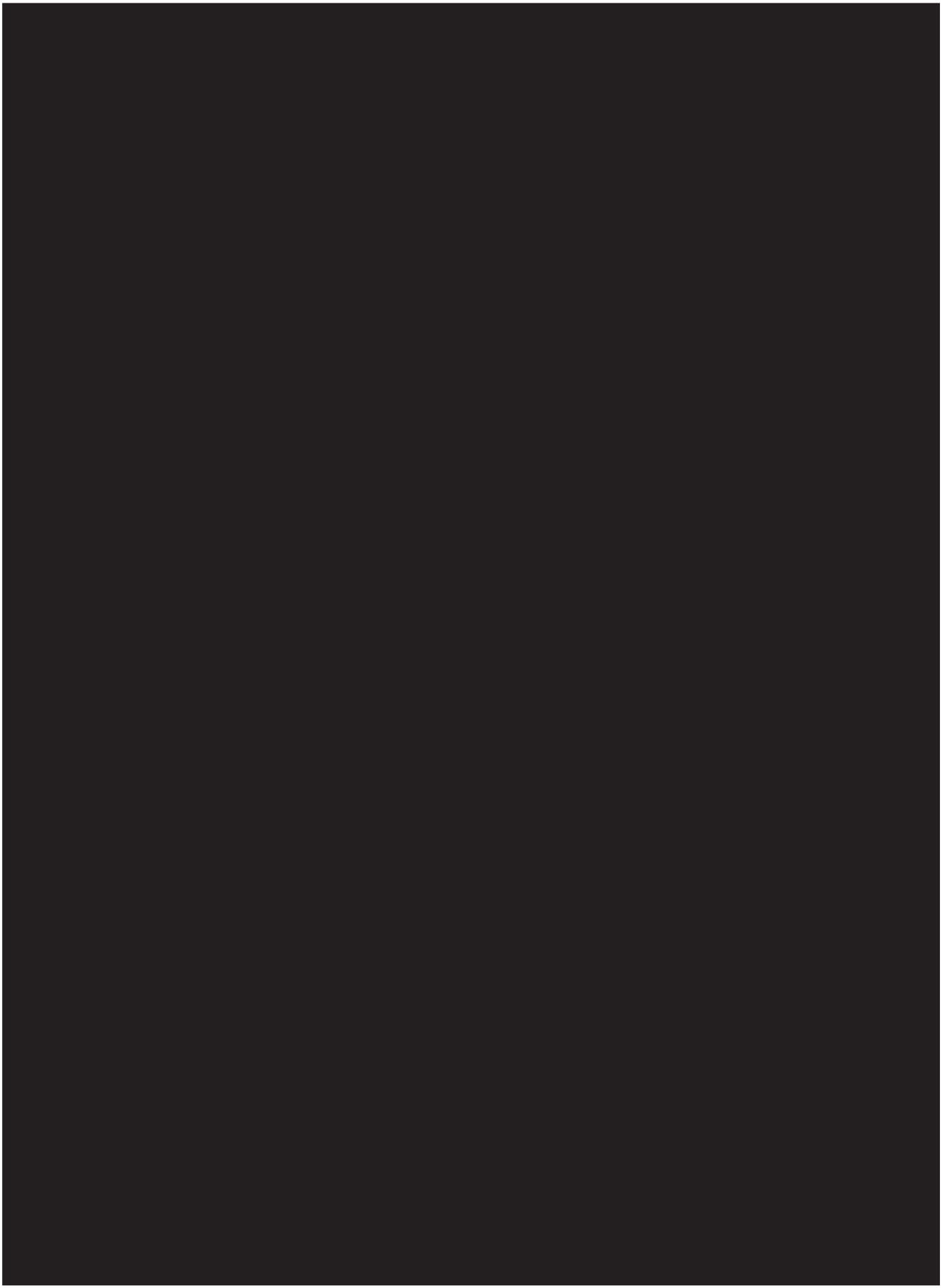
ISSN 1023-6325

MIRPUR PAPERS, Volume 24, Issue 28, November 2018

MIRPUR PAPERS

Defence Services Command and Staff College
Mirpur Cantonment, Dhaka-1216
Bangladesh



ISSN: 1023-6325

MIRPUR PAPERS, Volume 24, Issue 28, November 2018

MIRPUR PAPERS

Defence Services Command and Staff College
Mirpur Cantonment, Dhaka-1216
Bangladesh

MIRPUR PAPERS

Chief Patron

Major General Md Enayet Ullah, BSP, ndu, psc

Editorial Board

Correspondence:

The Editor
Mirpur Papers
Defence Services Command and Staff College
Mirpur Cantonment, Dhaka – 1216, Bangladesh

Telephone: 88-02-8031111
Fax: 88-02-9011450
E-mail: dscscbd@yahoo.com

ISSN 1023 – 6325

Published by
Defence Services Command and Staff College
Mirpur Cantonment, Dhaka – 1216, Bangladesh

Printed by
Army Printing Press
168 Zia Colony
Dhaka Cantonment, Dhaka-1206, Bangladesh

Message from the Chief Patron

I feel extremely happy to see the publication of the research journal *Mirpur Papers* Volume-24, Issue Number-28 of Defence Services Command & Staff College, Mirpur. *Mirpur Papers* bears the testimony of the intellectual outfit of the course participants of Armed Forces of different countries around the globe. Besides the course participants, faculty members also share their knowledge and experiences on national and international military activities through their writings in *Mirpur Papers*.

Defence Services Command and Staff College, Mirpur is the premier military institution which is designed to develop the professional knowledge and understanding of selected officers of the Armed Forces in order to prepare them for the assumption of increasing responsibilities both in staff and command appointment. Besides military matters, the course participants also undertake research works as part of their Masters of Science in Military Studies Programme under Bangladesh University of Professionals (BUP). This institution is publishing *Mirpur Papers* since 1978. Over the years, *Mirpur Papers* could draw appreciation from learned readers due to its rich contents.

This publication of DSCSC contains the research works of Course 2017-18. DSCSC always emphasizes on conducting research on contemporary issues on national security and defence. This enables the mid-level officers to make an original contribution to a subject of national or international interest. I believe the readers will find the articles useful and intellectually stimulating.

Finally, I take this opportunity to congratulate and commend the editorial board, all contributors, reviewers and all others involved in the process of the publication of this journal.

Major General Md Enayet Ullah, BSP, ndu, psc
Commandant
Defence Service Command and Staff College

EDITORIAL

Every year the Defence Services Command and Staff College, Mirpur, Bangladesh publishes a professional research journal namely *MIRPUR PAPER*. This journal is a fine blend of articles written by the student officers that present institutional, national, regional and international issues. The articles are basically the abridged versions of the original dissertation papers that the students submit as a part of the Masters of Science in Defence Studies Program under Bangladesh University of Professionals (BUP). The contributions of the faculty members are also significant as they supervised the research work throughout the course. In addition to the articles of the students, the faculty members also shared their valuable knowledge through their writings in this journal.

The first article of this issue is 'Revisiting Soldiers Ration Scale in Pursuance of Look-Fit Philosophy: Analysis and Way Ahead.' This paper seeks to identify the impact of Present Ration Scale on physical signature of 'Look-fit' philosophy among the soldiers of Bangladesh Army. Initially, the attributes of physical signatures of 'Look-fit' philosophy were identified. Then, prevalent condition of those physical signatures among soldiers followed by causes of declination was brought out. Thereafter, contribution of Present Ration Scale on physical signatures of 'Look-fit' was ascertained. However, Analysis on the ration scale of some neighboring Armies further reinforced these findings. Finally, the impact of Present Ration Scale on 'Look-fit' of soldiers was determined. At the end, an implementable strategy was outlined.

The second article is on 'Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.' This researcher seeks to identify the effect of "Managerial Leadership for mitigating challenges emanated due to the induction of modern equipment." A mixed method of qualitative and quantitative analysis coupled with expert interviews and focused group discussions were used. Initially, prevailing leadership style of the EME Field workshop coy where analyzed by extensive research using surveys. Then, challenges and expectations were identified, followed by an analysis to see how far the expected leadership can deal with the perceived challenges. Finally, the impact of Managerial Leadership on OCs' performance was determined. Thus, researcher proved the hypothesis: "Managerial leadership is a prime requirement for Field workshop coy to meet the challenges emanated due to induction of modern equipment in the Bangladesh Army."

The third article of this issue is on 'Working Wives and Its Impacts on Military Life of Bangladesh Army.' The dual-career families of our army have been trying at their ends to keep the negative effects associated with serving couple at its bay. However, it is felt that, many a times they are struggling to resolve the issues as expected. Hence, the researcher attempted to identify the extent of negative impacts of the employment of the officers' wives on the military life and tried to determine the need of organizational measures to mitigate the challenges. The research was carried out through a mixed method of qualitative and quantitative analysis. Various tools such as survey, expert's interview, case study, focus group discussion, document study and researcher's own experience were brought into effect in this research. Thereby, researcher validated the hypothesis: 'Pragmatic organizational endeavors will reduce the negative effects of working wives on the military life.'

'Attain Moderate Manufacturing Capabilities: Feasible Venture to Curb Foreign Dependency on Armored Vehicle Maintenance' is the fourth article. This research seeks to identify the underneath causes of foreign dependency in order to frame out plausible ventures to solve the limitations through appropriate Macro Engineering Venture (MEV). The Research focused endeavors to prove the hypothesis by finding out association between curbing foreign dependency and attainment of Moderate Manufacturing Capabilities (MMC). The study followed Mixed- Method

Study design. The hypothesis was validated by statistically proving that MMC through MEV will curb the vicious cycle of foreign dependency for AFV. Through the extensive study of the research, it is quite evident that the 902 Central Workshop is the hub of all effort, a technological center of gravity when it comes to the maintenance of armoured vehicles. It is an unpleasant fact that, the workshop falls short of what is needed. As such, the research proved that the MEV is the sole option left to attain MMC in order to curb this vicious cycle of foreign dependency.

'Impact of Violent Conflicts on Economic Growth in Nigeria: Lessons for Bangladesh' is the fifth article. This study evaluates the Impact of Violent Conflicts on Economic Growth in Nigeria, and draws lessons for Bangladesh. Four questions were raised and reformulated as objectives of the study. They include evaluating the impact of violent conflicts on economic growth in Nigeria, as well as examining the impacts of government expenditures on defence (DEFEX) and on Internal Security (EXIS) on economic growth in Nigeria. To achieve the study objectives, annual time series data, spanning 2001 to 2015, on the variables of the study (Real Gross Domestic Product [RGDP], DFEX, EXIS, Religious Violence [RLGV] scores and Ethnic Violence scores [ETHV]) were collected from publications of the Central Bank of Nigeria (CBN) and Integrated Network for Societal Conflict Research (INSCR). Descriptive and multiple regression analyses were used to analyze the data. The results of the regression show that DEFEX has a stronger positive impact on RGDP compared to EXIS, while RLGV negatively impacted on RGDP than ETHV. Based on the findings, it is recommended that policy-makers should integrate conflict-lessening measures in policy designs. Such measures may include dialogue among conflicting groups to resolve their differences through a formal process. Government should further increase DEFEX and EXIS to adequately equip security network in the country to respond to conflict situations, as well as ensure job creation and equitable income distribution.

The sixth article of this issue is 'Relationship between Disturbed Conjugal Life and Rise of Moral Turpitude Cases in Bangladesh Army.' Bangladesh Army is considered as one of the most disciplined forces due to strong focus on the castigation in the professional life as well as social life of the staffs. With the increase of the social networks, technological advancements and change in social structures, there has been increasing intricacies in the families of Bangladesh Army personnel. This research on the topic 'Relationship between Disturbed Conjugal Life and Rise of Moral Turpitude Cases in Bangladesh Army' is considered as a burning problem in the social context of Bangladesh Army and hence, it is necessary to analyze the problem and dig the root cause of it. As a part of the research, investigation over some moral turpitude cases, finding the reason behind it, factors influencing this, is necessary. Due to the basic human nature, individual behavior is largely regulated by his personal ethics, which is in turn driven by his mental state. But above all it is mostly a genre of one's conjugal life. Disturbance in the conjugal life of Bangladesh Army personnel can be caused by several reasons, but the outcome is detrimental for both his personal life and his organization as well.

The seventh article is 'An Evaluation of Present Re-Sale to officers System and Ways to Make it User-Friendly: Re-sale to Officers' is surfaced amongst the officers, two things are common; one is No availability (NA) of stores, and the other one is 'When the stores will be issued after demanding.' NA of stores is a common problem which can be minimized through timely decision, correct provisioning, and proper procurement process. On the other hand, 'Demand, Issue and Collection System' need a change. It is seen that online system is getting popularity in recent days. Steps were taken to upgrade the process through 'Ordnance Inventory Management System,' but still, there are rooms to improve the system through a different fashion. This research is undertaken to evaluate the existing problems of 'Re-sale to Officer System' regarding demand and issue process including collection of stores. This research is a pursuit for giving a solution for those problems. In doing so, the researcher has applied a number of tools for data collection which

includes surveys, scholar interviews, focused group discussion, case studies, documents study and the researchers own experience.

'The Integrated Vocational Rehabilitation Program to Convert Special Child into Utility Manpower through Employment: Bangladesh Army Perspective' is the eighth article. This research seeks to identify the impact of an integrated vocational rehabilitation program on employment rate and formulating rehabilitation options for the special children of the military community. In the research mixed method of qualitative and quantitative analysis coupled with expert interviews and focused group discussions were used. Initially, prevailing approaches of vocational rehabilitation in Proyash was identified with an evaluation of other armed forces of the world and organizations out of the armed forces. Then, the employment opportunities with the military employers were identified. Finally, attributes of Integrated Vocational Rehabilitation Program were identified and individual and collective impact of those attributes on employment rate of the special children was determined.

The ninth article of this issue is 'The Role of Standard Infantry Battalion in Asymmetric Warfare- A Bangladesh Army Perspective.' In contrast to Conventional Warfare (CW), Asymmetric Warfare (AW) refers to operations that do not rely on masses of troops or munitions to destroy enemy. In general, AW refers to warfare between opponents not evenly matched where the smaller or weaker force must exploit geography, timing, surprise, or specific vulnerabilities of the larger and stronger enemy force to achieve victory. Bangladesh Army may have to resort to AW sooner than expected considering diversifying nature of threats in 21st century. It has already taken an endeavour to prepare a draft doctrine of AW. But proper brainstorming session on AW was limited to strategic and operation level till now. Standard Infantry Battalions (SIB) is the key tools for Bangladesh Army to fight AW. Unfortunately, SIBs are designed to fight CW only till now. The characteristics of emergent Violent Non-state actors (VNSA) suggest that they will ask question to SIBs in every step if embroiled into fighting in future. Thereby, SIBs need to re-examine their existing mission, capabilities and organization to fight against asymmetric threats.

'Training of BN Gunnery Sailors to Meet the Present and Future Fleet Requirements' is the tenth article. This research endeavors to find out the core predicament which is slowing down the headway of BN training system despite significant remedial actions. Gunnery School at BNS ISSA KHAN has been conducting the gunnery training of BN Officers and sailors with age old limitations. Reality is that, the impediments of BN Gunnery training system are embedded in the challenges of BN training system. However, challenges are not unmarked. As a matter of fact, analysis of the various policies, study paper, and instructions issued by DNT, NHQ reveals that numerous pragmatic and significant steps were undertaken in past to eradicate the age old problems of BN training system. Yet substantial improvement in this sector is far from reality. Further, investigation of various reminders and correspondence from DNT, NHQ regarding adherence of various enforced training policies exposes the dissatisfaction of NHQ and realism on ground. A good number of researches have been conducted on BN training system previously. However, previous researchers did not evaluate the existing training system by any reputable training evaluation method. At this backdrop, this research chose to evaluate the existing training system of BN Gunnery Sailors by Donald L Kirkpatrick's 'Four steps to measure training effectiveness.'

'Exploiting the potentials of NouKollan Foundation for National Development' is the eleventh article. This research provides knowledge on the potentials of NKF and identifies the potentials sectors where it can undertake its activities for national development. Welfare activities of BN through NKF are in a developing state. In comparison with sister services in general and SKS of Bangladesh Army (BA) in particular, activities of NKF are in a nascent state. SKS in addition to rendering welfare services, is also providing remarkable service to the national development of the

country. In this regard, BN should undertake intensive activities through NKF utilizing the expertise of its retired personnel. Considering the overall commitment of BN to the nation, NKF should be developed with a systematic approach to promote not only welfare activities for its personnel but also contributing to the national development. This particular research is an exploratory one based on qualitative approach. The researcher personally visited the offices of NKF, SKS and BAFWT to acquire first-hand knowledge through observation of the day to day activities and the working procedures of the mentioned organizations.

The twelfth article is 'Capability Enhancement of Naval Aviation: Augmenting the Maritime Security of Bangladesh.' Bangladesh, an Indian Ocean littoral state, has a maritime zone that encompasses significant security implications for the country. The openness of the Bay of Bengal (BoB) is a key security concern which is exposed to maritime threats. Recent maritime boundary delimitations with neighbors have given Bangladesh exclusive right to explore and exploit the maritime resources which needs to be safeguarded. It is important for Bangladesh to address the non-traditional threats and vulnerabilities existing in the country's maritime domain alongside the traditional challenges. Bangladesh Navy (BN) is the prime organization to ensure maritime security of Bangladesh. BN has undertaken a pragmatic approach to enhance her operational capability in the last decade. Recently a good number of capable surface platforms with modern weapons and sensors were inducted in BN. Induction of Naval Aviation, Special Warfare Diving and Salvage (SWADS) and submarine is also a significant achievement for BN. However, operational capability of Naval Aviation is yet to develop as was envisaged during inauguration.

'The Implication of Current Career Progression System of Engineering Officers on Professional Specialization in Bangladesh Air Force' is the thirteenth article. Forces Goal 2030 plans to make Bangladesh Air Force a technologically advanced, well-trained and well-equipped force that can deter any threat. In the process, Bangladesh Air Force has been inducting advanced equipment in its fleet. This has necessitated specialized skill of its engineers for operation and maintenance of these aircraft and equipment. Foreseeing increasing demand for specialization BAF is continually evaluating its policy for career development of engineers. As part of this BAF recently reformed the structure of engineering officers and developed an integrated career progression system. This however, was found to falter in addressing the issue of specialization for engineering officers. As such, there a generally agreed upon understanding that the currently practiced career progression system and for that matter even the previous system does not support specialization of engineering officers. An in-depth study of relevant data on officers' posting pattern, their opinion about the system and self-assessment on own expertise establish the hypothesis that BAF engineering officers' specialization and the current career progression system are negatively related. The study reveals that, the system has limited departmentalization and practices cross discipline assignment along with a high rate of rotation for engineers.

The fourteenth article is 'Gender Equity in Bangladesh Air Force (BAF) and Its Impact on Mid-Level Maintenance.' In line with the national policy on gender equity under SDG, Bangladesh Air Force (BAF) started recruiting female candidates in different branches of officers with effect from the year 2000. The maintenance system of an air force calls for immense supervision, critical management and in-depth involvement. BAF maintenance system has a new environment of gender equity at its midlevel when Male and Female officers share the supervisory tasks to achieve the provisions of sustaining services for the operational tasks. With this connotation, the hypothesis for the study was 'Present significant workload in Bangladesh Air Force mid-level maintenance system is disproportionately shared with a consideration to Gender Equity.' A research was carried out to validate this hypothesis. It was observed at the end that male mid-level engineering officers share a significant proportion of the maintenance workload. An interesting aspect of the study has been the testing of the hypothesis.

The last article of this issue is 'Impact of Facebook on Officers in Bangladesh Air Force.' Facebook is a popular trend today, especially among the young people. However, the elders are also using this equally. This study examines the impact of Facebook on officers of Bangladesh Air Force. Based on own involvement, observation of peers and from the previous related research a is assumed that there is hardly any research on the use of Facebook on the officers of Bangladesh Air Force. Like any citizens of other country Bangladeshis are also addicted to Facebook and so do Bangladesh Air Force officers. As Facebook culture in an interactive fashion which influences behavior of each other in human society, it can also have an impact on the users like officers of Bangladesh Air Force. As such the purpose of this research is to show how the use of Facebook has impact on the officers of Bangladesh Air Force and allows them to understand the common weaknesses of the Facebook environment and the risks of using this. While carrying out the research all the officers agreed that the use of Facebook has both negative and positive impact on the job performance, social and security of Air Force officers. There were 16 different offences related to Facebook by the officers. The nature of offences is mostly sharing post, like or comment in respect of religion, personal matter of defamatory nature, comment of the character of superior officer, post of unauthorized events, free mixing, extra marital affairs etc. However, officers cannot be prevented from using Facebook in the age of global information technology.

Contents

Contents

REVISITING SOLDIERS' RATION SCALE IN PURSUANCE OF LOOK-FIT PHILOSOPHY: ANALYSIS AND WAY AHEAD

"Looking good and feeling good go hand in hand. If you have a healthy lifestyle, your diet and nutrition are set, and you're working out, you're going to feel good."

–Jason Statham

Major Gazi Abdus Salam G, Artillery

ABSTRACT

Sound physical fitness is an indispensable quality for any soldier around the globe, so is for soldiers of Bangladesh Army. In that, soldiers require to undertake constant physical training and practice. However, Bangladesh Army introduced a new Ration Scale for soldiers in 2010. Thereafter, a declination in their physical fitness took place, which brought the concept of 'Look-fit' into radar. Presumably, unburnt calories gathered by soldiers from calorie-heavy ration scale is considered one of the contributory factors for the aforesaid declination. At this backdrop, this paper seeks to identify the impact of Present Ration Scale on physical signature of 'Look-fit' philosophy among the soldiers of Bangladesh Army. Initially, the attributes of physical signatures of 'Look-fit' philosophy were identified. Then, prevalent condition of those physical signatures among soldiers followed by causes of declination was brought out. Thereafter, contribution of Present Ration Scale on physical signatures of 'Look-fit' was ascertained. However, Analysis on the ration scale of some neighbouring Armies further reinforced these findings. Finally, the impact of Present Ration Scale on 'Look-fit' of soldiers was determined. At the end, an implementable strategy was outlined.

INTRODUCTION

Soldiering is one of the oldest professions around the globe. Physical fitness, on the other hand, is considered to be a core element of soldiering. The very nature of military profession requires a physically sound and mentally robust force which can undertake any daunting task reposed on it. However, the ability of men to fight largely hinges on what they are fed. The vigor, zeal, and enthusiasm with which a soldier discharges his duties depend on his nutritional status. The axiom that Army marches on its stomach is as good today as it has ever been. Sensing the importance, Bangladesh (BD) Army introduced a new Ration Scale for soldiers in 2010 and the diet program got changed accordingly. Items with plenty of Protein, Carbohydrate and Vitamins were included in that Ration Scale. Despite that, it is observed that physical efficiency of soldiers is declining day by day. These days, soldiers barely stand out as icon of fitness and the curve is in the declining trend. This declining phenomenon gave birth to 'Look-fit' philosophy in BD Army.

'Look-fit' is a perception introduced by General Iqbal Karim Bhuiyan, SBP, psc the ex-Chief of Army Staff (26 Jun 2012 to 25 Jun 2015), Bangladesh Army and is being firmly pursued by the present CAS. This concept aims to shape up the mindset of soldiers to look fit by physical appearance. It is perceived that present ration scale (PRS) of soldiers' of Bangladesh Army is heavy compared to their routine intake requirement. In response, a soldier is expected to do extra work out to burn the extra calories. Routine training and administrative commitments of the soldiers, in fact, leave very limited room for them to make time for extra workout in the gymnasium. However, a soldier with higher self-esteem endeavors to burn out the extra calories; but majority of the soldiers retain it within their body resulting in a 'Look-obese' body. As such, it has become essential to revisit soldiers' ration scale in pursuance of 'Look-fit' philosophy.

The significance of this study lies in its attempt to unearth the necessity to revisit PRS of soldiers to promote 'Look-fit' philosophy. It is assumed that soldiers' disproportionate calorie intake-burn ratio offers a scope to revisit PRS. In this scenario, **this paper would identify and analyze the drawbacks of PRS to promote 'Look-fit' philosophy**. It is envisaged that a balance diet originated from Ration Scale would assist the soldiers to achieve physical signatures of 'Look-fit' philosophy. Therefore, **a possible restructured model of Ration Scale for an effective balance diet** would also be presented in this paper. While writing this paper, it is assumed that average standard weight of a soldier of Bangladesh army is 150 Pounds (lbs) and meals are prepared based on the authorized ration scale

AIM

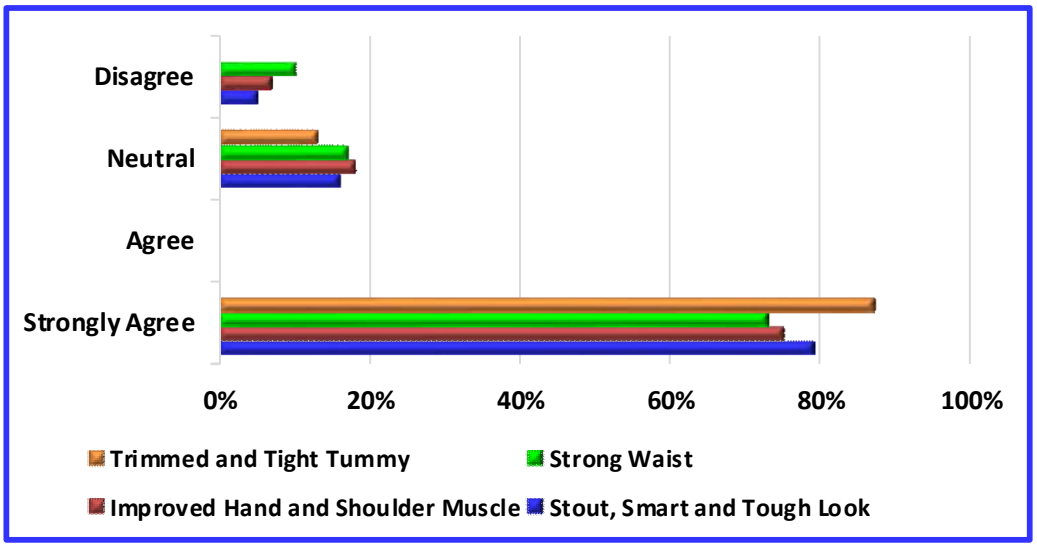
The aim of this paper is to evaluate the PRS of soldiers in pursuance of 'Look-fit' philosophy and propose a restructured Ration Scale for better contribution towards physical signatures of 'Look-fit' philosophy.

ATTRIBUTES OF PHYSICAL SIGNATURE OF LOOK-FIT, PREVALENT CONDITION, AND CAUSES OF DECLINATION

Attributes of Physical Signature of Look-fit

Though 'Look-fit' now-a-days is a widely-discussed topic in Bangladesh Army, it doesn't have any literary attributes. In laymen, we understand that 'Look-fit' means someone got to look fit through physical signature. However, persons who look obese and are overweight are also not considered as 'Look-fit' in Bangladesh Army (19 Division, 2017). Through content analysis, document study, and interviews, few commonly perceived attributes emerged: trimmed and tight tummy, strong waist, improved hand and shoulder muscle, and stout, strong and tough look. These attributes were also supported by survey which is given below:-

Figure 1: Perception of Offrs on the Attributes of 'Look-fit'

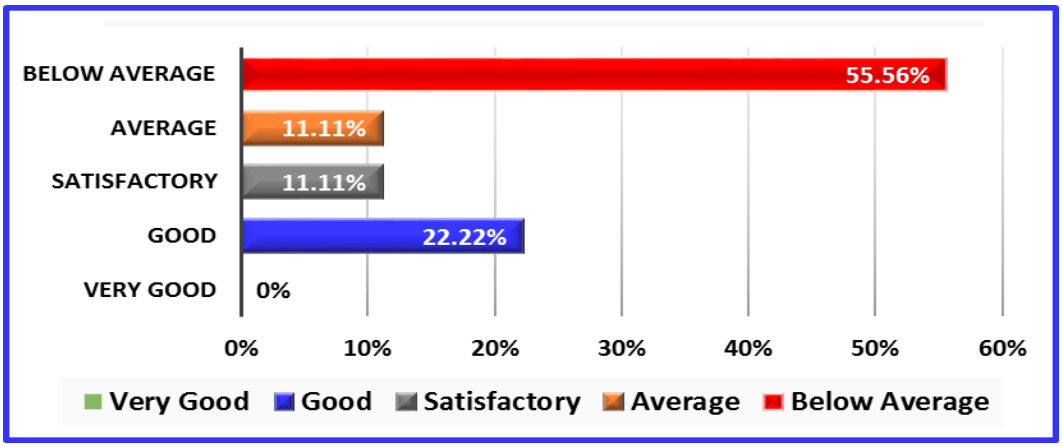


Source: Author's Construct

Prevalent Condition of Physical Signature of Look-fit

Now-a-days the state of physical signature of 'Look-fit' possessed by soldiers isn't encouraging. This perception was statistically and analytically tested with survey, where all the responded clearly agreed to this phenomenon. More than half of the offrs (56%) opined that tentative state of soldiers in their units possessing attributes of physical signature of 'Look-fit' is below average.

Figure 2: State of Soldiers with Physical Signature of 'Look-fit'



Source: Author's Construct

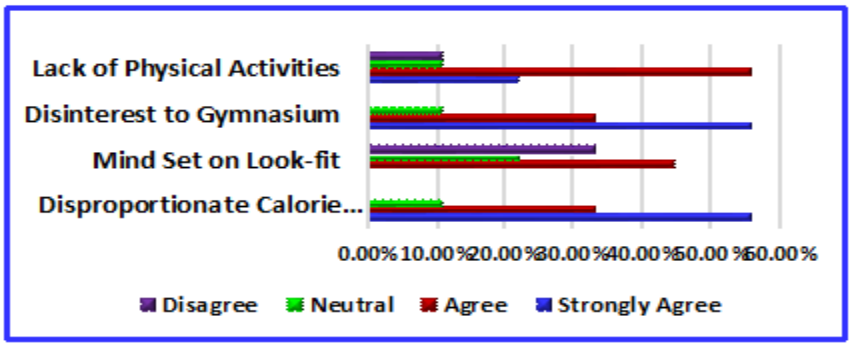
Data on overweight and 'Look Obese' further reveals that almost 25% (overweight-6.6% and look obese-18.4%) of the Army personnel are either overweight or 'Look Obese' (19 Division, 2017). Among all age groups, around 62.8% of the below 45 age

group and 48.3% of below 40 age group are either overweight or 'Look Obese'. It is the highest obesity state among all age groups.

Likely Causes of Decline of Physical Signature of 'Look-fit'

The researcher focused on the general causes of the decline of physical signature of 'Look-fit' among soldiers of BD Army. The causes were at sorted out and later verified through survey, which are highlighted in the subsequent paragraphs.

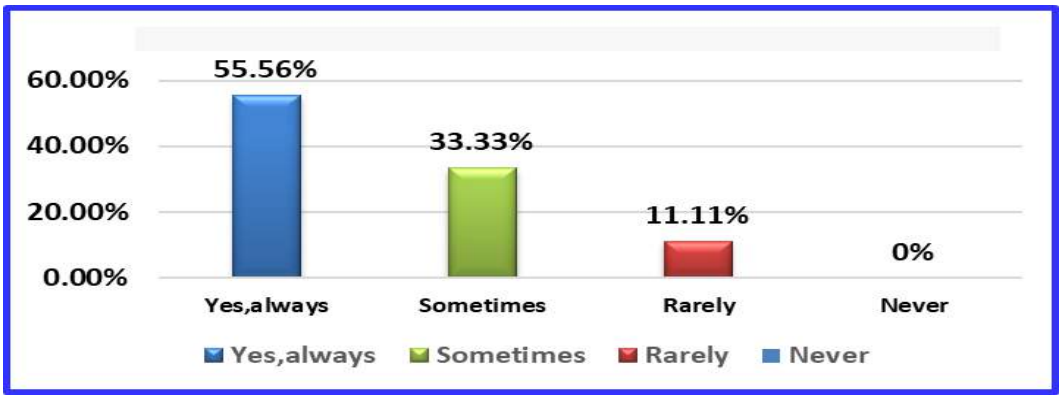
Figure 3: Perception of Offrs on Causes of Decline of 'Look-fit'



Source: Author's Construct

Disproportionate Calorie Intake-Burn Ratio from PRS. Disproportionate calorie intake-burn ratio of PRS is one of the major causes of the decline of physical signature of 'Look-fit'. Survey results show that 56% offrs (Figure 3) strongly agree this to be the most important cause of this downtrend. To confirm this phenomenon, another question was asked to offrs whether soldiers are receiving more calorie through PRS or not. In response, 56% opined that they (soldiers) are always receiving more calorie.

Figure 4: Perception of Officers Regarding More Calorie Intake of Soldiers

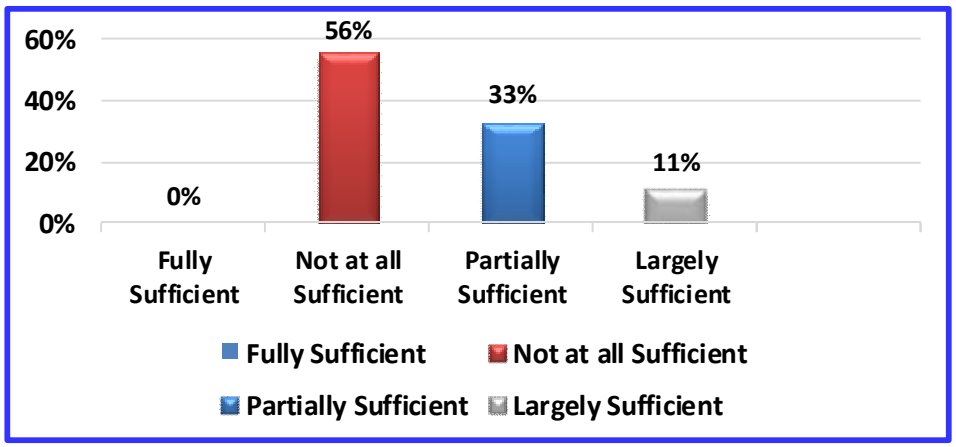


Source: Author's Construct

Disinterest to Gymnasium. Gymnasium culture was introduced in BD Army to allow burning of additional calorie. Unfortunately, soldiers aren't using it judiciously to burn additional calorie leading to unsatisfactory physical fitness. However, majority of the respondents (55%) in Figure 4 identified this as another reason of decline of 'Look-fit'. This perception is further verified by survey, where maximum respondents revealed that frequency of using gymnasium by their soldiers to burn additional calorie during off-duty time is at below average state.

Lack of Physical Activities. In Figure 3, almost 55% offrs identified lack of physical activities is another notable reason for declination of physical signature of 'Look-fit'. As such, the researcher felt the necessity to identify the adequacy of physical activities presently undertaken in the units. From survey, it is seen that maximum (56%) officers believe that present physical activities undertaken in the unit isn't at all sufficient to burn the total consumed calorie of soldiers (Figure 5).

Figure 5: Perception of Officers on Adequacy of Physical Activities in Units to Burn Extra Calorie



Source: Author's Construct

Mindset on Look-fit. Mind Set stands as another important reason for declining physical signature of 'Look-fit' (Figure 3). In Army, mindset is an imperative element for doing anything and everything. If the mindset is wrong, then the outcome does not match with expectation. Soldiers' mindset on 'Look-fit' will dictate how fast and how much physical fitness they will achieve.

CONTRIBUTION OF PRS IN 'LOOK-FIT' PHILOSOPHY AND DRAWBACKS OF PRS

Calorie Intake by Soldiers

Basic Ration Scale for soldiers of Bangladesh Army was revisited in 2010. Accordingly, it is being followed in the present diet program for Bangladesh Army. PRS as per food value is given in the following table:-

Table 1: PRS as per Food Value

Sl	Item	Scale (gm)	Calorie/(gm)	Total Calorie
1.	Rice	595	3.46	2059
2.	Atta/bread/flower/ biscuit	112	3.52	394
3.	Dal	85	3.42	291
4.	Edible Oil	85	9.02	767
5.	Sugar	63	3.95	249
6.	Salt	14	-	-
7.	Tea	09	-	-
8.	Milk Fresh	170 ml	0.63	108
9.	Beef	226	1.8	407
10.	Mutton	226	1.8	407
11.	Chicken (Undressed)	310	1.5	465
12.	Fish (River)	247	0.99	245
13.	Egg	04 Nos	90 Each	360
14.	Onion	56	0.526	29
15.	Potato	113	0.95	108
16.	Vegetables	141	0.17	24
17.	Fruits (Citrus\ Non Citrus)	85 (Every day)	0.76	65
18.	Condiments	21gm/day	-	-
Total Calorie				**5978**

Source: Author's Construct

From the detail calculation of calorie intake, every soldier of BD Army takes in an average 4000 calories per day according to daily ration scale (excluding 10% wastage). The summarized weekly calorie intake is also shown in the Table:-

Table 2: Summarized Weekly Calorie Intake

Serial	Day	Daily Menu	Calorie
1.	Saturday	Rice, Chicken, Vegetables, Dal, Tea	4557
2.	Sunday	Flour, Tea, Rice, Beef, Vegetables, Dal, Fruit	4499
3.	Monday	Flour, Tea, Rice, Fish, Vegetables, Dal	4337
4.	Tuesday	Flour, Tea, Rice, Chicken, Vegetables, Dal, Fruit	4557
5.	Wednesday	Flour, Tea, Rice, Beef, Vegetables, Dal	4499
6.	Thursday	Flour, Tea, Rice, Fish, Vegetables, Dal, Fruit	4337
7.	Friday	Flour, Rice, Egg, Vegetables, Dal	4348

Source: Author's Construct

Calorie Burn by Soldiers

Considering the present physical training programme followed in units, a soldier burns maximum 3396 and minimum 2984 calorie in a day. More importantly, during weekly holidays, the calorie consumed through PRS remains unexpended. Weekly calorie burn of a soldier is given below:-

Table 3: Weekly Total Calorie Burn by a Soldier

Serial	Day	Activities	Expended Calorie
1.	Saturday	Weekly Holiday	0
2.	Sunday	PT, Games, Outdoor Training, Working, Routine Activities, Guard Duties, Desk Job, Afternoon Rest and Sleeping	3291
3.	Monday	PT, Games, Outdoor Training, Working, Routine Activities, Guard Duties, Desk Job, Afternoon Rest and Sleeping	3203
4.	Tuesday	PT, Games, Outdoor Training, Working, Routine Activities, Guard Duties, Desk Job, Afternoon Rest and Sleeping	3396
5.	Wednesday	PT, Games, Outdoor Training, Working, Routine Activities, Guard Duties, Desk Job, Afternoon Rest and Sleeping	3091
6.	Thursday	PT, Games, Outdoor Training, Working, Routine Activities, Guard Duties, Desk Job,	2984

		Afternoon Rest and Sleeping	
7.	Friday	Weekly Holiday	0

Source: Author's Construct

Calorie Requirement of Soldiers from Physiological Perspective

Calorie requirement of soldiers from Physiological Perspective as per age and weight group is given at ATP 01-0008(B). From there, it is found that the highest calorie requirement of a soldier of 150 lbs (considering the standard weight) is **2933** calorie.

Calorie Intake- Burn Ratio

The daily calorie intake- burn ratio is shown in the table below:-

Table 4: Calorie Intake-Burn Ratio

Serial	Day	Calorie Required	Calorie Received	Calorie Expended	Leftover Calorie
(a)	(b)	(c)	(d)	(e)	(f)
1.	Sunday	2933	4499	3291	1208
2.	Monday		4337	3203	1134
3.	Tuesday		4557	3396	1161
4.	Wednesday		4499	3091	1408
5.	Thursday		4337	2984	1353

Source: Author's construct

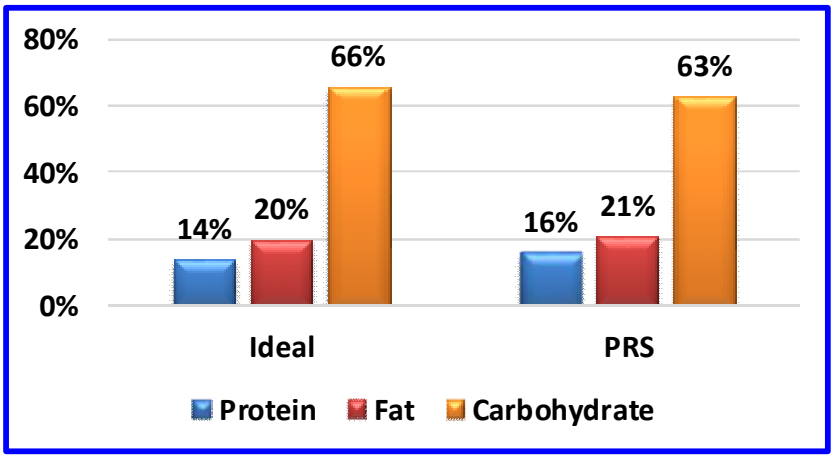
The average daily calorie expenditure of a soldier is 3193 calorie, rounded off to 3200 calorie. Based on all the supply schedule of BSD, the average calorie intake of a soldier from the diet program in each day is (138033 / 31) calorie = **4453 calories**. However, 10% of the total calorie is wasted while cooking and serving (ARTDOC, 2015). So the net calorie intake of a soldier per day is (4453- 445) calorie = **4008 (rounded off to 4000) calories.** If 3200 calorie is considered to be the average daily requirement, then net calorie requirement considering 10% wastage (320 calorie) becomes 3520 calorie, rounded off to 3500 calorie. As such, everyday each soldier is receiving additional (**4000-3500**) =**500** calorie.

Drawbacks of PRS

Non-scientific Ration Scale. PRS of Bangladesh Army was introduced in 2010. The chief reason to increase the scale of various items was to bring it at per with BN and BAF. No scientific research was carried out in determining the PRS More so, ruti was reduced to once in daily meal and rice increased twice. As a result, the scale of some protein items was increased to serve as curry. Unfortunately, modern scientific facts and findings were not considered while readjusting the ration scale.

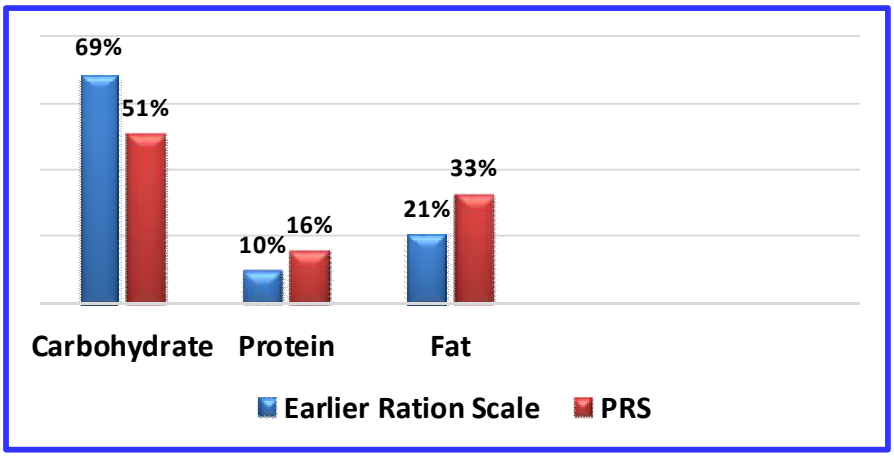
Imbalanced Diet. According to ATP 01-0008(B), an ideal diet programme should contain about two-third Carbohydrate and rest one-third Protein. But in PRS, Carbohydrate is 63%, Protein 16% and Fat 21%. More so, fresh vegetables and fruits should constitute the major portion of the diet. But the authorization of vegetable and fruit in PRS is (141gm+85gm) = 262 gm, which is only 15% of the total diet. Surprisingly, the scale of vegetable has been reduced to 141gm from 170 gm in PRS. However, composition of ideal and PRS and comparative food value of PRS and earlier ration scale are shown below (Figure 6 and 7):

Figure 6: Composition of Ideal and PRS



Source: Author's Construct

Figure 7: Comparative Food Value between Earlier Ration Scale and PRS

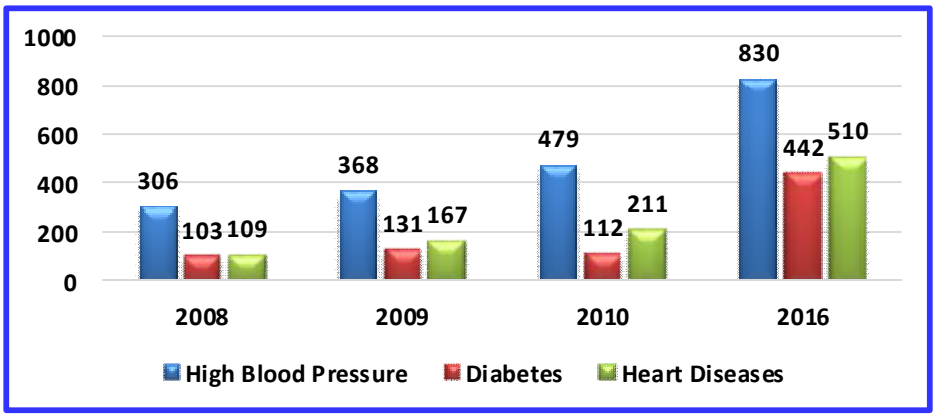


Source: Author's Construct

Increased Intensity of Diseases and Death of Soldiers. The additional calorie intake, once gathered for a prolonged period, may cause various diseases like High Blood Pressure, Diabetes, Heart Diseases including death. Nevertheless, data retrieved from

AHQ, Medical Directorate clearly reveals that the intensity of suffering from various diseases including death rate of soldiers has increased with PRS.

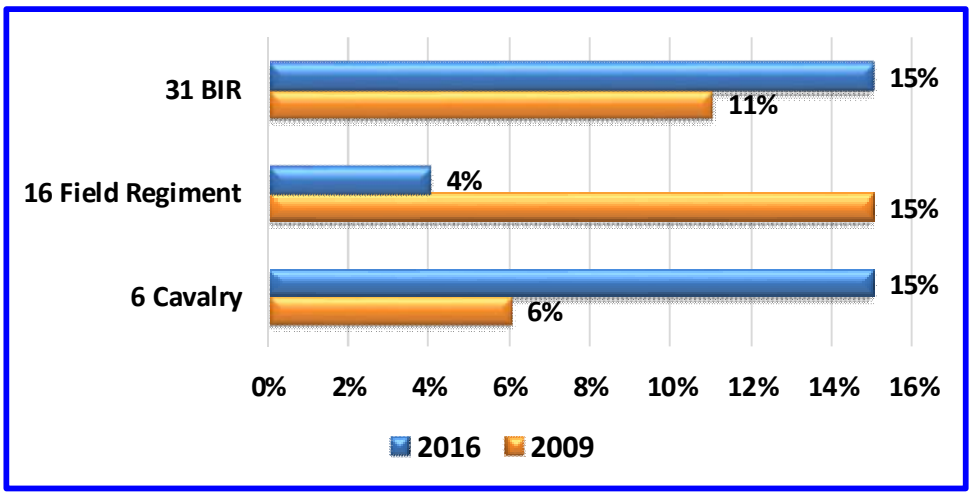
Figure 8: State of Yearly Patients in CMH



Source: Author's Construct

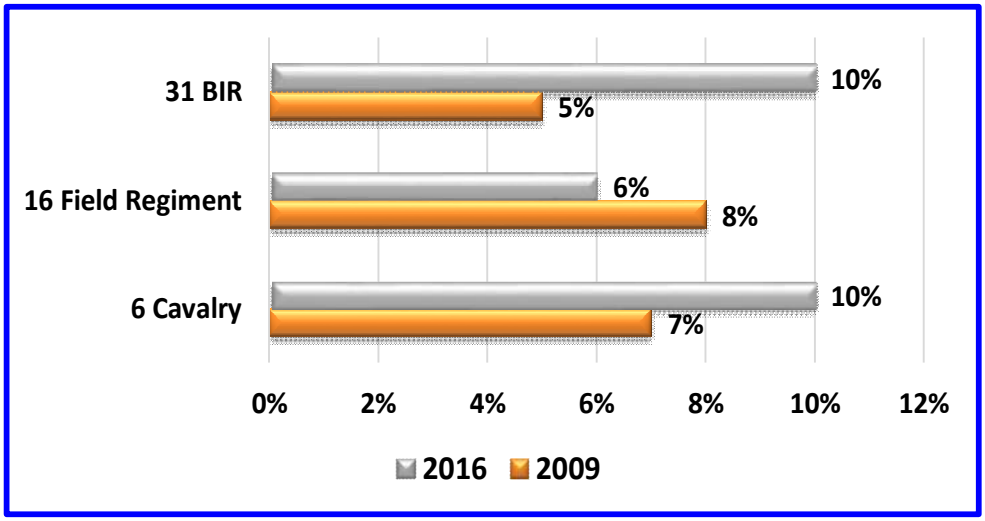
Deterioration in PT Result and Obesity State. From 2010 onwards, a gradual deterioration was observed in soldiers' PT result and obesity state. Consumption of too much calorie through PRS is one of the major reasons for this phenomenon. However, to confirm this, two years data on PT and obesity state was collected from three sample units of 33 Infantry Division; one is before PRS is introduced and the other one is after PRS is introduced. It is found that a gradual declination took place in soldiers PT result and obesity state in case of all three units.

Figure 9: State of PT Fail of Soldiers



Source: Author's Construct

Figure 10: State of Obesity of Soldiers



Source: Author's Construct

COMPARATIVE STUDY AND ANALYSIS ON SOLDIERS' RATION SCALE OF NEIGHBORING ARMIES

Comparative Study and Analysis on Soldiers' Ration Scale and Physical Activities of Neighboring Armies

Pakistan Army. Pakistan Army takes ruti twice and rice once in a day. More importantly, their soldiers take protein only during dinner. However, basic ration scale of Pakistan Army is given below:-

Table 5: Basic Ration Scale of Soldiers of Pakistan Army

Serial	Item	Scale (gm)	Calorie/(gm)	Total Calorie
1.	Rice	453	3.46	783
2.	Atta	700	3.52	1232
3.	Flour	26	4	104
4.	Dal	85	3.42	291
5.	Ghee/Edible Oil	100	9.02	902
6.	Sugar	70	3.95	277
7.	Suji	30	3.6	108
8.	Salt	14	-	-
9.	Tea	09	-	-
10.	Milk Fresh	248 ml	0.63	156

Serial	Item	Scale (gm)	Calorie/(gm)	Total Calorie
11.	Beef	228	1.8	410
12.	Mutton	220	1.8	410
13.	Chicken (Undressed)	162	1.5	243
14.	Egg	02 Nos	90 Each	180
15.	Onion	56	0.526	29
16.	Potato	113	0.95	107
17.	Vegetables	198	0.17	34
18.	Fruits (Citrus\ Non Citrus)	113	0.76	86
Total				**5352**

Source: Author's Construct

Findings. Considering the ration scale and weekly training programme, the findings are given below:

a. Total calorie (item wise) of soldiers' ration scale of Pakistan Army is less by 626 calorie (5978-5352) than that of BD Army.

b. Pakistan Army conducts morning PT four hours in a week, which is one hour less than BD. But their soldiers appear Battle Physical Efficiency Test (BPET) with full battle gear and Individual Physical Fitness Test (IPFT) four times in a year. In case of BD, soldiers appear Battle Physical Training (BPT), like BPET of Pakistan Army, with combat jacket only and IPFT twice in a year.

c. Pakistan conducts BPET as part of unit efficiency test, but in Bangladesh there is no BPT test.

d. Therefore, Pakistan Army soldiers are receiving less calorie by participating in more and tougher physical activities than Bangladesh.

Indian Army. Basic ration scale of Indian Army is given below:-

Table 6: Basic Ration Scale of Soldiers of Indian Army

Serial	Item	Scale (gm)	Calorie/(gm)	Total Calorie
1.	Rice	400	3.46	1384
2.	Atta	220	3.52	774
3.	Dal	90	3.42	308
4.	Edible Oil	80	9.02	722
5.	Sugar	90	3.95	356

Serial	Item	Scale (gm)	Calorie/(gm)	Total Calorie
6.	Salt	20	-	-
7.	Tea	09	-	-
8.	Milk Fresh	250 ml	0.63	158
9.	Milk Powder	30	5	150
10.	Chicken (Undressed)	180	1.5	270
11.	Fish (River)	190	0.99	188
12.	Egg	02 Nos	90 Each	180
13.	Onion	60	0.526	32
14.	Potato	110	0.95	105
15.	Vegetables	170	0.17	29
16.	Fruits (Citrus\ Non Citrus)	230	0.76	175
		Total		4831

Source: Author's construct

Findings. Considering the ration scale and weekly training programme, the findings are given below:-

a. Total calorie (item wise) of soldiers' ration scale of Indian Army is less by 1147 calorie (5978-4831) than that of BD Army.

b. Indian Army conducts morning PT five hours in a week, which is equal to BD. But their soldiers appear BPET with full battle gear and IPFT four times in a year. In case of BD, soldiers appear BPT with combat jacket only and IPFT twice in a year.

c. India conducts BPET as part of IPFT, but in BD there is no BPT test.

d. Therefore, Indian Army soldiers are receiving less calorie participating in more and tougher physical activities than BD soldiers.

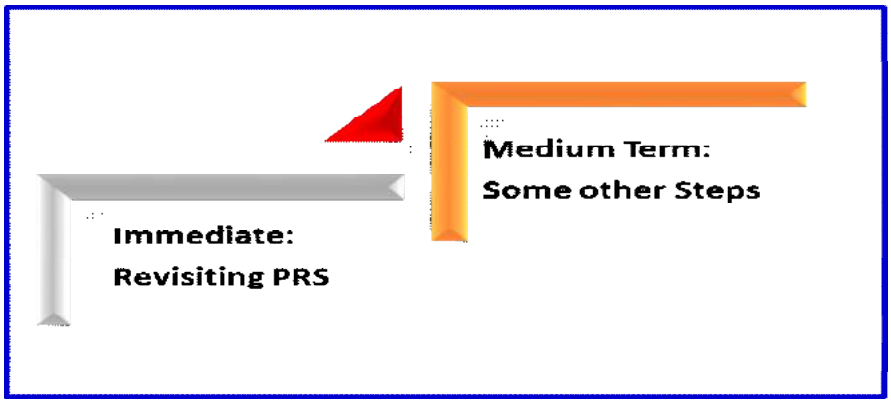
SUGGESTED STRATEGY TO PROMOTE 'LOOK-FIT' PHILOSOPHY AMONGST SOLDIERS

Strategy to Promote 'Look-fit' Philosophy among Soldiers

It is seen from the preceding chapters that the physical signatures of 'Look-fit' are notably affected by the unburnt calorie received through PRS. Therefore, Revisiting PRS of soldiers can bring a positive outcome in 'Look-fit' philosophy. Keeping this analogy in view, this chapter aims at discussing plausible stratagem to promote 'Look-fit' philosophy. In addition, this chapter will also unfold some other steps to promote 'Look-

fit' philosophy among soldiers. To implement, the measures can be approached from two perspectives (Figure 11): immediate and medium term basis.

Figure 11: Strategy to Promote 'Look-fit' amongst Soldiers

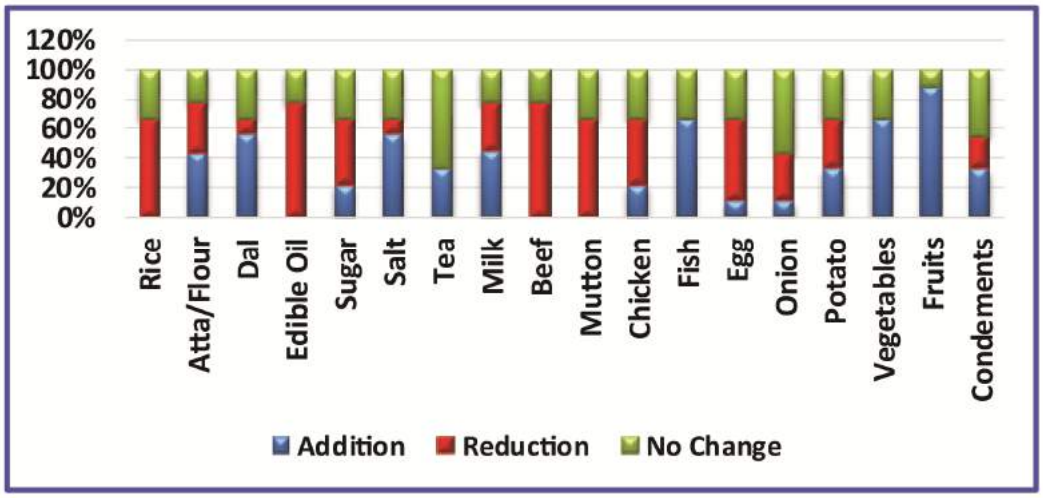


Source: Author's Construct

Revisiting PRS

Adjustment of Ration Scale. PRS of soldiers is disproportionate in terms of calorie intake-burn ratio. This has triggered the necessity to determine an ideal and comprehensive ration scale for the soldiers. As such, survey question was asked to offrs to have their recommendation on existing scale. In that, majority opined for scale reduction of Protein items and increase of Carbohydrate items.

Figure 12: Response of Officers Regarding Adjustment of PRS



Source: Author's Construct

Findings from Proceedings of ASCC&S. A Board of Offrs (BOF) formed in ASCC&S in 2013 to carry out survey on the suitability of PRS of Recruits. The recommendations of that survey are given below:-

a. Scale of milk and fruits may be increased from 200 ml to 250 ml and from 85 gm to 200 gm respectively.

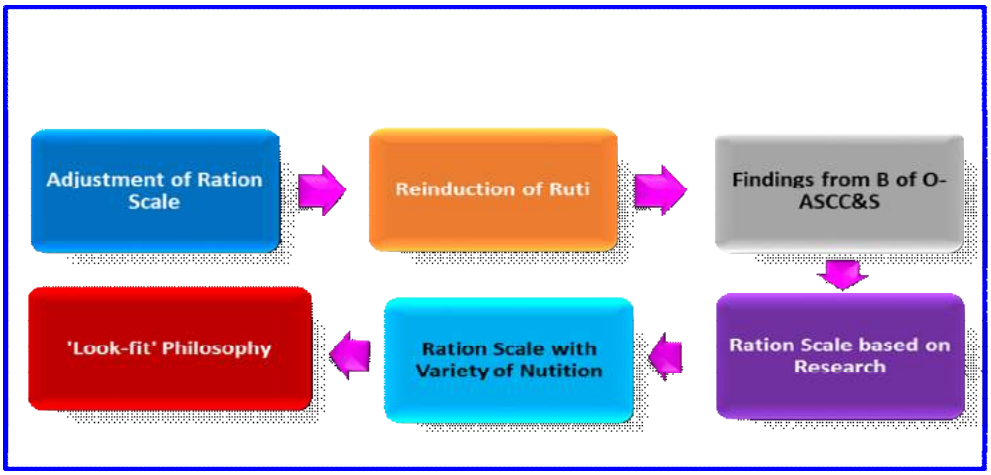
b. Few items like lemon, salad, jam/jelly, honey and dates may be included in the ration scale.

c. Like many other countries of the world, BD Armed Forces may establish **Defence Food Research Laboratory (DFRL)** for carrying out research on food and nutrition**.**

Research-based Ration Scale. No scientific research was carried out to formulate PRS. As such, it's time now to revisit PRS basing on separate scientific survey or research. For this purpose, a detail nutrition survey should be carried out in different garrison of the country. Modern scientific facts and findings must be considered while readjusting the ration scale.

Balanced Diet with Variety in Nutrition Value. Revisited PRS must entail a balance diet containing about two-third with Carbohydrate and rest one-third with Protein. More so, fresh vegetables and fruits should constitute the major portion of the diet. The diet should have 10-14% protein group with required amount of red meat. It should also include wide variety of vegetables with different nutrients. While determining the scale for vegetables, the nutrition value of different vegetable needs to be considered.

Figure 13: Suggested Measures to Revisit PRS



Source: Author's Construct

Suggested Ration Scale. Considering all the above paragraphs, the suggested ration scale is given in the table below.

Table 7: Suggested Ration Scale

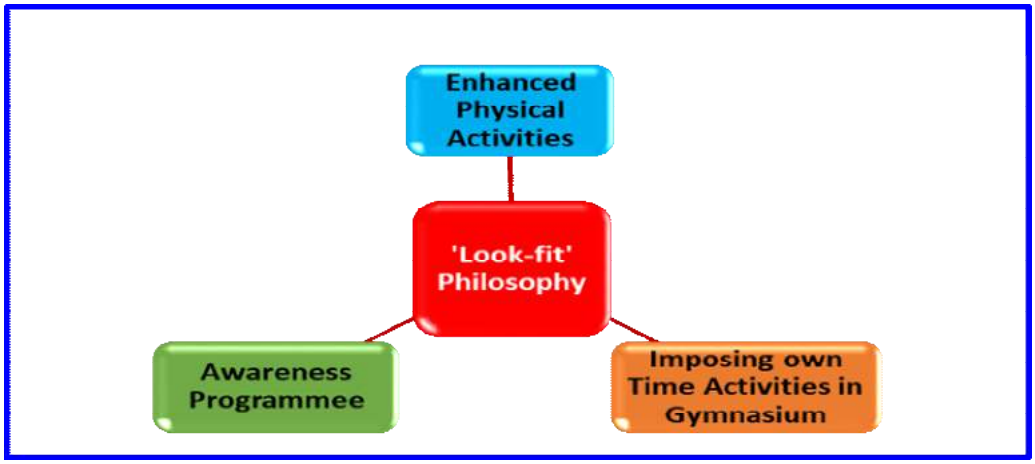
Serial	Item	Existing Scale (gm)	Adjusted Scale (gm)	Rationale
1.	Rice	595	***280***	***Ruti twice, rice once daily***
2.	Atta/Flower	112	***150***	
3.	Dal	85	***70***	***Reduction/Protein***
4.	Edible Oil	85	85	
5.	Sugar	63	63	
6.	Milk Fresh	170 ml	170 ml	
7.	Onion	56	56	
8.	Potato	113	***100***	***Reduction/ Carbohydrate***
9.	Vegetables	141	***170***	***Increase/ Carbohydrate***
10.	Fruits (Citrus\ Non Citrus)	85	***200***	***Increase/ Carbohydrate***
11.	Condiments	21	21	
12.	Salt	14	14	
13.	Tea	09	09	
14.	Beef	226	***200***	***Reduction/Protein***
15.	Mutton	226	***200***	***Reduction/Protein***
16.	Chicken (Undressed)	310	***275***	***Reduction/Protein***
17.	Fish (River)	247	***200***	***Reduction/Protein***
18.	Egg	04 Nos	04 Nos	

Source: Author's Construct

Some other Steps to Promote 'Look-fit' Philosophy among Soldiers

Revisiting PRS is one of the major steps to promote 'Look-fit' Philosophy among soldiers. As such, necessity was felt to gather other suggested steps through survey, which are articulated in subsequent paragraphs.

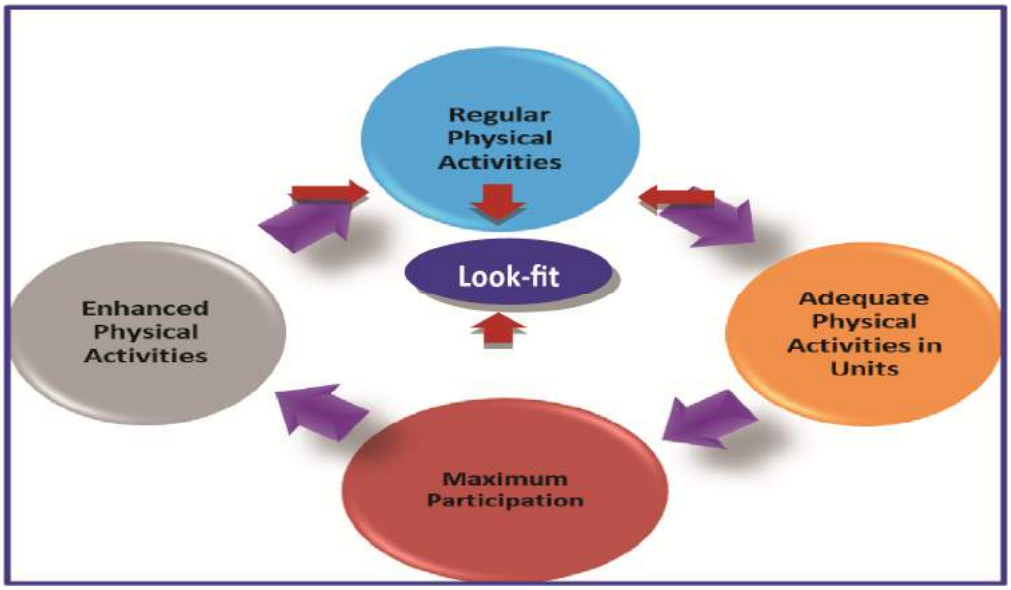
Figure 14: Some other Steps to Promote 'Look-fit' Philosophy



Source: Author's Construct

Enhanced Physical Activities in the Units. To get the maximum benefit of an effective feeding system and ensure the physical fitness, regular physical activities are essential. The weekly training program of units reveals that official physical activities in the units in vogue are quite adequate. However, the problem lies in the state of participation of soldiers in those events. To overcome, maximum participation of soldiers in physical training activities must be ensured.

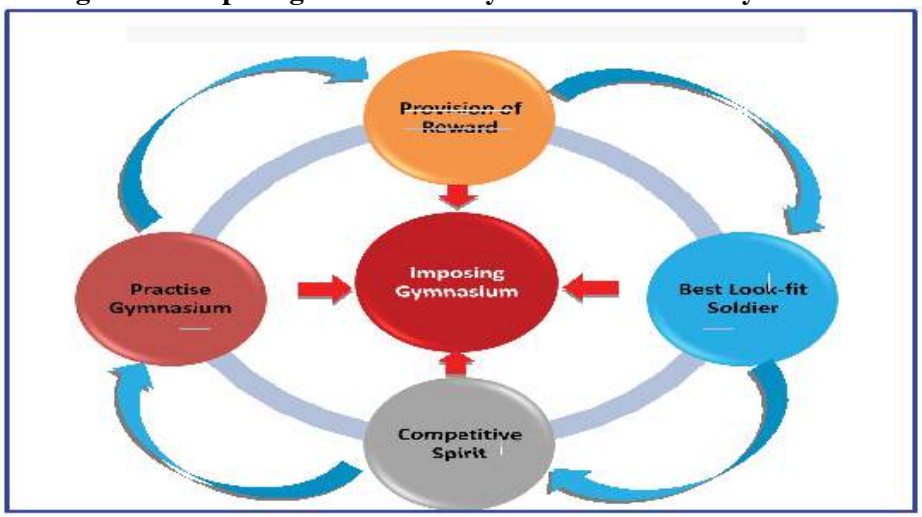
Figure 15: Enhanced Physical Activities in Units



Source: Author's Construct

Imposing Own Time Physical Activities in Gymnasium. Gymnasium culture is yet to achieve its expected outcome in BD Army. Provision of reward may be made to promote gymnasium culture in BD Army. For example, in units best Look-fit Corporal, best Look-fit Sergeant etc may be introduced who will be rewarded. This will instill a competitive spirit amongst the troops to practise own time physical activities in gymnasium.

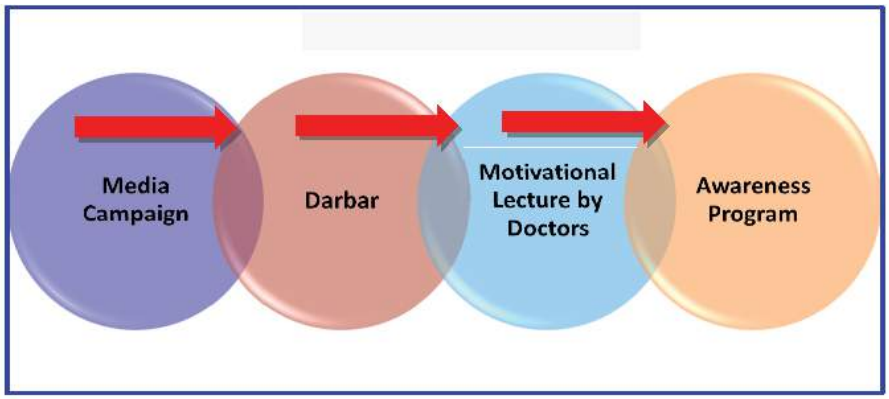
Figure 16: Imposing Own Time Physical Activities in Gymnasium



Source: Author's Construct

Awareness Program. To ensure an effective feeding system, it will be necessary to develop health awareness among the soldiers. Their knowledge on food and nutrition isn't satisfactory. As such, soldiers should be made knowledgeable on calorie requirement and its impacts through media campaign, darbar by CO/OCs and so on. In addition, regular motivational lecture may be organized by the doctors and dieticians at formation level.

Figure 17: Awareness Program



Source: Author's Construct

CONCLUSION

Soldiers being the lifeblood of Bangladesh Army is expected to pursue 'Look-fit' Philosophy with appropriate spirit. They require to attain physical signatures of 'Look-fit' through constant physical training and practice. However, BD Army introduced a new Ration Scale for soldiers in 2010. Since then, a gradual downtrend in their physical fitness was observed leading to the concept of 'Look-fit'. It is alleged that soldiers' disproportionate calorie intake-burn ratio from PRS is one of the prime reasons for the aforesaid downtrend. At that backdrop, this research makes an attempt to investigate the relationship between PRS and the physical signatures of 'Look-fit' among the soldiers of BD Army.

In this paper, firstly some attributes of physical signatures of 'Look-fit' were analyzed: trimmed and tight tummy, strong waist, improved hand and shoulder muscle, and stout, strong and tough look. Having analyzed the attributes, prevalent condition of physical signatures of 'Look-fit' was assessed as unsatisfactory and also validated through survey later on. Thereafter, the probable causes of perceived decline of the physical signatures of 'Look-fit' were identified. Disproportionate calorie intake-burn ratio, disinterest to gymnasium, lack of physical activities, and mindset on 'Look-fit', were identified as few important causes.

At this juncture, the contribution of PRS to 'Look-fit' philosophy was ascertained. In that, it was found out through data analysis that the calorie requirement of an average soldier of 150 lbs is 2933; he receives 4086 calorie, and burns 3200 calorie daily. Therefore, it was proved that the calorie intake-burn ratio of soldiers from PRS is disproportionate.

Thereafter, the paper focused on the drawbacks of PRS. Non-scientific ration scale, imbalance diet, lack of variety in nutrition value, increased intensity of diseases and death of soldiers, deterioration in PT and obesity state, were identified as some important drawbacks of PRS. In that, it was also found that diseases like High Blood pressure, Diabetes, and Heart Disease including death cases had increased after PRS was introduced in 2010. In addition, a gradual downtrend was discovered in PT and obesity state ever since PRS was introduced.

Before determining proper strategy to promote 'Look-fit' philosophy among soldiers, the ration scale of Pakistan and Indian Army was analyzed. It was found out that troops of those countries receive less calorie and perform more physical activities than BD soldiers. This finding helped the writer in determining the suggested ration scale for soldiers of BD Army.

Having analyzed the ration scale of neigh boring armies, implementable strategy to promote 'Look-fit' philosophy was identified. The strategy included revisiting PRS; some other steps like enhanced physical activities in units, imposing own time physical

activities in gymnasium, awareness program etc. However, revisiting PRS may be done by readjusting ration scale, reintroduction of Ruti twice, incorporating ration scale based on research with varying nutrition and so on.

RECOMMENDATIONS

Basing on the findings of the research, following are the recommendations to promote 'Look-fit' philosophy among the soldiers:-

a. Bangladesh Army may establish Army Food Research Laboratory (AFRL) under ARTDOC for carrying out research on food and nutrition**.** This laboratory will continually analyze, monitor, assess the ration scale within the organization, and identify trends and drifts to advise decision making channel with remedial measures. They will also review ration scale periodically in relation to the physical signatures of 'Look-fit'.

b. Bangladesh Army, especially ARTDOC may carry out further research on the suggested Ration Scale of this paper to formulate a revised Ration Scale of Soldiers.

BIBLIOGRAPHY

Books and Precis

Bean, Anita. (2002). *Food for Fitness,* London: A&C Black Publishers Limited.

BA Swinburne, I Caterson, JC Seidell and WPT James. (2005). *Diet, Nutrition and the Prevention of Excess Weight Gain and Obesity: Physical Activity and Nutrition Research Unit*, Melbourne, Australia: Deakin University.

Fitness Hand Book, (2013). Dhaka: ARTDOC.

Field Manual 20-21. (2013), Fort Leavenworth, Kansas: U.S Army.

Howie, Dr. Wenger. (2002). *Army Fitness Manual*, Canada: ART & FACTS DESIGN.

I Darnton-Hill, C Nishida, and WPT James. (2004). *A Life Course Approach to Diet, Nutrition and the Prevention of Chronic Diseases,* New York, USA: Columbia University.

Military Health Science. (1981). *General Service Training Pamphlet*-0042(B), Dhaka Cantonment: Military Training Directorate.

Physical Fitness Training, ATP 01-0008 (B), (2015). Dhaka: ARTDOC.

Project Study

6 Brigade, Independent Air Defence Artillery. (2015). A Review of the Physical Fitness Regime of Bangladesh Army and Way Forward towards a Desired Fitness Standard. Dhaka Cantonment: Army Headquarters Project Study.

11 Division, Infantry. (2014). Gymnasium and Jogging Culture. Bogra Cantonment: Division Level Study Period.

19 Division, Infantry. (2017). Evaluation of Present Individual Physical Fitness Test System of Bangladesh Army. Dhaka Cantonment: Army Headquarters Project Study.

66 Division, Infantry. (2017). Shortage of Manpower and Coping Measures. Dhaka Cantonment: Army Headquarters Project Study.

Official Publications

Army Headquarters. (2017). *CAS Training Directive* 1/2017.Dhaka: Military Training Directorate.

Journal Articles

Babusha, S.T. (2008). 'Assessment of Ration Scales of the Armed Forces Personnel in Meeting the Nutritional Needs at Plains and High Altitudes,' *Indian Defence Science Journal,* Volume 58.

Internet Websites

Harriman, Dan. (n.d). List of Food and Nutrition Value. Retrieved August 2017 from https://www.livestrong.com/article/252657-list-of-foods-their-nutritional-value.

Ramirez, Kimberley. (2009). Relation between Food and Nutrition. Retrieved July 2017 from http://nutritionstudies.org/nutrition-democratic-topic-life-changing-writing-class.

Dissertations

Arif, Major Mohiuddin Ahmed (2015). Feasibility of Introducing Meal Ready to Eat (MRE) and Proposed MRE Package for Bangladesh Army in Present Perspective. Mirpur Cantonment, Mirpur: Defence Services Command and Staff College, Individual Research Paper.

Asif, Major Anwar Husain (2015). Physical Fitness of Soldiers – A Comprehensive Approach through Gym Culture and Diet. Mirpur Cantonment, Mirpur: Defence Services Command and Staff College, Individual Research Paper.

Moin, Major Md. Uddin Sarker (2012). Feeding System of Troops in Bangladesh Army - A Critical Analysis. Mirpur Cantonment, Mirpur: Defence Services Command and Staff College, Individual Research Paper.

Salauddin, Major A K M Azad (2015). Effect of Present Diet System on the Physical Fitness and Health State of the Soldiers of Bangladesh Army. Mirpur Cantonment, Mirpur: Defence Services Command and Staff College, Individual Research Paper.

Sahariar, Major Md Morshed (2015). Gymnasium Culture in Banglaesh Army- A Way Forward for a Healthy Life. Mirpur Cantonment, Mirpur: Defence Services Command and Staff College, Individual Research Paper.

Taifur, Major Mahbob Pavel, (2014). Calories in Present Diet Program – Obesity of Troops in Bangladesh. Mirpur Cantonment, Mirpur: Defence Services Command and Staff College, Individual Research Paper.

Interviews taken by author

Anwar, Lieutenant General Hossain, ndc, psc, Quarter Master General (Personal communication, 2017, September 09).

Ahsan, Brigadier General Hafiz Farid, ndc, psc, Director in Supply and Transport Directorate (Personal communication, 2017, August 28).

Kabir, Brigadier General Fazlul, MPH, MPhil, Deputy Director General Medical Services (Personal communication, 2017, August 28).

Momtaz, CS-00008 CGO-1 Begum, Dietician, Dhaka CMH (Personal communication, 2017, August 28).

Major Gazi Abdus Salam G, **Artillery** was commissioned on 28 June 2004 with 50th BMA Long Course. He served in four Artillery units in different capacities including Battery Commander. He also served as Instructor Gunnery in Artillery Centre & School (AC&S). Under Blue Helmet, he served as Military Staff Officer at Multi National Sector East Headquarters in United Nations Mission in Ivory Coast in 2009-2010.

Besides mandatory courses, he attended number of courses including Potential Platoon Commander Course at Bangladesh Military Academy, and Officers' Gunnery Stafff Course at AC&S. Presently, he is undergoing Army Staff Course at Defence Services Command and Staff College, Mirpur.

He is married and blessed with a daughter.

INDUCTION OF MODERN EQUIPMENT IN THE BANGLADESH ARMY: CHALLENGES OF LEADERSHIP AND MANAGEMENT IN FIELD WORKSHOP COMPANY

"The day the soldiers stop bringing you their problems is the day you stopped leading them. They have either lost confidence that you can help them or concluded that you do not care. Either case is a failure of leadership." ***–General Colin Powell***

Major Mohammad Shakawat Hossain, EME

ABSTRACT

The Bangladesh Army is experiencing a great transformation under ***'Forces Goal 2030****'. Induction of educated soldiers, new technology and weaponry, change in the outlook of both man and materials, and overall organizational changes necessitate more dynamic leadership style to deal with the emerging challenges emanated due to induction of modern equipment. Technical leadership, one of the most studied and researched taxonomies in the leadership paradigm, advocates making an efficient leader by enhancing the performance of subordinates, transcending the subordinates, and achieving organizational goals.At this backdrop, this research seeks to identify the effect of* ***'Managarial Leadership for mitigating challenges emanated due to the induction of modern equipment'.*** *A mixed method of qualitative and quantitative analysis coupled with expert interviews and focused group discussions were used. Initially, prevailing leadership style of the EME Fd wksp coy where analyzed by extensive research using surveys. Then, challenges and expectations were identified, followed by an analysis to see how far the expected leadership can deal with the perceived challenges. Finally, the impact of Managarial Leadership on OCs' performance was determined. Thus, researcher proved the* ***hypothesis: 'Managerial leadership is a prime requirement for Fd wksp coy EME to meet the challenges emanated due to induction of modern equipment in the Bangladesh Army.'*** *At the end, few suggestions have been made. In fact, Managerial Leadership demands all the leadership traits and sound knowledge on modern technology to lead a group of highly skilled and professional soldiers. It is assumed that this superior leadership style and its practice by the EME OCs will enable the under-commands to contribute more for the Army; this will pave the way for making a strong and high tech army in the future.*

INTRODUCTION

"Leadership is one of the most observed and least understood phenomenon on the earth,' (Burns, James Mac Gregor, 'The Crisis of Leadership,' New York 1978). Understanding and implementing the effective leadership attributes require platform compounded with training and education. On the other hand, "Management is efficiency in climbing the ladder of success; leadership determines whether the ladder is leaning

against the wall." Military leadership consists of adaptability and vigor. Corps of Electrical and Mechanical Engineers (EME) is entrusted to support Bangladesh Army by providing repair and recovery support. The corps provides its support in four layers. Field Workshop Company (Fd wksp coy) is the second line repair organization of EME. It provides field and limited base repair to the affiliated supported units of a standard infantry brigade. The unit is commanded by Officer Commanding (OC) ; an officer in the rank of Major in Bangladesh Army.

OC guides Junior Commissioned Officer (JCO) and Non Commissioned Officer's (NCO), who all are trained in a particular equipment and master on it. On an average an OC has to take decision on repair of 32 different types of equipment's under the maintenance load of his coy. In addition, Bangladesh Army is modernizing its inventory of equipment's in line with "Forces Goal – 2030". The upgrading efforts facilitates purchase of modern hardware like MBT-2000 tanks, SP guns, METIS etcetera (Annex-T). These military arsenals are built with ultra-modern and sophisticated technologies. To maintain and repair these equipment's at Fd wksp coy demands knowledge based guidance by the OC. There is a high expectation of the JCO's and NCO's from OC regarding spot-on and sensible guidance. Furthermore, OC is responsible to his technical supervisors like Commander Electrical and Mechanical Engineers (CEME), Director Electrical and Mechanical Engineers (DEME) and operational commander the General Officer Commanding (GOC) of the formation he is providing support during peace and war. The expectations from an OC to perform as a technical leader and his ability to do so need evaluation. As per the existing system whatever may be the qualifications and technical background, a major in EME will become an OC. That brings the question of his ability to perform up to the expectations considering the fact that modernization of Bangladesh Army is undergoing.

AIM

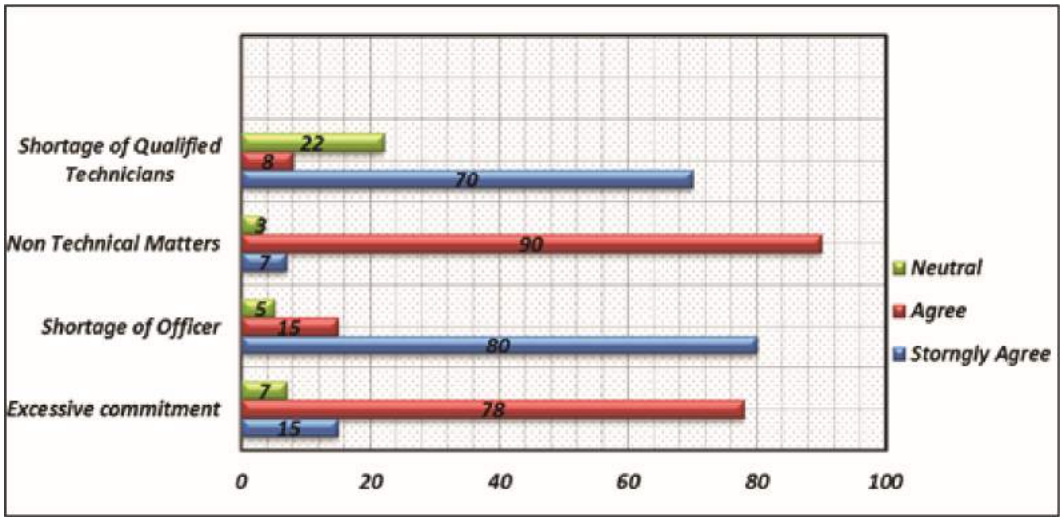
The aim of this paper is to identify the impact of induction of modern equipment in Bangladesh Army with a view to determining its effects on leadership and management challenges at Field Workshop Company.

PRESENT LEADERSHIP AND MANAGEMENT STYLE BY OFFICER COMMANDING OF FIELD WORKSHOP COMPANY

As per the Military Secretariat branch there is no set criterion to become an OC in Fd Wksp Coy. Whatever may be the carrier profile of an OC, a Major of Corp of EME will be posted as OC. Currently there are OC in the service length of min 8 yrs to max 23 yrs. So management style and leadership qualities vary due to the differences in service length and professional knowledge level. OC of a Fd Wksp coy is responsible for training, administration and overall supervision of the under commands. In addition to that, the overall repair and maintenance of the units to be supported is also the prime responsibility of an OC A detail survey was carried out amongst 250 officers of BD

Army to find out the current leadership style demonstrated by OC of any FD WK sp coy. The finding of the survey is given below in Figure 1:-

Figure 1: Factors Affecting OC's Performance



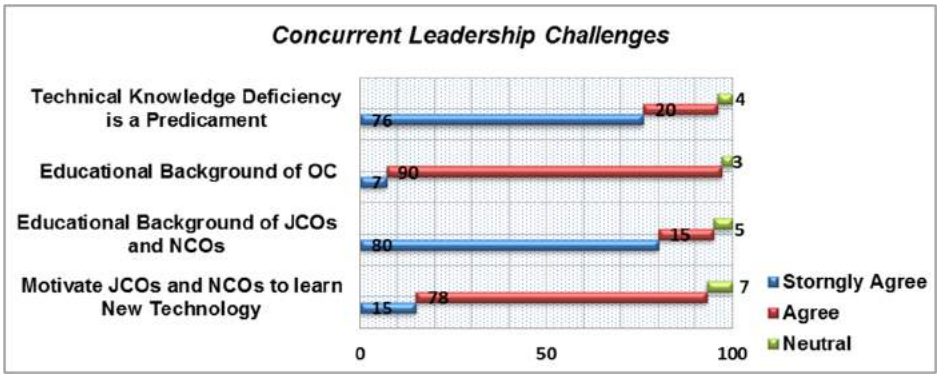
Source: Based on Survey Result

Rendering Effective Service to Supported Units

The technology with which modern equipment are made is the use of electro-mechanical device. Some of them even use computerized software to drive those electro-mechanical components. This major technology shift is due to the continuing trend of using high tech equipment among the different armed forces of the world to establish superiority in the regional and global arena. The problem with the induction of this modern equipment is not only to use these rather to maintain and repair them by the EME field units in the formations. The OC face a great challenge to motivate the JCOs and NCOs to learn the new technology as human nature is to resist any change from the existing. The OC also coordinated the team efforts to perform effectively with change in technology (Survey Result). But the educational background of the OC is not sometimes sufficient to meet the current ongoing transformation as most of the survey respondents agreed.

Leading under Commands in Changing Environment. That brings the new paradigm of leader – follower relationship: an OC promotes the development of each person by modeling, inspiring, teaching, delegating and serving to their subordinates.

Figure 2: Concurrent Leadership Challenges



Source: Based on Survey Result

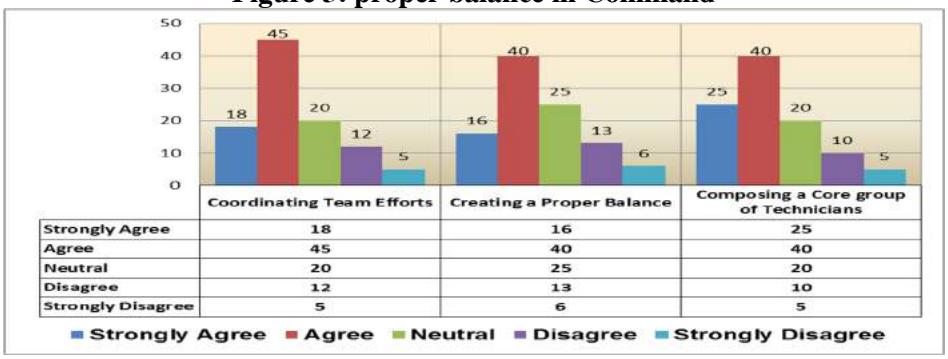
They are more motivating than commanding (survey answer projection). The educational background of the JCOs, NCOs and soldiers are not up to the mark to meet the technological challenges brings with the induction of modern equipment. Most of them are only SSC qualified and come from very remote places of the country where the education backbone is not as good as the towns.

Courses and Cadres. The no of courses and cadres of the JCOs and NCOs are more but the required lessons are not adequate. The course contends are not satisfactory for the effective performance in the unit and that brings challenges to OC.

Record Based Career Planning. The carrier planning and postings of JCOs and NCOs are done by OC EME records. This has made the life of OC very difficult in terms of repair, maintenance and unit performance.

Coordinating the Team Efforts. OC performs to the best of his ability during the tenure by **coordinating the team efforts** to perform effectively with the change in technology. With the sudden increase in under-commands job responsibility, OC creates a **proper balance** between responsibilities and facilities of their under command as shown in Figure 3 below:-

Figure 3: proper balance in Command

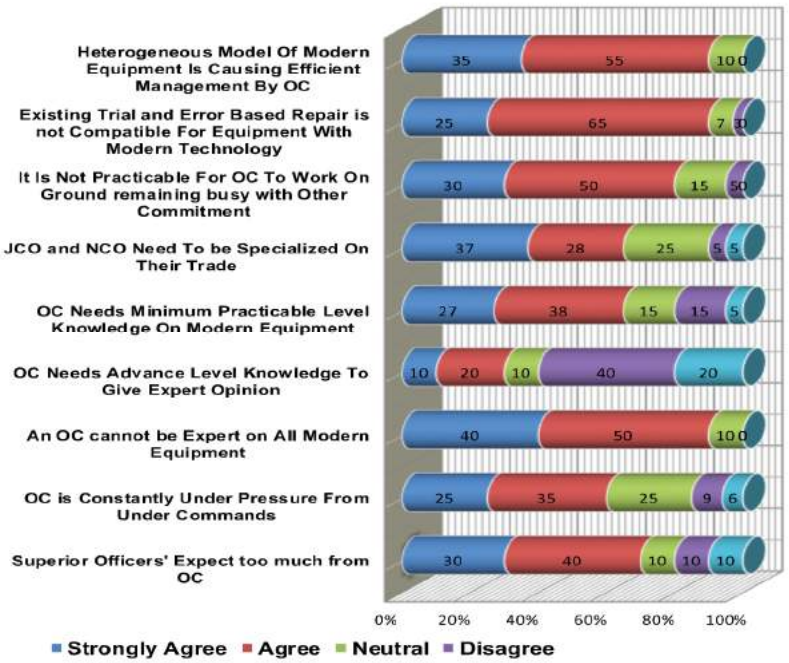


Source: Based on Survey Result

Managerial Challenges Need to be Addressed

With no special requirement for being an OC and not having enough professional experience to repair all the modern equipment with diversified technology, OC needs to perform and meet the expectation not only from superior officer's but also from his under commands. As per existing pattern of carrier planning and professional development of officers of the corps of EME, it is not practically possible to make one officer expert on all equipment under his maintenance load. That brings the question of how much depth of knowledge an officer needs to possess on all modern equipment to give expert opinion at the Fd Wksp level. Is it possible to make an officer master on all equipment currently held in the inventory of Bangladesh Army? If not, then how much depth of knowledge an officer needs to possess to effectively give technical direction? Who all needs to be expert and specialized on particular modern equipment? How much it is practicable by OC to work on ground during repair of sophisticated equipment? Is the existing system of 'trial and error' based repair feasible and equally applicable for modern equipment? If not, are the repair, spares management system and heterogeneous model of same kind of equipment supporting the cause of efficient management by OC during technical repair? To get the answers of the above questions, the researcher has done extensive survey on present and previous OC's and conducted numerous interviews of experts and experienced EME officers. The results found were interesting and real thought-provoking with new dimensions as shown in Figure 4 below:-

Figure 4: New Dimensions



Source: Based on Survey Result

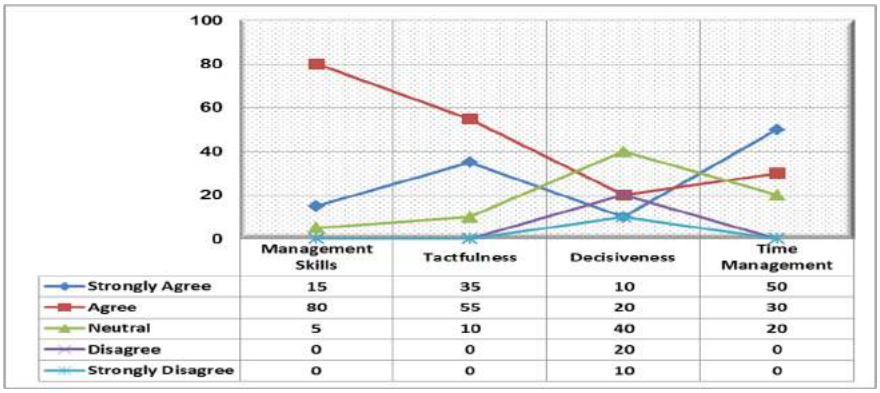
Comments. Almost 70% of the respondent either agreed or strongly agreed that superior officer (MGO, GOC, DEME and CEME) expect high from the OC. The ground reality is 90% of the respondents agreed that OC cannot go on ground most of the time to monitor the repair activities, as such, understandably majority (65%) of the respondents opined that, JCOs and NCOs are the persons who all need to be specialized on their respective trades. Few of the respondents commented though, new generation of technicians are very smart and expect the OC to give required direction by his technical knowledge. Respondents mostly (90%) disagreed that, OC needs advance knowledge on all the newly inducted modern equipment and mostly agreed (65%) that, OC needs minimum practicable knowledge to manage technical activities.

EMERGING CHALLENGES FOR OC OF FIELD WORKSHOP COMPANY WITH THE INDUCTION OF MODERN EQUIPMENT

The 21st Century Military Challenges are more complex and dynamic: the challenges of limited resources, increased accountability, and the challenge of creating more employment opportunities (GSTP 0030). Armed forces, an integral part of our society, are influenced by these issues. Sophisticated modern equipment, lack of modernization of repair facilities, heterogeneous variety of equipment of same model, too much administrative commitment, and no managerial leadership training on equipment based repair in the Fd Wksp level. The emerging challenges go more by adding few other peripheral factors: shortage of qualified officers, maintaining correct stock of spares at all time for repair, lengthy local purchase and local repair procedure, gap in interpersonal relation, individual service experience et cetera (Saidur, 2008).

Technical Knowledge of Modern Equipment. Presently in the corps of EME the officer-technician ratio is 1:30. In grasping the new technology officers are proactive than the other ranks, but get very less opportunity to work physically on the equipment. After the induction of a new model/type of equipment it takes some time to develop required training facility (Mubarak,2010). UCs is now days more inclined towards quantifiable gain rather than dedication and selfless service to the organization as a whole and towards learning new technology in particular (FGD-1 & 2). Researcher found 95% of all respondents agreed that, developing management skills, tactfulness and decisiveness, time management to cope up with the newly inducted equipment as current and future challenges as shown in Figure 5 below:-

Figure 5: New Equipment



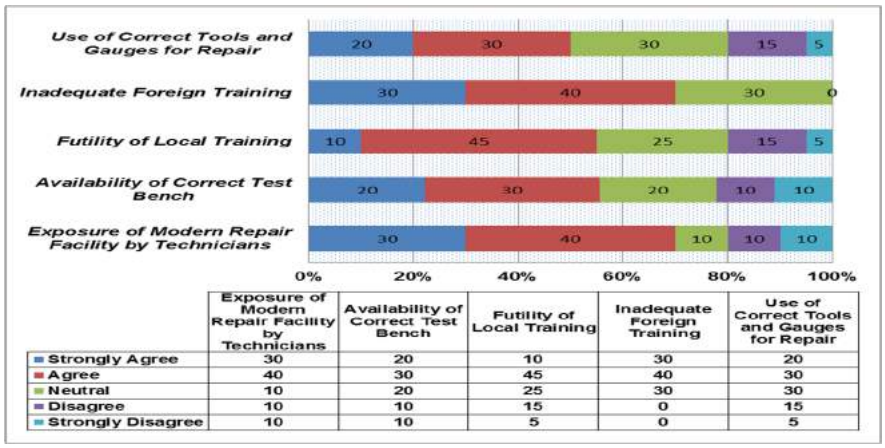
	Management Skills	Tactfulness	Decisiveness	Time Management
Strongly Agree	15	35	10	50
Agree	80	55	20	30
Neutral	5	10	40	20
Disagree	0	0	20	0
Strongly Disagree	0	0	10	0

Source: Survey Results

Lack of Modern Repair Facilities. Adequate and proper repair facilities are one of the grey areas of our repair system (Eftekhar, 2015; Wahid, 2015). Tangible steps towards acquiring state of the art repair facilities is absent in the overall repair system. This deficient gives rise to many unwanted issues. The modernization step of the Fd Wksp coy in terms of test bench, gauges and tools is essential for quality repair work (Saidur, 2008).

Crisis in Decision Making on Versatile Equipment. Leaders/Commanders are the heart of every decision on critical repair activities. EME units are experiencing chronic shortage of officers (FGD-2), more importantly the expert officers. The induction of MBT-2000, SP Gun (Nora), LAV and METIS demands giving decision on every equipment for repair by the OC. As a consequence, OC seeks advice either from the officers qualified on particular equipment or from JCOs and NCOs expert on that equipment. As a last resort he uses civil resources for efficient, timely and quality repair of equipment as shown in Figure 6 below:-

Figure 6: Civil Resources



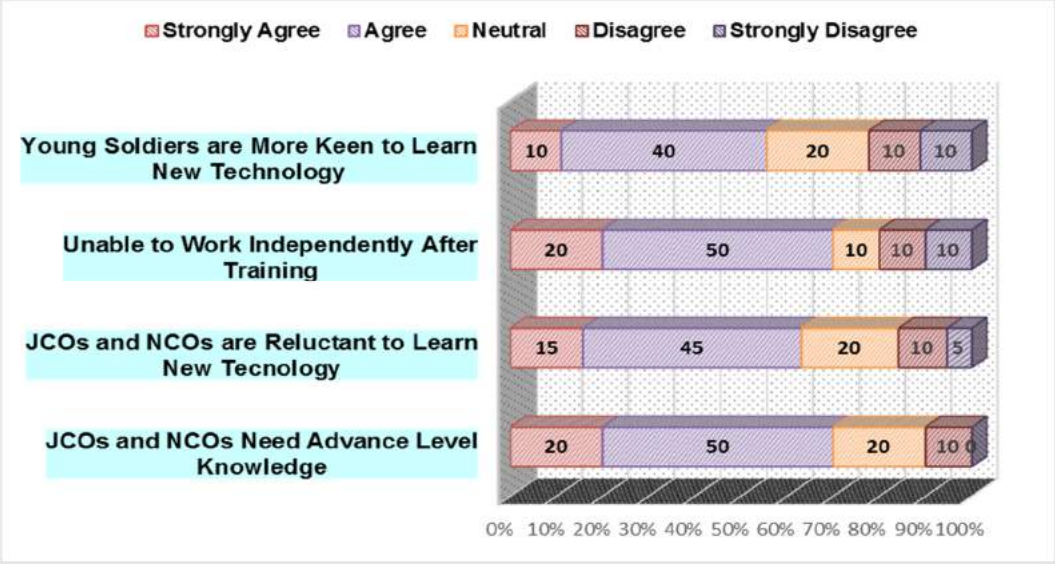
	Exposure of Modern Repair Facility by Technicians	Availability of Correct Test Bench	Futility of Local Training	Inadequate Foreign Training	Use of Correct Tools and Gauges for Repair
Strongly Agree	30	20	10	30	20
Agree	40	30	45	40	30
Neutral	10	20	25	30	30
Disagree	10	10	15	0	15
Strongly Disagree	10	10	5	0	5

Source: Survey Results

Current training Module for Officers. EME officers undergo different level of training from foundation to advance level training. Survey result shows unanimously the requirement of remodeling the course content to meet the advance technical knowledge found in the modern equipment. The knowledge on programming, ability to read and design complex electrical circuits, use of advance diagnostic tools and artificial intelligence are found in lacking among the officers. But there are lack of qualified instructors and training aids on this type of technology. As a result when this officers are posted as OC face remarkable tests.

Employment Challenge of JCOs and NCOs in Fd Wksp Coy. The effective employment of JCOs and NCOs is a big challenge when it comes to the matter of repair and replacement of equipment having advance technology. Survey data found, 90% OCs agreed on reluctant to learn new technology by JCOs and NCOs as a challenge for 21st century UCs (FGD-1). Even after trained on particular equipment, they were not able to work independently during repair indicating the futility of training lack of required knowledge to apprehend the modern technology. Surprisingly, it was opined by the respondents' that young soldiers are keener to acquire new knowledge on modern equipment as shown in Figure below:

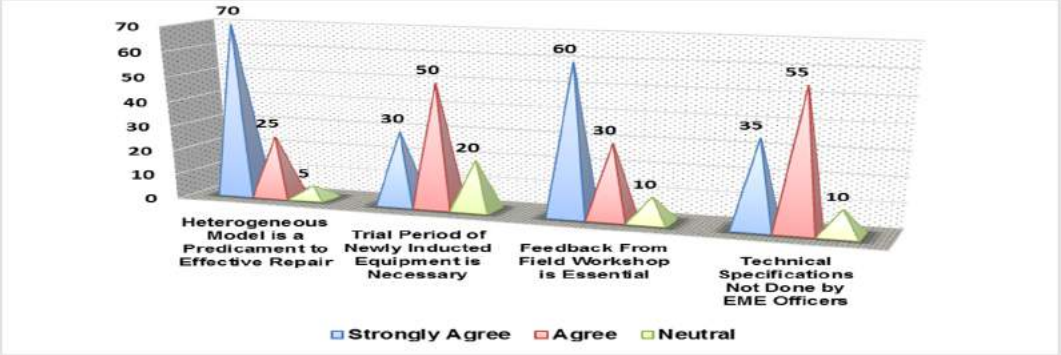
Figure 7: Young Soldiers



Source: Survey Results

Challenges Due to Existing Procurement System. Each new type of equipment is equipped with more complex consoles. So technicians are always lagging behind with these changes in their capabilities. This picture gets even worse as we our Army change the type/model of equipment (Mobarak, 2010). At present Bangladesh Army is having 59 different types of B vehicles. A meticulous feedback from the users and from field workshops is a must but which are not accounted currently (Mobarak, 2010) as shown in Figure 8 below:-

Figure 8: Feedback from Workshops



Source: Survey Results

Challenges to Make JCOs and NCOs Specialized. OC remains busy with training administration and higher commanders' task majority of his work hours. That means inadequate time on learning new technology in the Fd Wksp. But to smoothly function the unit repair activities and satisfying repair and replacement facilities to the supported units, OC needs to make JCOs and NCOs expert on newly inducted equipment. But the challenges of task are multifarious. Career planning (85% agrees) of JCOs and NCOs are not controlled by unit, education gap (90% strongly agree) among the officers and soldiers, and lack of resources (78% agree) and futility of induction training during pre and post shipment training from country of origin are few of those.

Expectation from Officer Commanding of Fd Wksp Coy

General. Expectations from the Officer Commanding are likely to be high which might be difficult to meet. In this research, expectations from Officer Commanding were surveyed in light of the force restructuring and induction of modern high-tech equipment in the army. Following paragraphs describe expected leadership and management qualities in an attempt to mitigate the challenges discussed.

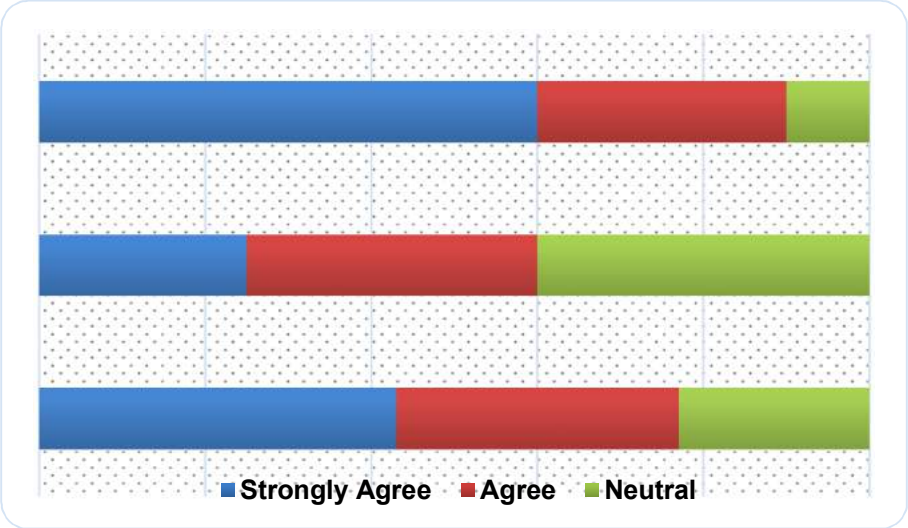
Management Skills. An Officer Commanding needs to have sound management skills. Commanders provide vision, purpose, and goal for the UCs. To do so, commanders should understand the overall goal of the unit, and then translate those in term of near term and long term objectives (Solaiman, 2015). This will reduce the effect of uncertainty and unexpected. Commander with a keen management skill can deal with the leadership challenges arising due to the induction of new equipment and lead UCs in right direction. Quantitative analysis (Figure 24) and qualitative analysis both strongly suggested the need for sound management skill for Officer Commanding.

Acquiring Higher Education. Intellectually superior UCs are expected to be driven by sound technical leaders rather than strict and hard command climate (Solaiman, 2015). One of the way to command the JCOs and NCOs is to guide them by acquiring higher

education. New higher study policy of 2014 is also emphasizing the need for higher study by EME officers.

Acquiring Higher Education. One of the way to command the JCOs and NCOs is to guide them by acquiring higher education. New higher study policy of 2014 is also emphasizing the need for higher study by EME officers. So it is imperative for an Officer Commanding to try to get a higher degree (MS/PhD) to become more knowledgeable in professional matter as shown in Figure 9 below:-

Figure 9: Higher Education



Source: Researcher's Construct Based on Survey Data Analysis

Need For Specialization. During the process of the research, the researchers have identified that the need for specialization is felt by all members of Corps of EME (FGD - 1&2 and expert opinions). The best options available for the corps are to make an officer expert for one or two equipment and try and emphasize make the JCOs and NCOs expert on their trades. Officer commanding are expected to make a core group of technicians who all are expert in their trade and update themselves with the latest technology on a particular equipment. Officer Specialized on particular equipment can be posted in the same formation or nearby formation where the newly inducted modern equipment is used.

MANAGERIAL LEADERSHIP FOR MEETING THE CHALLENGES DUE TO INDUCTION OF MODERN EQUIPMENT IN BANGLADESH ARMY

Challenges Emanated due to Induction of Modern Equipment. OC need to train his technicians on the modern equipment present in the unit. Few of the predicaments in doing so as highlighted in chapter 3 are related to knowledge level of JCOs and NCOs. In

addition, lack of expert officer in the formation and inadequate training facilities in the unit worsen the situation for OC. Therefore, OC manages the situation with his initiative and tactfulness. As survey respondents suggested, OC cannot be expert on all the modern equipment; he needs his management qualities to solve the problems regarding repair and maintenance. OC demonstrates operational improvement by setting some managerial attributes:

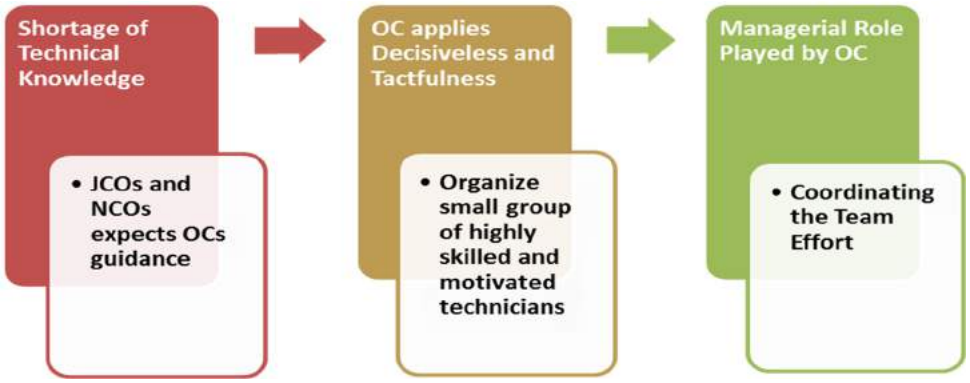
a. Goals and Priorities in Repair.
b. Systematic development of JCOs and NCOs.
c. Innovation and Organizational Learning for the Unit Members.
d. Modeling, Inspiring, teaching and delegating authority.
e. Team Building and coordinating team effort.

Challenges Due To Existing Organizational Structure of EME. Future days EME technicians will be more educated, intellectually superior hence psychologically mature. They are expected to be more accountable, more contributing for unit, and more trustworthy when they get scope for exploiting their intellect and creativity. So, if the commanders encourage and inspire creative thinking and innovation of the UCs, they will be able to apply their intellect and retain initiative (FGD-1 and 2). However, OC can manage by applying the followings:

a. Personal Vision, Values and Purposes.
b. Accepting the Challenges with Positive attitude and Outlook.
c. Communicating, Motivating and Influencing UCs.
d. Personal Growth and Continual Improvement.

Individual Challenges Faced During the Tenure as OC. OC faces numerous challenges due to the induction of modern equipment in the units. Due to shortages of technical knowledge by the JCOs and NCOs, the main problem arises during the repair process is decision making. However OC use decisiveness and tactfulness in making correct repair decisions. He organizes small repair team of highly motivated technicians comprises of JCOs and NCOs. In doing so present day OCs emphasizes on equipment based specialization of technicians as shown in Figure 10 below:-

Figure 10: Individual Challenges



Source: Researcher's Construct

Managerial Leadership Attributes of Officer Commanding. OC demonstrated some exceptional leadership quality during the time of need to mitigate challenges arising from the induction of modern equipment. OC applied his vision, values and specific purposes. The service to support the supported unit was the top priority during the tenure of an OC. In doing so, OC motivated his UCs who were working day and night sacrificing personal and family matters. Some of them were deprived of going to UN mission for the maintenance of MBT- 2000. Motivation and recognition of their efforts were given due considerations. Performance management of every individuals related with the repair of the MBT-2000 tanks were given due considerations. Overall, the managerial leadership attributes was the major asset of an OC during the critical periods. Delegations of authority to the UCs in the absence of shortage of officers enhanced the capabilities of JCOs and NCOs and engender self confidence among the UCs as shown in Figure 11 below:-

Figure 11: Leadership Attributes

Source: Researcher's Construct

CONCLUSION

Modernization of Bangladesh Army necessitates induction of modern sophisticated equipment in its inventory. As the second line EME unit, Fd Wksp coy maintains all modern equipment at the formation level. As the commander of the Fd Wksp coy, OC is responsible to give decision on the critical repair of all the modern sophisticated equipment. But, OC is not specialized on all the modern sophisticated equipment held in the maintenance load. That creates problem in decision making during the time of critical repair activities.

An OC of a Fd Wksp coy commands a group of skilled technicians. OC is responsible for the unit administration as well as the training and technical activities in the unit. In rendering the efficient service to the supported unit, OC is challenged by few intrinsic and extrinsic factors. Excessive unit administrative commitments and shortage of skilled technicians and officers are the main predicaments. However, despite all the

challenges, OC demonstrates few of the leadership qualities in addition to his technical abilities to mitigate the challenges.

As the current pattern of officers training of the corps of EME is not sufficient to make an officer expert on all the equipment, OC need to have sufficient depth of knowledge to successfully handle the situation. In doing so, OCs need to find out innovative solutions and take a prompt decision in the workplace. OCs also need to adaptive to systematic changes necessitated by the modern equipment.

RECOMMENDATIONS

Managerial leadership is demanding for Bangladesh Army and more particularly to the Fd Wksp coy, but relatively newer approach. Based on the basic understanding of managerial leadership, the feedback from the Superior Officers, OCs, JCOs, NCOs and other UCs coupled with case study and FGDs, following recommendations can be made for managing the challenges of leadership and management at Fd Wksp emanated due to induction of modern equipment as part of the modernization of Bangladesh Army:

a. A board of officers under EME directorate may be formed to ascertain the practical impact of Managerial Leadership and its effect on soldiers' technical performance and recommend for modification.

b. More study and research can be carried out under sponsorship of EME directorate through the EME Center and School to find out the feasibility of Managerial Leadership training in the courses attended by EME officers.

c. A board of officers may be formed by ARTDOC to include the lessons of Managerial leadership training system and GSTP 0030.

BIBLIOGRAPHY

Books

Bass, Bernard. M. (2008). Bass & Stogdill, *Handbook of Leadership-Theory, Research, and Managerial Applications* (Third Edition). New York: The Free Press.

Yukl, G. (2006). *Leadership in organizations* (6th ed.). Upper Saddle River, NJ: Pearson-Prentice Hall

Kotter, J. P (1998). 'What leaders really do,' *Harvard Business Review,* Boston: Harvard Business School Press, pp. 37–60.

Zaleznik, A. (1977). 'Managers and leaders: Are they different?' Boston: *Harvard Business Review*, 55, pp. 67–78.

Mintzberg, H. (1998). 'Retrospective commentary on the manager's job: Folklore and fact,' *Harvard Business Review*, Boston: Harvard Business School Press, pp. 29–32.

Rowe, W. G. (2001). *Creating wealth in organizations: The role of strategic leadership*. Academy of Management Executive, 15(1), pp. 81–94.

Bennis, W. G., & Nanus, B. (1985). *Leaders: The strategies for taking charge*. New York: Harper & Row.

Research Papers/Other Papers

Awal, Rezaul Md. (2007). 'Providing Efficient Electrical and Mechanical Engineering Support to Bangladesh Army to Cope With The Technological Advancement,' Mirpur, Dhaka.

Hossain, Mobarak Md. (2009). 'Enhancing the Repair and Maintenance Support of EME Unit in the Field Formation of Bangladesh Army,' Mirpur, Dhaka.

Rahman, Sayedur M. (2008). 'Reviewing the Equipment Procurement System of Bangladesh Army to Meet the Changing Situation of Procurement Tasks,' *Army Journal*, 43rd Issue, June 2008.

Rahman, Sayedur M. (2004). 'Restructuring of EME Resources in the Field Formation of Bangladesh Army to Enhance EME Support,' Mirpur, Dhaka.

Karim, Efthekharul Mohammad (2015). 'New Training Facilities For The Personnel of The Corps of Electrical and Mechanical Engineers of Bangladesh Army: A Tool to Meet Future Challenges,' Mirpur, Dhaka

Wahid, Al Firoz (2015). 'The Impact of Heterogeneous Military Vehicles (HMV) of Bangladesh Army on The Attainment of Equipment Based Technical Efficiency (EBTE) of EME Technicians,' Mirpur, Dhaka

Islam, Tahfimul Abdullah (2009). 'The Feasibility of Outsourcing The Base Repair of Military Transports In Bangladesh Army,' Mirpur, Dhaka

Zaccaro, S. J., Kemp, C., & Bader, P. (2003). 'Leader Traits and Attributes. The Major Schools of Leadership,' pp. 101-124.

Training Pamphlet and Instructions

Formation Level Training Package, Command, Leadership and Management (CLM), Bangladesh Army.

General Staff Training Pamphlet-0030 (2013). Command, Leadership and management - An Integrated Approach, Volume-1.

FM 22-100. (1999, August). Army Leadership. Washington DC: Government printing office.

Bangladesh Army GSTP 3111 (2003) : Electrical and Mechanical Engineering (EME) Services in the Field. Dhaka

Internet Source

https://www.trainingindustry.com/blog/leadership/the-importance-of-managerial-leaders-in-the-21st-century/

http://www.bretlsimmons.com/2010-09/the-process-of-managerial-leadership/

Transformational Leadership. (2007). Retrieved July 03, 2014, from http://www.transformationalleadership.net/products/TransformationalLeadershipReport.pdf

https://www.gov.uk/government/uploads/system/uploads. UK Defence logistics supply chain

Interviews taken by author

Matin, Major General Abdul, ldmc, afwc, psc (retd)-(2017, October 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Rahman, Brigadier General Md Habibur, psc-(2017, September 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Khan, Brigadier General Md Sohail Hossain, psc-(2017, September 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Chowdhury, Brigadier General Mohammad Ayub, psc-(2017, June 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Pasha, Brigadier General Md Jaglul, afwc, psc-(2017, September 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Uddin, Brigadier General Md Sanuwar, ndc, psc-(2017, October 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Ahmed, Colonel Shamim, psc-(2017, September 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Faruque, Lieutenant Colonel Md Omar, afwc, psc-(2017, September 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Uddin, Lieutenant Colonel Syed Helal (2017, August 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Ishaque, Lieutenant Colonel Abul Kashem Mohammad (2017, August 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Haque, Lieutenant Colonel Md Mahbubul, afwc, psc-(2017, August 17). Induction of Modern Equipment in the Bangladesh Army: Challenges of Leadership and Management in Field Workshop Company.

Major Mohammad Shakawat Hossain, EME was born on 10 December 1981 at Chittagong. He passed both Secondary School Certificate and Higher Secondary Certificate Examinations from Faujderhat Cadet College. He was commissioned from Bangladesh Military Academy (BMA) with 45 BMA Long Course in the Corps of EME on 27 December 2001.

He has a diverse experience of service in different units and as a staff. In pursuance of his unit career, he gained experience of serving in a unit of Chittagong Hill Tracts under OPERATION UTTARON (143 Fd wksp), a newly raised unit (141 Fd wksp), and a central wksp (902 Cen wksp). Meanwhile, he held all the regimental appointments under different capacity. Apart from regimental appointments, he has served as a staff officer at Directorate General of Forces Intelligence headquarters. He also has a stretch of service as a Graduate Teaching Assistant at the University of South Alabama, Mobile, Alabama, USA. Apart from the mandatory courses for his professional career, he attained MSC in Electrical Engineering from University of South Alabama, USA. He has published several publications on Satellite Communications in international journals. Presently, he is a student officer in Defence Services Command and Staff College. He has participated in United Nations Peacekeeping Mission in Sudan a contingent member. He is happily married and blessed with a son.

WORKING WIVES AND ITS IMPACT ON MILITARY LIFE OF BANGLADESH ARMY

''There is no tool for development more effective than the empowerment of women.''
-Kofi Annan

Major Mohammad Hedayetul Islam, Infantry

ABSTRACT

Women participation in the workforce to earn wages and contribute to the economy is a rising phenomenon. Owing to the socio-cultural changes, women are now more committed to fulfill their aspiration through employment than before. The inception of female soldiers in Bangladesh Army bears the testimony of a changed outlook towards women employment. Evidently, the participation of the military officers' spouses in the workforce is ever-increasing. The benefits of this trend are manifold. However, women involvement in the fulltime employment confronts numerous challenges. Maintaining a work-life balance for a dual-career family is always a daunting undertaking. As military is an inclusive profession, the participation of the officers' wives in a paid job has profound impacts on the military life. Analysis of 'Working Wives and Its Impact on Military Life of Bangladesh Army' provides an overview of the negative impacts of the dual-career families on the military life of Bangladesh Army. It also amplifies the need of organizational intervention in order to maintain the harmony of the military society. The dual-career families of our army have been trying at their ends to keep the negative effects associated with serving couple at its bay. However, it is felt that, many a times they are struggling to resolve the issues as expected. Hence, the researcher attempted to identify the extent of negative impacts of the employment of the officers' wives on the military life and tried to determine the need of organizational measures to mitigate the challenges. The research was carried out through a mixed method of qualitative and quantitative analysis. Various tools such as survey, expert's interview, case study, focus group discussion, document study and researcher's own experience were brought into effect in this research. Thereby, researcher validated the hypothesis: 'Pragmatic organizational endeavours will reduce the negative effects of working wives on the military life.' At the end, few suggestive measures and recommendations have been proposed to reduce the negative impacts of working wives.

INTRODUCTION

Evidently, the trends of wives' seeking a paid job are on rise in the Bangladesh (BD) Army. Alongside many benefits, this phenomenon has brought in numerous challenges to the families of the serving couples. In broad term, there are two types of working ladies: military and non-military. Though there are variations in the kind of challenges faced by both the categories, a significant part of the challenges are of similar nature. As a matter of fact, the military families being very much part of the military organization, any

difficulty faced by the officers at any level (personal, family or social) will have substantial impact on the military life as a whole.

The affected families of our army have been trying at their ends to meet the challenges and keep the negative effects associated with serving couple at its bay. However, it is felt that, many a times they are struggling to resolve the issues as expected. Presumably, the number of working wives will increase with the passage of time. As such, with the increasing number of working ladies, the problem is likely to aggravate in days to come. Therefore, it is assumed that organizational intervention is essential to reduce the negative effects of the serving couple on the military life. Beside the affected families, the army as an organization should take some pragmatic steps with immediate effect before the situation deteriorates and takes a gigantic shape.

At this backdrop, initially this paper identifies the possible areas of the military life of BD Army that are affected by the working wives. Subsequently, it underscores the existing organizational support including their adequacy to meet the challenges of the dual-earner couples. The paper then highlights the coping strategy of the dual-earner families in absence of adequate organizational support to mitigate the challenges. Finally, the paper outlines the possible ways to mitigate the negative impacts caused by the wives' profession.

AIM

The aim of the paper is to identify the probable ways to negate the negative impacts of working wives on the military life of BD Army.

EVALUATION OF NEGATIVE IMPACTS OF WIVES' PROFESSION ON MILITARY LIFE OF BD ARMY

Negative Impacts Related to Children

Child Development

Parental absence is detrimental to the cognitive, emotional, social and psychological development of the children (Kabir, 2014). A survey was conducted to confirm the negative effects of the mother's profession on the child's development. Majority of the working ladies (strongly agree-26% and agree-41%) and the officers (strongly agree-26% and agree-63%) expressed that their professional busyness do have adverse effect on their children's development.

Child's Safety

In absence of both parents, child's safety remains as a matter of concern to any dual-career family. Parents who need to rely on the maids for childcare feel anxiety about the negligence of the maids in handling the children. During survey, bulk of the respondents agreed that mother's absence due to employment causes safety concern for the children.

Child's Health

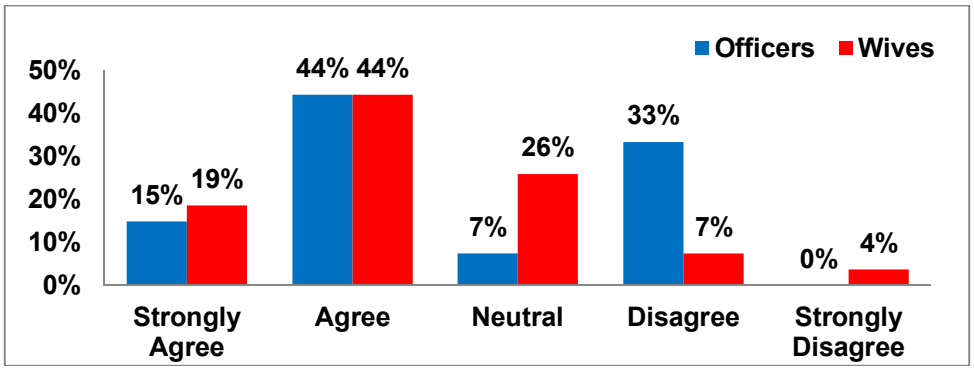
Child's health is another major concern for the serving couple. The participants of Focused Group Discussion (FGD) mentioned that this concern deepens when the parents have to leave breastfed infants at home. Furthermore, timely feeding of the toddlers become challenging in absence of the mother due to lack of care or kid's refusal to take food. Most of the respondents (both male and female) in the survey recognized the negative impacts of mother's profession on child's health.

Negative Impacts Related to Family Life

Difficulty in Managing Household Chores

Managing household chores is traditionally regarded as the prime responsibility of the women in a family (Krupalini, Bhat, 2003). In dual-earner family time is lower than in those families where only one member is employed (Cosp, Román, 2010). Again, after a daylong hectic day at office, doing the household works at night seems taxing to most of the working ladies. The survey result is shown below:-

Figure 1: Difficulty in Managing Household Chores

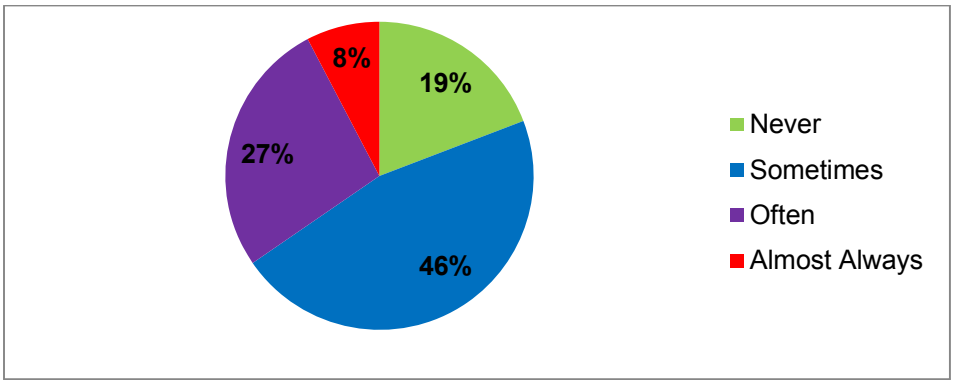


Source: Researcher's Construct Based on Survey Results

Adding Extra Stress

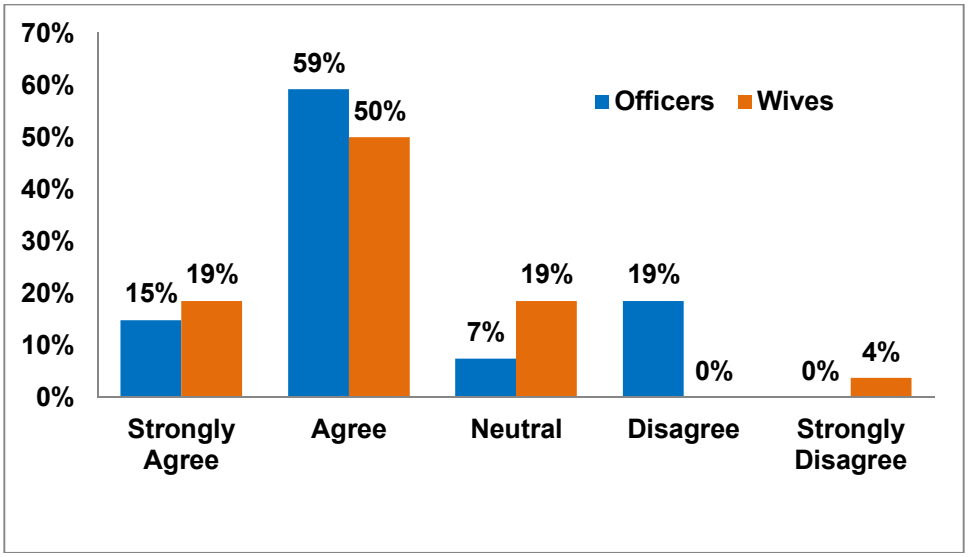
Executive and professional women consistently experience more stress, anxiety, and psychological distress than do men (Kramer and Harris, 2016). The situation becomes even worse for the ladies who need to work extra hours due to the nature of their profession. According to the survey, a significant number of working wives (almost always-8%, often-27%, sometimes-46%) do official work at home. Most of the respondents of both categories agree that wife's profession adds additional stress to the family. The survey results are shown below:

Figure 2: Frequency of Working At Home



Source: Researcher's Construct Based on Survey Results

Figure 3: Adding Extra Stress

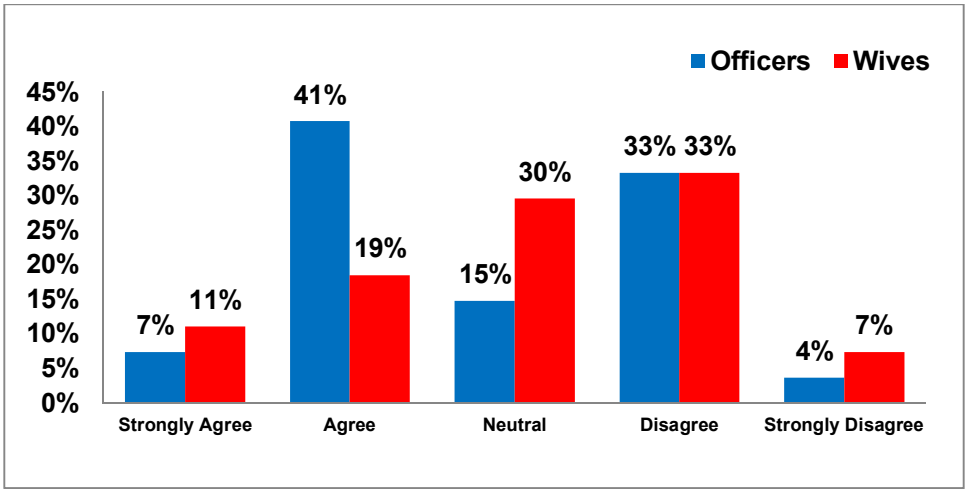


Source: Researcher's Construct Based on Survey Results

Conjugal Discord

The dual-earner families - encounter additional stress to look after the home affairs. This may work as a catalyst to aggravate any turmoil in a spousal relationship. However, majority of the respondents denied wife's profession as a reason for conjugal discord. At the same time, important to note that 48% officers opined that wife's career pursuance causes conjugal discord and 60% working wives did not actually disagree (neutral-30%, agree-19%, strongly agree-11%) with this opinion. The survey result is shown below:

Figure 4: Conjugal Discord

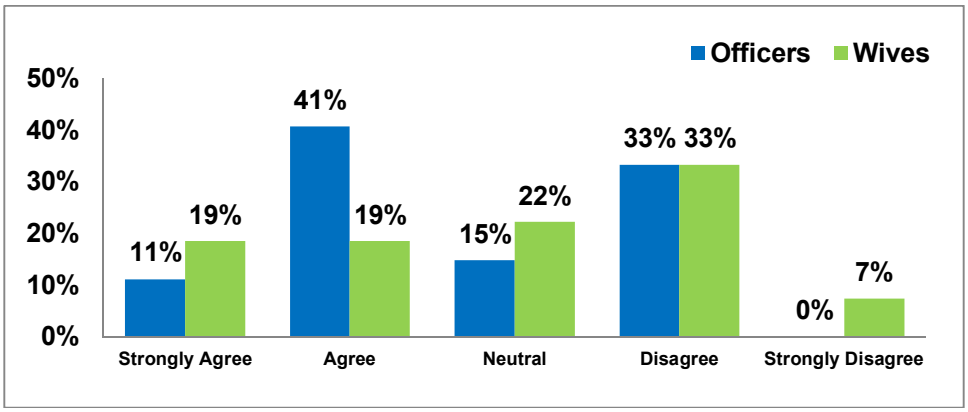


Source: Researcher's Construct Based on Survey Results

Reduced Life Satisfaction due to Increased Pressure

Sameshta in her research **'Association between role expectation and role strain among dual-earner couples'** proved that in dual-earner families, women often experience added strain due to the multiple-role demands. These added stress take away much of their life satisfaction. The perception of life satisfaction varies significantly. While 52% officers consider wife's profession to have adverse effect on their life satisfaction due to increased pressure, only 38% wives feel it in the same manner. The survey result is appended below:

Figure 5: Reduced Life Satisfaction Due To Increased Pressure

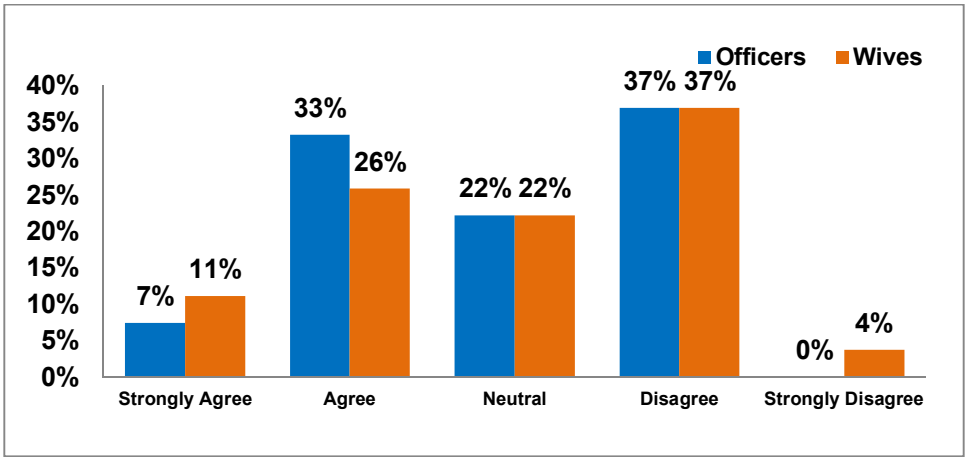


Source: Researcher's Construct Based on Survey Results

Effect of Careerism

Wives' careerism may cause strain on the marital relationship. The survey result shows that, 37% of the working wives assume that their career oriented approach in the profession may generate husband's discontent, as it will necessitate more involvement in the official matters posing further challenges to the family life. However, equal percentage (41%) of the working wives presented the opposing view and a significant number (22%) remained inconclusive in their remarks.

Figure 6: Discontent Caused by Careerism



Source: Researcher's Construct Based on Survey Results

Detached Family Life

Military officers are prone to frequent posting. It triggers detached family life for the dual-career couples as most of the civil professions do not have offices all over the country. The posting of military couples is also often not done in the same garrison.

Chances of Occurrence of Moral Turpitude Incidents

In the recent past, it has been observed that a large number of the members of BD Army who are convicted of moral turpitude cases are from dual-earner families and had been living a detached family life (Interview-AG**).** From the analysis of their crime, it was revealed that pursuance of a career by both the spouses directly or indirectly contributed to the occurrence of such anti-social act.

Negative Impacts Related to Social Life

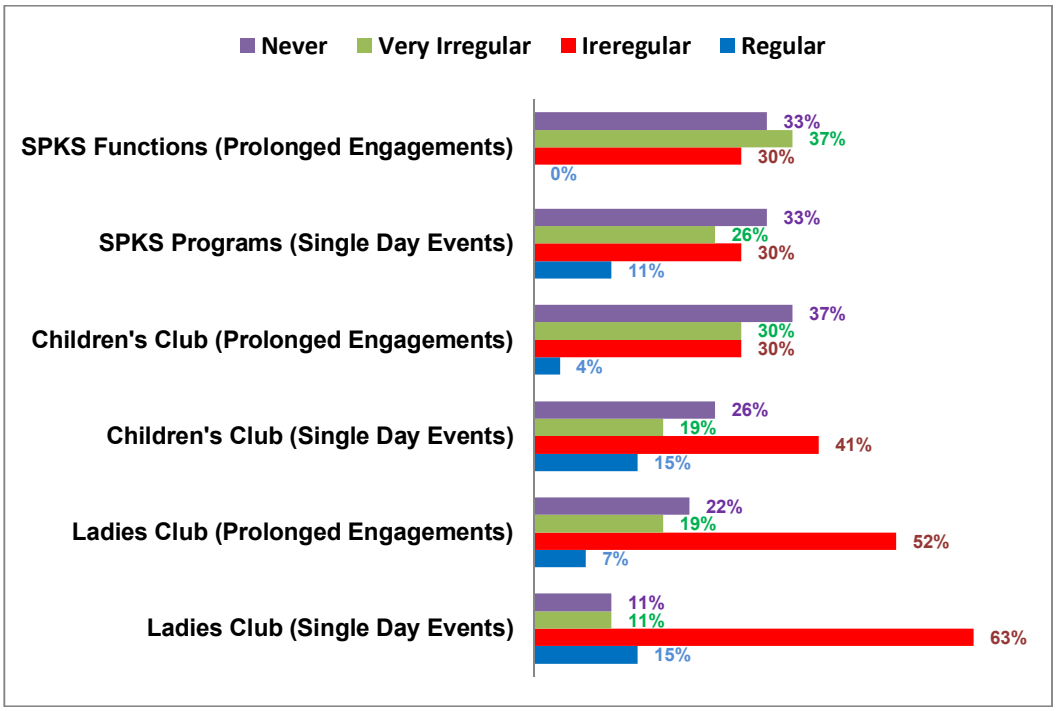
Absence in Social Events

Military has its own unique social events which have been in practice for long. These include celebration of Armed Forces Day and Pohela Boishak, Eid Reunion, Pitha Utsob, Club Night etc. Primarily because of the scarcity of time, officers' spouses fail to attend social events, if these are held during working hours of a day.

Difficulty in the Functioning of Social Outfits

Working spouses being away throughout the day cannot often attend the programs or contribute to the functions of these social outfits. A survey was carried out to identify the state of presence of the working spouses in the programs of the military social outfits. Survey shows that presence of working spouses is more in the single day events than that of prolonged engagement.

Figure 7: Presence in Social Outfits

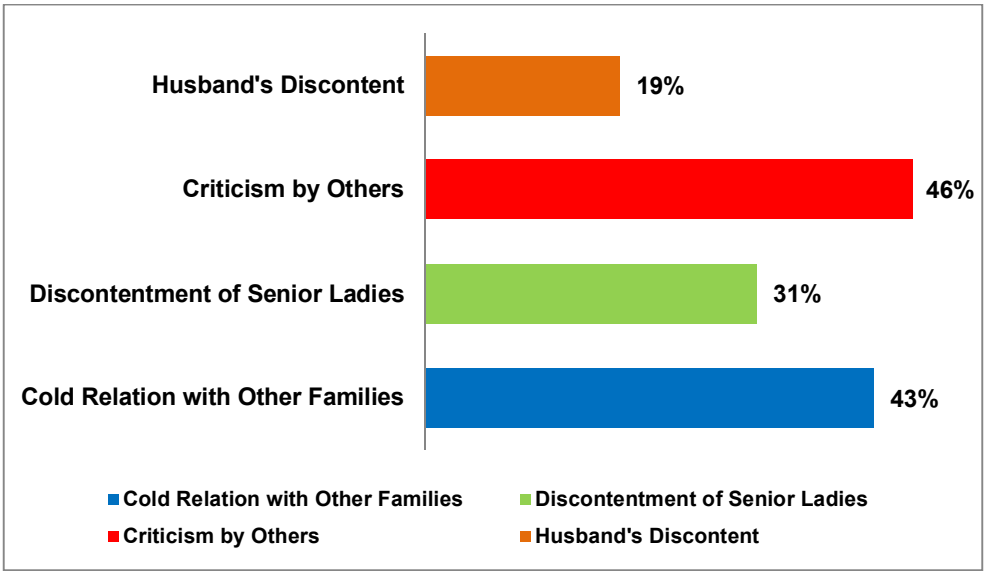


Source: Researcher's Construct Based on Survey Results

Other Negative Effects

Working wives due to their employment often fail to maintain desired interaction with the neighbors or husband's colleague-families. They also struggle attend or contribute to the activities of military social outfits (Ladies Club, Children Club, SPKS etcetera). In their absence, the non-working wives play a key role in running these outfits and organizing various related programs or events. Naturally, the non-working wives feel more committed in the social activities which take away substantial amount of time from their leisure or family time. Consequently, many of them become critical about the contribution of the working wives to the military society which at times lead to a cold relationship between the families. The result of the survey is appended below:

Figure 8: Other Negative Effects on Social Life



Source: Researcher's Construct Based on Survey Results

Negative Impacts Related to Officers' Professional Life

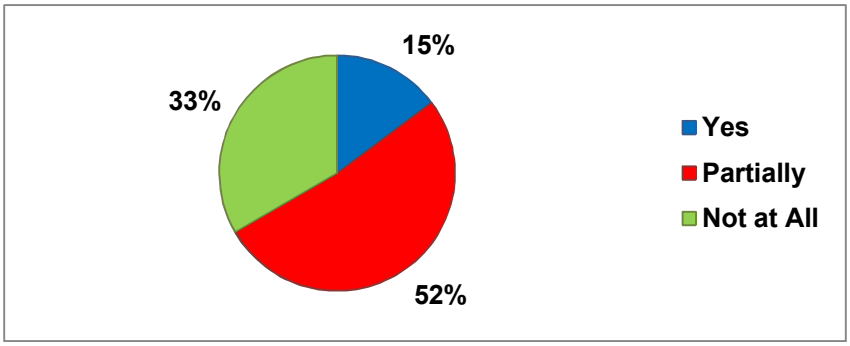
Increased Mental Stress

Work-family conflict affects one's well-being as manifested in job satisfaction, family satisfaction and life stress. Juggling work and family is difficult and it becomes even more challenging when both spouses are doing this (Ortega & Hechanova, 2010). Officers having working wives therefore experience more mental stress emancipating from the family and societal challenges. Stress being a negative force adversely affects the officers' profession to a greater extent. Besides, as the wives themselves are trying to strike work-life balance in the face of increased workload, they at times struggle to provide adequate emotional support to their spouses.

Likely Poor Performance

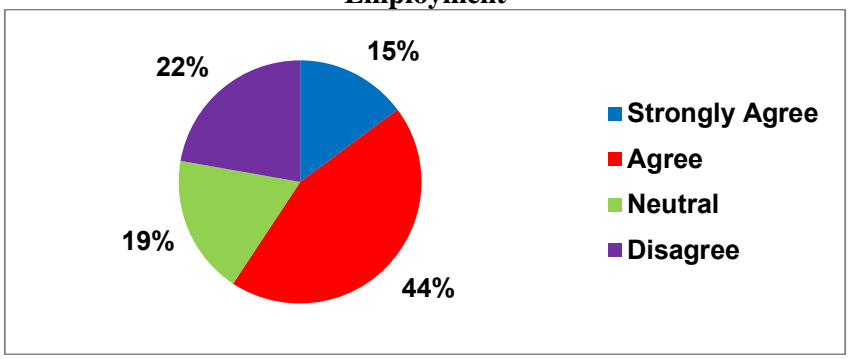
There is a significant relationship between stress and job performance which contributes to the negative impact on employee's performance (Alkubaisi, 2015). As the officers who have working wives encounter added stress, their performance is likely to be adversely affected. For various challenges as presented by their wife's profession, they at times struggle to concentrate on their job. A related survey was conducted among the officers to validate the negative impacts on the officer's career due to wife's employment. The outcome of the survey is appended below:

Figure 9: Adverse Effect on Officers' Career



Source: Researcher's Construct Based on Survey Results

Figure 10: Perception about Better Concentration in Work in Absence of Wives' Employment



Source: Researcher's Construct Based on Survey Results

Negative Reflection in Officers' Performance Report (OPR)

At times the senior officers express dissatisfaction to the concerned officers for their wives' less or no contribution in social activities. Though decreasing day by day, there are still instances where negative remarks have been reflected in the OPR due to the less involvement of the working spouses in the social activities.

4 EFFECTIVENESS OF THE EXISTING ORGANIZATIONAL SUPPORTS AND THE COPING STRATEGY FOLLOWED BY THE WORKING SPOUSES

Existing Organizational Support

Children Oriented Support

A wide range of children oriented support systems are prevailing in the BD Army. It includes Day Care Centre in Dhaka Cantonment, provision of school bus, sports facilities, and Children's Club etcetera. When children's grooming, health and safety are

a great concern for the dual-earner parents, the existing child oriented support systems of the organization render substantial assistance to tackle many day to day challenges.

Various Utility Services

BD Army has an organized system of providing various utility services to the military personnel. Some of the mentionable utility services are laundry, tailoring and barber services; cable network and internet services; beauty parlour facilities etc. Every unit/establishment has the provision of laundry, tailoring and barber services for all the members of the unit/establishment. These services are easily reachable at almost any time needed and thus have certainly reduced the household hassles of the dual-earner couples. Likewise, presently in the military cable network, internet services and beauty parlour facilities are also very easy to access and have further eased up the life of the officers in manifold.

CSD Outlets within the Cantonment

CSD outlets within the cantonment have given much flexibility to the families residing inside the cantonment. Dual-earner families usually get less time to spend for buying the daily commodities. As CSD stores are nearby which meet almost all kinds of routine need, these have proven to be very useful for the working couples. A survey was conducted among the working ladies to check the effectiveness of CSD stores in reducing the difficulty of managing household chore.

Employment Opportunities for the Spouses within the Military Periphery

Employment opportunity for the spouses within the military periphery offers marked advantage over the job offered by non-military organizations. Apart from posting there are many other benefits: less journey time to and from the workplace, better security etcetera. However, the scope of such employment is limited which includes army-run educational institutions (schools and colleges), bank, CWC etcetera. Getting an employment in these institutions can significantly reduce the difficulties of the dual-earner couples.

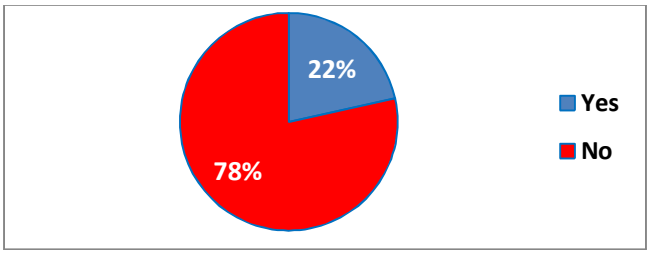
Other Organizational Supports

Inter-formation bus service is a prominent organizational support aimed at reducing travel hazard for the members of the BD Army (Interview-QMG). Another important organizational endeavor was forming a posting policy for the military couples. The policy is useful in the sense that it expresses commitment to keep both spouses posted in the same area in alternative tenure. However, it also restricts two consecutive posting even if opportunity prevails, which is detrimental for a healthy family life of the military couples.

Adequacy of the Organizational Supports

The existing organizational supports are not adequately tackling the challenges faced by the dual-career couples. Even, some opine that hardly any pragmatic step has been taken by the organization to lessen the sufferings of the dual-earner families. The survey result is appended below:

Figure 11: Adequacy of the Organizational Support



Source: Researcher's Construct Based on Survey Results

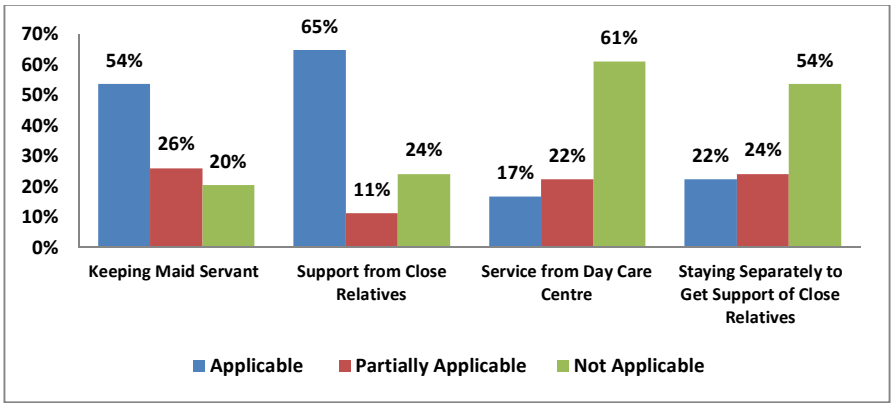
Coping Strategy Followed by the Working Spouses

The affected dual-earner families at their end are taking diverse measures to limit the challenges to a tolerable level. The measures vary from person to person as the spouses are engaged in multifarious professions with varied support systems.

Coping Strategy Related to Children

Military families are mostly nuclear families. As such, the dual-earner couples primarily rely on either maids or senior family members (parents/ in laws) or a combination of both to look after the children in their absence. A related survey was conducted among the working ladies. The result is appended below:

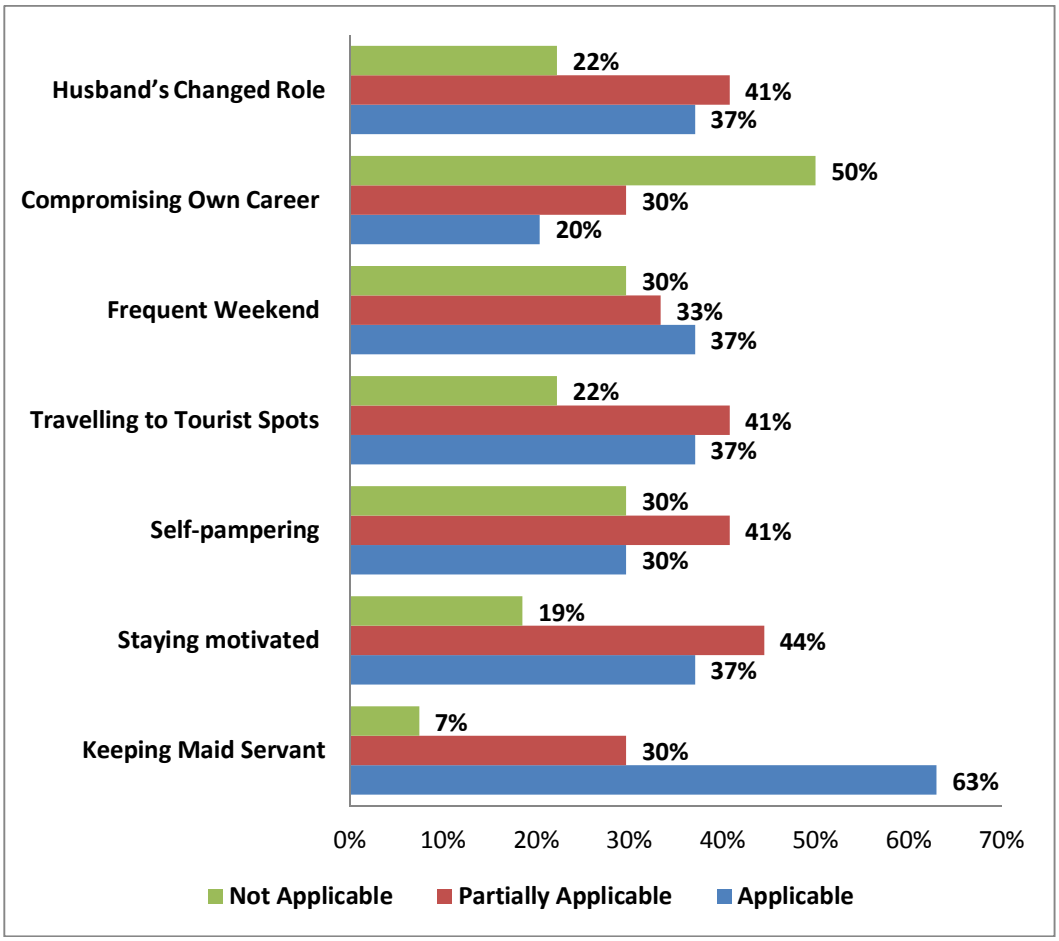
Figure 12: Coping Strategy Related To Children



Source: Researcher's Construct Based on Survey Results

Family life of the dual-earner couples are entangled with host of challenges and impediments. To mitigate these, the response is also diverse from family to family. An exhaustive survey was conducted in this connection among the working spouses. The outcome is appended below:

Figure 13: Coping Strategy Related To Family Life

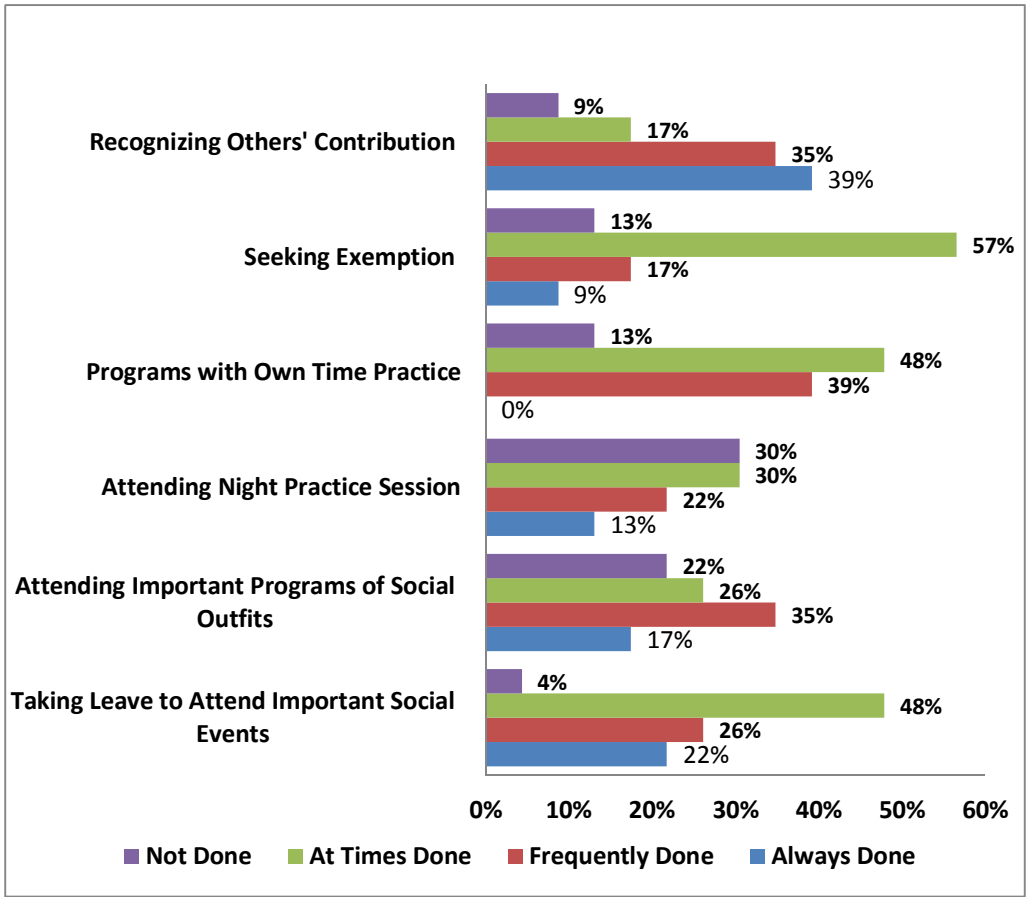


Source: Researcher's Construct Based on Survey Results

Coping Strategy Related to Social Life

The dual-career families encounter difficulty to interact with friends and relatives. However, they mitigate the social life related challenges in numerous ways. A survey was conducted in this connection among the working ladies. The outcome of the survey is appended below:

Figure 14: Coping Strategy Related To Social Life



Source: Researcher's Construct Based on Survey Results

POSSIBLE ORGANIZATIONAL MEASURES TO REDUCE THE NEGATIVE IMPACTS OF SERVING COUPLES

Measures to Mitigate Children Related Challenges

Quality Day Care Centre

According to **Child Care Services Association (CCSA) of United States**, a quality Day Care Centre should have certain characteristics such as Low child/teacher ratios, small group size, staff with higher education and on-going training, prior experience and education of the director, low teacher turnover, age appropriate activities, good health and safety practices, positive teacher/child interactions etc.A quality day care centre is of paramount importance for the working parents as it aids to shake off the child related worries to a great extent.

Provisioning Maid as Babysitter

Most of the working couples prefer to have a reliable maid, if they fail to manage any close relative to look after their children. However, getting a maid is not an easy task these days. In this context, the military welfare organization like 'Sena Kalyan Sangstha' may provide maids to the military families, who are unable to manage by themselves. As a matter of fact, there are numerous maid agencies already functioning in the major cities of the country to provide quality maid service to the families. Such service if managed by the organization is likely to reduce the security hazards related to the maids.

Measures to Mitigate Family Related Challenges

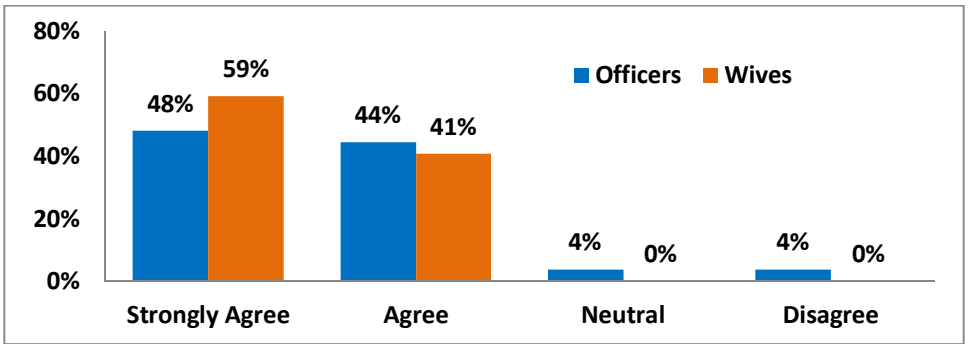
Provisioning Maids to Assist in Domestic Works

Alongside the childcare activities, a paid domestic worker may lighten the burden regarding time consuming domestic task obligations in the dual-earner household (Smith, 2001). Managing a paid house assistant is a challenging undertaking. The military welfare organization like Sena Kalyan Sangstha may serve the purpose by offering trustworthy domestic workers.

Creating More Employment Opportunities for the Officers' Wives within the Military Periphery

Creating more scope of employment for the officers' wives within the military periphery may help to maintain better work-life balance of the serving couples. This can be done by expanding the vacancies of existing employment or by creating new fields of employment. Some of the new employments could be web based outsourcing, software development, legal and engineering consultancy, civil staffs in the headquarters, faculty members of the army-run university and medical colleges etc. However, these employments must be made in accordance with the requisite qualifications as decided for any given post (Rashid, 2017). The survey result in regards to creating more employment opportunities within the military periphery is appended below:

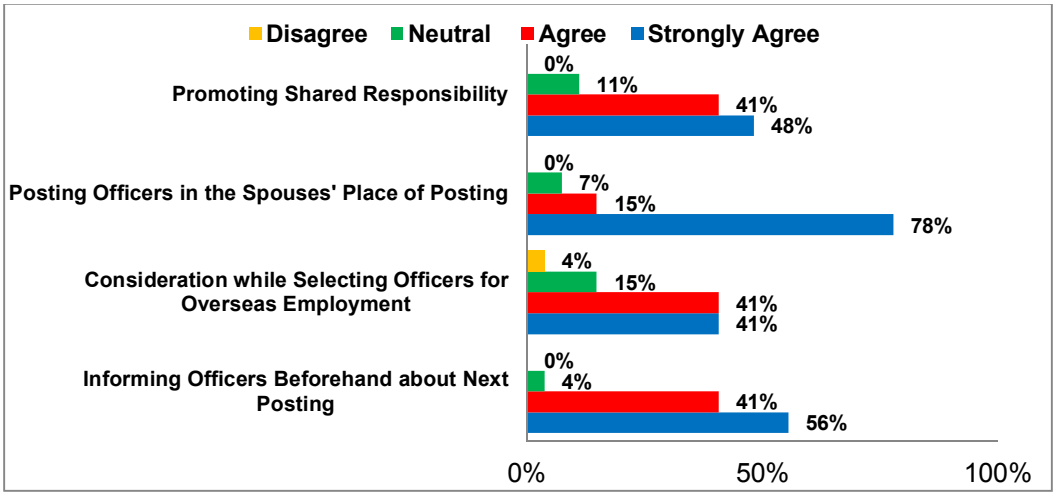
Figure 15: Effectiveness of Creating More Employment Opportunities



Source: Researcher's Construct Based on Survey Results

Majority of the problems of the serving couples stem from detached family life (Interview-AG, 2017). As such, eliminating detached family life will definitely reduce the family related difficulties of the serving couples to a great extent. The survey result in regards to likely measures to overcome the detached life is given below:

Figure 16: Measures to Eliminate Detached Family Life

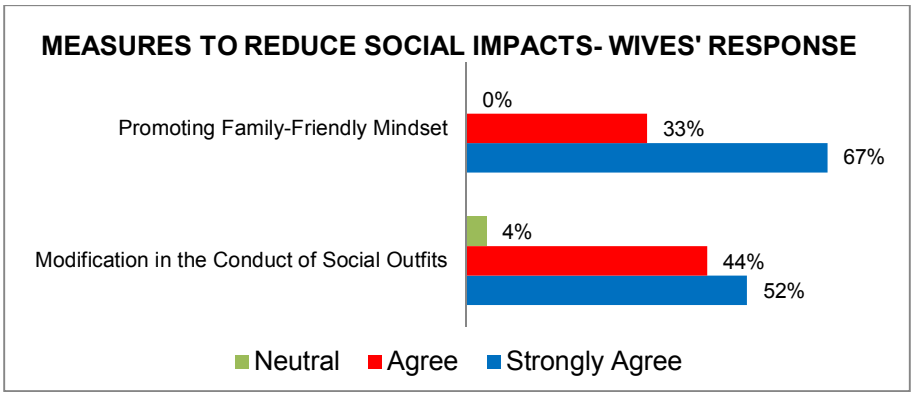


Source: Researcher's Construct Based on Survey Results

Measures to Mitigate Social Impacts

Social life being an inseparable part of the military life should be free of negative impacts caused by the profession of the officers' spouses in order to maintain a congenial military community. The survey result in regards to the measures related to the social life is appended below:

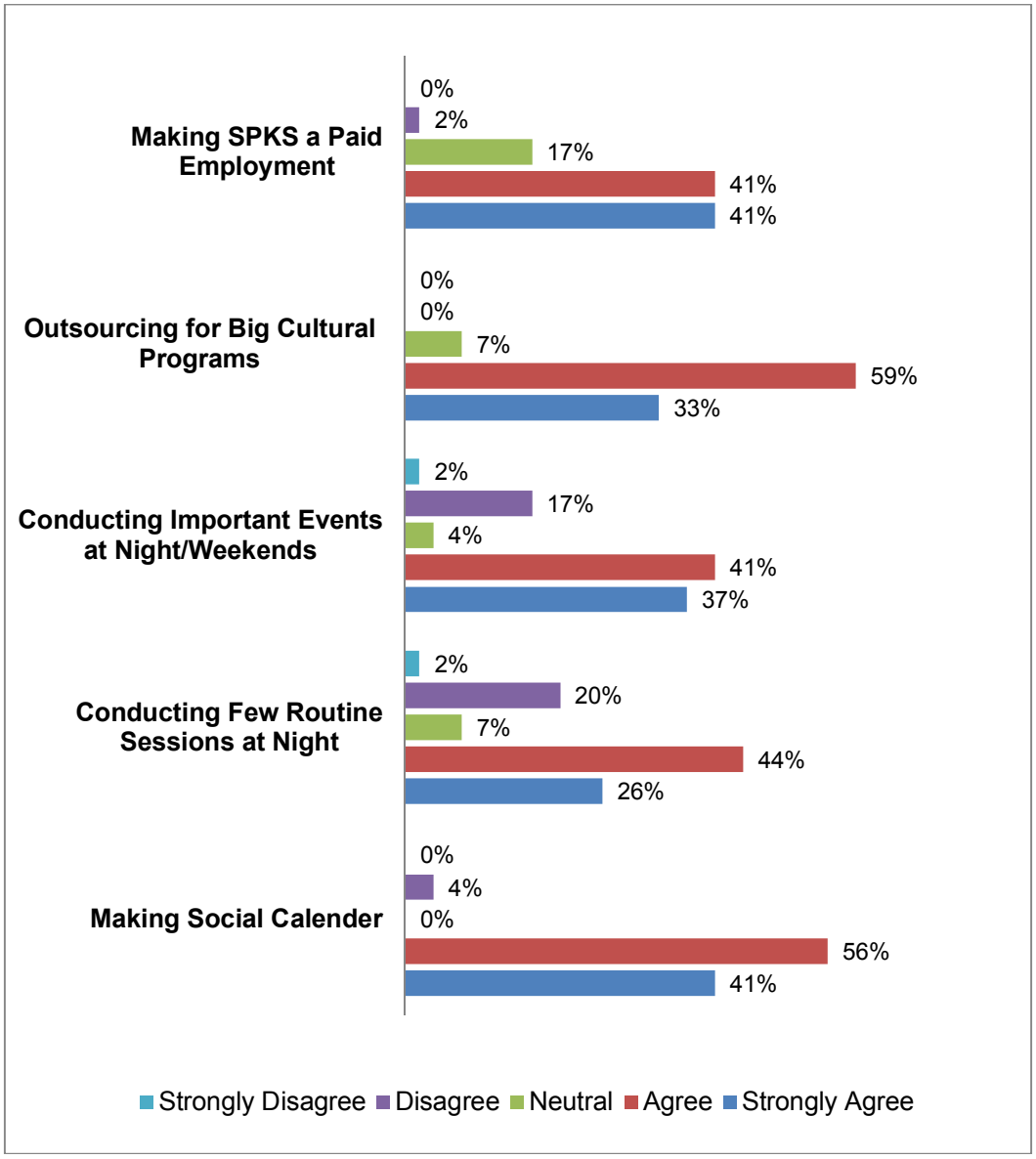
Figure 17: Measures To Reduce Social Impacts



Source: Researcher's Construct Based on Survey Results

Modification in the conduct of social outfits is a massive undertaking keeping the age-old practice in perspective (Interview-46 Bde Comd, 2017). However, the researcher took an endeavour to outline the possible modifications and tested those though an exhaustive survey among the affected working spouses. The result is appended below:

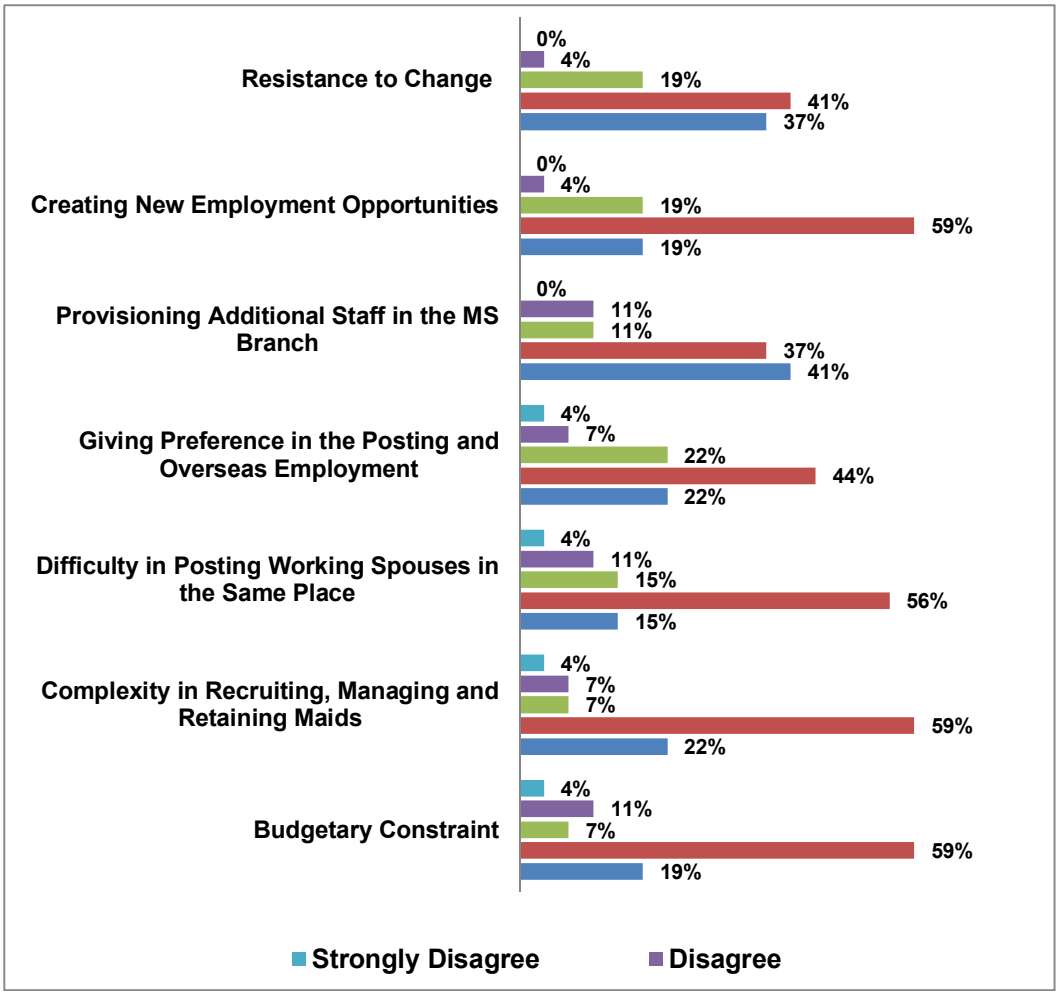
Figure 18: Ways to Modify Conduct Of Social Outfits



Source: Researcher's Construct Based on Survey Results

There are challenges in the way of implementing suggested measures which must be addressed properly to reach the desired end.

Figure 19: Challenges To Implement the Suggestive Organizational Measures



Source: Researcher's Construct Based on Survey Results

CONCLUSION

The wives of military officers of BD Army are increasingly seeking a paid employment to fulfill their aspirations. Apart from many benefits, this phenomenon has caused numerous challenges to the families of the serving couples. Consequently, military life is being disrupted in many ways because military families are inseparable part of the military organization and thus any difficulty faced by them will have

substantial impact on the military life as a whole. Despite, varied measures taken by the affected families of our army, the dual-earner families are still struggling to maintain the harmony of life. Therefore, organizational intervention is imperative to reduce the negative effects of the working wives on the military life.

Out of many, four areas of the officers' life are greatly affected by the wives' profession. These are children, family, social life and the officers' profession. The respondents in the survey unanimously did not agree with all the perceived negative impacts of the working wives. On few discussed negative impacts like conjugal discord, occurrence of moral turpitude cases, reduced life satisfaction due to increase pressure, negative effects of wives' careerism, negative effects on officers' performance etcetera opinion varied notably. However, a significant part of the respondents either agreed or remained neutral on these points. It signifies that there is a link between wives' profession and the above-mentioned impacts. It can be assumed that the respondents either did not experience such impacts or preferred to avoid the direct answer.

There are numerous facilities provided by the organization which have eased up the life of the dual-earner couples. Though almost none of these facilities has been exclusively provisioned for the serving couples, these have been proved to be very useful for the dual-earner families. Yet, they struggle to mitigate the challenges that they encounter on regular basis. As such, they have adopted various coping strategy to maintain a congenial life. The affected families feel that various organizational endeavors can substantially reduce the negative impacts caused by the wives' profession.

Most of the respondents as well as the key informants believe that the organizational measures can mitigate much of the negative impacts related to children, family, social and professional life of the officers. There are challenges in the implementation of the suggested measures as well. However, thorough and positive approach can overcome most of these challenges and can effectively contribute to negate the impacts of working wives on the military life of BD Army.

RECOMMENDATIONS

Based on the above discussion and analysis the recommendations made are as follows:-

Army Headquarters may check the feasibility and establish quality day care center in every division to facilitate the career pursuance of the working spouses.

Army Headquarters may hold a project study period to further analyze and identify the probable measures to help the dual-career families in order to formulate a reasonable policy.

MS Branch may maintain a digital database of the serving couples to integrate it in the officers' career planning process.

Formation Headquarters may conduct study period to develop supportive organizational culture in favour of the serving couples.

Formation Headquarters may conduct study period to promote shared responsibility between the spouses and generate awareness in maintaining work-life balance.

Formation Headquarters may check the feasibility of modifying the conduct of military social outfits and making SPKS a paid employment.

'Sena Kalyan Sangstha' may test the feasibility of introducing maid service for the families on payment.

Welfare Directorate may check the feasibility of creating more employment opportunities within the military periphery for the officers' spouses.

BIBLIOGRAPHY

Books

Islam, M. Nurul. (2016). *An Introduction to Research Methods*, Dhaka: Mullick and Brothers.

Krupalini, H.S. & Bhat, Vighnesh N. (2003). *Women in a Developing Country: Aspirations and Perceptions*, APH Publishing Corporation, New Delhi, pp. 189-202.

Journal Articles

Ahsan, Kamrul (2015, June 23). 'Bangladesh: World's No. 2 Garment Exporter,' Retrieved from Diplomat & International Canada: http://diplomatonline.com/mag/author/kamrul-ahsan/

Alkubaisi, Muwafaq Mohammed (2015). 'How can Stress Affect Your Work Performance? Quantitative Field Study on Qatari Banking Sector,' *Business and Management Research,* Vol. 4, No. 1; 2015, Sciedu Press. Retrieved from:

http://www.sciedupress.com/journal/index.php/bmr/article/view/6496/3992

Anam, Tahmina (2014, March 5). 'Bangladesh's Home Truth, Retrieved from *The New York Times*:

https://www.nytimes.com/2014/03/06/opinion/bangladeshs-home-truth.html

BD Bureau of Educational Information and Statistics-Educational Database, (n.d). Retrieved 25 September 2017 from:

http://data.banbeis.gov.bd/

Berger, M., Foster, M. & Wallston, B.S. (1978). 'Finding Two Jobs,' in Rapoport, R. &Rapoport, R.N., eds. *Working Couples.* London: Routledge & Kegan Paul. pp 23-35.

Carter, J.C. & Carter, J.D. (1995). 'He Works She Works: Successful Strategies for Working Couples,' New York: Amacom.

Child Care Services Association (CCSA), (n.d). 'Child Care Quality,' Retrieved 30 November 2017 from:

http://www.childcareservices.org/fs/finding/child-care-quality/

Cosp, Marc Ajenjo & Román, Joan García (2012, June 15). The Effect of Dual-earner Couples´ Generalization on Family Time in Spain. Retrieved from 'European Population Conference 2012, 13-16 June Stockholm, Sweden':

http://epc2012.princeton.edu/papers/120303

Glynn, Sarah Jane, Farrell, Jane & Wu, Nancy (2013, May 8). The Importance of Preschool and Child Care for Working Mothers. Retrieved from 'Center for American progress':

https://www.americanprogress.org/issues/education-k-12/reports/2013/05/08/62519/the-importance-of-preschool-and-child-care-for-working-mothers/

Kramer, Andrea S. & Harris, Alton B. (2016, August 4). Why Women Feel More Stress at Work. Retrieved from *Harvard Business Review*:

https://hbr.org/2016/08/why-women-feel-more-stress-at-work

Majhi, Geetanjali (2015, March). Marital Satisfaction in Dual Earner Family. Retrieved from:

http://www.iosrjournals.org/iosr-jhss/papers/Vol20-issue3/Version-1/A020310104.pdf

Ortega, Renee Ann L. & Hechanova, Ma. Regina M (2010).Work-Family Conflict, Stress, and Satisfaction among Dual-Earning Couples. Philippine Journal of Psychology, 2010, 43 (1), 27-43. Retrieved from:

https://www.researchgate.net/publication/264040193_Work-Family_Conflict_Stress_and_Satisfaction_among_Dual-Earning_Couples

Quast, Lisa (2011, February 14). Causes and Consequences of the Increasing Numbers of Women in the Workforce. Retrieved from:

https://www.forbes.com/sites/lisaquast/2011/02/14/causes-and-consequences-of-the-increasing-numbers-of-women-in-the-workforce/#56a88f44728c

Sameshta & Agarwal, Sunita (2015). Association between Role Expectation and Role Strain among Dual-earner Couples. Retrieved from *International Journal for Applied Research* 2015; 1(13): pp. 784-788':

http://www.allresearchjournal.com/archives/2015/vol1issue13/PartL/1-13-105.pdf

Sekaran, U. (1986). Dual-Career Families. San Francisco: Jossey-Bass.

Smit, Ria (2001). Work-family Spillover Revisited: Is There Hope for Marital Happiness in the Dual-earner Family? Retrieved from 'Koers 66 (4) 2001:603-620':

http://www.koersjournal.org.za/index.php/koers/article/view/402

Swedish National Institute of Public Health (2009). Child Day Care Center or Home Care for Children 12–40 Months of Age – What is Best for the Child? Retrieved 25 September 2017 from:

https://www.folkhalsomyndigheten.se/contentassets/4ae4e4fb515042839c0f9010a36bd8e7/r2009-09-child-day-care-center-or-home-care.pdf

Research Papers

Islam, Mohammad Touhidul (2016). 'Serving Couples of Bangladesh Army: A Challenge in Making Competent Future Generation in the Society,' Defence Services Command and Staff College, Mirpur.

Kabir, Sayeed (2014). 'Challenges Military Couples Face in Raising Their Children,' Defence Services Command and Staff College, Mirpur.

Talukder, Abu Naser (2015). 'Possible Impacts of Working Ladies on Officers' profession: Concerns for Bangladesh Army,' Defence Services Command and Staff College, Mirpur.

Interviews taken by author

Alam, Md Shafiul (2017, August 30).

Chowdhury, Naquib Ahmed (2017, September 6).

Hossain, Anwar (2017, September 7).

Karim, Md MeftaUl (2017, October 5).

Khanom, Syeda Shrifa (2017, November 25).

Parvin, Nazma (2017, November 25).

Rahman, Md Anisur (2017, September 5).

Rahman, S M Matiur (2017, September 6).

Rahman, Mohammad Saifur (2017, October 24).

Rashid, Md MamunOr (2017, September 5).

Siddiki, Md Sayeed (2017, September 24).

Uddin, S M Mahi (2017, July 28).

Waker-Uz-Zaman (2017, September 7).

Major Mohammad Hedayetul Islam, Infantry was born on 14 October 1984 at Manikganj. He passed Secondary School Certificate Examination from Savar Cantonment Public School & college and Higher Secondary School Certificate Examination from the same institution. He was commissioned from Bangladesh Military Academy (BMA) with 51BMA Long Course in the Corps of Infantry on 22 December 2004.

He has a diverse experience of service in unit, headquarters as well as in the training institutions of Bangladesh Army. He served in 10 East Bengal Regiment and held almost all regimental appointments. While serving in the unit, he took part in 'OPERATION UTTARON' in Chittagong Hill Tracts. He served as General Staff Officer Grade-3 in Counter Insurgency (GSO-3 CI) in the Headquarters of 24 Infantry Division. He served as an Instructor Class B at Tactics Wing of School of Infantry and Tactics (SI&T). He also served as a Platoon Commander and Term Commander of 75 BMA Long Course, the pioneer course of 4 years curricula in BMA.

Apart from the mandatory courses, he attended Junior Command Course in India, Potential Platoon Commander Course in BMA and Basic Para Course in SI&T. Presently, he is a student officer in Defence Services Command and Staff College. He has participated in the United Nations Peacekeeping Mission as a military observer at Western Sahara. He is happily married.

ATTAIN MODERATE MANUFACTURING CAPABILITIES: FEASIBLE VENTURE TO CURB FOREIGN DEPENDENCY ON ARMOURED VEHICLE MAINTENANCE

Major Md Ashikur Rahman, EME

ABSTRACT

Bangladesh Army is at a point of inflection towards rapid development. It is a force simultaneously in transition, in action, and in preparation. The present is more akin to future rather than the past. As such, the age old paradigm of capability generation is insufficient for the tasks ahead. The armoured vehicle is a vital military instrument in this operational effort. However, the maintenance framework is failing to keep pace with these rapidly emerging requirements. The entire framework is susceptible to acute foreign dependency and vicious cycle of monopolistic business. At this backdrop, this research seeks to identify the underneath causes of foreign dependency in order to frame out plausible ventures to solve the limitations through appropriate Macro Engineering Venture (MEV). The Research focused endeavors to prove the hypothesis by finding out association between curbing foreign dependency and attainment of Moderate Manufacturing Capabilities (MMC). The study followed Mixed- Method Study design. The hypothesis was validated by statistically proving that MMC through MEV will curb the vicious cycle of foreign dependency for AFV. Through the extensive study of the research, it is quite evident that the 902 Central Workshop is the hub of all effort, a technological centre of gravity when it comes to the maintenance of armoured vehicles. It is unpleasantly fact that, the workshop falls short of what is needed. As such, the research proved that the MEV is the sole option left to attain MMC in order to curb this vicious cycle of foreign dependency. For Bangladesh Army, 'Path and Engineering' strategy has been found to be most appropriate. The research adopted 'Cost-Benefit Analysis' to finally validate the hypothesis. Mathematically, it has been proven that MMC will reach Break even point by 2022. Thus; within the five years of the perspective plan, as suggested by the research, successful MEV will deny the monopolistic international market space. The syndication of supplier will no more remain capable of affecting army's operational capabilities in terms of AFV. Besides, the protracted and complicated procurement and provisioning policy can be mitigated by own resources. This magnum opus reveals that, the foreign dependency is curbed moderately and self reliance acquired, thus the hypothesis is validated.

INTRODUCTION

"This is the first time our army is getting such state of the art modern battle tanks. This will enrich our armour capacity and the military power will rise."

> *-**Honourable Prime Minister Sheikh Hasina** on 13 December 2012 on the occasion of commissioning parade of main battle tank MBT-2000 in National Parade Square, Dhaka.*

From the Iron Age through the Medieval till this day, armour power has been predominantly a battle winning factor. Since the First World War, (1914-1918) all military powers have invested heavily in armoured forces. Armour has suppressed many other battlefield operating systems in the conduct of mechanized warfare. This holds true in the ever-mobile engagements of the World War II (1939-1945), Korean War, Indo-China and Vietnam War, and during conflicts such as the Yom-Kippur Wars and the Gulf Wars (1991). Manifestly in the 21st century, armour power has emanated as preponderant facet in the military, political and global perspectives.

Since the beginning of the new century, profound and complex changes have taken place in the world. Traditional and non-traditional security challenges interweave and interact ambiguously. The balance of international forces is shifting in restoring or enforcing peace, thus adding new tiers in military responsibilities. The economic globalization has led to intense multi-polarities amongst the states. Competition is intensifying in the global military field. International military alliances are growing noticeably more abrupt, interrelated and comprehensive. These diversified complexities suggest that, there can hardly be any guaranteed friend or distinct foe. As such, to be an effective fighting machine, any professional army should quest to attain self-dependency for war armaments.

Emerged through the glorious War of Independence (26 March 1971–16 December 1971), Bangladesh Army (BD Army) has trekked through astounding developments. Over the years, the army has expanded and equipped itself with various war armaments. In correspondence, the army resiliently developed its maintenance and repair infrastructure and manpower. However, the total effort evidently falls short of what is needed. The prime reason accusable is the redundant and totalized dependency on foreign imports, technology and expertise. At this backdrop, in an ever-changing world, it is the call of time to leap forward in attaining moderate manufacturing capabilities through Macro-Engineering Ventures (MEV). In this perception, a dire need exists in identifying the root causes of foreign dependency and feasible MEVs to attain manufacturing capabilities moderately.

AIM

The aim of this research is to examine if attaining moderate manufacturing capabilities (MMC) can curb foreign dependency on armoured fighting vehicle (AFV) maintenance and recommend ways to attain MMC.

EXISTING MAINTENANCE SYSTEM AND TRAINING FRAMEWORK FOR ARMOURED VEHICLES

General. After the inception of the Main Battle Tank Concept (MBT) during the Cold War era, all the modern armies have been pursuing this armour capacity building. To keep pace with the modern race of arsenal, BD Army made relentless effort to acquire substantial armour power. Besides, the Army has developed four echelons of maintenance framework in the Corps of EME to sustain and support such armour inventory.

Existing Echelons of Maintenance. There are four echelons of maintenance for armoured vehicles. However, fourth echelon is the highest and most capable of all. The 902 Central Workshop is the only fourth and highest echelon of maintenance in the army. The workshop activities encompass rebuilding of engines, major assemblies and periodic complete overhaul of AFV and its associated armaments, communication sets, fire and gun control systems and other equipments.

Impediments to Efficient Human Resource Acquisition. It is accepted that a good amount of work skill is there at the disposal of the various echelons. However, through the interactions and focused group discussions (FGD), following are the chief impediments for developing an efficient human resource at base workshop:-

a. Frequent posting of officers and other ranks.

b. Lack of foreign training on armoured engineering.

c. The first civilian technician intake of 1987 is aged by now. In base workshop, besides experience, a sheer need of human strength is required. Moreover, few of the potentially hazardous operations require good neuromuscular reflex.

c. Poor educational background of few of the technicians to cope with modern equipments.

Operational Efficiency of the Base Workshop. With the advancement of Army, new armour units are raised which has increased the maintenance load and working dimensions enormously. Induction of new and modern armour with sophisticated instruments, equipments and gadgets on-board has rendered the repair very complex. Thus it poses a great challenge for the base maintenance. Number of interactions, survey and FGDs portrayed the perception of the respondents. This is intriguing to find that, 89.1% of the service provider perceived the base workshop performance to be satisfactory and above while only 41% service receiver felt similar.

Critical Factors Affecting the Base Workshop. Through survey the major two critical factors are identified that are affecting the technical performance of the base workshop:

a. **Lack of Workshop Up-gradation and Expansion**. When the workshop was established in line with the "PLA Base Overhaul Factory 6409" Fushun City,

Liaoning Province, China (*the author had completed factory level training on Armour Base Overhaul and Modification in 6409),* it was an outstanding feat of engineering then. However, presently many of the machineries and facilities are depreciated. There is a need of complete up-gradation of the workshop which will be deliberately discussed later.

b. **Complicated Army Provisioning Policies**. The army procurement process is time consuming and complicated. It is also susceptible to monopolistic business of the suppliers. It will be deliberately discussed later.

Present Training Framework-Home. The prime organization for training the AFV tradesmen is the EMEC&S. The center holds a rich set of instructors for AFV. In survey, 94% of the respondents agreed that, the training of EMEC&S is satisfactory or above. However, the most practicable and real time training package is the OJT. It bridges the experience of the veteran tradesmen to the new ones.

Foreign Training. The best training is offered by the Academy of Armoured Forces Engineering (AAFE) of PLA, China for all types of Chinese Tanks. The number of officers and men qualified in "Armoured Engineering" from AAFE is workable. When BD Army first procured the MBT-2000, a good number of officers and men were trained by North Industries Group Corporation (NORINCO). However, there are facts of despair as well.

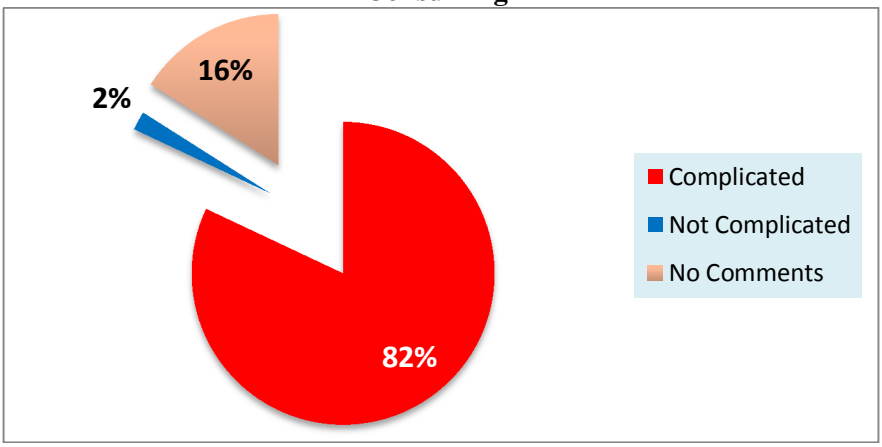
INTRICATE ARMY POLICIES AND INDICATORS OF FOREIGN DEPENDENCY

General. Spare management and provisioning is a dynamic mechanism which transcribes the real-time demands of spares and money into military hardware. The primal of a brilliant provisioning operation is the quickest execution to render fastest equipment recycling. However, it is yet a distant dream. As such, the efficiency of the AFV maintenance of BD Army dwells on the availability of the spares through the protracted and complicated provisioning mechanism.

Complicated Spare Management and Provisioning Procedure. Over the years, the material Spare management and provisioning maintained impulsive pace with the advancement of BD army. The changes were forced upon and followed the 'trial and error' method. However, the policy still embeds the shadow of the Pakistan era and the status quo is yet to be broken. The only state level military procurement organization is the Directorate General of Defence Purchase (DGDP).

Intricate Army Policies. The bureaucratic procurement policy is the product of the intricate army policies. The policy devised a mechanism that revolves around a number of stakeholder directorates, inspectorates and agencies. The aim of such design was to maintain a strict compliance to transparency. However, this system is very protracted in nature. It requires a complicated procedure of enlisting. In the survey, 82% of the respondents felt 'Army Procurement System' to be complicated:

Figure-1: Response on 'Procurement System to be Complicated and Time Consuming'



Source: Author's construct based on survey result

Creation of Vested Group. Many credible contractual agencies avoid to work with Army due to complicacies. Besides, the financial transactions of the contractors are done through the Finance Control (FC) Army (Belongs to Ministry of Finance, not part of BD Army). There are different opinion and suspicion about the professionalism and honesty of the FC Army. TSA Associates, one of the stakeholder defence contractual agency for AFV said: "The army policies unknowingly create a vested group of contractors who start playing through syndication."

Monopolies in International Market Space. The syndication of the contractor is the ground level reality. The same essence in the international market space takes the form of 'Monopolies'. Ayub. M. Personal Communication. (2017, August 22) stated, "there is no heterogeneity in armour for BD Army, and NORINCO is pretty much aware of it". 75% of respondents concurred that there exists a monopolistic market when it comes to AFV. The prime sources/stakeholders of the monopolism were surveyed in research,

Weaknesses of the Present Procurement System. The major weakness of the protracted procurement and provisioning system is discussed below:

a. **Inferior Performance Based Procurement**. The system fails to address the performance oriented procurement system. The system is more of a template that has to be followed within the participants irrespective of their performances.

b. **Time Consuming Army Shopping List**. The army still works basing on the age old procurement policy DP-35 of 1961. The obsolete design renders lengthy time to prepare the army shopping list which then, has 'chain reaction of time consumption' on rest of the procedure.

c. **Paper Based Evaluation**. Due to the very nature of the financial year design of the country, sometimes the time available for quality assurance is meager. As such, in few instances paper evaluation has to be resorted. Later, the inspection focuses on quantitative assurance instead of qualitative assurance.

POTENTIALS AND CHALLENGES OF BANGLADESH ARMY TO ATTAIN MODERATE MANUFACTURING CAPABILITIES

Existing Industrial Value of Base Workshop vs Compatibility. The major strengths and potentials are the infrastructural facilities and skilled manpower. The manpower exists in four tiers, i.e. 'Skilled, High Skilled, Assistant Foreman and the Foreman' besides the military strength. In spite of limitations, the base workshop's industrial value forms a compatible base platform for MEV.

Technology Transfer in Tank T-59 Up-gradation Project: A Giant Leap Forward.

a. **Keynotes on the Project**. This is the highest budgeted single project of BD Army worth about Bangladeshi Taka (BDT) 1300 Crore. The production process is very complicated and complex, yet completely administered by BD Army Engineers.

b. **Up-gradation of the Workshop**. Prior launching the biggest venture of the engineering feat, the workshop capability and industrial infrastructures were upgraded first. The total cost incurred to upgrade the workshop is BDT 30184093.20.

Compatibility of Army Owned Industries. The existing industrial facilities and human resources of Bangladesh Ordnance Factory (BOF), Bangladesh Machine Tools Factory (BMTF) Ltd and Bangladesh Diesel Plant (BDP) are very optimistic and promising. Both BMTF and BOF have gone through major BMRE (Balancing, Modernizing, Rehabilitation and Expansion). All these army own industries, when incorporated with a MEV, will produce a synergistic result of MMC to curb foreign dependency.

Compatibility of Commercial Industries. The commercial and state owned commercial industries possess tremendous potentials. BD Government has taken initiatives and expressed keen interest to promote industrial sector. However, a strong sense of political and policy consensus will be pre-requisite for this. In the research, 89% of the respondents opined to adopt joint venture with some competent civil industries as well.

Challenges

a. **CNC Machine Expertise**. Through the FGD 1 and 2, one of the major challenge, that is identified, is the lack of expertise on CNC machineries. The workshop has number of CNC machines now.

b. **Absence of BMRE**. According to Ayub. M. Personal Communication. (2017, August 22), the BD Army is devoid of the contemporary industrial practice. He stated that there exists an abrogative notion within the technical arms to adopt latest industrial trends. The most important being the 'Balancing Modernization Rehabilitation and Expansion (BMRE)'. This will be a fresh and new approach and has the potential to add new dimension to BD army when it comes to the manufacturing aspirations.

c. **Forced Dependency**. The army is passively forced to foreign dependency. For example, army might develop the limited manufacturing capabilities for AFV to curb foreign dependency. However, for armament and communications, still the leverage is left to the Foreign Stakeholders. These real-world complicacies have far reaching effect in our foresight and decisiveness.

Challenges Identified and MEV Needed. From the survey and KII, the certain important challenges were identified through the response of the respondents. It makes evident, that only MEV to attain MMC is the sole option to reduce the foreign dependency for which the potentials exists at feasible level.

WAYS TO ATTAIN AND DESIRED IMPACT OF MODERATE MANUFACTURING CAPABILITIES IN CURBING FOREIGN DEPENDENCY

MEV: ToT Approach. ToT is simply the flow of technology from supplier to recipient nation where exists a gap of technological capacity and skill. For BD, it will comprise the major effort of MEV to create and expand MMC.

Motives for ToT.

a. **Self Reliance**. There is a shift in paradigm from direct military purchase to ToT by the developing countries to acquire self-reliance. For BD army the main motivation will be to reduce foreign dependency through MMC. In survey, 67% strongly opined that MEV should be adopted to attain MMC while only 1% disagreed.

b. **Economy**. Investment in the design and production of military technology in BD will flourish a technological infrastructure which will save a lot of foreign exchange and create employment opportunities.

Feasible ToT Strategy. For BD Army, "Path and Engineering" strategy will be the most appropriate. In "Path Strategy" the ToT will follow several steps from developing repertoire of technology acquisition to production. Later this will be replaced by the "Add on Engineering" which will adopt armoured systems to specific needs by adding features or developing a new armour system.

ToT Option. Authors and his associates' communication with two major stakeholders of China's armour production yields a viable option for ToT for AFV MMC:

a. **Proposal of NORINCO**. The total price of the proposal is USD 10,2495,80.00 (approximately 77 Crore BDT).

b. **Proposal of Fudong Machinery Factory**. The proposal of the Fudong Machinery Factory is a comprehensive one which includes a large no of test equipment, heat treatment plant, track and chain production line, warehouse management etc. The total price of the proposal is USD 8,701,98.00 (approximately 67 Crore BDT).

Comparative Statement. Considering the technical and economic factor, the Proposed MEV ToT of FUDONG is more comprehensive and feasible.

Re-stated Proposal with Integration. In order to take the financial challenge into cognizance, the MEV can be collaborated jointly with BOF, BMTF, BDP and competent commercial industries. Uplifting of the status of the base workshop to "Factory" will be the prerequisite for it.

Integrating Country's Academic Intelligentsia. Maglub. Al. Personal Communication. (2017, November 9), stated: "There are always scopes and possibilities to team up the military engineers with the production sector engineers and academicians of BUET". Mimma. S. Personal Communication. (2017, August 10), stated: "MIST can be a very good platform for R&D of such effort. However, such projects must be legislatively sponsored by the government and financially sponsored by the army.

Cost Benefit Analysis (CBA)

Approach. The approach is taken with following limitations:

a. Potential but margin of error will be prone to parameter changes over years.

b. A lot of the benefits will be very difficult to quantify.

c. A lot of the costs will be difficult to quantify– particularly net production changes. All values are predictive based on various research instruments. Some values are rounded for ease of calculations.

d. No case studies available for this research to follow.

Tank T-59 Up-gradation Project. Army decided to upgrade the existing T-59 tanks at BD end to draw a finer balance between the need and the financial capacity. The fixed Cost is 10,023,100 USD = 77,17,78,700 BDT. In this project, the total benefit/savings of the government is 6,612 Crore BDT.

Final CBA for MMC.

a. At the cost of achieving self reliance up to 2021, the MEV will prove negative *if only T-69II G is up-graded and MMC is not executed*. As such, ***right after the ToT, the MMC should be executed to reach BeP as soon as possible***.

b. On the completion of ToT, the base workshop will be able to manufacture the number of assemblies as earmarked in the research.

c. There was a loss of BDT 217.5 Crore, even after MEV without MMC (and not taking T-59 ToT into cognizance). However, along with MMC, at the end of 5th year, net revenue is = (994.6375-217.5)= BDT 777.14 Crore.

d. **Equation for Predictive Linear Regression Model by SPSS.20**. The mathematical equation for revenue is:

Y=9.735 (X) + 169.723

Author's Calculations by Linear Regression in SPSS

Validating Hypothesis. Mathematically, it is evident that MMC will reach BeP and beyond within the five years of the perspective plan, as suggested by the research, the MMC will curb foreign dependency substantially, proving the hypothesis to be true.

CONCLUSION

The vast potentials of industrialization of the BD Army remained unexplored. The armoured vehicle is a vital military instrument in this operational effort. However, the entire maintenance framework is susceptible to acute foreign dependency and vicious cycle of monopolistic business.

In this paper, efforts are made in identifying the underneath causes of foreign dependency in order to frame out plausible ventures to solve the limitations through appropriate MEV. Author focused endeavors to prove the hypothesis by finding out association between curbing foreign dependency and attainment of MMC. The hypothesis was validated by statistically proving that MMC through MEV will curb the vicious cycle of foreign dependency for AFV.

The efficiency of the AFV maintenance dwells on the availability of the spares through the protracted and complicated provisioning mechanism. The primal of a brilliant provisioning operation is the quickest execution to render fastest equipment recycling. However it is yet a distant dream.

The dynamics of time necessitates revisiting the old schools of thoughts to conceive a vision and a near-utopian state, where BD Army posses self reliance in a not so distant

future. At this backdrop, number of options were generated in both national and international spectrum.

The existing industrial value of primarily the base workshop was analyzed. It was followed by the study of BOF, BMTF and Commercial Industries. Through the survey, factory visit and interviews, the need for BMRE and joint-effort were identified. The research analytically proved through *PASTEL* analysis that, the potentials are suitable for taking a further step of MEV.

For BD Army, "Path and Engineering" strategy has been found to be most appropriate. Two ToT offers were pursued by the researcher from two major stakeholders of China's armour production: NORINCO and Fudong Machinery Factory, China. The offers were deliberately studied to form recommendation.

There are always scopes and possibilities to team up the military engineers with the production sector engineers and academicians of BUET. BUET can help in MEV by providing the the experienced professors and other qualified academicians. MIST can be a very good platform for R&D of such effort since there is no functional technical R&D of BD Army.

Finally, the research adopted Cost Benefit analysis to finally validate the hypothesis. Mathematically, it has been proven that MMC will reach BeP by 2022. Next year onward all revenue will add to the earning of the MEV. Thus; within the five years of the perspective plan, as suggested by the research, successful MEV will deny the monopolistic international market space. The magnum opus of the research at the end is that, the foreign dependency is curbed moderately and self reliance acquired, thus the hypothesis is validated.

RECOMMENDATIONS

In light of the findings of the research, following recommendations are made:

a. The proposal of Fudong can be studied at appropriate level of the army by forecasting next 30 years of hardware development.

b. 902 Central Workshop to be uplifted to the status of "Factory" with all the, thus enhancing manufacturing and imposing the responsibility of making own revenue.

c. To reach BeP and nullify the opposing idea of being not cost effective, the effort needs to be integrated with BOF, BMTF, BDP and appropriate commercial industries. Provided, the base workshop has the factory status, BMTF model can be followed to produce certain commercial products using the same manufacturing facilities and using the by-products to reach BeP.

d. The same facilities may be utilized to produce spares of APC, which will earn a substantial amount of foreign currency. The establishment of 'Rubber Production

Line' will help to reach the BeP and later the MEV will establish itself as profit earning effort.

e. The countries academic intelligentsia and engineering universities to be integrated as think tank, R&D and students may be given military based technology as thesis.

BIBLIOGRAPHY

Books

Aguliar. F (1967). *Scanning the Business Environment,* New York, NY: Simon & Schuster.

Gill. R. Bates. (1992). *Chinese Arms Transfer: Purposes, Pattern, and Prospects in the New World Order,* The Regents of the University of California.

Wulf. Herbert. (1993). *Arms Industry Limited,* Oxford University Press.

Davidson. P. Frank et al. (1983). *Macro Engineering and the Infrastructure of Tomorrow,* Westview Press.

Geng. H. Hwaiyu et al (2006). *Manufacturing Engineering Handbook*, Second Edition. Oxford University Press.

Taniguchi, N. (1974). 'On the Basic Concept of 'Nano-Technology' Part II *Proceedings from the International Conference on Production Engineering*. London, Part II. British Society of Precision Engineering.

Blickhan, R., Full, R.J. (1993). *Similarity in Multilegged Locomotion: Bouncing like a monopod.* Oxford University Press.

James. A. Harvey (2014). *CNC Trade Secrets: A Guide to CNC Machine Shop Practices.* Industrial Press Inc. USA.

Fredrick. P. (2007) *Project Engineering: The Essential Toolbox for Young Engineers.* Butterworth-Heinemann Publications.

Case, Karl E. & Fair, Ray C. (1999). *Principles of Economics.* 5th Edition. Prentice-Hall.

Publications and Precis

EME Services in the Field.

The Public Procurement Act, 2006.

Defence Procurement-35 (Revised -2009). Government of The People's Republic of Bangladesh, Prime Minister's Office, Armed Forces Division.

Research Methodology Study Précis, Defence Services Command and Staff College.

Reports

SIPRI. (2011). *National reports on arms exports*, Stockholm.

SIPRI. (2015). *National reports on arms exports*, Stockholm.

SIPRI. (2016). *National reports on arms exports*, Stockholm.

SIPRI. (2017). *National reports on arms exports*, Stockholm.

SIPRI. (2016). *Military Budgets in India and Pakistan*, Stockholm.

SIPRI. (2016). *World Military Spending*, Stockholm.

Jane's Defence Weekly, (2014). Annual Defence Report.

Jane's Defence Weekly, (2015). Annual Defence Report.

Jane's Defence Weekly, (2016). Annual Defence Report.

Jane's Defence Weekly, (2017). Annual Defence Report.

Interviews taken by author

Major General Abul Khair, ndc – Commandant, Military Institute of Science and Technology (MIST).

Brigadier General Md Jaglul Pasha, afwc, psc – Director Electrical and Mechanical Engineers, Army Headquarters.

Brigadier General Mohammad Ayub Chowdhury, psc – Commandant, 902 Central Workshop.

Brigadier General Shohail Hossain Khan, psc – Dean, Electrical, Electronics and Communication Engineering, MIST.

Brigadier General Md Sanuwar Uddin, psc – National Defence College.

Dr. Maglub Al Nur, Ph.D. (Cambridge, UK), M.Sc. Engg. (AIT, Thailand), B.Sc. (BUET), Professor of Department of Mechanical Engineering, BUET.

Lieutenant Colonel Md Shafiqul Haque, Commanding Officer Tank Workshop and Tank T-59 Up-gradation Project, 902 Central Workshop (The Pioneer Commanding Officer of the Project).

Lieutenant Colonel Abu Haya Masud, psc – Commanding Officer Planning and Control, 902 Central Workshop (The Pioneer Commanding Officer of the Project).

Lieutenant Colonel S M Bayazid Khan, psc – Assistant Director, Planning and Control, BOF.

Major Shihab Bin Sayeed, EME – Production Officer, BMTF.

Major Firoz Al Wahid, psc, EME – DADEME, EME Directorate, Army Headquarters.

Major Bilal Aziz, psc, EME – Pakistan Military Academy

Major Ataul Mannan Hashmi, EME, Pakistan Army, PAKBAT, MINUSCO.

Senior warrant Officer Md Kabirul Islam, EME, 902 Central Workshop.

Dr. Sukalpa Mimma, Ph.D. (Brunel University, UK), Assistant Professor of Department of Aeronautical Engineering, MIST.

Madam Tăo Yīn, Country Director of Bangladesh, North Industries Corporation (NORINCO), China.

Mr. Feng Guī Zhóng, Chief Engineer and Team Leader, Chinese Expert Team of Tank T-59 Up-gradation Project.

Major Md Ashikur Rahman was born on 07 February 1981 at Sherpur. He passed both Secondary School Certificate and Higher Secondary Certificate Examinations from Pabna Cadet College. He was commissioned from Bangladesh Military Academy with 46th BMA Long Course in the Corps of Electrical and Mechanical Engineers on 26 June 2002.

He has a diverse experience of serving in different echelons of Workshops. He also has commanded 115 Field Workshop Company. In his service career, he served as Instructor Class B of Electrical and Mechanical Engineering Center and School. He also has a stint of service as Group Testing Officer in Inter Services Selection Board. The researcher was the pioneer engineer in the Tank T-59 Up-gradation project. He is a Graduate Engineer from Military Institute of Science and Technology in Mechanical Engineering discipline. He also graduated on Armoured Engineering being the top on the merit list from Academy of Armoured Forces Engineering, Peoples Liberation Army, and Beijing, China. He has participated in United Nations Peacekeeping Mission in Liberia. He is married to Umme Kulsum Rumi and blessed with a daughter.

IMPACT OF VIOLENT CONFLICTS ON ECONOMIC GROWTH IN NIGERIA: LESSONS FOR BANGLADESH

Major Chidiebere Emmanuel Anele

ABSTRACT

This study evaluates the Impact of Violent Conflicts on Economic Growth in Nigeria, and draws lessons for Bangladesh. Four questions were raised and reformulated as objectives of the study. They include evaluating the impact of violent conflicts on economic growth in Nigeria, as well as examining the impacts of government expenditures on defence (DEFEX) and on Internal Security (EXIS) on economic growth in Nigeria. To achieve the study objectives, annual time series data, spanning 2001 to 2015, on the variables of the study (Real Gross Domestic Product [RGDP], DFEX, EXIS, Religious Violence scores [RLGV] scores and Ethnic Violence scores [ETHV]) were collected from publications of the Central Bank of Nigeria (CBN) and Integrated Network for Societal Conflict Research (INSCR). Descriptive and multiple regression analyses were used to analyze the data. The results of the regression show that DEFEX has a stronger positive impact on RGDP compared to EXIS, while RLGV negatively impacted on RGDP than ETHV. Based on the findings, it is recommended that policy-makers should integrate conflict-lessening measures in policy designs. Such measures may include dialogue among conflicting groups to resolve their differences through a formal process. Government should further increase DEFEX and EXIS to adequately equip security network in the country to respond to conflict situations, as well as ensure job creation and equitable income distribution.

INTRODUCTION

Many countries in Sub-Sahara Africa have had an unstable blend of conflict and insecurity over the years. This has destabilised peace in the region and is blamed on several factors including leadership failure. Nigeria is one of the African countries severely affected by conflicts. It was ranked 146 of 162 worldwide estimates of violent nations in the Global Peace Index (Transparency International, 2012). According to Human Right Watch (2014), over 15,700 people have been killed in ethnic, political and religious violence in Nigeria since the country transitioned to democracy in 1999. Today, the most common forms of violence in Nigeria include ethnic clashes, religious conflict, ransom kidnappings, militant activities and gender-based violence. Therefore, Nigeria could be categorized as a hotbed for conflict.

Several scholars have offered different definitions for violent conflict and economic growth. Francis (2006) and Wall and Callister (2005) view conflict as a zero-sum situation where people fail to reconcile their differences and instead, engage in overt actions and reactions. Conflict becomes violent when actions taken by one party exerts negative effects on the interests of other parties and also affect the peace of the society.

Economic Growth on the other hand is a continuous rise in per capita income or national product over a long period (Dwivedi, 2004). It is distinct from economic development. While distinguishing growth from development, Woodford (2000) explained economic growth as a positive increase in the total productivity within a fixed period in a country while economic development is consistent increase in the level of output and incomes. Therefore, economic development is a process by which a country experiences sustained growth in output, structural changes and institutional reforms. These phenomena generally lead to better living standard for the populace.

The relationship between violent conflict and economic growth is long recognized. Expectations are that the relationship should be inverse; however, some studies have revealed a positive correlation. Conflicts in northern Nigeria, particularly in the North-East have resulted in the loss of many lives and property. In recent times, one could argue that the Boko Haram insurgency remains the most severe indication of violent conflicts in the country. To some social commentators, the nation is at war. The purpose of this paper is to discuss the impact of violent conflicts on economic growth in Nigeria. Accordingly, it will first establish the relationship between violent conflicts and economic growth and thereafter highlight the impact of government expenditures on economic growth. Additionally, the impact of violent conflicts on economic growth will be examined before outlining some relevant lessons for Bangladesh.

AIM

The aim of this paper is to analyze the impact of violent conflicts on economic growth in Nigeria with the view to drawing relevant lessons for Bangladesh.

RELATIONSHIP BETWEEN VIOLENT CONFLICT AND ECONOMIC GROWTH

Economic Analysis of Conflict

There are many ideas about the sources of violent conflict development theories. Though some contrasts exist between the ideas, they largely agree that conflict erupts from frictions in social relations. These frictions could be generated by the processes of economic development, scarcity in resources and other contradictions. Class differences sharpen this drive because it polarizes the population along economic and social lines.

Smith (1776) stated that "the wealth of nations which always allows the improvements of agriculture and manufactures provoked the invasion of all their neighbours. An industrious, and upon that account a wealthy nation, is of all nations the most likely to be attacked." Therefore, a wealthy person is more likely to be attacked by the poor though any means. According to Hirshleifer (1991), the probability of this attack is directly linked to the economic distance between the rich and the poor. Violent

conflicts thus appear to be a rational activity that is based on self-interest. It provides yet another avenue for resource reallocation.

Landes' (1978) model explains the behaviour of a group of aggrieved (or greedy) persons, contemplating an attack on another group for political and/or economic objectives. The simplified version of the model considers three states of the world: a state of peace (no contest or conflict), the state where conflict or contest is successful and the state of a failed contest. The model assumes that utility in the no contest scenario is certain; that is, if the group decides against engaging in any form of violent activity. Utility is thus said to be associated with such decision.

Relationship between Violent Conflicts and Economic Growth

Researchers differ on the effect of conflict on economic growth. Some view the relationship is negative, while others see it is positive. Both arguments are plausible if we consider the collapse of European economies after WWII or the rapid growth of the Japanese economy due to the Korean War. Martin (2004) suggested that it takes an economy a long time to regain its pre-conflict level because of the gradual pace at which human capital recovers. Similarly, there are justifications as to why increased wealth can also propel conflicts. The contention is that if economic growth increases a country's wealth, it may induce a higher desire by individuals and groups to fight for control over the productive resources. This was experienced in Nigeria's Niger-Delta Region where rich oil industry workers were the targets of kidnappers. Therefore, to avoid this kind of conflict, stateless societies should avoid wealth accumulation in the hands of a few persons.

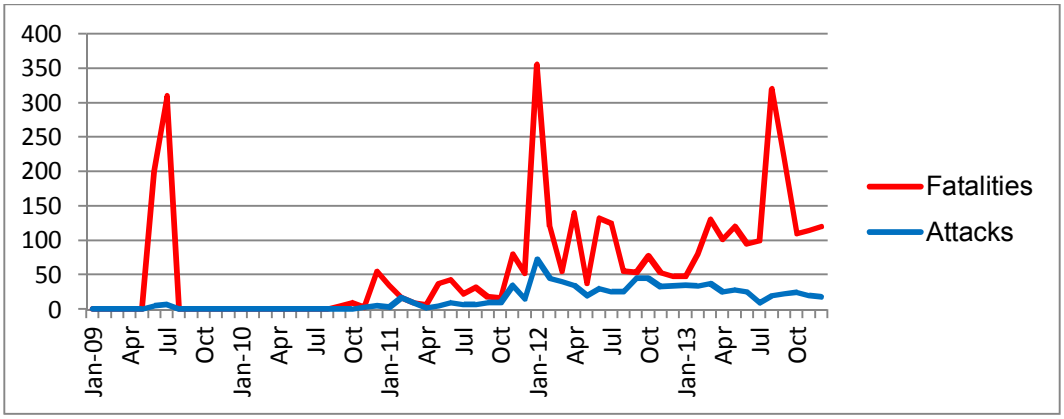
According to Bates (1973), economic development may fuel violence, in that there is a positive correlation between wealth and violence. He argued that this relationship could generate a radical re-organization of the existing political structures. He concluded that such a situation can engineer conflict. Thus, an explanation is given for "ethnic-politics", which is often conflict-ridden, and is in fact a result of development rather than un-civilisation. In less wealthy nations, an increase in economic growth or wealth induces the need for more resources, and any perceived shortages creates the desire to have a more direct control over resources (Choucri and North, 1972). This idea was however criticized by Zuk (1985) who notes that the countries studied by Choucri and North (from 1870-1914) could provide their own resources and where it was impossible, they did so through international trade. Therefore, the notion that wealth creation motivates conflict may be incorrect; rather, it provides the means by which conflict is sustained.

Attacks by Boko Haram Sect

In recent times, attacks by the Boko Haram sect have hampered economic activities in affected areas. Data obtained from the Global Terrorism Database indicate that during

some months within the study period, more than 50 Boko Haram attacks were recorded, with some claiming up to 350 lives as shown in the figure below. The traditional targets of the sect are economically viable areas, from where they steal resources to sustain their evil quest.

Figure 1: Graph showing Boko Haram Attacks and Fatalities from 2009-2013



Source: Global Terrorism Database

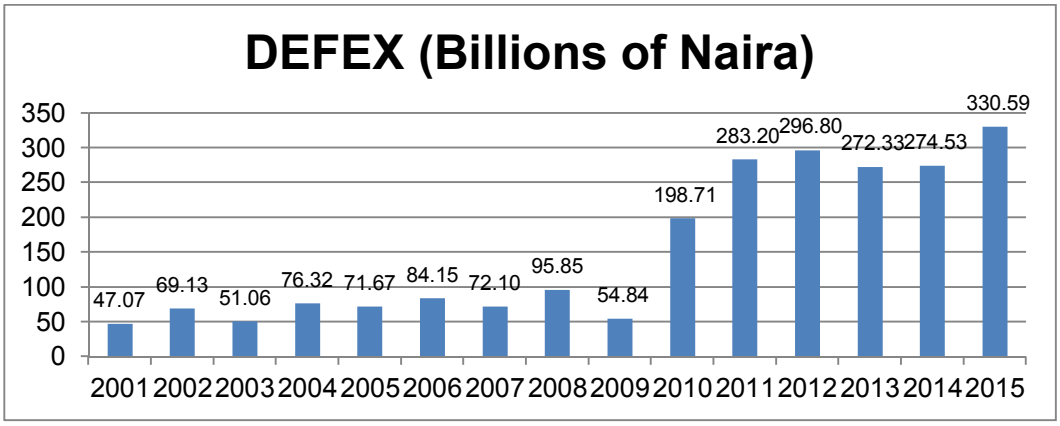
GOVERNMENT EXPENDITURES AND ECONOMIC GROWTH; THE NEXUS

DEFEX and Economic Growth

Overview. Growth theories suggest that government expenditures affect economic growth. Its effects depend on the size and composition of government intervention. For example, infrastructures and education are often considered as public goods which have positive economic effect. If we view defence as such, then DEFEX affects economic growth. In this study, DEFEX are capital and recurrent expenditure incurred by government in financing the military. They include expenses on equipment, vehicles, arms and ammunition as well as payment of salaries to military personnel and support staff. These expenses position the military to respond to conflict situations.

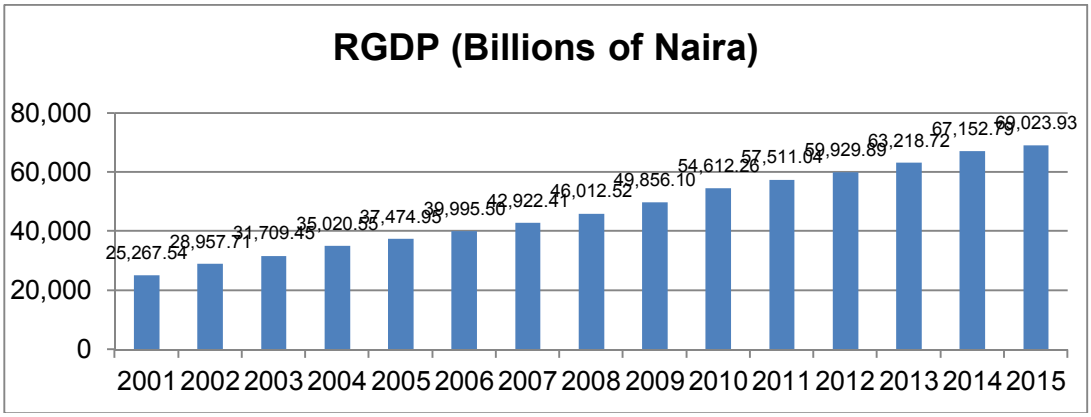
Quantitative Analysis of DEFEX and RGDP. Since 2001, Nigeria's DEFEX has fluctuated significantly. However, in 2010, there was a sharp increase which continued until 2012, suggesting a rise in violence, viz-a-viz a government attempt to enlarge and equip the AFN. Instructively, this was also around Boko Haram rebirth. Apparently therefore, the level of violence is correlated with DEFEX. DEFEX further fluctuated and peaked at N330.59 Billion in 2015. Conversely, the RGDP has generally been on an upward trend over the same period. Figures 2 and 3 illustrate the data on DEFEX and RGDP.

Figure 2: Bar Chart showing Nigeria's DEFEX from 2001-2015



Source: Central Bank of Nigeria

Figure 3: Bar Chart showing Nigeria's RGDP from 2001-2015



Source: Central Bank of Nigeria

An analysis of the RGDP growth rate over the study period shows that from 2001-2015, the largest growth rate of about 9.54% occurred in 2010. In terms of the value-added, this increase (of N 4,756.17 Billion) was also the highest over the entire study period. One plausible explanation for this significant increase could be explained by the sharp increase in DEFEX in 2010. This indicates that DEFEX is a strong component among the many variables which drive RGDP. On the strength of this unique observation therefore, it is opined that DEFEX has a significant impact on RGDP in Nigeria.

EXIS and Economic Growth

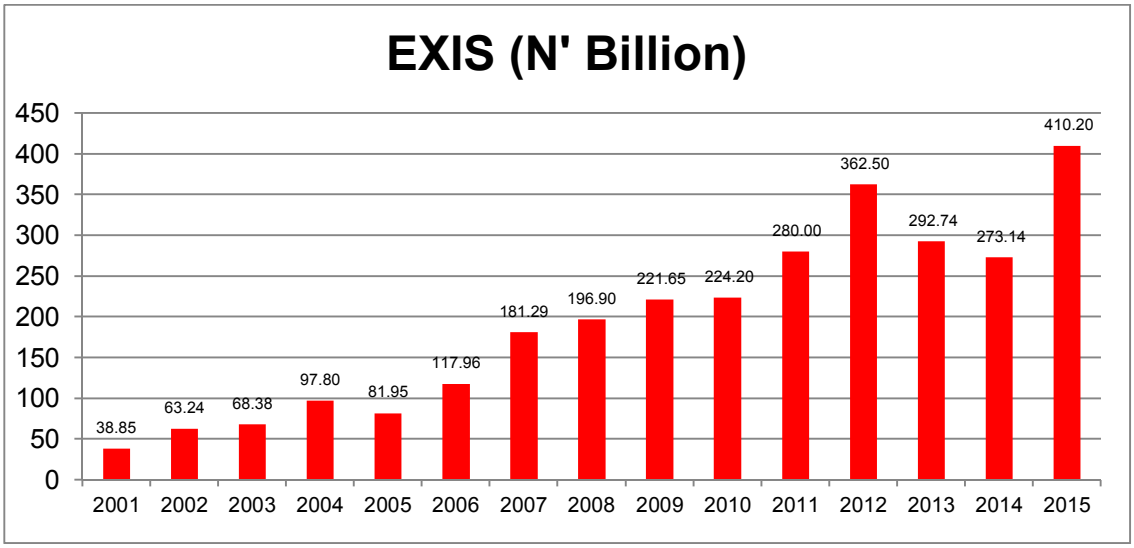
Overview. Basically, it is within the purview of the police to maintain peace and security within any country. However, in most developing countries, it is common for the military to be employed alongside the police in this task. This practice is also evident in Nigeria, especially since 1999 when the country returned to democracy. It should be noted that the military is not well equipped for this role. Therefore, whenever it is deployed for IS duties, there is the obvious need for special equipment and allowances which lays more costs on the government. These additional expenses sum up as EXIS. While DEFEX is more permanent in nature, EXIS are somewhat temporary. At present, around 4 Division size force is involved in different IS Operations around Nigeria. The Notable Operation areas are highlighted in Figure 4.

Figure 4: Map of Nigeria showing Major Internal Security Operations

Source: Nigerian Army Headquarters

Pent/invested directly in the local economy by soldiers in the form of feeding and purchasing other needs. Little wonder over the observed period, government has been quite comfortable to steadily increase funds voted for this cause as shown in Figure 5.

Figure 5: Bar Chart showing Nigeria's EXIS from 2001-2015



Source: Central Bank of Nigeria

From a meagre N 38.85 Billion in 2001, EXIS has risen and peaked at N 410.20 Billion in 2015. Although these expenses are in the form of purchase of vehicles, arms and ammunition (representing capital flights outside the country), yet a significant amount is spent within the country in the affected areas. This has improved the local economies and those of contiguous communities. Therefore, one could argue that the stable rise in RGDP as seen in Figure 3 could also be attributed to some ripple effects from EXIS.

IMPACT OF VIOLENT CONFLICT ON ECONOMIC GROWTH

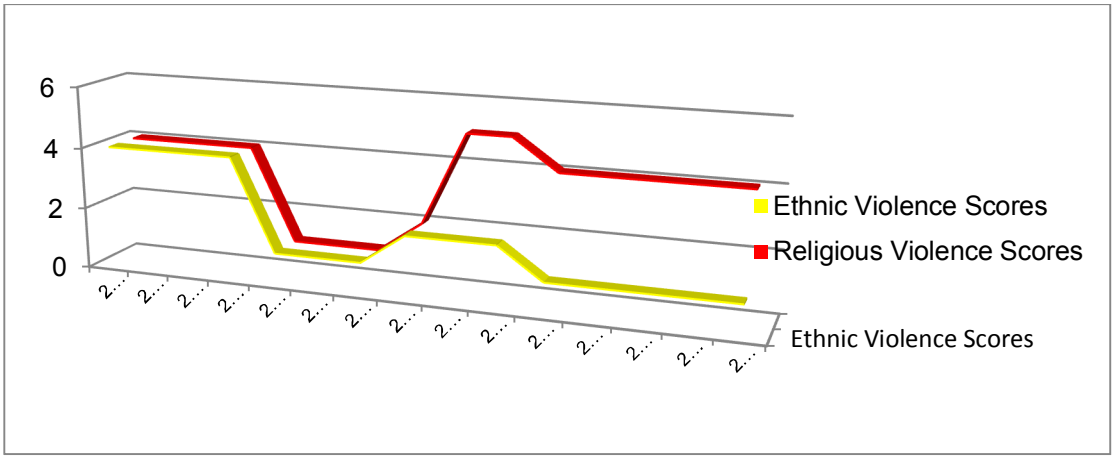
Violent Conflicts and Economic Growth

Overview. Economic experiences around the world have often linked violence to economic growth. In some studies, this impact is viewed as negative, while other more radical views see it as positive. Those who view this relationship as negative argue that violence leads to destruction of productive lives and property. On the contrary however, those who see it as positive opine that during violent conflicts, government spends money to return the situation to status-quo, which represents investment. Ordinarily, investments propel economic growth. Additionally, where the positive impact is not felt

within the immediate crises society, it may manifest in contiguous communities. In the Nigerian context, evidence show that both arguments are valid.

Ethnic and Religious Violence and Economic Growth. Nigeria has over 250 distinct ethnic groups. Within this diversity lies a silent competition for domination which often leads to overt disagreements. There are also a few religions in Nigeria. However Christianity and Islam are dominant spread almost evenly the South and North respectively. As such, ethnic division is usually sharpened by religious affinity. In fact most conflicts are expressed along ethnic or religious lines. Over the years, many cities like Jos and Kaduna were hotbeds for ethnic violence. Also, in the North-Eastern region, religious violence by the Boko Haram Terrorists has been prevalent. The effects of these acts have devastated the affected areas. Many economically viable persons and businesses have been cut short. Consequently, the local economies are on the decline. According to INSCR, violence in Nigeria has been phenomenal. On a scale of 1 - 10, the trend has been significant, peaking around 2009 – 2010 as seen in Figure 6.

Figure 6: Line Graph showing Nigeria's RLGV and ETHV Scores from 2001-2015



Source: Integrated Network for Societal Conflict Research

Regression Analysis Depicting Impact of Violent Conflicts on Economic Growth

Social scientists are not only interested in analyzing past events. The interest should also be to make future forecasts. Hence the need for regression analysis. This leads us to specify a mathematical model for this purpose, where RGDP is expressed as a function of DEFEX, EXIS, RLGV and ETHV as follows:

RGDP = 0 + 1DEFEX + 2 EXIS + 3RLGV + 4 ETHV + ... (1.2)

Where;

RGDP = Real Gross Domestic Product,
DEFEX = Government Defence Expenditure,
EXIS = Expenditures on Internal Security,
RLGV = Religious Violence Scores,
ETHV = Ethnic Violence Scores,
0 = intercept,
i, = vectors of partial slopes; (i = 1, 2….4)
= Error Term.

Regression Analysis Result. Regression analysis is a statistical process for estimating relationships among variables. It may be linear of multiple. Linear regression determines the relationship between one independent variable and one dependent variable. Conversely, multiple regression is used to predict the value of a dependent variable based of the values of two or more independent variables. The multiple regression result for the data set is as shown in Table 1.

Table 1: Multiple Regression Table
Dependent Variable: RGDP
Method: Least Squares
Date: 07/26/17 Time: 05:56
Sample: 2000 2015
Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEFEX	194.6638	38.79534	5.017711	0.0003
ETHV	-615.9191	1692.475	-0.363916	0.7223
EXIS	92.83211	34.77745	2.669319	0.0204
RLGV	-2214.267	2044.610	-1.082977	0.3001
C	2472.347	6565.828	0.376548	0.7092

R-squared	0.962447	Mean dependent var	37260.43
Adjusted R-squared	0.953059	S.D. dependent var	31907.19
S.E. of regression	6912.982	Akaike info criterion	20.73251
Sum squared resid	5.73E+08	Schwarz criterion	20.92565
Log likelihood	-161.8601	Hannan-Quinn criter.	20.74240
Durbin-Watson stat	1.336330		

Source: Researcher's Computation Using SPSS Software

Interpretation of the Result. The multiple regression results above show that all the coefficients of the explanatory variables are non-zero. This suggests that the variables affect RGDP over the study period. Secondly, the signs of the coefficients are as

theoretically expected. Additionally, all the variables have high t-values, implying that they are all statistically significant. The coefficient of RLGV is high, suggesting that religious violence has a strong effect on Nigeria's RGDP. Similarly, the R-square from the estimates is over 96%, suggesting that the model explains reality and could be used for forecasting. The econometric model could be specified as follows:

RGDP = 2472.347 + 194.6638 (DEFEX) + 92.83211 (EXIS) – 2214.267 (RLGV) – 615.9191 (ETHV)

In the model, the coefficient of DEFEX is 194.6638. It implies that a unit increase in DEFEX increases RGDP by approximately 195 units. This supports findings by Collier and Hoeffler (2002) that an increase of DEFEX of around 1.8% of RGDP during war times is likely to improve social welfare. Also, a unit increase in EXIS increases RGDP by about 93 units while a unit increase in RLGV and ETHV decreases RGDP by about 2214 and 616 units respectively. The later finding supports Hegre and Sambanis (2006) that the relationship between GDP and violent conflict is negative. This finding is firmly established in conflict literatures.

If we further take India and Pakistan as microcosms for similar studies, one could infer that the steady economic growth experienced by India could be adduced to low levels of conflicts over the last decade. Additionally, larger defence budgets (5th in the world) has steadily improved the economy, albeit silently. Conversely, within the same time period, Pakistan's investment in the military has been comparably low at 23rd globally. Furthermore, incidences of violence have been quite high which accounts for its slower economic growth. Therefore, governments should develop long-term conflict lessening strategies tailored towards crises-vulnerable persons and sectors of the economy. The implementation of policies which enhance job creation for youths and equitable income distribution (by cautiously targeting the local defence industry) could also be a step in the right direction.

NIGERIA'S CONFLICT/ECONOMIC EXPERIENCE; LESSONS FOR BANGLADESH

Similarities between Nigeria and Bangladesh

Although Nigeria and Bangladesh exist in different continents, yet, as developing countries, both nations have many factors in common. Therefore, one could infer that the factors that affect one in a particular way could have similar effects on the other. This assumption is consistent in researches, and is the basis for comparative analyses among countries. Some areas of similarities between both countries are highlighted in subsequent paragraphs.

Population. Nigeria and Bangladesh both have high populations. On the global scale, Nigeria stands as the seventh most populous country, while Bangladesh is the

eighth. The analogy therefore is that both countries will experience similar demographic behavioural pattern which is the hallmark of social sciences researches.

Religious Affinity. Bangladesh has a large Muslim population; the same as Nigeria. As highlighted earlier, religion plays a lasting effect on conflict in Nigeria. The activities of Boko Haram sect, an Islamic fundamentalist group is a clear manifestation of this fact. Bangladesh has also had a small share of religiously motivated attacks, drawing from the July 2016 Gulshan Attacks in which 20 persons (mainly foreigners) were killed. Thus, while Nigeria is in the curative stage of religious conflict, Bangladesh seems to be at the infancy; hence the need to draw pertinent lessons from the former.

Literacy. Both Nigeria and Bangladesh have fairly large literate population. UNESCO 2015 Report lists Nigeria as 59.6% literate, while Bangladesh has a literacy rate of 61.5%. The link is that with an almost equal literacy rate, the peoples of both countries are likely to behave in a similar way, given similar conditions.

Economy. On the level of economies, both Nigeria and Bangladesh are akin to each other. The World Bank 2016 Report ranks Nigeria as the 27th largest economy, while Bangladesh is the 45th, yet, as emerging economies; both countries share many similarities like unemployment and income distribution problems. The connection here is that with these semblances, both countries will likely be affected by several similar factors.

Lessons for Bangladesh

Having highlighted a few striking similarities between Nigeria and Bangladesh, it is instructive to mention some strategies which the latter could imbibe in order to address the negative effects of violent conflicts on its economy. Although some points could be presently in use in Bangladesh, however, they may have to be reinforced for greater benefits.

Addressing Inequality. Although Nigeria is resource-rich, it has failed to engender policies that bridge the gap between the rich and poor. This is a motivating factor for conflict, given the breeding ground of disgruntled and frustrated masses. It is a time bomb that Bangladesh also sits on. Bangladesh could therefore institutionalize policies to address unemployment and inequality problems in the country.

Education. Education is another vital tool that could be used to tame violence. It has been used quite potently to de-radicalize terrorists in Nigeria. Bangladesh government could take a cue and invest massively in education, especially in rural areas. The target population here should be young boys in primary and secondary schools to prevent radicalization, since they are the most potent tools for fomenting large scale violence. Education which centers on non-radicalization has become more pertinent in Bangladesh since the Gulshan Terror incident of July 2016.

Sustained Use of Military in IS Operations. The use of the military in IS operations to reverse tensed situations to normalcy is long recognized. This may not be the case for developed nations; however, it is pertinent in developing countries. Military involvement in crises control helps rectify problems quickly and give a sense of security to economically productive persons to do their businesses. However, once the enabling environment is created, government must quickly exploit the situation by addressing the root causes of conflicts. Therefore, Bangladesh could tow this line; and further reinforce it where the practice already exists. Additionally, the inclusion of personnel of all services in this venture could guarantee quick successes.

Voting of Special Funds for IS Operations. Military personnel could be a force for good in crises areas. Notwithstanding, if the operation is poorly funded, the reverse could be the case. Therefore, Bangladesh government could ensure a daily stipend is paid directly to soldiers involved in the operation right at the area of deployment. Such funds have a way of trickling around the affected areas and improving the living standards of the people around. Also, the provision of some funds for the military to undertake quick-impact-projects such as school renovation and construction of playgrounds could be contemplated.

Increased DEFEX. Virtually all studies in defence economics have observed a strong positive correlation between DEFEX and RGDP. This assertion is also true for Nigeria. In fact, the position of the US as a global leader is strongly tied to a healthy defence budget. Therefore, Bangladesh could ensure periodic increases in DEFEX in order to tap from the inherent benefits and better the lives of her citizens.

Ensuring Conflict Reduction Mechanisms. Dialogue is a strong tool to defuse tensions. Though a slow and harrowing process, it has been used quite extensively by the Nigerian government with appreciable results, even with Boko Haram Terrorists. Bangladesh could therefore, establish a standing committee to settle grievances before they manifest in overt negative actions and reaction. In fact, dialogue might be the only real solution to the Chittagong Hill Tracts problems and the current Rohingya problems with Myanmar.

CONCLUSION

This paper investigated the impact of violent conflicts on economic growth in Nigeria. Initially, the paper laid a background and defined the main concepts. The relationship between the concepts within the Nigerian context was further established. Subsequently, the impact of government DEFEX and EXIS as well as ethnic and religious violence on economic growth in Nigeria was established. Basing on these, some lessons for Bangladesh were drawn.

Empirical analyses were also conducted using annual time series data from 2001 - 2015. These data were amplified by quantitative and qualitative analyses. The data

suggest that high crises levels in 2009 and 2010 led to a sharp increase of DEFEX in 2010 and EXIS in 2012. Indeed, the involvement of the military in IS Duties represent an economic investment in the local economy. This investment, along with government DEFEX has had a positive impact on the economy. Therefore, government should explore options to improve funding for the military by re-equipping it and improving her financial benefits. Additionally, government should adequately fund IS operations around the country within available resources.

The multiple regression results obtained further confirmed that violent conflicts have negative impact on economic growth since it destroys productive lives and property. This is evident from the negative relationship between economic growth proxied by RGDP and conflict variables (RLGV and ETHV) used in the study. This result thus disagrees with Martins (2014) that there is a direct relationship between conflicts and Nigeria's economic growth, but supports Longinus, Ben and Raphael (2014) that violent conflict retards economic growth and fuels social crises. Out of the two components of conflicts investigated, RLGV has a more adverse impact on RGDP. This is due to its lasting effects on society. There is therefore the need for government to adopt strong conflict preventive measures. This will ensure that economic gains made are not reversed.

DEFEX and EXIS were found to have strong effects on Nigeria's RGDP over the study period. This supports Collier and Hoeffler (2002) that an increase of military expenditure is likely to improve social welfare. It is further clear that there has been progressive increase in the nature and sophistication of ethnic conflicts in the midst of robust growth of the Nigerian economy over the years. Therefore, there is the tendency that ethnic violence may increase if economic gains are not fairly distributed in the country. However, the implementation of policies that enhance equitable income distribution could mitigate this.

RECOMMENDATIONS

Based on the findings of this paper, it is recommended that the Nigerian government should:

a. Implement policies that enhance more equitable income distribution.
b. Ensure job creation to engage the youths more productively.
c. Develop long-term conflict lessening strategies tailored towards crises-vulnerable persons, sectors and areas of the economy.
d. Increase expenditures on defence and internal security.

BIBLIOGRAPHY

Books

Albert, I.O. (1999), *Community Conflict in Nigeria: Management, Resolution and Transformation,* Ibadan, Spectrum.
Anifowose, R. (1982), *Violence and Politics in Nigeria: The Tiv and Yoruba Experience,* Enugu: E-NOK Publishers Limited.
Bates, R. H. (2001), *Prosperity and Violence,* New York: Norton. J
Chioma, S. (2011). *Time Series Analysis,* Princeton University Press, Princeton, New Jersey.
Constitution of the Federal Republic of Nigeria (1999).
Dwivedi (2004), *Economic Growth*, MIT Press, Second Edition
Friedman, H., & Schustack, M. (1999), *Personality Classic Theories and Modern Research,* (Fifth ed.), New Jersey: Pearson.
Guillén, M. F. (2003), *Multinationals, Ideology, and Organized Labor, The Limits of Convergence,* Princeton University Press.

Journal Articles

Abadie, A and Gardeazabal, E.C (2003). 'Further Evidence of the Great Crash, the Oil-Price and the Unit-Root Hypothesis,' *Journal of Business and Economics Statistics* Vol 10.
Adebanwi, B. (2004). 'Peace and Conflict Studies: An African Overview of Basic Concepts,' in Best, S.G. (ed.), *Introduction to Peace and Conflicts Studies in West Africa.* Ibadan: Spectrum Books Limited.
Akinboye, D. & Otto, G. (2005). *'Democracy under the gun: understanding post-conflict recovery,' Journal of Conflict Resolution.*
Anyanfo, D.F (1996) 'Econometric Modeling with Cointegrated Variables: An Overview,' *Oxford Bulletin of Economics and Statistics.*
Berkowitz, Leonard (1969), 'The Frustration-Aggression Hypothesis Revisited,' Berokowitz (ed.), *Roots of Aggression*, Atherton Press, New York.
Chassangy, B. and Miguel, N. (2009). 'Sensitivity Analysis of Empirical Results on Civil War Onset,' *Journal of Conflict Resolution.*
Choucri, N. and North, R.C. (1972), 'Dynamics of International Conflict: Some Policy Implications of Population, Resources, and Technology,' *World Politics.*
Collier, P. and Hoeffler, A. (2002), 'On the Incidence of Civil War in Africa,' *Journal of Conflict Resolution* Vol 46.
Dollard M. (2005) 'Terrorism-Induced Structural Shifts in Financial Risk: Airline Stocks in the Aftermath of the September 11th Terror Attacks,' *European Journal of Political Economy 20(2).*
Drakos and Kutan (2001) 'Regional Effects of Terrorism on Tourism in Three Mediterranean Countries,' *Journal of Conflict Resolution* Vol 47, No 5.

Dunmoye, R.A. (2003), 'General Survey of Conflicts in the Middle Belt Zone." In Africa Peace Review,' Special Edition, *Journal of Centre for Peace Research and Conflict,* National War College, Abuja, Nigeria.
Dune, J. P. (1990). 'The Demand for Military Spending in Developing Countries,' *International Review of Applied Economics,* Vol 17, No 1.
Eckstein, Z. and Tsiddon, D. (2004). 'Macroeconomic Consequences of Terror: Theory and the Case of Israel,' *Journal of Monetary Economics* Vol 51, No 5.
Engle and Granger (1987). 'Techniques for Testing the Constancy of Regression Relations over Time,' *Journal of the Royal Statistical Society* Vol 37.
James, M. (2005), 'Civil War Destruction and the Prospects for Economic Growth,' *Journal of Politics* Vol 67, No1.
Jega, A.M. (2002), 'Tackling Ethno-Religious Conflicts in Nigeria,' *The Nigeria Social Scientist* Vol 5.
Landes, J.S. (1978). 'Statistical Analysis of co-integrating vectors,' *Journal of Economic Dynamics and Control*, Vol 12.
Lingnus, O., Ben, E.O. and Raphael, V.O. (2014). 'Economic Costs of Divisive Social Conflicts in Nigeria and the Public Relations Antidote for Managing the Problem,' *International Journal of Economics, Commerce and Management*, United Kingdom Vol. II, Issue 12.
Martins, I. (2014). 'Economic Growth and Conflicts: Evidence from Nigeria,' *Journal of Sustainable Development Studies* ISSN 2201-4268 Vol 5, No 2.
Olufemi, F.J. and Samson, A.O. (2012), "Climate Change, Environment and Conflicts in Nigeria", *British Journal of Arts and Social Sciences* Vol 6.
Omorogbe, S.K. and Omohan, M.E. (2005), 'Causes and Management of Ethno-Religious Conflicts: The Nigerian Experience,' A.M. Yakubu,et al. (eds),*Crisis and Conflict Management in Nigeria Since 1980*, Vol. 2. Baraka Press and Publishers Ltd; Kaduna, Nigeria.
Onuoha, F.C. (2008), 'Environmental degradation, Livelihoods and Conflicts: A Focus on the Implications of Diminishing Water Resources of Lake Chad,' *African Journal of Conflict Resolution*.
Tilman, K. and Marc, M. (2010). 'After the Shooting Stops: Insights on Post-War Economic Growth,' *Journal of Peace Research*, Vol 26, No 3.
Wall, A.and Callister, R.R. (2005). 'Conflict and its Management,' *Journal of Management* Vol 3, p.517.
Zuk, G. (1985), 'National Growth and International Conflict: A Re-Evaluation of Choucri and North's Thesis,' *The Journal of Politics 47*.

Research Papers/Other Papers

Bates, R.H. (1973), 'Ethnicity in Contemporary Africa Program in Eastern African Studies,' *Working Paper XIV*, Maxwell School, Syracuse University.
Collier, P. (1999), 'On the Economic Consequences of Civil War,' *Oxford Economic Papers* p. 51.

Degroot, K. L. (2009) 'A New Data Set Measuring Income Inequality,' *World Bank Economic Review*, November, 1996.
Ezra, U.K. (2011). 'Impact of Global Conflict and Terrorism on some Selected Macroeconomic Variables: the Case of Nigeria,' a thesis submitted to the postgraduate school, Ahmadu Bello University Zaria, in partial fulfilment of the requirements for the award of degree of Doctor of Philosophy (PhD) in Economics, June, 2011
Fama, E. F., Lawrence F., Michael C. J. & Richard R. (1999). 'The Adjustment of Stock Prices to New Information,' *International Economic Review 10.*
Fielding, D. D. (2003). 'Ethnicity, Insurgency, and Civil War,' *American Political Science Review, 97 (1).*
Fischer, G. (1993). 'The Socio-Demographic Legacy of the Khmer Rouge Period in Cambodia,' *Population Studies, 60 (2).*
Fleischer, A. and Buccola, S. (2002). 'War, terror, and the Tourism Market in Israel,' *Applied Economics 34.*
Frey, B.S., Luechinger, S. and Stutzer G. (2004). 'Calculating Tragedy: Assessing the Costs of Terrorism,' *CESifo Working paper.* no 1314. Category 1: Public Finance. November 2004.
Gupta, M., Göran, F.H. and Lindgre, P. (2001) 'Measuring the Economic Costs of Internal Armed Conflict – A Review of Empirical Estimates,' Department of Peace and Conflict Research, Uppsala University, Sweden. Paper for the Conference Making Peace Work in Helsinki arranged by the United Nations University – World Institute for Development Economics Research (WIDER):
Hirshleifer, D.J. (1991). 'Peace and Conflict Studies: An African Overview of Basic Concepts,' Best, S.G. (ed.), *Introduction to Peace and Conflicts Studies in West Africa*. Ibadan: Spectrum Books Limited.
Hoffman (1998) 'Economics and Violent Conflict. The Conflict Prevention Initiative,' (CPI), an online project of the Harvard Program on Humanitarian Policy and Conflict Research,http://www.preventconflict.org/portal/economics/portalhome.php. Retrieved on 26 August 2017.
Human Right Watch Report (2014)
Imobighe, T.A. (2003), 'Ethnicity and Ethnic Conflicts in Nigeria: An Overview,' In T.A. Imobighe (ed), *Civil Society and Ethnic Conflicts Management in Nigeria.* Ibadan: Spectrum Books Limited, pp. 13-35.
Mauro, P. (1998), 'The Persistence of Corruption and Slow Economic Growth,' *IMF Staff Papers* Vol. 51, No1.
Phil-Eze, P.O. (2009), 'The Environment, Peace and Conflict in Nigeria' in Mariam Ikejiani- Clark (ed) *Peace Studies and Conflicts Resolution in Nigeria; A Reader.* Ibadan: Spectrum Books Limited.
Raheem, M.I. (2010), 'Nigeria for Africa: A Case for Labour Export,' in Oyejide, T. A. and M. I. Obadan (eds), Applied Economics and Economic Policy - In Honour of Emmanuel C. Edozien, Ibadan University Press, Ibadan.
Sachs, J.D. (2005), The End of Poverty: Economic Possibilities for Our Time. Penguin Press: New York.
Transparency International Report (2012).

Woodford, G. (2000). State Driven Conflict in the Greater Horn of Africa, Revised Paper Presented at the USAID Organized workshop on Conflict in the Great Horn of Africa, Methodist House: Nairobi.

Internet Sources

Blackwell, M. (2014), Frustration-Aggression Theory, http://www.blackwellreference.com. Retrieved 18 October 2016.
Shively (2011). "Conflict and Trade" Paper for 7th Annual Conference on Economics and Security University of Bristol, United Kingdom, June 26-28. http://www.aug.edu/~sbajmb/paper- Trade-and-Conflict.pdf. Retrieved on 19 August, 2017.
Boko Haram Attacks and Fatalities by Month from 2009 - 2013, retrieved from https://www.google.com.ng/search?q=Boko+Haram+attacks+and+fatalities+by+month+2009-2013 retrieved 6 September 2017.

Interviews Taken by author

Anele, O.A., Maj, (2017, October 28).
Azinta, O.F., Brig Gen, (2017, October 28).
Hassan, S.Y., Maj, (2017, September 26).
Shehu, K., Maj, (2017, September 26).
Sule, M.S., Lt Col, (2017, October 19).

Major Chidiebere Emmanuel Anele was born on 22 August 1983 in Jos, Plateau State, Central Nigeria. He began his military career in the Nigerian Defence Academy (NDA) in 2003 and was commissioned into the Armoured Corps on 29 September 2007 as a member of 55 Regular Course.

Maj Anele has completed all the courses commensurate with his rank and has attended the Junior Command and Staff Course at the School of Infantry and Tactics, Sylhet, Bangladesh. He holds both B.Sc and M.Sc Degrees in Economics from the Nigerian Defence Academy.

Since commission, Major Anele has held command, staff and instructional appointments. The most recent was as GSO 2 Plans at the Army Headquarters Department of Policy and Plans. He has also participated in Untied Nation/African Union Hybrid Mission in Dafur (UNAMID) in 2011. His hobbies include playing volleyball and watching movies.

RELATIONSHIP BETWEEN DISTURBED CONJUGAL LIFE AND RISE OF MORAL TURPITUDE CASES IN BANGLADESH ARMY

Major Tanveer Ahmed, G+, Artillery

ABSTRACT

*Bangladesh (BD) Army is considered as one of the most disciplined forces due to strong focus on the castigation in the professional life as well as social life of the staffs. With the increase of the social networks, technological advancements and change in social structures, there has been increasing intricacies in the families of Bangladesh Army personnel. This research on the topic '**Relationship between Disturbed Conjugal Life and Rise of Moral Turpitude Cases in Bangladesh Army'** is considered as a burning problem in the social context of Bangladesh Army and hence, it is necessary to analyze the problem and dig the root cause of it. As a part of the research, investigation over some moral turpitude cases, finding the reason behind it, factors influencing this, is necessary. Due to the basic human nature, individual behavior is largely regulated by his personal ethics, which is in turn driven by his mental state. But above all it is mostly a genre of one's conjugal life. Disturbance in the conjugal life of a Bangladesh Army personnel can be caused by several reasons, but the outcome is detrimental for both his personal life and his ORGANIZATION as well. Such argument suggests critical examination of family life, to be specific conjugal life style which might be a precursor to moral turpitude cases. To identify the nature of relationship between disturbed conjugal life and rise of the moral turpitude offences, a critical analysis over the moral and non-moral turpitude cases is necessary. Exploring this interesting yet critical association would ultimately unveil the root causes of this offence and can approach at the heart of the problem. In this journey on the identification of the problem, analyzing the causes, finding the current trend, the probable outputs of this problem and developing the recommendation to solve this social problem, various literatures are reviewed, a survey has been conducted on 775 respondents from different levels of Bangladesh Army and various publications and information from various intelligence organizations have been used with proper authorization. The use of qualitative and quantitative approaches in different levels of the study have also been considered based on the nature of the problem and its outcomes.*

INTRODUCTION

"No matter how poor a man is, if he has family, he's rich.Other things may change us, but we start and end with the family." ***–Anthony Brandt***

Happiness in conjugal life of an individual is considered as a major factor behind his performance in professional or service life. Professional life is directly influenced with the ailment of the conjugal life of individual due to the attachment between conjugal life

and mental state of individuals. BD Army has a long history of maintaining discipline in the force which is supported by the family life of the members. As a part of that discipline maintenance, there is zero tolerance strategy against moral turpitude cases in the BD Army. Despite its constant concern, policy regulations and exemplary punishments, statistically BD Army is still experiencing frequent occurrences of moral turpitude cases with higher magnitude. Even the rate of occurrence is on the rise with time (Major General S M Matiur Rahman, 2017.)

Approaches to deal with the setbacks originated by disturbance in conjugal life are innumerable. Apparent causes, can be social, environmental, human change, technological etcetera. Along with that, the basic human nature towards greed and offences can be termed as another reason behind the moral turpitude cases While BD Army's internal culture is traditionally restrictive and controlling, the cultural change in the society is generally free flowing and beyond constraint. Being part of the broader society, like any other citizen of the country, members of BD Army are likely to be affected by societal changes. In a broader sense, the change in society and culture affects the military families at the same magnitude like the civilian families.

A disturbance in the conjugal life of a BD army personnel can be caused by several reasons, but the outcome is detrimental for both his personal life and his organization as well. Such argument suggests critical examination of family life, to be specific conjugal life style which might be a precursor to moral turpitude cases. Exploring this interesting yet critical association would ultimately unveil the root causes of this offence and can approach at the heart of the problem. Thus, this will contribute in developing the recommendation to avoid the moral turpitude cases and the disturbance over the conjugal life of the army personnel.

AIM

The aim of this paper is to examine the link between disturbed conjugal life and moral turpitude offences with a view to suggesting measures to enhance smooth conjugal life of the members of BD Army.

UNDERSTANDING OF DISTURBED CONJUGAL LIFE AND MORAL TURPITUDE OFFENCES

Disturbed Conjugal Life. When the understanding between husband and wife is faulty that can be called as disturbed conjugal life. Even a couple staying separately for any reason *(*professional or administrative reason*)* can be regarded as a disturbed conjugal life; that means the lack of continuity in conjugal life (Colonel Ainul Morshed Khan Pathan, 2017**).** Apparently, an unhappy couple continues a disturbed conjugal life. But chances are there a normal and a happy couple may enter into a problematic conjugal situation just for interrupted conjugal life which can also be regarded as disturbed conjugal life.

Offences Considered as Moral Turpitude Cases. To bring clarification and specificity BD Army has defined 'Moral Turpitude Offences' for its members vide a policy letter from Adjutant General's Branch, Personnel Service (PS) Directorate in 2014. Offences considered as moral turpitude cases are:

a. Mutiny and insubordination under Army Act Section 31.

b. Fraudulent enrolment under Army Act Section 38.

c. Fraudulent offences in relation to property under Army Act Section 40.

d. Disgraceful conduct of cruel, indecent and unnatural kind under Army Act Section 41.

e. Illegal gratification under Army Act Section 42.

f. Offences relating to voluptuous (attracting/physical contact) and greedy conduct under Army Act Section 55.

g. Civil offences such as theft, extortion, robbery, criminal breach of trust, dishonest misappropriation, habitually dealing in stolen property, cheating by percolation, forgery, rape, adultery etcetera under Army Act Section 59.

Concept of Moral Turpitude Offences among the Army Personnel. A common perception among the army personnel regarding the moral offences include the extra marital affair, deprivation of family members and deceiving the partners, mutiny and insubordination, offences relating to voluptuous (attracting/physical contact) and greedy conduct, fraudulent enrolment etcetera. According to the survey on 775 military members of different ranks, a clear idea is found about the way of thinking of the military members. However, the survey result is shown as below in Table 1:-

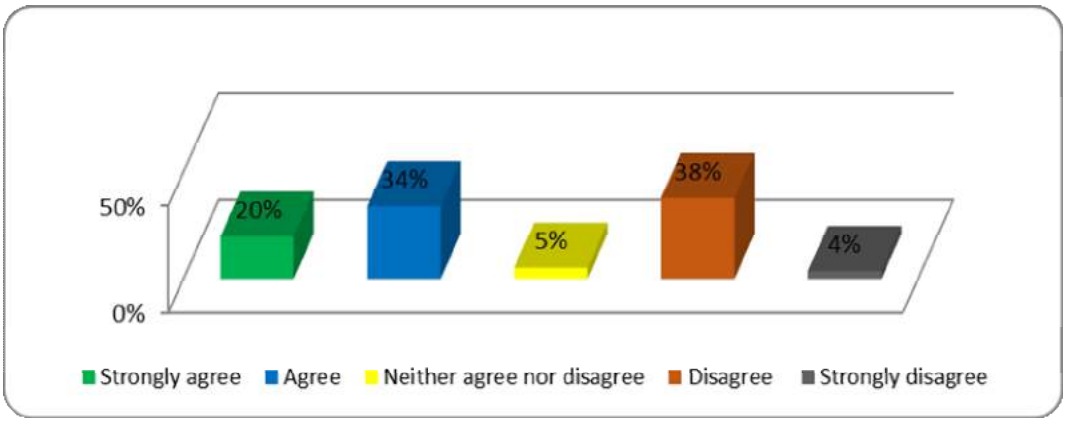
Table-1: Understanding of Army Personnel about Moral Turpitude Offences

Types of offences	Responses
Mutiny and Insubordination	377
Fraudulent enrolment	339
Fraudulent offences in relation of property	87
Disgraceful conduct of cruel, indecent and unnatural kind	299
Illegal gratification	264
Extra marital affair, illicit relations	415
Domestic violence, pornography	246
Offences relating to voluptuous (attracting/physical contact) and greedy conduct	349
theft, extortion, robbery, dacoity, criminal breach of trust, cheating by percolation, forgery, rape, adultery	271

Source: Researcher's construct based on survey result

Conjugal Life vis-à-vis Moral Turpitude Offences. Happiness is a prerequisite to a sound and contended conjugal life. According to the sociologists, family is the basic unit which builds the society. Any disruption in family starts influencing the society and when the rate of disruption reaches to an alarming rate, society starts to fall. In a happy family, the discussions and supports between the spouses that contribute for better career and better living. So, when there is a happy family, there is a better environment of living that provides the children of the family with better learning and living standard. Major General S M Matiur Rahman discussed about this issue and opined that officers and men are living separate family life due to various reasons. United Nations missions, education for the children, education of counterpart, lack of accommodation and for many other necessities members of BD Army continue a separate living. This is also a disturbed conjugal life. Disturbed conjugal life hampers the proper care of the children. He also added that a balanced relation between work and personal life is very important. A question was included "There is a relationship between the conjugal life and moral depravity" in the questionnaire to find the response**.** The detail responses rate is shown below**:-**

Figure-1: Response Showing Relation between Conjugal Life and Moral Depravity



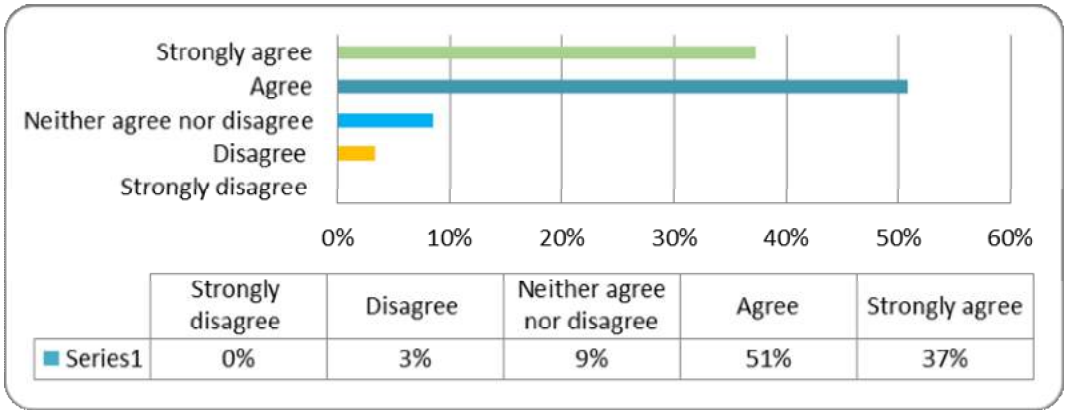
Source: Researcher's construct based on survey result

CAUSES OF DISTURBED CONJUGAL LIFE AND IMPACT

Causes of Disturbed Conjugal Life

Societal Change. Change in the social perspective and social structure is the most prominent reason behind the disturbance in conjugal life of the BD Army families. Moreover, the rapid urbanization and industrialization is leading people towards an urban living standard, where emotion and feelings are decreasing with the increase of demand and utilitarianism (Colonel Ainul Morshed Khan Pathan, 2017). The survey result on this issue is shown below**:-**

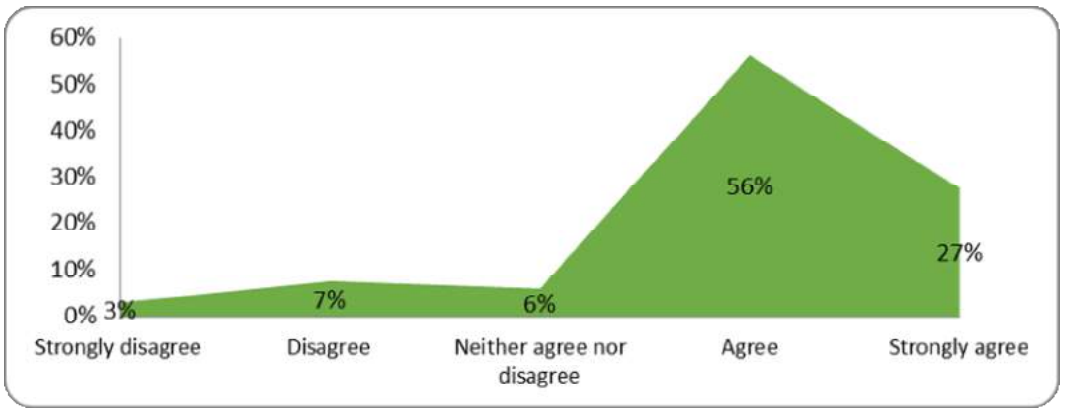
Figure-2: Response Showing Societal Change Influencing the Conjugal Life



Source: Researcher's construct based on survey result

Deterioration of Family Values. Breakdown in the traditional large families into small family units, negative impact of the western culture, vulgarism in media in the form of entertainment, grasp of the drug, etcetera are contributing in reducing the family value. These factors influences the family relationship and as an effect, the family members, especially the spouses are being affected with the output of disturbance in their marital life and relationship (Colonel Md Mizanur Rahman, 2017). The survey result reveals some outcome is shown below:

Figure-3: Response Showing Deterioration of Ethics in Family Life

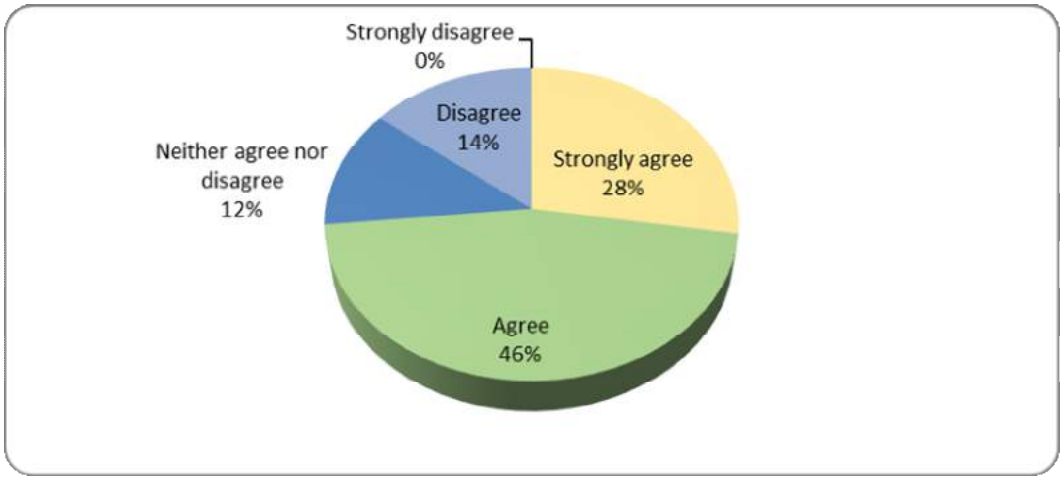


Source: Researcher's construct based on survey result

Changing Family Structure. Army people live a separate life for some specific common reasons. For better schooling of children, profession of counterpart and sometimes for advanced treatment facility (Brigadier General Md Faizur Rahman, 2017).

Family breakdown towards the small units, decrease of the number of family members is causing loneliness among the family members. This changing nature of the families are also leading the families towards a fracas in the relationship between husbands and wives. The survey result on this issue is shown below:

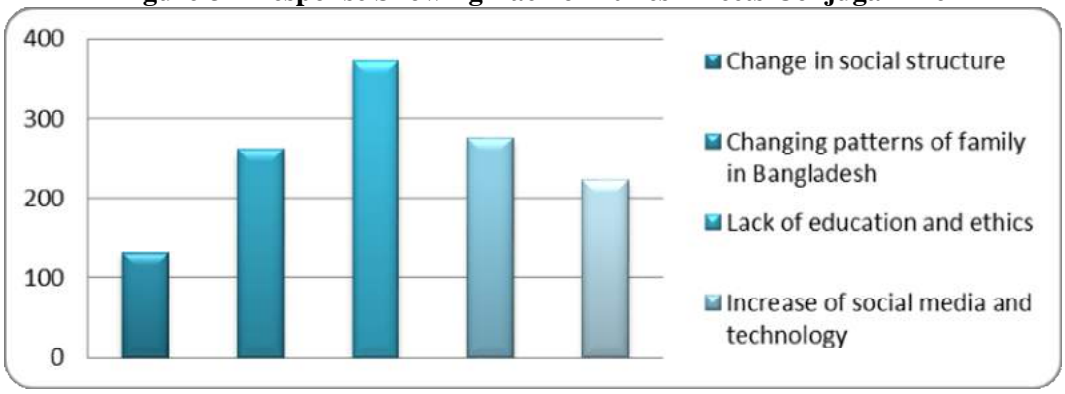
Figure-4: Response Showing Effect of Changed Family Structure



Source: Researcher's construct based on survey result

Lack of Family and Institutional Learning. Learning from the family is the most sustainable learning for an individual. Due to the breakdown of families, rapid urbanization, decrease of the sports fields, increase of technology (smartphones, computers, and tabs), and expansion of social media is making children self-centered and taking them far from families. The survey result on this issue is shown below:

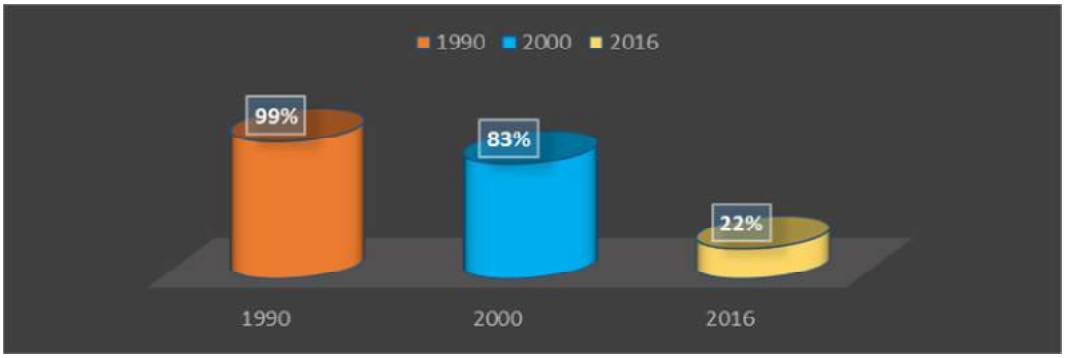
Figure-5: Response Showing Lack of Ethics Affects Conjugal Life



Source: Researcher's construct based on survey result

Economic and Financial Influence. Financial ability of army people are better now-a-days. But with the rise of financial ability positive and negative vices also increase among people. (Brigadier General Md Faizur Rahman, 2017). 55 Infantry Division found out an interesting data from there study. During 90s, 100% soldiers used to work in the crop fields with their father and grandfather before and even after joining the Army. In contrast, during 2000 it was 83% while it is only 22% in 2016. 38% soldiers of 2014 and 2015 intake have very little experience of digging with spade.

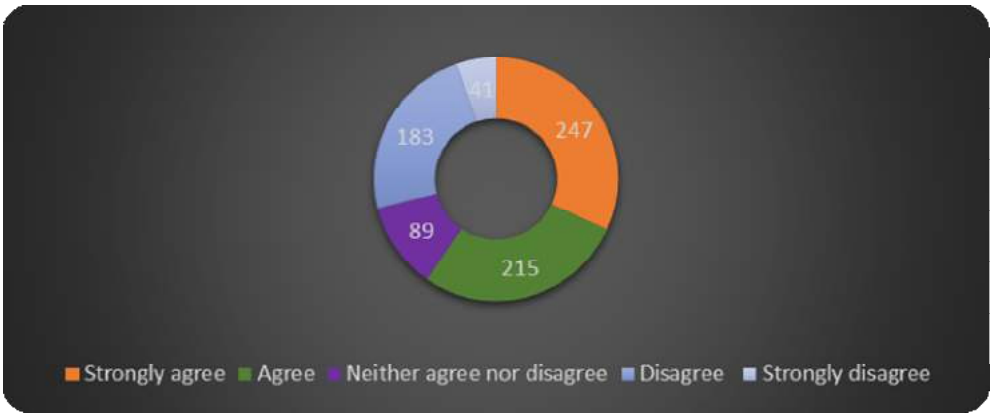
Figure-6: Experience of Working in Crop Field by our Soldiers



Source: AHQ Project Study Paper of 55 Infantry Division, 2016

Misuse of Information Technology (IT) and Social Media. Increase and availability of technology (smartphones, computers, and tabs) has been also considered as a major influential behind the family disturbance. These facilities are often misused and family members often get engaged with others from these social media without the knowledge and consent of their partners (Major Md Nazmul Kadir Shuvo, 2017).

Figure-7: Response Showing Effect of Social Media and IT in Conjugal Life

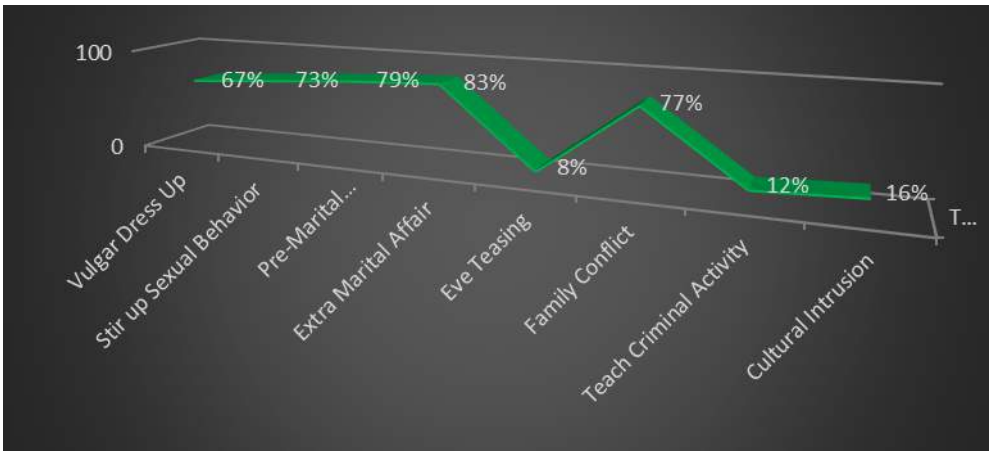


Source: Researcher's construct based on survey result

Materialistic Attitude. By tradition, Bangladeshi families are proud with emotion and their belongingness to one another. But, the urbanization, financial advancement, rapid industrialization has made people more materialistic than previous time. Financial gain, materialistic attitude of husband or wife are causing various moral turpitude offences. But in the deep the root is ultimately disturbed conjugal life (Colonel Ainul Morshed Khan Pathan, 2017).

Effect of Foreign Culture. The acute differences among families of Bangladeshi and foreign society are seen from the satellite and internet whereas people become attracted to the foreign cultures. *ASA University Review,* Vol. 8 No. 1, January–June, 2014 (Impacts of Indian Drama Serials on Bangladeshi Social System: An Overview of People's Perception by Md. Abdullah Al Helal) shows that 83% respondent thinks satellite channels are responsible for increased extra marital affairs in the society.

Figure-8: Impact of Indian Drama Serials in Bangladesh Society



Source: *ASA University Review*, Vol. 8 No. 1, January–June, 2014

Dissimilarities in External and Internal Environment. When BD Army's internal culture is traditionally restrictive and controlling, the cultural change in the society is generally free flowing and beyond constraint. The basic human nature of violating rules and avoiding discipline creates a sense of fear and dissatisfaction. This strong dissimilarity between the military and nonmilitary environment creates a scope of frustration for some people.

Lack of Religious Values and Teaching. Religious view of an individual is very important *(*Major General S M Matiur Rahman, 2017*)*. With the expansion of social media, western culture, satellite media there has been marked deterioration of the family value and teaching in the families.

Impact of Disturbed Conjugal Life Leading to Moral Turpitude Cases

Extra Marital Affair. Extra marital affair is the most common outcome of the disturbance in conjugal life.

Unusual/Illicit Relations. Another serious impact of the disturbance in conjugal life can be illicit relations.

Abortion. When there is strong disturbance in family, and spouses have robust disputes among themselves.

Divorce. Another destructive outcome of disturbance in conjugal life is divorce. Divorce is one of the outputs of the extra marital affair or continuous strong disputes among the spouses.

Domestic Violence. Sometimes, domestic violence arise due to the disputes among the husbands and wives. Many wives have been suffered through domestic violence as husbands get ferocious. But always the picture is not same. Immoral acts of wives even create chaos in the family life. (Major Md Nazmul Kadir Shuvo, 2017).

Drug Abuse. It has been found that his wife is extremely busy with her job which created a gap between them. Frequently they involve in domestic fight due to day to day misunderstanding.

Civil Offences. Along with all the above mentioned moral offences, people from military background are found to be engaged in civil offences like offence related to property, financial benefit etcetera. In the deep root it has been found that either for lack of balance in income and expectation or over matterialistic attidtude of either husband or wife are leading towards these issues. That is also a sign of disturbed conjugal life.

MEASURES TO ENHANCE SMOOTH CONJUGAL LIFE AND REDUCE MORAL TURPITUDE CASES

Institutional Steps to Enhance the Smooth Conjugal Life

Arranging Psychological Motivation. Training on psychological issues, marital relationships and individual happiness can be arranged for all levels of the army in order to ensure smooth conjugal life. Professional counsellor can be outsourced to address the various conjugal problems. Even a website can be designed to highlight the solutions as well as for motivation purpose (Colonel Md Mizanur Rahman, 2017).

Ladies Club Activities. Constructive activities in Ladies Club, care about woman rights by husband, parents or in-laws to be introduced and practiced strictly. Ladies club can play an effective role for the motivation and alertness. For entertainment purpose, central movie show on newly released movies or outing can be arranged. Picnics, family

day outs or similar programs can be arranged on a regular basis for the army personnel that can help improving the family bonding.

Religious Teaching. Religion can contribute in establishing peace and happiness among the army personnel. Hence, regular time and space should be provided to practice religious rituals for all levels of army.

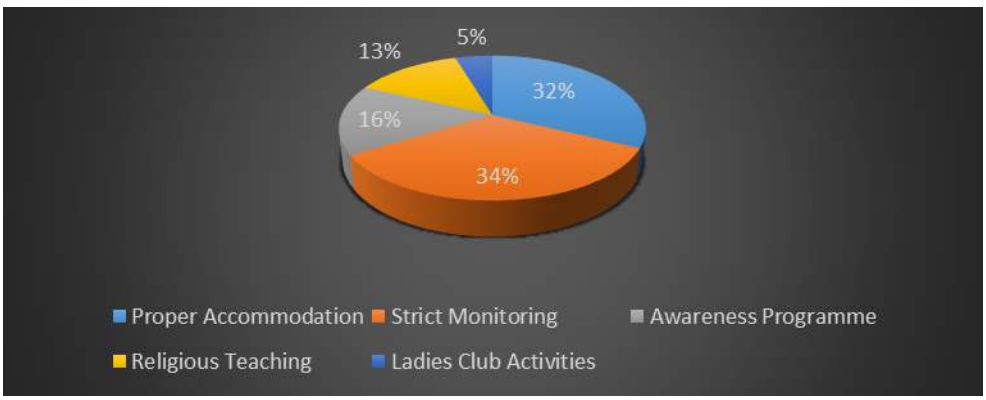
Ensuring Regular Communication. In case of distant posting (hill tracts or any emergency), there should be regular scopes for meeting family. For UN mission or any other foreign posting, army personnel should be given with regular communication means and instruments to ensure steady communication with family.

Strong Monitoring Policy. Unit welfare committee should detect and entertain the family crisis of the soldiers. Provision to be there of checking the letters of the soldiers. Strong monitoring policy over the use of social media and technology items of the army personnel, can be helpful for the army. Regular up gradation of technology is necessary for this regard. Regular scanning of call history and patterns of mobile phone messages will be effective.

Awareness Program. Awareness to be developed at all level. Well regimentation of newly wed civilian wife or husband is very important. A customized program on military culture and norms for newlywed can be very effective. Lieutenant Colonel Md Rafiqul Islam, 2017.

Ensure Discipline. Strict punishment should be ensured for the moral turpitude offences and disturbance in family life if the army personnel is found guilty. A survey carried out among 775 personnel on the issue and their opinion is shown in the figure below:

Figure-9: Response Showing Institutional Steps to Enhance Conjugal Life



Source: Researcher's construct based on survey result

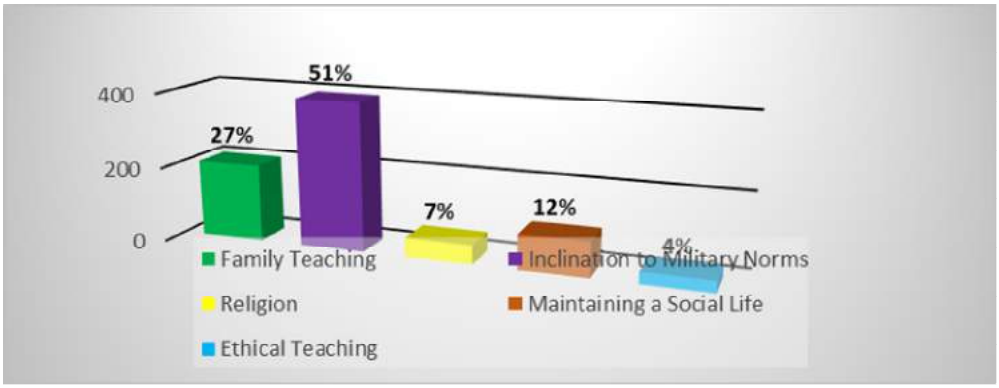
Social Steps to Enhance the Smooth Conjugal Life

Inclination to Military Norms. Social beliefs and customs play a great role in determining the personal behavior. So, social beliefs and customs should include some basic learning about the personal, marital and conjugal life. So, army personnel should be more inclined to military norms to avoid such effects.

Family Teaching. Family teaching and learning are sustainable for the people in society. Hence, strong relationship and bonding among family members, respecting women, respecting human being, taught in the family will help a great deal for future learning of the family members Chowdhury, Islam and Rahman, 2016.

Maintaining a Social Life. Regular social events, picnics, family programs, tours etcetera arranged among the close neighbors can help developing good relationship among the neighbors. Visiting neighbors and relatives on a regular basis can be helpful in mitigating the gaps and passing good times in weekend. This is also helpful for social and conjugal life. A survey carried out among 775 personnel on the issue and their opinion is shown in the figure below:

Figure-10: Response Showing Social Steps to Enhance Conjugal Life



Source: Researcher's construct based on survey result

Individual Steps to Enhance the Smooth Conjugal Life

Respect towards Family Members. Each individual should have respect for their family members and their rights should be protected by the individual. Respect begins at family. So, respecting family members will bring respect for them as well that will finally help improving conjugal life.

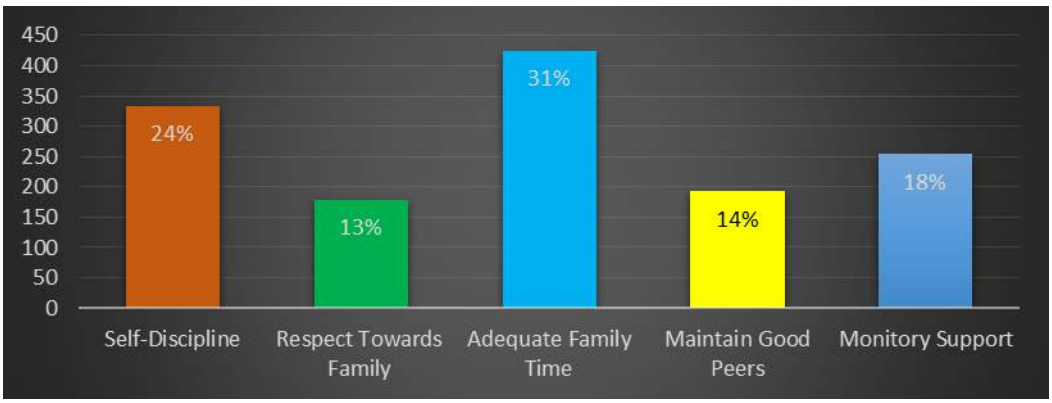
Adequate Family Time. Individuals in BD Army should give sufficient times for their family. When families are prioritized, opportunity of any unwanted occurrences reduce and conjugal life become smooth (Colonel Ainul Morshed Khan Pathan, 2017).

Necessary Monetary Support. Financial issues are the most important issue for a family. When families are not given proper financial support, disturbance in conjugal life increases and probability of moral turpitude offences also increases. So, army individuals should ensure proper support (monetary) for their families.

Maintain Good Peers. Sometimes bad company leads to wrong path. So, army personnel should be monitored strongly so that they are not getting any bad company. Individuals should be aware about bad company and stay away from that.

Self-Discipline. If individuals follow the religious views, give proper time and support to family, avoid any unwanted complexity and focus on individual development, the probability of disturbance in conjugal life and moral turpitude offences will reach minimum. A survey carried out among 775 personnel on the issue and their opinion is shown in the figure below:

Figure-11: Response Showing Individual Steps to Enhance Conjugal Life



Source: Researcher's construct based on survey result

CONCLUSION

Army as a profession is significantly different than any other profession or organization. The members of army work as a team to accomplish its task during war and peace. The family members of the army personnel are also a part of this team. In recent past, it was observed with great concern that, many members of our army were involved with various incidents resulted from disturbance in their conjugal lives. Presumably, changes in the societal values, rapid digitization, materialistic attitude etcetera are predominantly contributing in the rise of family crisis.

This paper was aimed at identifying the relationship between the distributed conjugal life and rise of the moral turpitude offences in BD Army. The causes and effect of the disturbed conjugal life was discussed in detail. To find the reasons behind this problem,

different social, economic, political and environmental aspects are considered and most of the suitable reasons are found out. Besides these reasons, the impact of the disturbance in conjugal life is also searched in this part. Outcomes of the moral turpitude offences and the factors which create pressure in family and conjugal life are also identified on the basis of survey results and different publications. Few of the prominent causes are- societal change, financial impact, misuse of IT, changed family value, effect of foreign culture, lack of religious teaching et cetera. And these are resulting into extra marital affair, divorce, illicit relations, abortion etcetera.

This paper also attempted to identify the possible solutions of the problem. Individuals, family, society and institution as a whole are sufferer to the problem of disturbed conjugal life and the moral turpitude offences. For this reason, the solution of this problem is not possible unless measures from individual, social and institutional level are taken. Ensuring proper accommodation, standard educational system in all stations, regular motivation, psychological counselling, proper address by the command channel to the family crisis above all strict punishment procedure for the defaulters were few suggestive measures deduced by the researcher. All these suggestions were basically to enhance a smooth conjugal life for the members of Bangladesh Army. Moral turpitude cases are a kind of an abstract mental disorder or state. So directly an active measure currently cannot eradicate the issue completely. So prime steps should be to enhance the harmony in the personal lives and that will result in to the reduction of the offences.

RECOMMENDATIONS

Bangladesh Army should apply all-out efforts to arrest the deteriorations immediately. Being a value based organization, it must re-establish its standing for the continued existence as a premier organization. Based on this fact, following actions may be taken:-

a. A separate wing or cell should be opened under the control of PS Directorate to deal with the family crisis issues. Basically in all the division headquarters similar cell should be operating under direct control of the wing in AHQ.

b. Often intelligence units track the crime and catch the defaulter at the last stage. Intelligence organizations should warn the individual upon detection of any moral turpitude offences in primary stage. So that the individual can strain himself from further offence.

c. Above all exemplary punishment system to be established. Many army personnel already received various degree of punishments including termination of job. But to

demonstrate the severity of the issue curtailing some pension benefits as well as civil jails under penal code can be incorporated basing on the severity of the crime.

BIBLIOGRAPHY

Books

Daniel Keeran. (2012). *Counseling in a Book*, British Columbia, Canada: College of Mental Health Counseling.

Nurul Islam. (2016). *An Introduction to Research Methods*, Dhaka: Mullick and Brothers.

Ragib Hasan. (2016). *Gobeshonay Hatekhori,* Dhaka: Adorsho.

Project Study and Presentation

HQ 86 Independent Signal Brigade. (2016).. Changes to the traditional military lifestyle due to the advancement of information technology and the change management. AHQ Project Study.

HQ 55 Infantry Division (2015). Degrading Family Values: A Cause for Moral Turpitude Cases in Bangladesh Army. AHQ Project Study.

Logistic Area Command. (2015). Leading a healthy family life in military environment. AHQ Project Study.

Journal Articles

Jacy Eckhart. (2017). 'How long Married Miltary Couple Stay Together,' www.military.com

Tamanna Chowdhury, Md Azharul Islam, Syed Tanveer Rahman. (2016). 'Adaptation of the Relationship Assessment Scale for Use in Bangladesh,' *Bangladesh Psychological Studies*, pp. 25-32.

Abdul Khaleque, Rumana Akter. (2015). 'Cognitive and Contextual Factors Mediating the Relation between Interparental Conflict and Adolescents,' Psychological Maladjustment.' *Journal of Science and Family Studies,* June 2015.

Lt Col Schlosser. (2014). 'Army Updates Regarding Defining Inappropriate Relations,' www.army.mil/article/138222.

Dissertations

Jamilur, Major Rahman. (2011). Degradation of moral values in uniform affecting the image of Bangladesh Army - Ways for improvement. Individual Research Paper, Defence Services Command and Staff College, Mirpur, Dhaka.

Kamruzzaman, Squadron Leader SM. (2012). Moral and ethical values in maintaining social and working environment in Bangladesh Air Force (BAF). Individual Research Paper, Defence Services Command and Staff College, Mirpur, Dhaka.

Mostafizur, Major SM Rahman. (2013). Problems of soldiers staying away from family in BD Army: Ways to overcome the challenges. Individual Research Paper, Defence Services Command and Staff College, Mirpur, Dhaka.

Majeed, Commander M Shaheen. (2014). Facebook Culture - Its adverse effect on moral values of young officers in BN. Individual Research Paper, Defence Services Command Staff College, Mirpur, Dhaka.

Rashed, Major Abu Tareq Mohammad. (2013). Discontent in the family life of other ranks (OR) –An insight to the causes and way out. Individual Research Paper, Defence Services Command Staff College, Mirpur, Dhaka.

Internet Websites

Recognition of Relationships. (2016). www.defence.gov.au.

Military Married to Military. (2016). https://www.thebalance.com/dual-military-couples-3346200

Interview taken by author

Faizur, Brigadier General Md Rahman, Commandant, Army Security Unit. (Personal communication, 2017, August 29)

Matiur, Major General S M Rahman, Adjutant General. (Personal communication, 2017, August 31)

Mizanur, Colonel Md Rahman, Colonel Staff, Personnel and Service Directorate-1. (Personal communication, 2017, August 29)

Morshed Colonel Ainul Khan Pathan, Commanding Officer, Army Military Police Unit.

(Personal communication, 2017, August 28)

Nazmul Major Md Kadir Shuvo, Officer Commanding, 594 Field Intelligence Unit. (Personal communication, 2017, August 28)

Rafiqul Lieutenant Colonel Md Islam, Officer Commanding, Dhaka Detachment, Army Security Unit. (Personal communication, 2017, August 29)

Towhid Colonel Khandaker Murad, Acting Director, Military Intelligence Directorate. (Personal communication, 2017, August 28)

Major Tanveer Ahmed, G+, Artillery was born on 05 June 1983 at Chittagong. He passed both Secondary School Certificate and Higher Secondary Certificate Examinations from Faujderhat Cadet College. He was commissioned from Bangladesh Military Academy (BMA) with 50 BMA Long Course in the Corps of Artillery on 28 June 2004.

His unit service started at Jamuna Multipurpose Bridge (JMB) Cantonment (now Bangobandhu Cantonment) in 36 Air Defence Regiment. He held all the regimental appointments under different capacity. Apart from regimental appointments, he has served as Group Testing Officer (GTO) in Inter Services Selection Board (ISSB). He has also completed his Masters in Science and Applied Gunnery (MSAG) under Bangladesh University of Professions (BUP). Presently, he is a student officer in Defence Services Command and Staff College. He has participated in United Nations Peacekeeping Mission in Liberia as BANBAT contingent member. He is happily married and blessed with twin daughters.

AN EVALUATION OF PRESENT 'RE-SALE TO OFFICERS' SYSTEM AND WAYS TO MAKE IT USER-FRIENDLY

"The line between disorder and order lies in logistics…"
–Sun Tzu

Major Mahmud Ullah, Ordnance

ABSTRACT

When the subject of 'Re-sale to Officer' is surfaced amongst the officers, two things are common; one is 'No availability (NA) of stores,' and the other one is 'When the stores will be issued after demanding.' NA of stores is a common problem which can be minimized through timely decision, correct provisioning, and proper procurement process. On the other hand, 'Demand, Issue and Collection System' need a change. It is seen that online system is getting popularity in recent days. Steps were taken to upgrade the process through 'Ordnance Inventory Management System,' but still, there are rooms to improve the system through a different fashion. This research is undertaken to evaluate the existing problems of 'Re-sale to Officer' System regarding demand and issue process including collection of stores. This research is a pursuit for giving a solution for those problems. In doing so, the researcher has applied a number of tools for data collection which includes surveys, scholar interviews, focused group discussion, case studies, documents study and the researchers own experience. The in-depth study of the subject utilizing all the data collection methods identifies that all the problems can be solved/minimized through integrating modern technology which will be able to provide a faster service to the officers. Further investigation finds that avoiding the unit administration involvement in the online process can make the system easier. The ***findings of the study validate the hypothesis****: 'Introducing online 'Re-sale to Officers' system integrating modern technology can reduce the dissatisfaction of the users (officers).' In a subsequent part of the paper, its implementation process in BD Army context was highlighted after analyzing the requirements of it. The researcher has identified few challenges which may hinder the implementation process of the new system in BD Army context. The researcher has also suggested few solutions to those problems. At last, the researcher has given few recommendations to implement the new online 'Re-sale to Officer's system.*

INTRODUCTION

In Bangladesh Army, Officers receive specific military items and few household clothing items at a subsidized rate which are named as 'Re-sale to Officers' items. The process starts from the moment an officer is commissioned. It has been observed that officers are not satisfied with this service due to many reasons.

There are some manual steps involved in the 'Re-sale to Officer System.' Recently efforts have been taken to make it user-friendly by using a software named 'Ordnance Inventory Management System' (OIMS). Unfortunately, OIMS could not fulfill all the expectations at the user end. It seems that the core issues those are the main reasons behind the dissatisfaction in the users' mind were not appropriately identified and were not addressed in OIMS.

In this paper an endeavor has been made to describe present 'Re-sale to Officer' system in order to identify the core areas of dissatisfaction. Few new ideas were discussed which can increase the user satisfaction and at the end few recommendations were made.

AIM

The aim of this paper is to evaluate the current 'Re-sale to Officer' system to identify the reasons for users' dissatisfaction and to float few new ideas that can substantially increase the user satisfaction.

ANALYSIS OF PRESENT 'RE-SALE TO OFFICER SYSTEM'

Present System

Slow demand and issue system is one of the major problems of the present system. To address all issues of demand/issue process of the existing system, it is necessary to describe the current demand, issue and collection system in brief.

Present Demand System. Following '**Compendium of Bangladesh Army Order**,' presently demand is made by the unit Quartermaster office after receiving the 'No Demand Certificate' from the individual officer. Demand is then countersigned by unit Quartermaster through specified indent form manually (1985, pp 420-433).

Present Issue System. Following '**Compendium of Bangladesh Army Order**,' after receiving the demand manually or online, concern depot gives control number to that indent first. Then 'Officer's Payment Issue Cell' of the concern depot checks the indent and prepare issue voucher (IV). After making the six copies of IV, one copy is sent to the indenting unit, and other copies are distributed in different branches of the depot for further action. When the storage group of OPIC receives the copy of IV, they send the issued stores to the traffic branch for subsequent dispatch to the concerned unit (Bangladersh Army, 1985). This is a set procedure which is practiced from the birth of Bangladesh Army.

Present Collection System. '**Compendium of Bangladesh Army Order**,' describes that after receiving one copy of IV, the unit put the control number on it and unit Quartermaster will sign it. Then the unit will go for collection. After collection of stores

from depot traffic branch, the unit will deposit money to the bank and get the treasury receipt (Bangladersh Army, 1985). Completing this total process individual officer receives his/her stores.

Problems of present system

Problems Faced by the Users:

a. **Difficult to Track, Demand, Issue and Collection**. Tracking the demand, issue and collection is difficult which is a common problem for the officers. In most of the cases it becomes difficult to maintain/track the demand/issue of the stores remaining in UN mission/ RAB/ BGB.

b. **Mistakes Made by the Clerks While Forwarding Demand**. Unit clerks make mistakes in preparing the indent. Unit clerks remain busy with unit affairs thus they forget or cannot spare sufficient time for this purpose.

c. **More Time Taken by the Depot**. Depot takes much time than usual to prepare IV.

d. **Delayed Collection by the Unit**. After receiving IV, unit takes approximately one month in average to collect the stores. Obtaining the demanded stores by the users is delayed not only due to the slow issue system of the depot but also for the late collection of the unit representative too.

e. **Posting of the Officers and Change of Issuing Depot**. The administrative hassle that an officer needs to face to regularize his 'Re-sale to officer' service in the present station which is very unpleasant to all. The change of respective issuing depot that an officer faces in every change of station due to his posting makes the demand and issue process slow.

Problems faced by the service providers

a. **Traditional Demand System**. Traditional demand system is one of the major problems of the present system. Users think that it is a primary problem to demand or receive the stores quickly. Users want a system where there will be no requirement of submitting any demand.

b. **Problem of Semi-Automated Demand**. Presently most of the demand comes through online OIMS which is faster than the manual system. But this system cannot identify any wrong input or cannot automatically stop or return any wrong demand.

c. **Scarcity of Manpower**. Surprisingly, OPIC is not an authorized section in TO&E. Therefore, working workforce of OPIC is collected from different branches or sections of the depot. This creates problem as nobody is permanent here.

d. **Inadequate Time**. Service Providers cannot complete the preparation of IV in time. Manual demand system is lengthy and time-consuming. It has an extended

procedural circle. Therefore, it can be term as the major problem of the existing system.

e. **Excessive Workload**. OPIC is not an authorised section of COD as per TO&E. Therefore, the people nominated to work in this section have their other jobs to do which make them overburdened with work.

MODIFICATION OF PRESENT 'RE-SALE TO OFFICER' SYSTEM INTEGRATING MODERN TECHNOLOGY THROUGH INTRODUCING NEW IDEAS

General

Technology has been used extensively to make the day-to-day life comfortable. In military, integrating the contemporary technologies, the present 'Re-sale to Officer' system can also be upgraded to make life easier. In the following few paragraphs, few new ideas will be discussed which may wipe out the existing problem of demand, issue and collection process.

Solving Existing Problems with New Ideas

a. **Demand-Less System.** The concept of demand-less system is - there will be no requirement of placing any paper or online demand. In case of Re-sale to officer items, condition/life of the previously issued item is not taken into consideration for the next issue. As such in the demand-less system, demands can be calculated by the concerned authority basing on the present total strength of the user and the amount already available in the stock.

b. **Fixing Date of Issue.** The concept of fixing date of issue of an item is to fix few dates in a year when that item will be issued to all the officers of BD Army. For example, combat cloth will be due for all the officers of BD Army on a single day of the year. The next due date will be calculated adding the life of combat cloth from that day and naturally that date will also be same for all the officers. The life of the items may be revised or readjusted to facilitate the selection of dates. An example of the idea is given in the table below:

Table 1: Example of Fixing Date of Issue

Ser	Item	Life	Quantity	1st Issue	2nd Issue	3rd Issue
1.	Vest Cotton	4 months	4 pcs	01 Jan 18	01 May 18	01 Sep 18
2.	Shoes Canvas	9 months	1 pc	01 Jan 18	01 Oct 18	01 Aug 19
3.	Combat Cloth	16 months	3.66 m	01 Jan 18	01 May 19	01 Sep 20

Source: Author's construct based on survey

c. **Pick-Up from Display.** The concept of 'pick-up from display' is to allow the user to choose his items by himself. In every station, there can be a shop where all the re-sale to items' can be displayed. Officers will visit that shop and will collect their

due items by themselves just like a superstore. The primary reason behind this idea is 'user's satisfaction.' In the present system, an officer has to remain satisfied with what he is issued with.

d. **Automatic Provisioning and Real-Time Inventory Management and Issue System.** The concept of 'Automatic provisioning and real-time inventory management and issue system' is to make provisioning/accounting/issue activities quick and accurate. The idea is based on a central server where user's database will be maintained with adequate backup and electronic security/protection. Every item will be uniquely identified by using electronic codes (barcode/QR code etcetera). Every user will be issued with a photo identity card and will have individual online account. These accounts can be controlled (enable/disable) from the central server. Individual will have limited access to his/her account.

e. **Never Miss Your Items.** The concept of 'never miss your item' is to make the user free from the anxiety of missing due items. In the present system, the next issue is decided calculating the life from the present date of issue. In the new system, due items will be kept open for picking within next one year (365 calendar days) from the due date. This will ensure that user gets his due items wherever he remains (mission/deputation to RAB or BGB etcetera). The system will automatically update his account. If items are not picked by the officer within one year, it may be taken back to storage account to calculate the next year's requirement.

Requirements for the New System

a. **Network and Server Requirement.** The first significant requirement of the new system is to have a functional network connectivity and a central server. A new system can easily be launched with the existing Army WAN network which can only be accessible from a computer having Army WAN connection. If individual user wants to access personally, then internet connection will be required.

b. **Software Requirement.** It is necessary to have a software which can perform the task of issue along with accounting which in turn will help calculating the present stock and future requirement. Software needs to be as such that it should automatically correct any wrong entry.

c. **Inventory Management.** Inventory management is essential in a system where it relates to subsequent provisioning and purchasing. Maintaining accountability electronically without error is a prime requirement for year-end provisioning which act as the base for calculating future requirement and onward purchasing. Inventory management in the new system should allow individual item inquiry and real-time update.

d. **E-Card Requirement.** E-card will be used to identify individual user during issue. It will be necessary to swipe/scan the card to log on to any user's account during issue/collection. Spouses may use this card while the officer is away or is not able to come physically.

e. **Infrastructure Requirement. I**nfrastructure requirement can be divided into two parts. i.e. warehouse requirement and display outlet requirement. Warehouse is required for housing the available stock. COD existing OPIC storage facility may be used as central warehouse while the Ordnance Depot/DOC may fulfill the requirement of regional warehouse requirement. For display outlet, a small space will be required with display facilities.

f. **Training Requirement.** Quick orientation with the new system is a pre-requisite for immediate implementation of the system. Train the service providers about the new system might be complicated due to their separate location. A week-long training will be enough for both the service providers and the users. Separate training sessions may be arranged in every station for both the service providers and the users.

g. **Manpower Requirement.** One of the facilities of the new system is, it will entail minimum number of hands to run the entire system. In an average 25 persons are required for the smooth conduct of the present re-sale to system. Whereas, it can be done with only 7 persons in the new system provided they are given with modern handling equipment like MHE etcetera.

WAYS TO IMPLEMENT THE NEW IDEAS

Factors affecting the implementation of new system

Poor demand and issue system of the present system need to be changed through a new system integrated with modern technology. All important factors on the new system will be analyzed which have direct impact on implementation of the new system in Bangladesh Army context.

a. **Network and Server.** Bangladesh Army is connected through 'Army WAN.' Present bandwidth between AHQ and formations is 6 Mbps. All the ordnance installations have LAN connection within the depot. Any online software can be run without much modification. Therefore, it can be said that a new online system can be adopted in BD army without any major hindrance.

b**. Software Preparation and Running Through 'Army WAN;** A user-friendly software is necessary to quickly switch to a new online system. A new software can be designed integrated with all the said facilities within 3-4 months. The new system should be accessible from internet (www). Making the system accessible in internet can make the users satisfied.

c**. Integration of Inventory Data Into the System Software.** In the present OIMS system, the inventory list is already interfaced. Therefore, if the new system is run through Army WAN, there will be no requirement of uploading inventory list. On the other hand, a different inventory for 'Re-sale to Officer' can be prepared within 3 months.

d. **Card Preparation.** If all the required information can be made available in a given structure, 3 months will be required to prepare e-cards for 10,000 users. E-card should contain photo of both officer and spouse.

e. **Infrastructure Arrangement.** Display outlet needs to be located in a commonplace. Presently in every garrison there is a CSD outlets located in a commonplace. Form security and economic point of view, it will be a good idea if co-located display outlet can be planned along with CSD outlet. A small space of 600 square feet will be enough for displaying all the items. Apart from the display outlet, a small warehouse will also be required for storing the bulk stores. Warehouse requirement can be made from the existing facilities of depot or DOC as applicable.

CONCLUSION

Technology has been used extensively to make the day-to-day life comfortable. In military, integrating the contemporary technologies, the present 'Re-sale to Officer' system can also be upgraded to make life easier. Few new ideas like Demand-less system, fixing date of issue, never miss your items, automated system etcetera may wipe out the existing problem of demand, issue and collection process.

To solve the existing problems through new system has some requirements. Network and server facilities, software and website designing, inventory management, infrastructural requirement, e-card requirements, workspace, storage space, training requirement and cost of implementation need to be addressed through detailed study. In the context of BD Army, these requirements were further evaluated through different tools of research. After analyzing the prospects, difficulties, challenges, and options open at hand were discussed to implement the new system.

It is important to implement the plan in the correct way. After identifying the problems and planning a system that is integrated with modern technology, possible ways of implementing the newly designed system is also need detail study. Hence, it is very important to analyzing the factors affecting the implementation of the new system.

RECOMMENDATIONS

Basing on the findings of the research, following recommendations are made to implement the new online 'Re-sale to officer' system in BD Army context which can solve the existing problems and provide better service to the users:

a. A secured website and a user-friendly software should be prepared by CSE qualified officers or by capable third-party software farm under the direct supervision of IT Directorate. After preparation, proper evaluation should be carried out through an expert body of professionals combining service providers and IT experts.

b. Security system should be optimum through different administrative tiers of inspection and countercheck to protect unwanted interference or network and server difficulties. Also, some bit of issue document should be at the hand of service provider at the end of the day to have a ready reference for the future check and balance.

c. As online system is cost-effective and existing network/server facilities are quite capable to run the new online system. Therefore, ordnance directorate should take necessary steps to implement the project throughout the army.

BIBLIOGRAPHY

Bangladesh Army. (1985). *Compendium of Bangladesh Army* Order-1985. Dhaka:

Bangladesh Army.

Tarikullah, M. N. (2011, December 05). 'Paperless Office Concept In Bangladesh Army,' DSCSC Research Paper

Interviews taken by author

Ali, M. J. (2017, September 07). CLO.

Kh Md Mozammel Haque, p. (2017, September 07). Brigadier General.

Md Shah Shibly Noman, p. (2017, September 07). Lieutenant Colonel.

Tania, M. B. (2017, September 07). Major.

Ali, M. J. (2017, September 07). CLO.

Kh Mozammel Haque, p. (2017, September 07). Brigadier General.

Md Shah Shibly Noman, p. (2017, September 07). Lieutenant Colonel.

Miraz, M. R. (2017, September 17). Md.

Omar Zahid, p. (2017, September 17). Brigadier General.

Shahedul Haque, p. (2017, September 06). Major General.

Ali, M. J. (2017, September 07). CLO.

Hamid, M. (2017, September 06). Brigadier General.

Kh Md Mozammel Haque, p. (2017, September 07). Brigadier General.

Miraz, M. R. (2017, September 17).

Mostafa Kamal, p. (2017, September 17). Lieutenant Colonel.

Omar Zahid, p. (2017, September 17).

Tania, M. B. (2017, September 17).

Major Mahmud Ullah, Ordnance was born on 19 January 1984 at Dhaka. He passed both Secondary School Certificate Examination and Higher Secondary Certificate Examination from Mirzapur Cadet College. He was commissioned from Bangladesh Military Academy (BMA) with 50 BMA Long Course in the Army Ordnance Corps on 28 June 2004.

He served in different units and held all the regimental appointments within his capacity. In his service career, he has commanded 31 Independent Ammunition Platoon and 503 Division Ordnance Company under 24 Infantry Division. In addition to various courses at home, he attended Chaplain Captain Career Course in the USA. He has participated in United Nations Peacekeeping Mission in Darfur, Sudan. Presently, he is a student officer in Defence Services Command and Staff College. He is married and blessed with a daughter and a son.

INTEGRATED VOCATIONAL REHABILITATION PROGRAM TO CONVERT SPECIAL CHILD INTO UTILITY MANPOWER THROUGH EMPLOYMENT: BANGLADESH ARMY PERSPECTIVE

Major Monsur Ahmed, ASC

ABSTRACT

Special children of the military community are differently able and they can be turned into utility manpower through a vocational rehabilitation program. Vocational rehabilitation is aimed mostly towards the effective employment which upholds the individuals' dignity and self-respect. Proyash Institute of Special Education looks after the special children of the military community in terms of care, management and education. However, vocational rehabilitation and employment of the special children remains a grey area in the management of the special children. It has been observed in recent past that the vocational rehabilitation initiatives by Proyash, parents, policy makers and employers are disjoined. Previous research on special children have mostly focused on fostering identification, care, management, treatment and education. However, impact of an integrated vocational rehabilitation program for special children on their employment and other rehabilitation options remained unexplored. At this backdrop, this research seeks to identify the impact of an integrated vocational rehabilitation program on employment rate and formulating rehabilitation options for the special children of the military community. In the research mixed method of qualitative and quantitative analysis coupled with expert interviews and focused group discussions were used. Initially, prevailing approaches of vocational rehabilitation in Proyash was identified with an evaluation of other armed forces of the world and organizations out of the armed forces. Then, the employment opportunities with the military employers were identified. Finally, attributes of Integrated Vocational Rehabilitation Program were identified and individual and collective impact of those attributes on employment rate of the special children was determined. Thus, researcher proved the hypothesis: Special children of the military community can be turned into utility manpower through effective employment by an "Integrated Vocational Rehabilitation" program. It has also identified few rehabilitation options for the special children who may fail to acquire an employable skill and a support system for the military parents with special children.

INTRODUCTION

Children with special needs are the children who have learning disabilities or has any sort of disabilities which makes it harder for them to learn then that of the children of the same age group. Number of these children have risen to a significant figures in recent days. Looking closely into one of the disability state gives an indication of the prevalence rate of the special children. The Centers for Disease Control and Prevention (CDC) estimates that 1 in 68 children is identified with an autism spectrum disorder (ASD) in

the USA. There has been a dramatic increase in the prevalence of ASD in the last decade, with CDC reporting 1 in 150 in 2000. Though there is no comprehensive study on prevalence of special children in Bangladesh, a recent pilot study indicates that 1.65 in every 1000 is special children in an average. In Dhaka, it is 30 in every 1000 children which is 03% in total. Military, being the integral part of the greater society, is showing the similar trend and number of the special children in military community is increasing in rapid rate. This rapid increase is a great concern for the parents in particular and organization in general.

Special children of the military community are the integral part of military family. Wellbeing of these children are the responsibility of their respective parents. These children are looked after by their parents and will be done so until their parents are alive. However, the condition gets complicated with the demise of the parents of the special children. In addition to that, keeping these large population out of main stream society is again detrimental to the overall societal perspective. Bringing these large population into the main stream of the society is a great challenge. Integrated rehabilitation, training, care and social integration program can bring about a positive change in this aspect. Organizational initiative named Proyash Institute of Special Education (Proyash) is taking care of the special children of the military community where Proyash Vocational School is looking after the Vocational Training. However, employment rate of the special children remains a grey area with minimum possible employment rate. Thus, it is of immense importance to synchronize these efforts. An Integrated Vocational Rehabilitation Program combining Parents, Proyash, Policy makers and Employers can positively impact the employment rate.

At this backdrop, this paper will take an endeavor to find out a plausible vocational rehabilitation program to turn the special children of the military community through employment. It will also look for a support model for the special children who will not be able to acquire an employable skill or will not have someone to look after. In doing so, this paper will initially evaluate standard vocational rehabilitation practices in different armed forces and organizations with a comparison to the existing system followed by Proyash. Subsequently, employment opportunities with the military employers will be identified. This will also ascertain the challenges faced by the military employers in employing special children. At the end, this paper will evaluate the effectiveness of the Integrated Vocational Rehabilitation Program in creating employment opportunities and improving the employment rate of the special children of the military community with few implementable recommendations.

AIM

The aim of this paper is to examine the impact of Integrated Vocational Rehabilitation Program on employment rate of the special children of the military community.

VOCATIONAL REHABILITATION PRACTICES IN DIFFERENT ARMED FORCES AND ORGANIZATIONS

Standard Vocational Rehabilitation Practices

Standard vocational rehabilitation programs have different considerations, some of them are-

a. **Individualized**. Special education and vocational rehabilitation are by law highly individualized. According to the Individuals with Disabilities Education Act 2004, united state Department of Education, IEP also required to include appropriate measurable goals based on age appropriate transition assessment related to training, education, employment, and independent living skills. Parents' participation in the process of IEP is a must. Vocational rehabilitation training is also closely connected to the employment pattern and disability pattern.

b. **Disability Sensitive**. Vocational rehabilitation for the special children are highly disability sensitive. For example, vocational rehabilitation for the intellectual disabilities are focuses on promoting self-determination, community adjustment and community employment whereas for learning disabilities strong network of social support and supportive work environments are given most importance.

c. **Employment Targeted.** Vocational rehabilitation of the special children are employment targeted. In all the options, employment opportunities are again categorized in four different groups, those are: Sheltered Workshops, Supported Competitive Employment, Customized Employment and Self-employment. Their vocational rehabilitation programs are also designed to meet the requirement of the employment pattern targeted.

Practices in other Armed Forces

Vocational rehabilitation in different armed forces have wide range of varieties. Few countries concentrate on education, management and training and few others concentrate on mostly on the family support system. However, after conducting an in depth study on different system of different armed forces of the world through content analysys and interview , following vocational rehabilitation considerations were identified-

a. Medication, treatment, and management of the special children are free in almost all the armed forces of the world. Special children of the military community receive these support from their respective organizations. In India, an organizational initiative named Asha takes care of the special children of the military community and in Pakistan, military authority runs few special schools where education is free for the special children of the military community.

b. Most of the modern countries provide complete family support for the military personnel with special children. These support include, financial support, policy support in terms of posting and pay. For example, United States of America provides full financial support to the military families with special children. Besides financial

support this also covers any special need for the special children of the military family. They have family support programs like- The Extended Health Care Options (ECHO), Exceptional Family Member Program etc.

c. Vocational rehabilitation and employments are in most of the countries are looked after by the states. For example, United States armed forces does not involve in the employment of the special children of the military community since there is a well-established government system for the employment and rehabilitation for the special children.

Practices in Other Organizations

For the purpose of the research, researcher considered Parents Forum for Differently Able – Vocational Training Centre (PFDAVTC). Besides Individualized Education Plan (IEP) they follows a unique method of individualized Training Plan (ITP). Maintains close liaison with all the potential employers by a designated body. Organization itself has employed two of their students as their employee in the Vocational Training School. PFDAVTC has a sheltered workshop for the special children who work under the supervision of the organization. This organization has earned a commendable employment rate just in 3 years. Details of the state of employment are given in the table below:-

Table 1: State of Employment- PFDAVTC

Ser	Year	Total Students	Training Received	Employed So Far	%	Remarks
1	2015	95	1st year	Nil	Nil	Foundation training
2	2016	95	2nd year	Nil	Nil	Foundation training
3	2017	95	2 Years +	33	34%	3 persons waiting to be employed

Source: Facility Visit and Survey

Vocational Rehabilitation Practices in Proyash

Proyash Institute for Special Education is responsible for vocational training of the special children of the military community. Proyash runs total 10 branches including the main campus in Dhaka. Only the branch in Dhaka has a vocational school. However, other branches of Proyash have senior vocational class. State of students in different Proyash are stated below:-

Table 2: State of Special Children in Proyash

Ser	Name of School	Present Student		Remarks
		Military	Civilian	
1.	Proyash School Dhaka Cantonment	282	403	
2.	Proyash School Ghatail Cantonment	05	32	
3.	Proyash School Cumilla Cantonment	21	58	
4.	Proyash School Savar Cantonment	28	68	
5.	Proyash School Rangpur Cantonment	09	80	
6.	Proyash School Chattagram Cantonment	29	151	
7.	Proyash School Bogura Cantonment	20	98	
8.	Proyash School Rajshahi Cantonment	06	72	
9.	Proyash School Jashore Cantonment	43	59	
	Total	**443**	**1021**	

Source: Based on Survey result

Amongst these students, only 74 students are studying in Vocational school of Proyash. Other details of the vocational training program in Proyash are stated below-

a. **Trade Based**. Vocational training in Proyash is trade based. There are as many as eight training trades of the special children. Students of Vocational School are distributed to different vocational trades designed to train the special children with different disabilities. Distribution of trades amongst the students is aptitude based and they qualify to admit only after the age of 14.

b. **Minimum Parents Participation in Vocational Training**. Parents participation in the decision making process is minimum. Survey conducted amongst the parents shows that the parents does not have substantial amount of involvement in the overall vocational training of their children.

c. **Does not Follow ITP**. Though students' strength and weaknesses are considered during the training, Proyash does not have any individualized training plan.

d. **Does not Have Employer Engagement Program**. Proyash does not have a employer engagement program and they do not conduct any survey amongst the employers to find out the demand of the employable skills.

e. **Poor Employment Rate**. Employment rate of the Proyash Vocational School is considerably poor in comparison to other similar organization in Bangladesh. Since inception of this school, only 11 students could be employed in different organizations which is less than 02% of their total students.

Special Findings in Vocational Rehabilitation Practices

Through the analysis of the different vocational rehabilitation program of different armed forces, organizations, and Proyash, few special findings were identified. Important findings in this regards are narrated below:-

a. Proyash Vocational School does not follow internationally recognized system of Individualized Training Plan (ITP). They rely on the IEP which is meant for the special education only.

b. Parents participation in the decision making and in the overall vocational training is essential and on Proyash, the participation is minimum.

c. Employer engagement is considered to be an inseparable part of the vocational rehabilitation of the special children, which is not again followed by Proyash.

d. Employment rate of Proyash Vocational School is discouraging in comparison to the employment rate of the Parents Forum for Differently Able Vocational Training Centre. The state of employment of these two organizations are projected below-

Table 3: Comparisons of Employment- Proyash and PFDAVTC

Year	Proyash			PFDAVTC		
	Total students	**Employed Students**	**Avg Yearly Employment**	**Total students**	**Employed Students**	**Avg Yearly Employment**
2012	61	03	**1.8**	-		**33**
2013	67	-		-		
2014	60	05		95	-	
2015	59	-		95	-	
2016	58	01		95	33	
Percentage	**02%**			**34%**		

Source: Facility Visit and Survey

EMPLOYMENT OPPORTUNITIES WITH MILITARY EMPLOYERS AND CHALLENGES

Employment Opportunities and Organizational View

For the purpose of the research total seven military employers were considered, namely Bangladesh Machine Tools Factory (BMTF), Bangladesh Diesel Plant (BDP), Canteen Stores Department (CSD), Sena Kolyan Songstha (SKS), Trust Limited, Cantonment Board and Station Headquarters. Details of the employment opportunities and organizational view on employing the special children are stated below-

a. **Employment Opportunities**. Survey conducted amongst these organizations shows that these organizations employ a good number of people in different capacity ranging from temporary daily labors to managers.

b. **Organizational View**. Different organizations have different priorities and their view on employing special children of the military community are influenced by these. However, most of the military employers have a positive mindset for the special children of the military community. Summary of the organizational view on acceptance, employment and financial assistance are appended below in Table 4:-

Table 4: Organizational View of Military Employers

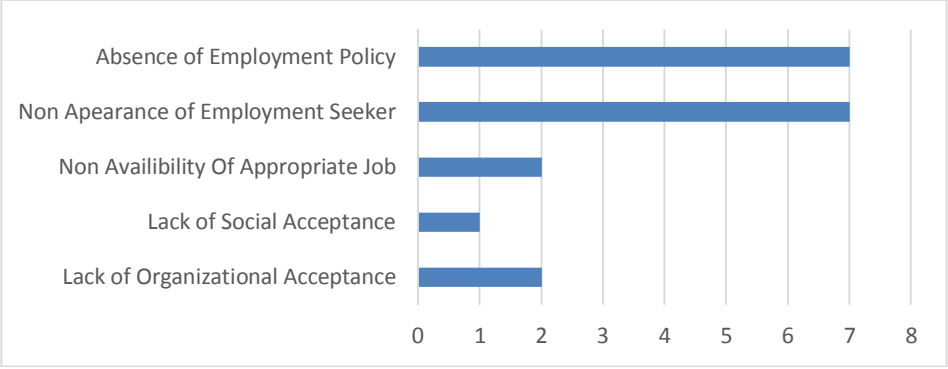
Ser	**Employers**	Acceptance	Employment	Financial Assistance	Remarks
1	BMTF	Yes	Yes	Yes	
2	BDP	Yes	Yes	Yes	
3	CSD	Limited	Yes*	Yes	
4	SKS	Yes	Yes	Yes	
5	Trust (TBL, Sy, Log)	Limited	Yes	Yes	
6	Cantonment Board	Yes	Yes	No	
7	Station Headquarters	Yes	Yes	No	

Source: Survey & Interview

Challenges

Effective employment of special children of the military community are subjected to different challenges. During the research, it was identified that nonexistence of a special employment policy for the special children has the most significant impact. Response of seven military employers in regards to challenges towards the effective employment are presented below in Table 5:-

Table 5: Military Employers' Perception on Challenges towards Employment



Source: Based on Survey result

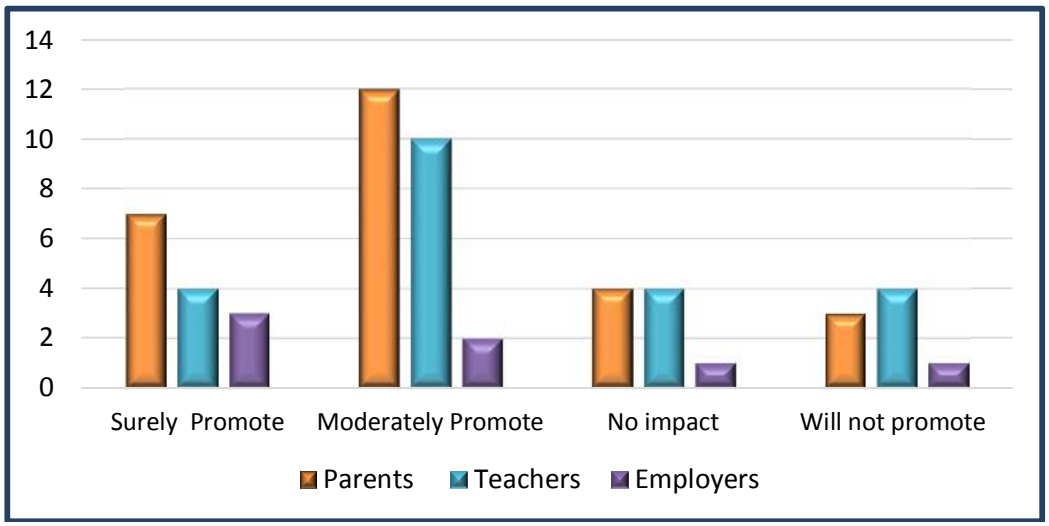
IMPACT OF INTEGRATED VOCATIONAL REHABILITATION PROGRAM IN IMPROVING EMPLOYMENT RATE AND MITIGATING CHALLENGES

Perceived Impact Based on Survey

It is perceived that all the ingredients of the integrated vocational rehabilitation program will have impact on the employment rate independently and collectively. Impact of different ingredients independently on the employment rate is discussed below.

a. **Impact of "Adaptive and Individualized Training Plan" on Employment Rate.** Effective employment is the outcome of Vocational training. An adoptive vocational training program which addresses the aptitude, strength and demand of the employable skills will impact the employment rate of the special children of the military community. Survey conducted into the various stake holders also reflects the same. Result of the surveys is given below:

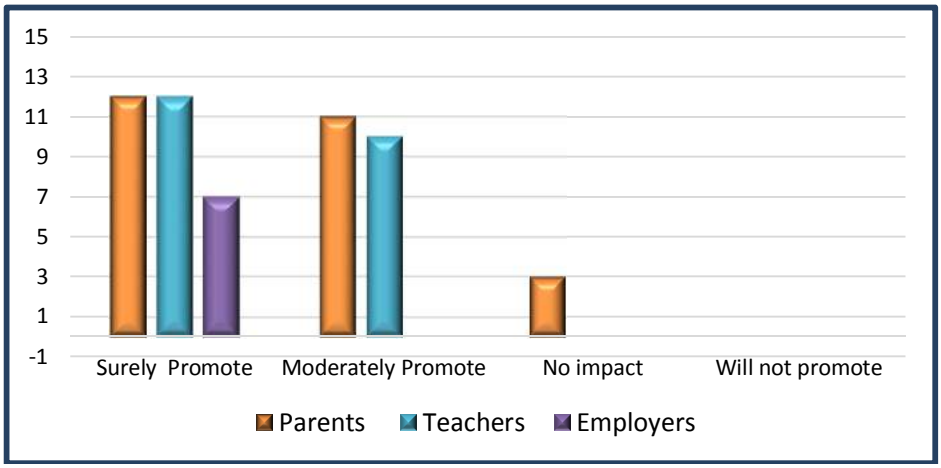
Figure 1: Respondents' Opinions Regarding the Impact of "Adaptive Training" on the Employment Rate of Special Children



Source: Based on Survey result

b. **Impact of "Military Employer Engagement" on the Employment Rate** Integrating military employers in the vocational rehabilitation program is essential as without effective employment vocational rehabilitation is impossible to implement. Military employers can play a vital role in employing the special children of the military community and thus contribute to the better employment rate of this segment of the society. Respondents from all the segments agreed that integrating the military employers in the vocational rehabilitation program will positively impact the employment rate and survey result further substantiate the argument.

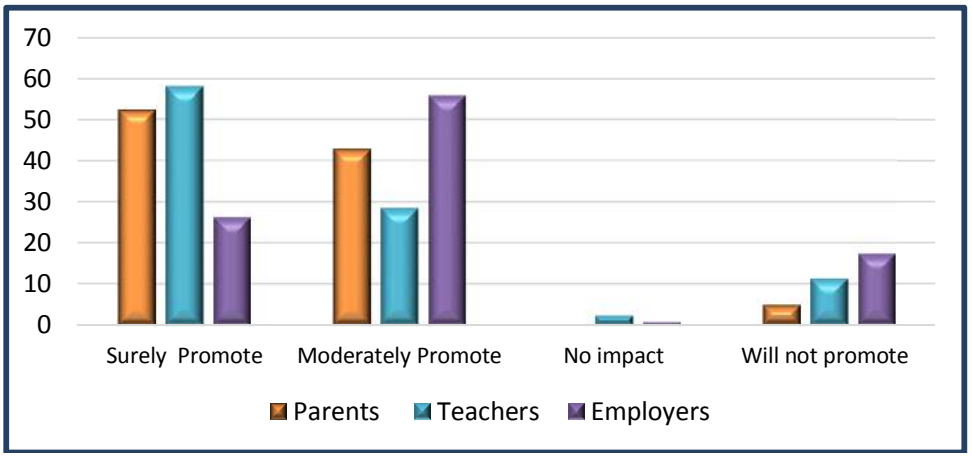
Figure 2: Respondents' Opinions Regarding the Impact of "Integrating Military Employers" on the Employment Rate of Special Children



Source: Based on Survey result

c. **Impact of "Policy Support" on the Employment Rate.** All the military employers identified absence of employment policy for special children as a major barrier. Military employers from different segment agreed that if a comprehensive employment policy with special quota for the special children is formulated then employment rate in their respective organization will be increased manifold. Respondents from parents and teachers also shown the same resonance.

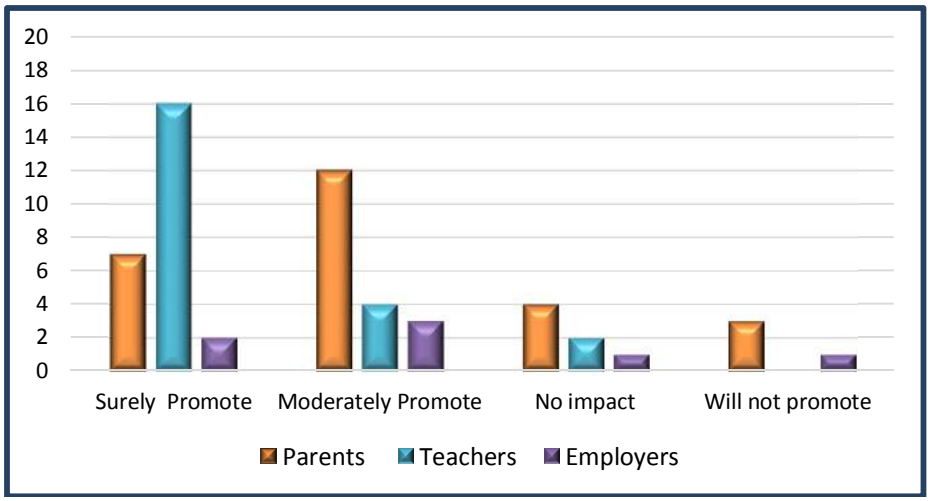
Figure 3: Respondents' Opinions Regarding the Impact of "Policy Support" on the Employment Rate of Special Children



Source: Based on Survey result

d. **Impact of "Parents Participation" on the Employment Rate.** Participation of the parents in the total rehabilitation program of the special children is equally important for effective employment. All the subject matter experts opined that parent's participation will impact the employment rate of the special children of the military community. As mentioned in earlier chapter, parents' participation is a must by law to in UK. However, many of the military employers found it to be less effective in increasing the employment rate. Survey result about parent's participation is given below:-

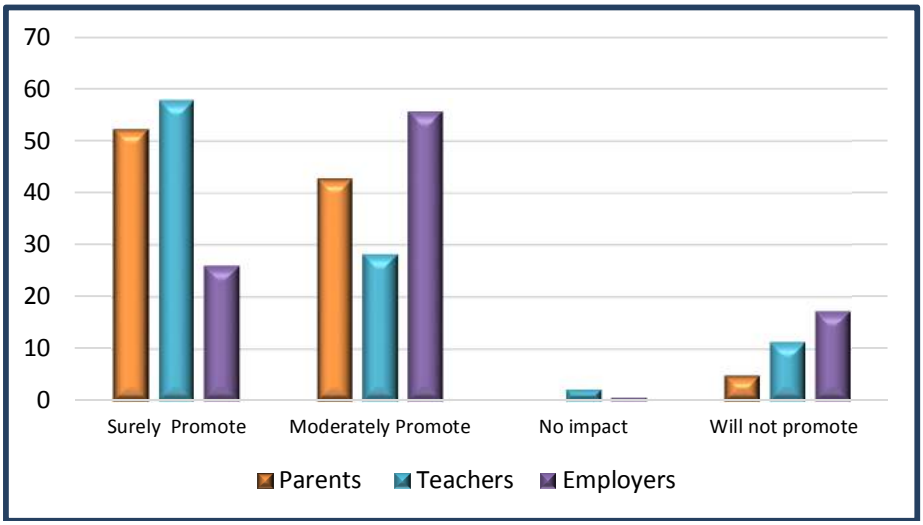
Figure 4: Respondents' Opinions Regarding the Impact of "Parents' Participations" on the Employment Rate of Special Children



Source: Based on Survey result

e. **Collective Impact of "Integrated Vocational Rehabilitation Program" on the Employment Rate.** Finally, respondents of all the category unanimously agreed that integrated vocational rehabilitation program will have a positive impact on the employment rate of the special children. Therefore, employment rate of the special children of the military community can be promoted through integrated vocational rehabilitation program.

Figure 5: Respondents' Opinions Regarding the Impact of "Integrated Vocational Rehabilitation" as a whole on the Employment Rate of Special Children



Source: Based on Survey result

Perceived Impact Based on Statistics

As discussed in the previous chapters, formulating an employment policy with 1% quota for the special children of the military community will create **74 employment opportunity** for the special children. This will be **seven times more** than the total employment of the special children in last seven years (10) and **41 times more** than the average yearly employment (1.8). Thus, this can be deduced that implementation of the "Integrated Vocational Rehabilitation Program" will surely improve the employment rate of the special children of the military community.

Overall Impact of Integrated Vocational Rehabilitation Program

Both empirically and statistically it was found that the "Integrated Vocational Rehabilitating Program" will have significant impact on the employment rate of the special children. Surveyed population amongst parents, teachers and employers almost unanimously agreed that all the ingredients of the "Integrated Vocational Rehabilitating Program" separately impact the employment rate. They also opined that collectively "Integrated Vocational Rehabilitating Program" will positively impact employment rate. Subject matter experts and key informants also agreed in this regards.

CONCLUSION

Vocational rehabilitation of the special children is a challenging task. Standard vocational training program is highly individualized and based on individualized Training

Plan (ITP). They are also disability sensitive and employment targeted. On the other hand, vocational rehabilitation program in different armed forces are mostly aimed onwards providing medical, service and financial support. Few advanced countries like USA, provides all sort of support needed to the military families with special children whereas countries like India and Pakistan concentrate on providing limited financial and medical support. Domestic vocational Rehabilitation and Training Centers concentrate on the employment of the special children with considerably good success rate. However, vocational rehabilitation program in Proyash lacks in different dimensions. Notable are, nonexistence of ITP, limited parent's participation in the vocational training program, not having adaptive training curriculum and non-availability of employer engagement program. As a result, employment rate of Proyash is also remarkably low in comparison to the employment rate of other domestic vocational rehabilitation centers. It was found through survey that the employment rate of Proyash Vocational School is 15 times less than similar organizations.

Military run organizations which were termed as military employers have numerous employment opportunities ranging from temporary daily labors to managers. Total number of employee with the military employers are 7349 and this number is increasing every day. Out of seven surveyed military employers, only one had employed special children in their organization so far. However, most of the military employers showed positive commitment towards the employing special children. Most of the employers committed that any initiative to support special children of the military community will be supported financially or whatever means possible. Military employers stated that non availability of a special employment policy is the main impediment towards effective employment. Nonappearance of the employment seeker, absence of proactive communication from Proyash, lack of support from the government to the employers and lack of social acceptance were identified as other challenges towards effective employment.

Integrated vocational rehabilitation program can positively impact the employment rate of the special children of the military community. Major ingredients of the Integrated Vocational Rehabilitation Program like Policy introduction, adaptive training by Proyash, ensuring parents participation and Employer engagement independently can improve the employment rate. It was found through survey that the parents, teachers and employers think that these ingredients will create employment opportunities and in turn improve employment rate. Expert opinion and literature review shown the same resonance. Most importantly, a domestic organization named PFDAVTC got success following partially similar approach. Statistical findings also validate this statement. While studying the accumulated impact of the all ingredients of the Integrated Vocational Rehabilitation program, it was found that maximum of the surveyed population opined that it (Integrated Vocational Rehabilitation Program) will improve the employment rate of the special children of the military community. Thus, it can be stated with confidence that implementation of an Integrated Vocational Program will contribute to the turning special children of the military community into utility manpower through employment.

RECOMMENDATIONS

Based on the findings of the research, following are the recommendations to improve the employment rate and thus turn the special children of the military community into utility manpower:-

a. **Introducing Government Policy.** Beside the existing employment policy on employing disabled citizen, government should introduce a new employment policy for the non-government and business organizations. A specific quota must be preserved for the special children. In addition, if an employee has a special child, related organization should authorize an allowance for that employee. Noncompliance to the policy must be accounted for. At the same time, organizations complying with the policy may be awarded with some incentive such as tax rebate.

b. **Formulate Comprehensive "Employment Policy" by Military Authority**. A comprehensive employment policy for military employers may be formulated by the welfare directorate to prioritize the special children of the military community. In particular, this policy must cover the employment of special children in the military affiliated organizations like BMTF, BDP, CSD Trust Limited, etcetera. This policy must be implemented through constant pursuance.

c. **Introduction of 'Employment Opportunity Cell' in Proyash**. Proyash should establish an "Employment Opportunity Cell" to find out new employment opportunities through survey, intimate interaction and liaison with employers. Their survey should include military units to identify few scope of employment for the special children. They should also suggest required modification of the vocational training program based on the demand of the employable skills. Introduction of new training trades and discontinuing a less relevant trade should also be suggested by them.

d. **Introduction of Individualized Training Plan (ITP) and adaptive Training Program in Proyash.** To ensure better training, Proyash should introduce Individualized Training Plan (ITP) besides IEP for each special children focusing on the ultimate employment goal. This should also introduce a training program which is highly adaptive to the changed demand of the employable skills.

e. **Develop "Family Support Scheme" for the Parents with Special Child.** For the special children of the military community, who will not be able to acquire an employable skill, be offered with a support scheme which may include lifelong treatment and therapy support, and financial support according to the economic condition of their parents. In this, parents with better financial abilities may receive minimum benefit where the parents with lesser income may receive more financial support. Introduction of new insurance policy or shredding a slice from the existing health scheme may generate necessary fund.

f. **Establishing Rehabilitation Homes.** Rehabilitation homes may be established by the military authority to accommodate and look after the special children of the

military community who will not be able to acquire any employable skills. This should also take the responsibility of the special children of the military family who lost their parents and does not have any one to look after. In future, different DOHS and military housings may designate and allot plots for this purpose and military affiliated organizations may provide financial support from their Corporate Social Responsibility fund.

BIBLIOGRAPHY

Books

Hallahan, D. P., Kafufman, J. M and Pullen, P. C. (2014). *Exceptional Learners: An Introduction to Special Education*, (6th ed). London: Pearson.

Drew, C.J., & Hardman, M. L. (2007). *Intellectual disabilities across the life span* (9th ed.), Upper Saddle River, NJ: Pearson.

American psychiatric Association, 1994. *Diagnostic and statistical manual of mental disorders* fourth edition. Washington DC: American Psychiatric Publications.

American psychiatric Association, 2013. *Diagnostic and statistical manual of mental disorders (DSM-5)* fifth edition. Washington DC: American Psychiatric Publications.

Journal Articles

McDonnell, J.J., Hardman, M.L., & McDonnell, A.P.(2003). 'An Introduction to persons with moderate and severe disabilities' (2nd ed.). Boston: Allyn & Bacon.

Abrahams, B.S. and Geschwind, D.H (2008). 'Advances in Autism Genetics: On the threshold of a new neurobiology,' *Nature Reviews Genetics.* 9(5), pp. 341-355.

Research Paper

Saidul, Major Md Islam (2012). 'Education and developmental training needed for the autistic children of Bangladesh Army: prospects and challenges,' Mirpur Cantonment, Mirpur, Defence Services Command and Staff College.

Asaduzzaman Squadron Leader Md (2012). 'Establishing more care center for autistic people: a timely demand for our society,' Mirpur Cantonment, Mirpur. Defence Services Command and Staff College.

Mahbubur, Major Mohammad Rahman (2012). 'Reducing stress for the military parents with autistic child,' Mirpur Cantonment, Mirpur. Defence Services Command and Staff College.

Cathrin, Hilary Brown (2010). 'Examining the needs of families of school-aged children with an autism spectrum disorder,' Kingston, Ontario, Canada. Department of Community Health and Epidemiology, Queen's University.

Reports

Life Journey through Autism: A Guide for Military Families (2010). Southwest Autism Research & Resource Center, Phoenix, Arizona, United States of America, 2010.

Survey of Autism and Neurodevelopmental Disorder in Bangladesh Report (2013). Department of Pediatric Neuroscience, Dhaka Shishu Hospital, Dhaka, 2014.

Autism Development and Disabilities Monitoring (ADDM) Networking Report (2002). Prevalence of the Autism Spectrum Disorders (ASDs) in Multiple Areas of the United States, 2000 and 2002.

Autism Development and Disabilities Monitoring (ADDM) Networking Report (2016). Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2012.

Department for Children, School and Families, UK Report (2009). Special Educational Needs (SEN)- A Guide for Parents and Carers.

Internet Websites

Winsor, J., & Butterworth, J. (2008). Participation in integrated employment and community based nonwork services for individuals supported by stat disability agencies. Intellectual and Developmental Disabilities, 46, 166-168).

Interviews taken by author

General Iqbal Karim Bhuiya, psc- Former Chief of Army Staff, Bangladesh Army. (2017, November 27) Personal Communication.

Lieutenant General Anwar Hossain, psc – Quarter Master General, Bangladesh Army and Vice Chairman, Industrial Coordination Cell Bangladesh Army. (2017, November 07) Personal Communication.

Major General Md Jahangir Al Mustahidur Rahman, psc – Managing Director, Bangladesh Mechine Tools Factory, Gazipur, Bangladesh. (2017, September 16) Personal Communication.

Brigadier General Md Fakhrul Ahsan, BSP, psc – Former Principal, Proyash Institute of Special Education. (Presntly Director, Military Intilligence) (2017, November 01) Personal Communication.

Brigadier General Md Mostagousur Rahman Khan, psc, Inf - Former Principal, Proyash Institute of Special Education. (Presntly Brigade Commander, 65 Infantry Brigade). (2017, September 23) Personal Communication.

Brigadier General Shameem Ahmed, psc – Managing Director, Bangladesh Diesel Plant, Gazipur, Bangladesh. (2017, September 16) Personal Communication.

Air Comodore Parvez, Director Welfare, Sena Kolyan Songstha, Bangladesh. (2017, November 23) Personal Communication.

Brigadier General Rashiduzzaman Khan (Retd) Managing Director, Canteen Stores Department, Dhaka, Bangladesh. (2017, November 09) Personal Communication.

Colonel Md Shahidul Alam, SGP- Principal, Proyash Institute of Special Education. (2017, October 11) Personal Communication.

Lieutenant Colonel Md Siddiqur Rahman, psc – Acting Colonel Staff, Welfare Directorate, Army Headquarters . (2017, October 17) Personal Communication.

Major Md Anarul Kabir, Inf - Station Staff Officer, Station Headquarters Dhaka. (2017, October 20) Personal Communication.

Major PL Raghawender – Indian Army. (2017, November 01) Personal Communication.

Major Ken Smith – US Army. (2017, November 01). Personal Communication.

Lieutenant Commander Sami – Pakistan Navy (2017, November 01) Personal Communication.

HM Abdul Kader – Cantonment Executive Officer, Cantonment Board, Dhaka (2017, October 12) Personal Communication.

Sajida Rahman Danny - President of Parents Forum, Vocational Training Centre. (2017, September 04) Personal Communication.

Major Monsur Ahmed, ASC was born on 01 November 1982 at Tangail. He passed Secondary School Certificate and Higher Secondary Certificate Examination from Rangpur Cadet College. He was commissioned from Bangladesh Military Academy with 47th BMA Long Course in the Army Service Corps on 31 December 2002.

He has gained experience of serving in different Army Service Corps units, as staffs and as an instructor. In his unit career, he served in 32 and 35 Supply and Transport Battalion. He also served in Station Supply Depot, Momenshahi. Apart from regimental appointments, he served as a Platoon Commander in BMA and as a staff in Army Headquarters. Besides the mandatory courses, he attended Officers' Advance Petroleum Course in Logistical Engineering University, China. He participated in United Nations Peacekeeping Mission in Liberia as a contingent member. He is married and blessed with a daughter.

THE ROLE OF STANDARD INFANTRY BATALLION IN ASYMMETRIC WARFARE – A BANGLADESH ARMY PERSPECTIVE

Major Mohammad Farhan Monir, Infantry

ABSTRACT

In contrast to Conventional Warfare (CW), Asymmetric Warfare (AW) refers to operations that do not rely on masses of troops or munitions to destroy enemy. In general, AW refers to warfare between opponents not evenly matched where the smaller or weaker force must exploit geography, timing, surprise, or specific vulnerabilities of the larger and stronger enemy force to achieve victory. Bangladesh Army may have to resort to AW sooner than expected considering diversifying nature of threats in 21st century. It has already taken an endeavour to prepare a draft doctrine of AW. But proper brainstorming session on AW was limited to strategic and operation level till now. Standard Infantry Battalions (SIB) are the key tools for Bangladesh Army to fight AW. Unfortunately, SIBs are designed to fight CW only till now. The characteristics of emergent Violent Non-state actors (VNSA) suggests that they will ask question to SIBs in every step if embroiled into fighting in future. Thereby, SIBs need to re-examine their existing mission, capabilities and organization to fight against asymmetric threats. Restructuring of SIBs will help them not only to fight AW but also prepare them better in CW of future. Thus, this research has taken an endeavour to justify that ***"Present mission, capabilities and organization of SIB requires modification in AW."*** *Finally, few recommendations will be highlighted for the adaptation of proposed mission, capabilities and organization of SIBs to fight AW.*

INTRODUCTION

Asymmetric Warfare (AW) is defined by today's military strategists from wide-ranging angles. But it generally denotes a situation where a weaker force, being grossly overpowered by a stronger one, adopts unorthodox approach. Though historically, most of the AW were initiated by relatively weaker nation against stronger nation, presently the idea has changed. Even the stronger nation of these days plan to exploit weaknesses of target country through AW, avoiding large scale Conventional Warfare (CW). Thus AW can be political, strategic or operational using different covert and overt methods. Nowadays the asymmetric threats are not limited to isolate terrorist attacks or insurgent actions only, but also involve highly sophisticated psychological warfare (PSYOPS), attack on opponent's will and culture. The very geo-political location of Bangladesh automatically puts it into an arresting position, which is enmeshed by unstable political situation, ever-increasing socio-economic disparity, rising religious extremism and continuous Chittagong Hill Tracts (CHT) issue. For geo-strategic reasons, interest of powerful nations in the internal affairs of Bangladesh has made it more vulnerable to the AW threats.

At this backdrop, in both state-state and state-non-state conflict asymmetric approach may be sought by Bangladesh Army to gain greater freedom of action and to achieve

disproportion effect. It is well understood that, the failure to successfully combat the asymmetric threats in tactical level will directly affect the decision-making cycle at highest levels of chain of command of Bangladesh Army. The concept of AW in Bangladesh Army is still in infant stage. Unfortunately, earlier attempts to dissect this form of warfare in our army were limited to strategic/military-strategic level. Furthermore, role of each arms/services in tactical level is still not researched well. As major arms, Standard Infantry Battalion (SIB) may play a vital role in AW. Thereby, its role including methods and concepts requires much attention. Furthermore, if the current mission, capabilities and Table of Organization and Equipment (TO&E) are analyzed, it appears that SIBs are under prepared to conduct operations against asymmetric threat. Considering the above factors, it is perceived that role of SIBs in AW need to be examined and addressed appropriately.

AIM

The aim of this paper is to propose modification of role of standard infantry battalion in AW.

POSSIBLE AW ENVIRONMENT AND POTENTIAL ASYMMETRIC THREATS – BANGLADESH ARMY PERSPECTIVE

Evolving Asymmetric Threat Environment in the World

Beyond simply amplifying the misuse of the term AW, it requires an alternative thought about the kind of threat Bangladesh likely to face from both state and NSA in contemporary strategic environment. Martin Van Creveld's (1991), 'The Transformation of War' described the changes of nature of military conflict in foreseeable future. He also argued that NSAs will be extremely active and Conventional Warfare (CW) between states was being replaced with the tactics of guerrilla war and terrorism.

Asymmetric Threat Environment – Bangladesh Perspective. Future adversaries, from NSAs to regional threats likely to utilize asymmetric strategies to undermine Bangladesh Army's strength. Bangladesh Army should continue to prepare itself against potential conventional adversaries. This assessment on broader threat perspective suggests that Bangladesh is yet to perceive correctly that threat environment after September 11, 2001. Indeed, the situation might have been changing without the attacks on September 11. In such a vividly transformed scenario, not only our thinking should be evolved, but also our forces and organization must undergo radical change.

Potential Asymmetric Threats – Contemporary World Perspective

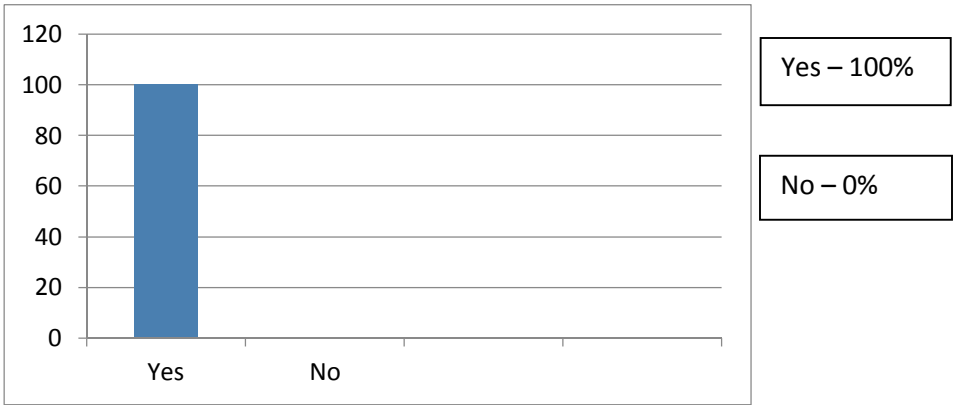
Over the last few years, the words "asymmetry" and "asymmetric" have become vogue words in world strategic and political science discourse. Wars, enemies, battles, strategies, "approaches," options, challenges, and many other phenomena related to armed conflict have all been labeled as "asymmetric," often in the same work. Asymmetric threats generally include terrorism, unconventional or guerrilla tactics or

guerrilla warfare as has been attempted in Iraq and Afghanistan against USA, the use of cyber warfare, or information war (IW).

Asymmetric Threats against Bangladesh Army– Conceptual Clarity

There is little reason to believe that battlefield would look like 1940s or 70's.Considering the countries advantage in 'defensive battle' in maximum portion of the year, future enemies are less likely to conduct CW involving large forces. Let there be no mistake, a conventional hedge must be maintained against potential aggressors. As demonstrated in Iraq, war does not end when the last enemy tank is destroyed. Bangladesh Army must truly institutionalize tactics, doctrine, and organizational lessons being learned by USA in Afghanistan and Iraq today. A survey was conducted where all COs' unanimously identified that in foreseeable future Bangladesh Army are likely to face asymmetric threats than the conventional threats.

Figure 1: Asymmetric threats in foreseeable future in Bangladesh

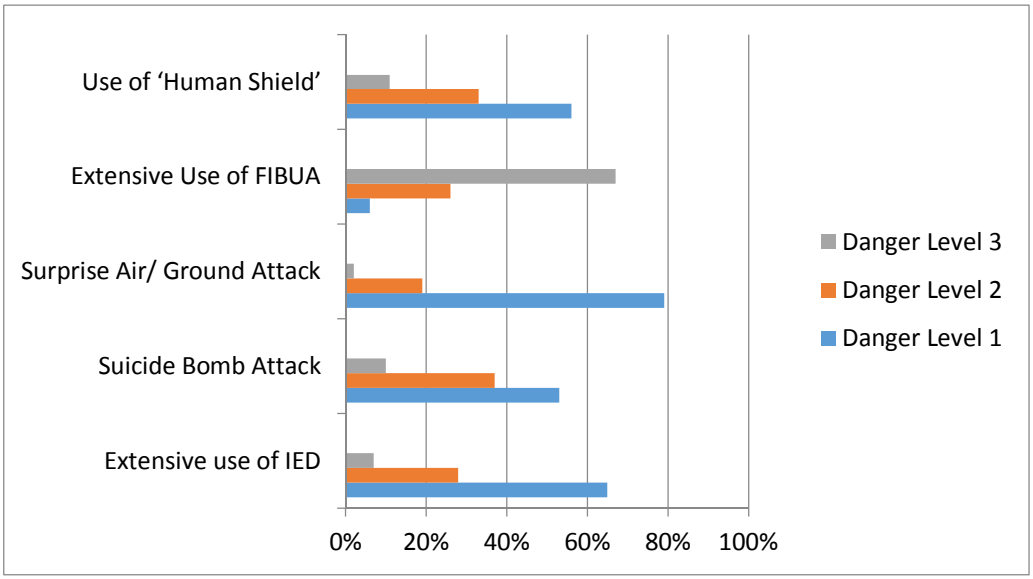


Source: Prepared by Author

Asymmetric Threats Specific to SIB

It is clear that wide range of asymmetric threats SIBs are likely to face is unprecedented. Although there is no schoolbook solution or idea about what kind of threats SIBs will face, it can presumed that most of them will be based on urbanized and their engagement will be limited in nature. In an asymmetric warfare sector, SIBs are likely to deploy in a district. Within a district, infantry companies are likely to deploy in one/two Upazillas. To identify asymmetric threats in future against infantry battalions, a survey was conducted among Commanding officers of infantry battalions where almost all could identify the likely threats against infantry battalions. For example, almost 56% opined that threats use human shield to fight against infantry battalion (danger level 1), whereas almost 67% suggested that threat will use extreme use of BUA to counter own forces strength (danger level 3).

Figure 2: Asymmetric threats against SIBs



Source: Prepared by Author

PRESENT STANCE OF BANGLADESH ARMY ON AW AND POTENTIALITY OF SIB IN AW INCLUDING ITS STRENGTHS AND LIMITATIONS

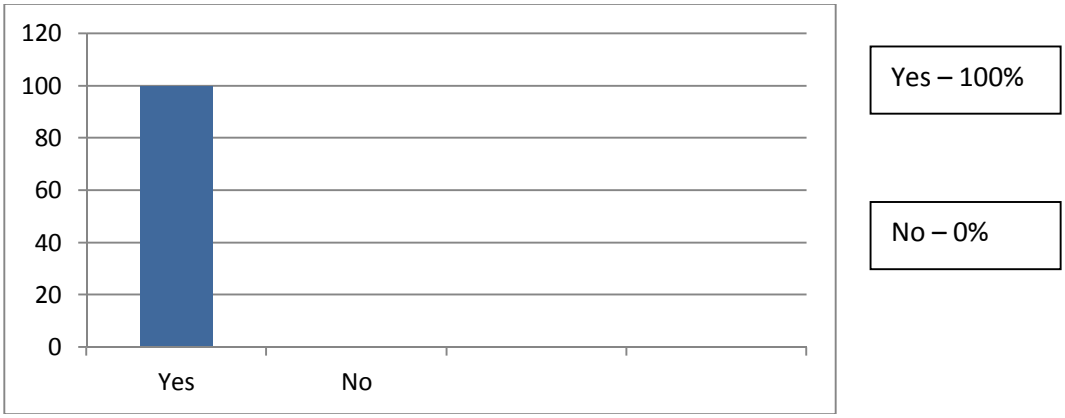
Present Stance of Bangladesh Army on AW

As stated earlier, Bangladesh Army may have to resort AW before, during or after CW against potential threat. A densely populated country like Bangladesh with its close geography makes it a nightmare for any potential aggressor. Any aggressive military action within Bangladesh will be governed by extreme caution and naturally be slow to avoid excessive human casualty and collateral damage. Capitalizing on this Bangladesh should by all means attempt to protract the war, should that be imposed on her.

Doctrinal Changes vis-à-vis Force Structure

AW force with the concept to fight against VNSAs' before, during or after possible CW would require doctrinal changes. The proposed AW force may be developed as a highly trained and equipped force with modern equipment to fight an AW. Again the changes should be incorporated in a befitting manner to serve both the purpose of fighting against conventional and asymmetric threats. AW force will be only able to mark their step in asymmetric environment when they will have an appropriate doctrine to guide their actions. A survey was conducted amongst all infantry COs' where all unanimously agreed that Bangladesh Army needs to incorporate doctrinal changes to deal with asymmetric threats.

Figure 3: Incorporation of doctrinal changes to fight AW



Source: Prepared by Author

An Analysis on AW Potentiality of SIBs of Bangladesh Army

While the capacity for violent, small-unit, close combat is necessary in, USA army in Middle-East painfully realized that it is rarely sufficient to achieve sustainable battlefield success in asymmetric environment. Therefore, it is well understood that even US army needed to adapt their force structure to fight AW. Having identified potential asymmetric threats in previous chapter, a survey was conducted among infantry COs' to know the efficiency of SIBs with present mission, capabilities and TO&E, if employed in AW.

Perceived Weaknesses of Present SIBs in Conducting AW

a. **Indefinite Mission.** Present mission of SIB does not clarify its role properly in conducting AW. Ambiguity also remains how present mission will fit in asymmetric environment. It is generally perceived that as an asymmetric force, its mission should be offensive oriented

b. **Limitations in Capability and Tasks.** Although SIBs' are capable of conducting multiple functions, in a dense urban terrain and possible hostile-occupied territory its limitations are glaringly exposed as follows:

(1) Foot infantry personnel are vulnerable to mines and soft-skinned vehicles are vulnerable to advanced Anti-Material weapons.

(2) Limited ground mobility because of shortage of integral transport.

(3) Lack of radio communication sets up to section level.

(4) Extremely vulnerable to conduct operations at night or in limited visibility.

(5) Inability to conduct intelligence based operations on ground.

(6) Absence of civil-military liaison personnel in conducting operations under extremely volatile scenario.

(7) Companies are extremely reliant on battalion for specialized personnel (engineer, intelligence, etc).

c. **Limitations in Organization.**

(1) **Lack of Intelligence personnel.** A battalion of 741 soldiers only has seven dedicated intelligence personnel assigned. This section is responsible for gathering information collected by the companies, analyzing it, and latter disseminate it to the brigade. Moreover, they are the responsible to conduct initial interrogation to Prisoners of Wars (POWs). Furthermore, there is no dedicated intelligence personnel in company level.

(2) **Lack of Security and Mobility.** Security is the cornerstone for success in AW. Therefore, the ability of military units to secure terrain, capture and kill enemies, and guard civilians are the dominating events for SIBs operating in asymmetric environments. Moreover, SIBs lack of protection against Anti-Material weapons also remain as an inherent limitations.

(3) **Absence of PSYOPS Qualified Personnel.** Deception, PSYOPS and dissemination of information to local populace will be major requirements in AW environment. In the era of information proliferation, it is quite normal that threats will resort to IW to confuse local populace as well as circular propaganda regarding operations of combat forces. Sustainment against false propaganda is a challenge for SIBs as they do not have designated trained personnel to deal against it.

(4) **Absence of civil-affairs coordination personnel.** At present, battalions even brigade/division level do not have civil-affair coordination personnel. It will create *impasse* while conducting operations in urbanized terrain. In AW environment, it will generally require to have clarity over local governance, demography, population and uncanny civil-military cooperation.

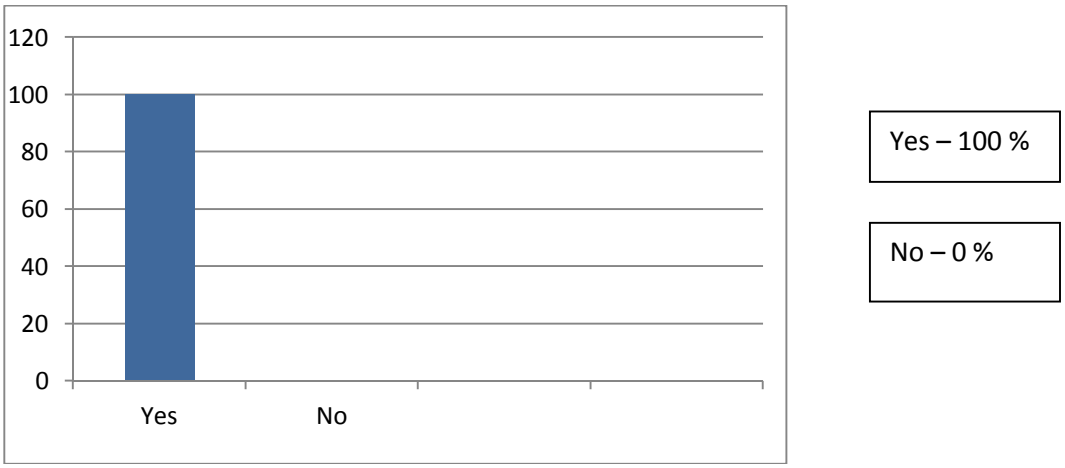
(5) **Inadequate Engineer Resources.** At present, support from division engineer platoon in various operations to the SIBs are scanty. Moreover on some occasions the engineer platoons allotted to SIBs remains as cohesive unit within the battalion, not decentralized to companies. Again, with inferior strength and absence of any BD personnel, battalion assault pioneer platoons are also unable to perform required job.

AN ALTERNATIVE THOUGHT ON MISSION, CAPABILITIES AND ORGANIZATION OF SIB IN AW

Adaptation of SIBs under Asymmetric Environment

Senior officers of Bangladesh Army in their recent interviews with the author had been comprehensive about the present mission, capabilities, and TO&E of SIB to combat asymmetric threats. They argued that as a primary 'workhorse' of Bangladesh Army, organizational adaptation of SIBs are paramount in near-future. Moreover, they agreed to the point that present day's trend of ad hoc arrangements (attachment/detachment from various headquarter/unit to another headquarter/unit) while going in the field will have difficult time to coordinate operations in a given asymmetric environment. Therefore, organizational changes within a SIB was recommended unequivocally by all senior officers. It has also been reflected in survey conducted among infantry COs' where they unanimously agreed that SIBs must be tailored to fight AW.

Figure 4: Requirement to change present role of SIBs if employed in AW



Source: Prepared by Author

Broad Parameters of Modifications to be Incorporated in SIBs. From the discussions above, it is well understood that SIBs have hardly undergone any functional organizational changes to combat asymmetric threats. There are predominantly three potential areas of improvement have been identified and will be highlighted for required changes need to be incorporated in the role of SIBs.

a. Adaptive organization considering asymmetric environment factor.

b. Increased number of specialized personnel.

c. Decentralized command and control.

Optimization of SIBs to combat asymmetric threat. SIB capable of fighting AW demands multi-functional role both in centralized and decentralized execution in asymmetric environment. Moreover, maintaining a sustained effort over a long duration and the importance of team integrity, requires a force structure that institutionalizes a close relationship between intelligence, combat, and civil-military specialties. Therefore, effective modern intelligence cells, efficient security team, enhanced engineer resources and workable civil-military liaison group must be integrated within infantry battalion and companies. The proposed mission, capabilities and major areas of organizational optimization are stated under following:

a. **Proposed Mission.** The mission of SIB in AW would be to eliminate enemy from a geographical area either independently or under bigger framework with minimum collateral damage.

b. **Proposed Capabilities.**

(1) Conduct operations through mission-oriented command and control.

(2) Conduct operations independently against both asymmetric and conventional threats.

(3) Easily deployable, highly mobile and capable to conduct small unit action with less effort.

(4) Ability to conduct operation in both 'heavily populated areas and remote areas' before, during and after the CW.

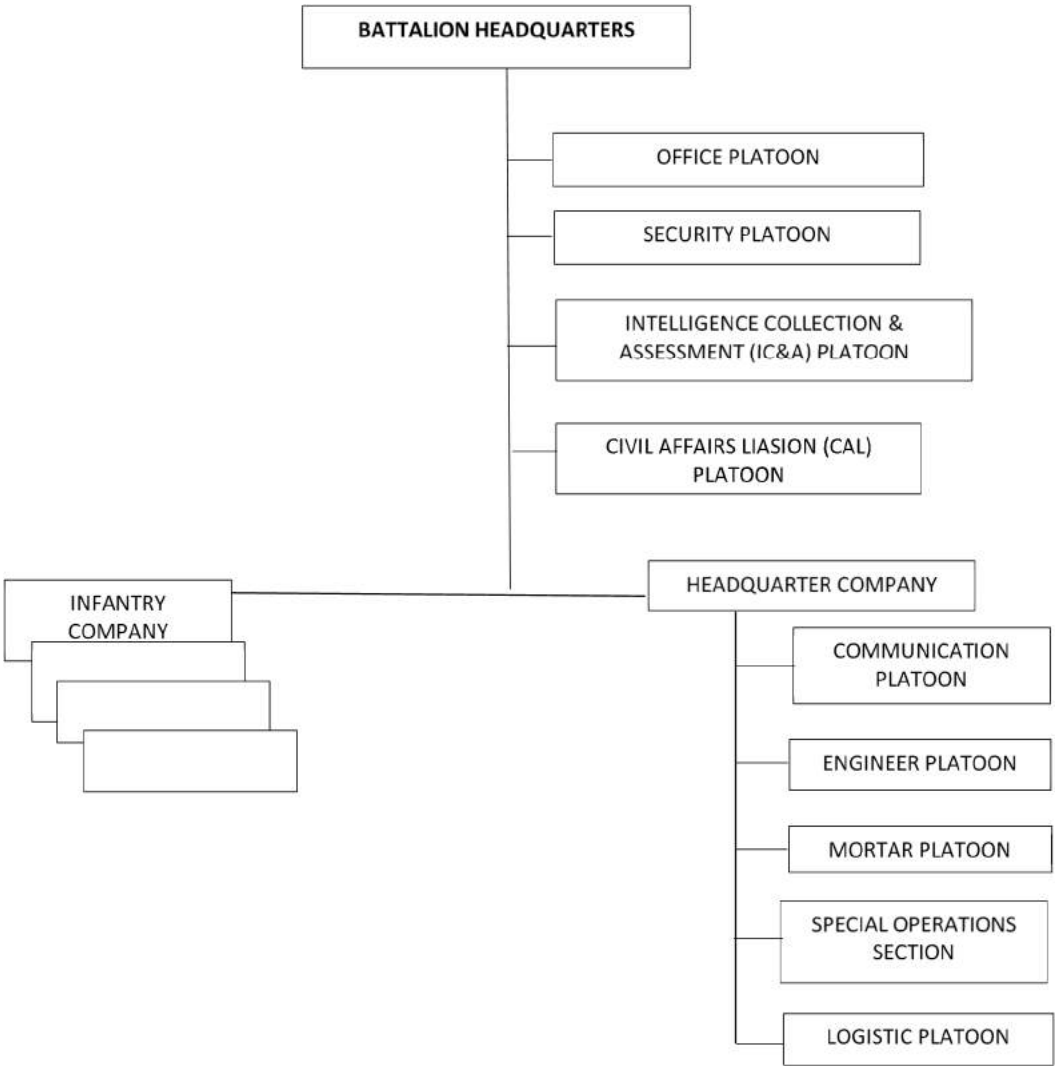
(5) Ability to employ modern intelligence collection tools to gather and process intelligence independently.

(6) Ability to continuously monitor and liaise critical governmental service functions and NGO's.

c. **Proposed Organization.**

(1) **Overall Concept.** The functional TO&E of SIBs are intended to counter asymmetric threats primarily. However, it does not negate the utility in case of conventional and especially in United Nations environment. A SIB have been optimized with necessary 'Intelligence Collection and Assessment Platoon' instead of an ineffective intelligence section. 'Security Platoon' will replace cursory regimental police section. 'Engineer Platoon' augmented with Dog team and Explosive Ordnance Disposal Assessment team will replace conventional assault pioneer platoon. Finally, a 'Civil Affairs Liaison Section' will be dedicated for necessary liaise with local administration. See Figure 7 for an illustration of this design.

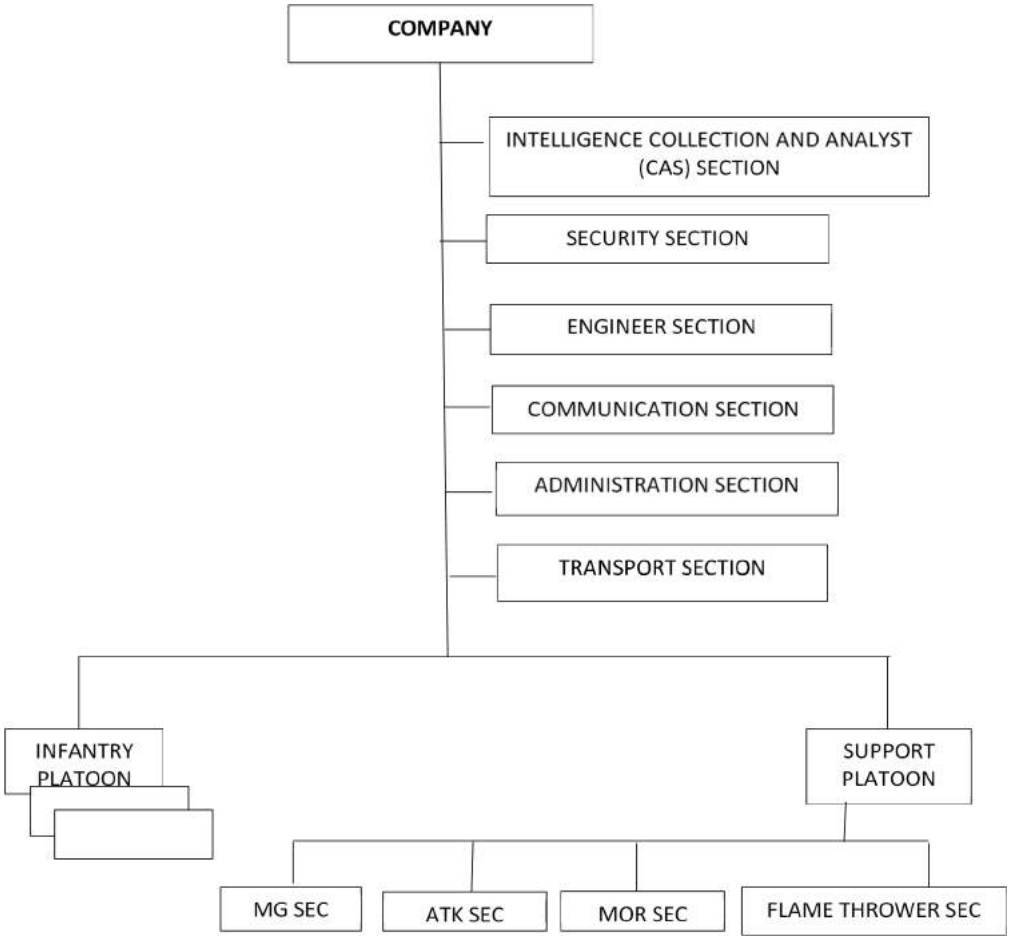
Figure 5: Optimized SIB



Source: Prepared by Author

An infantry company has been augmented with additional intelligence and assessment section, security section and engineer section capable of conducting operations independently or having less dependent on battalion. See Figure 8 for an illustration of this design.

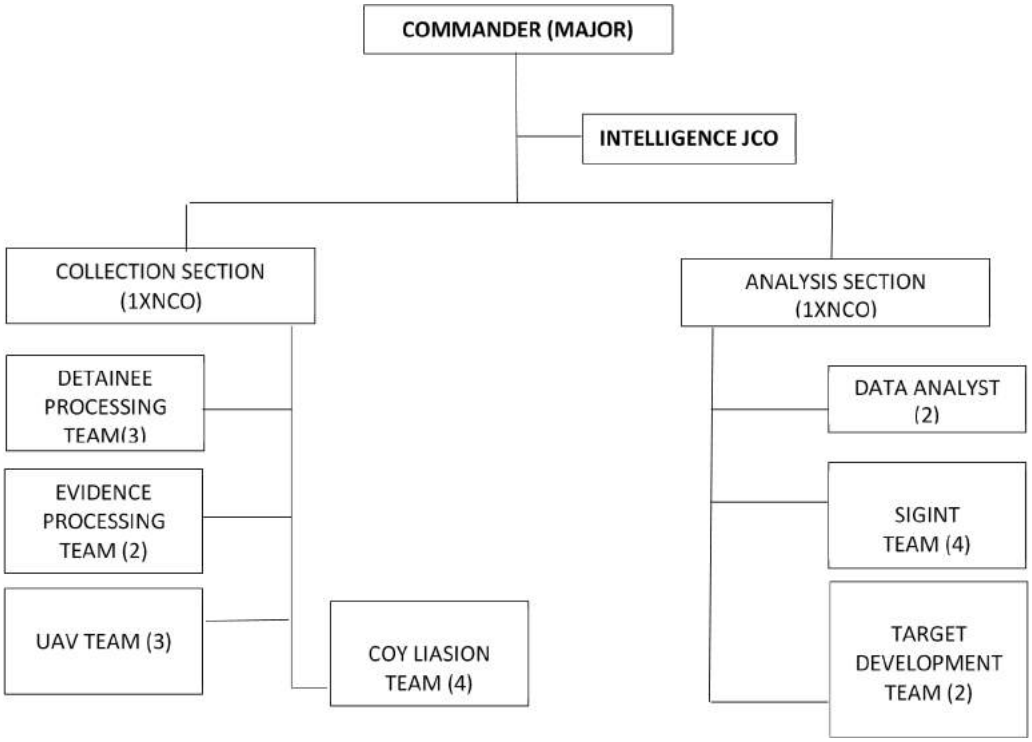
Figure 6: Optimized Infantry Company



Source: Prepared by Author

(2) Intelligence Collection. In asymmetric conflict an extensive information is collected from bottom-up which requires processing and analysis by specialists. Due to dynamic nature of conflict it is time consuming to wait for higher headquarters intelligence collection cycle. Therefore, intelligence analysts have been integrated in battalion organogram. Infantry battalions should continue to aggressively explore digital intelligence software systems that allow intelligence specialists assigned to the lowest-level tactical units to regularly update information and share information laterally. Furthermore, Unmanned Aerial Vehicle/Remotely Piloted Vehicle (UAV/RPV) Team has been integrated to utilize three-dimensional (3D) preview of updated intelligence. See Figure 9 for an illustration of this design

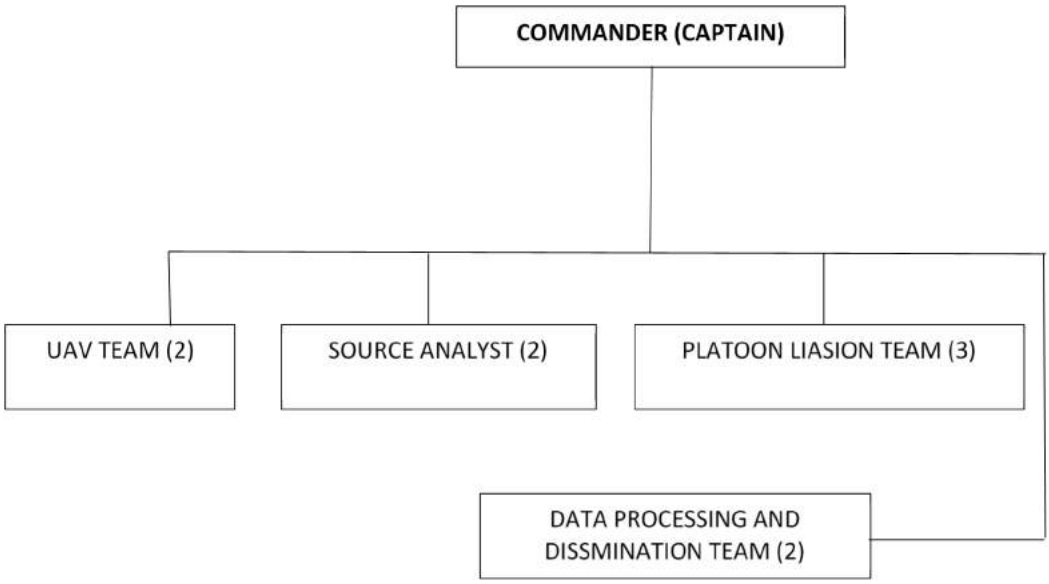
Figure 7: Battalion Intelligence Collection and Analyst Platoon



Source: Prepared by Author

Infantry Companies are also allotted with dedicated intelligence section capable of conducting effective intelligence operation. They should also have trained soldiers capable of collecting and processing intelligence. Intelligence teams should be capable enough to assist company commander to analyze contemporary security and civil-military operation. See Figure 10 for an illustration of this design.

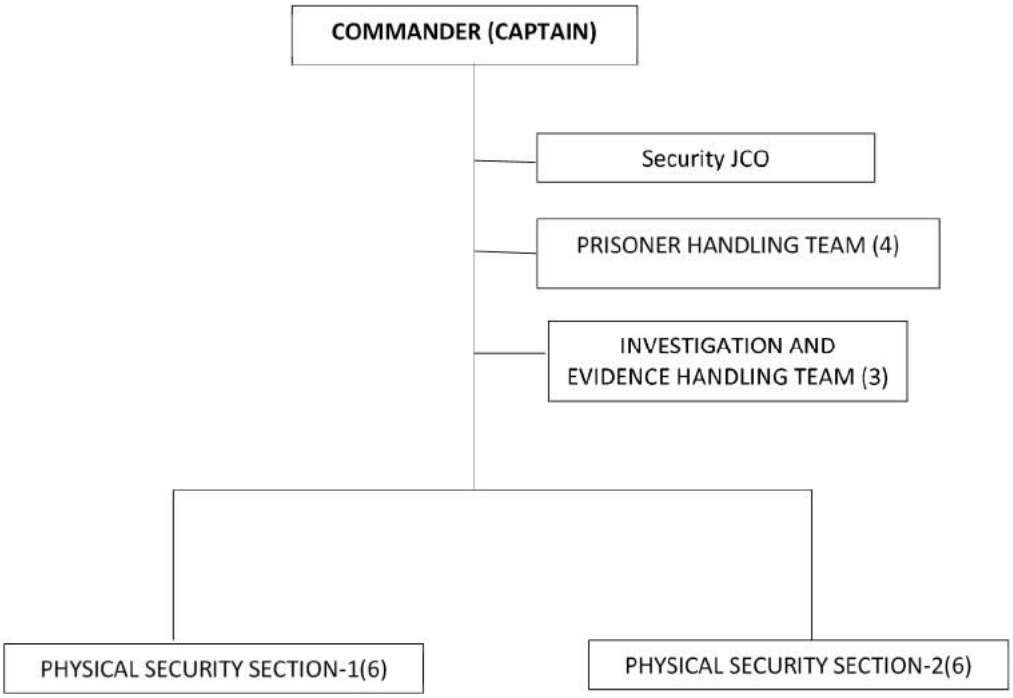
Figure 8: Company Intelligence Collection and Analyst Platoon



Source: Prepared by Author

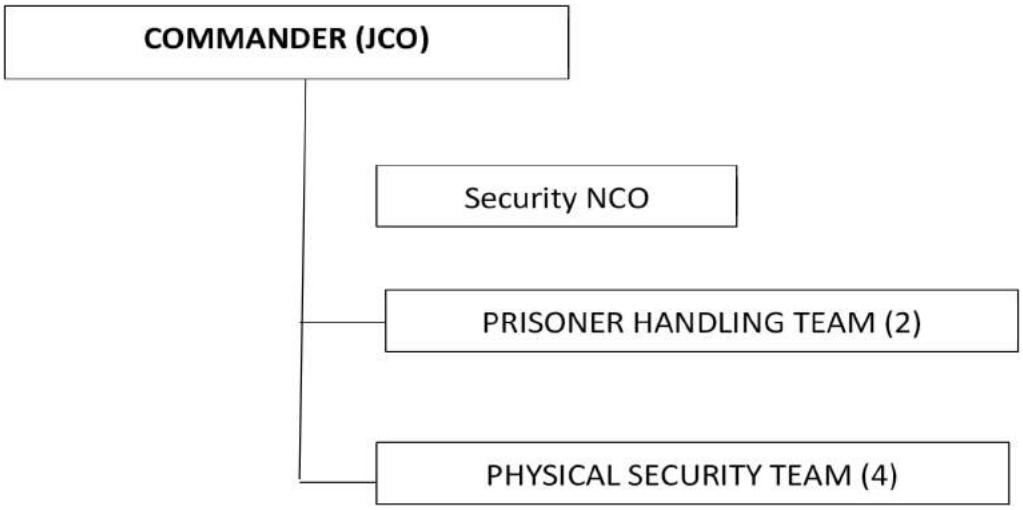
(3) Enhanced Security. In AW, enhanced security will be ensured by trained 'Military Police' course qualified battalion security platoon personnel. They will work closely with IC&A platoon for investigation and detainee handling procedure. They will also have close liaison with local police and will pursue evidence gathering techniques and assist in building judicial cases against fifth columnists. Similarly, Company security section would conduct same procedure in their respective jurisdiction in close liaison with battalion security platoon. See Figure 11 and 12 for an illustration of the design of Battalion Security Platoon and Company Security Section respectively.

Figure 9: Battalion Security Platoon



Source: Prepared by Author

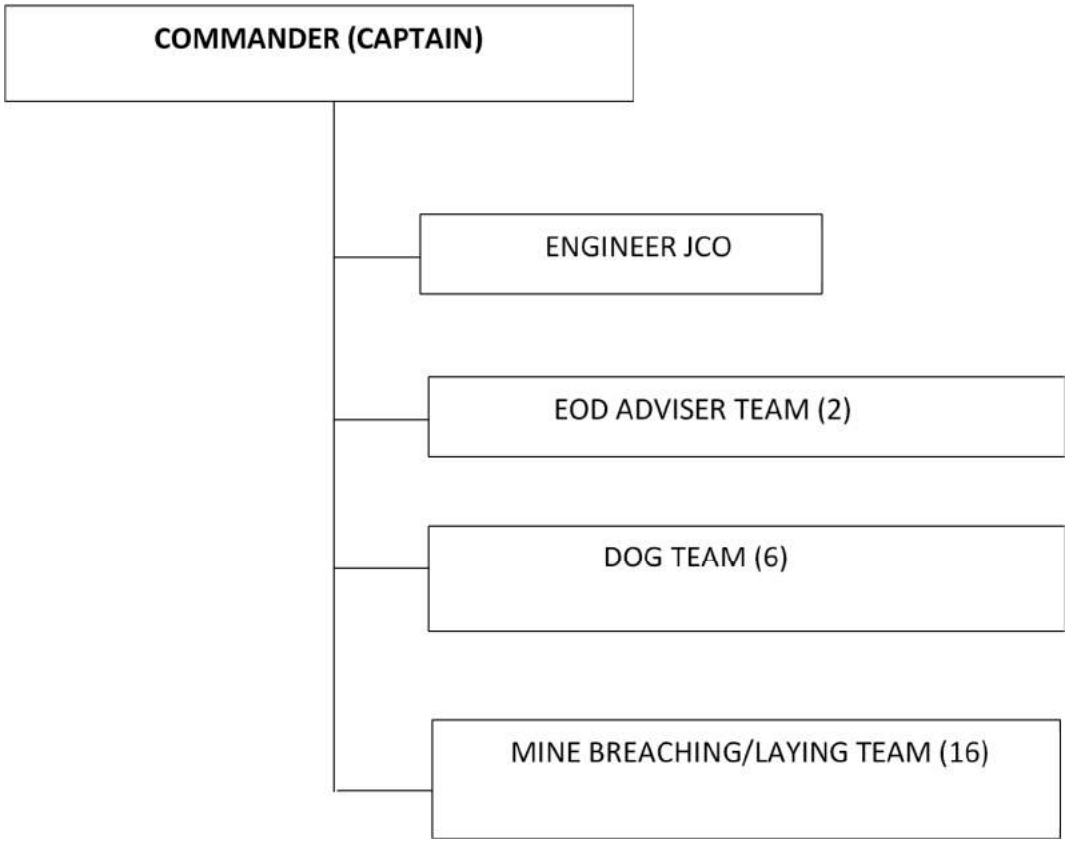
Figure 10: Company Security Section



Source: Prepared by Author

(4) **Skilled Engineer Capability.** Assault Pioneer Platoon has been replaced by skilled engineer platoon capable of obstacle development, obstacle reduction and demolitions. Battalion Engineer Platoon has EOD adviser team who would provide assistance to Company Engineer Section. Lesson learnt from Iraq and Afghanistan show that trained military dogs are extremely useful in clearing buildings and sensing explosive materials. See Figure 13 for an illustration of this design

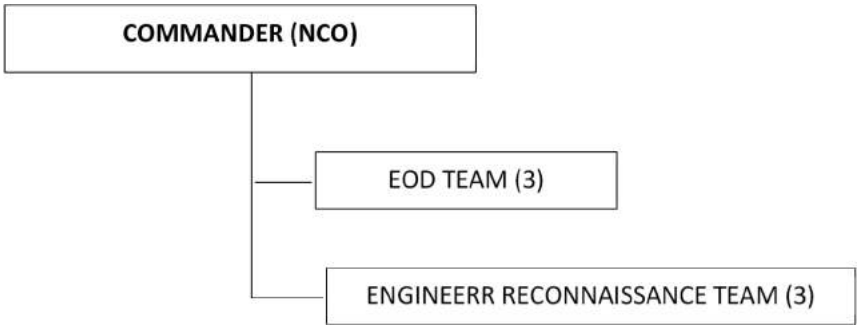
Figure 11: Battalion Engineer Platoon



Source: Prepared by Author

Like battalion, company engineer section is also capable of provide necessary assistance to infantry companies. They will provide technical assistance to infantrymen while clearing obstacles. See Figure 14 for an illustration of this design.

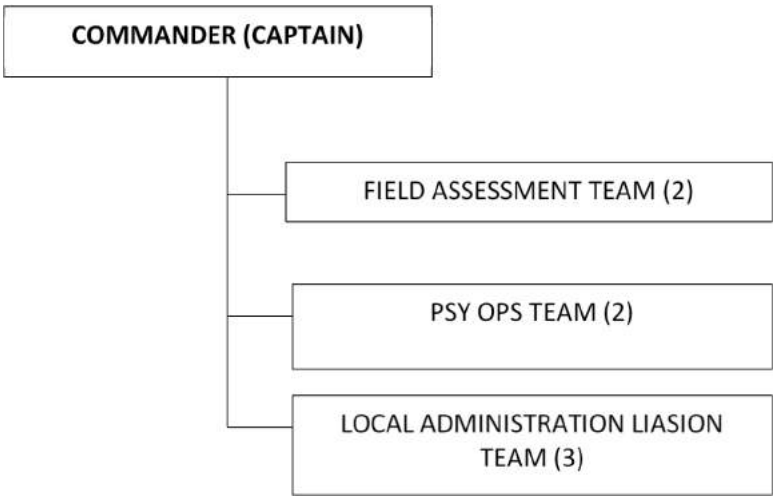
Figure 12: Company Engineer Section



Source: Prepared by Author

(5) **Integration of Civil Affairs Activities.** A section of dedicated civil affairs personnel has been integrated in SIB to maintain liase with civil administration and conduct PSYOPS. This team will be trained in PSYOPS and would advise battalion and company commanders on possible information sabotage. Like intelligence gathering, information sabotage is not confined within a handful personnel, rather it must be integral to every soldiers' action and conversations. See Figure 15 for an illustration of this design.

Figure 13: Battalion-Civil Affairs Liaison Section



Source: Prepared by Author

CONCLUSION

The type of conflicts rest of the world will likely to face in 21st century has already been witnessed by United States in Iraq and Afghanistan. Given this multiplicity of dimensions and possible usages of the terms "asymmetry" and "asymmetric," it soon becomes clear that employing these words and concepts to describe threats rather than strategies creates many problems for commanders, and analysts alike. Indeed, the then Secretary of Defense of the United States of Army Donald Rumsfeld has publicly stated his unhappiness with the term. According to him, "Asymmetry must mean more than 'simply making maximum use of one's advantages' or fighting differently than we do for this concept to possess utility for strategic planners in understanding their enemies and their own forces and strategies".

Considering our potential adversaries including the force ratio, it is difficult to perceive that a conventional head to head fight would continue for prolong period. Our operational concept is designed to fight a protracted battle to weaken and defeat potential adversary taking maximum advantage of terrain and weather. For Bangladesh Army, it is important to understand that AW will be a prequel, parallel or sequel of CW. As a primary 'workhorse' of Bangladesh Army, SIBs may have to be employed independently. Therefore, it is worthwhile to consider the changes need to be incorporated within SIBs to combat asymmetric threats. At tactical level, Bangladesh Army may fight an AW against non-traditional threats. Bangladesh Army may find itself entering into fight against this new nature of war within a few years. As a global trend of non-traditional threats are emerging in an unprecedented scale, it is quite a quagmire for the armies of all over the world to anticipate how to contest these threats.

Should Bangladesh embroiled into war with potential adversaries, it is well presumed that instead of large scale war Bangladesh Army have to counter asymmetric threats at a first go. SIB employed in AW may have to undertake diversified tasks which requires decentralized command and control; force capable of conducting multi-purpose tasks; and small unit action capable of producing infallible results. Analyzing the present trend, greater freedom of action against non-state actors may not be achieved due to turgid nature of inflexible organization. Hence, potential urbanized environment may have to take into consideration while employing SIBs. After detail analysis of current mission, capabilities and TO&E, it is well understood that SIBs require significant changes in their inventory to fight AW. Lack of specialized personnel in the companies are also marked as possible exposed areas. While the Army is making substantial headway in doctrine and training initiatives, its organizational details have remained unscathed.

SIBs need to be adaptive in their approach rather transformative in their modernization. Three broad areas of improvement have been identified: adaptation to environment; decentralized command and control; and increased number of specialized personnel. SIBs requires considerable change of their mission, capabilities and significant changes in organization to fight AW. An optimized infantry battalions will not only

effective in asymmetric conflict, but also will have laudable contribution in conventional conflict also.

RECOMMENDATIONS

SIB being premiere organization of Bangladesh Army will have a significant role to play in AW. Following recommendations are brought in relation to AW and the role of SIB in future:

a. An in-depth study also require for doctrinal changes need to be incorporated to fight against asymmetric threat.

b. The infantry battalion staff may be augmented with substantial number of intelligence collection personnel and analysts, PSYOPS experts and public affairs specialists to process intelligence and conduct psychosomatic operations.

c. The battalion capabilities may also be enhanced with an organic security platoon manned by military police qualified specialists in investigative procedures and detainee handling.

d. The battalion engineer platoon may be augmented with BD qualified personnel and military dog teams. They must be self-sufficient in clearing and laying obstacles in urban warfare without depending much on division engineer battalion.

e. Infantry company headquarters may have a small, but highly-trained support team of intelligence, engineer section, source analysts, HUMINT collection specialists, UAV operators and communication specialists to conduct operations independently.

BIBLIOGRAPHY

Books

Adam B. Lowther (2007), *Americans and Asymmetric Conflict – Lebanon, Somalia and Afghanistan*, Pentagon Press, London.

Ahmed, Imiaz (ed.) (2009), *Terrorism in the 21st century perspective from Bangladesh,* The University Press Limited, Dhaka.

Carl von Clausewitz (1976), *On War*, ed. and trans. Michael Howard and Peter Paret, Princeton, NJ: Princeton University Press.

Headquarters Army Training and Doctrine Command (ARTDOC) (2013), *Development of General Staff Training Pamphlet on AW for Bangladesh Army.*

Henry Mintzberg (1979) *The Structuring of Organizations* (New Jersey: Prentice Hall.

Sir Martin Ewans (2005), *Conflict in Afghanistan: Studies in AW*, Routledge, New York.

Ivan M Arreguin Toft (2005), *How the Weak Wins Wars - A Theory of Asymmetric Conflict, Cambridge University Press,* Cambridge.

Martin Van Creveld (1985), *Command in War (Cambridge:* Harvard University Press.

Martin Van Creveld (1991), *The Transformation of War: The Most Radical Reinterpretation of Armed Conflict Since Clausewitz*, New York: The Free Press.

Major General Sandhu PJS (ed.) (2011) *Strategies for Countering Non – State Actors in South Asia,* Vij Books India Pvt Ltd, New Delhi.

Colonel Thomas X Hammes,USMC (2004), *The Sling and the Stone: On War in the 21st Century.*

GSTP 0032, *Operations of War,* Volume One, Bangladesh Army.

GSTP 2632, *Infantry Battalion in Battle,* section 1, Bangladesh Army.

Peter R Levoy (2009). *AW in South Asia - The Causes and Consequences of the Cargil Conflict,* Cambridge University Press, Cambridge.

Journal Articles

Centre de Doctrine de'Emploi des Forces Publication (2007), 'Winning the Battle-Building Peace – Land Forces in Present and Future Conflict,' FT 01, Paris, p 16.

DoD, QDR (2006); BG Andrew B. Twomey, 'Cost of Modern War,' (PowerPoint presentation dated; and DoD, IW JOC.

Land Warfare Studies Centre; Colonel Chris Field (2009): 'Asymmetric Warfare and Australian National Asymmetric Advantages: Taking Fight to the Enemy.'

Other Articles

Brigadier General Asadullah Minhaz, Bangladesh Army (2008). 'AW: Imminent or Destiny?' *Bangladesh Army Journal*, 43rd Issue.

Lieutenant Colonel Mizanur Rahman Mizan, Bangladesh Army (2009). *AW Threats and Options for Bangladesh,' Research Paper*, Defence Services Command and Staff College, Mirpur.

Lieutenant Commander Arshad Jabid, Pakistan Navy (2006). 'AW- Prospect in South Asia,' *Commandant's Paper,* Defence Services Command and Staff College, Mirpur.

Major Md Moinul Islam, Bangladesh Army (2014). 'Modernized Infantry of Bangladesh Army in 2030: Necessities of Doctrinal Changes,' *Research Paper*, Defence Services Command and Staff College, Mirpur.

Major Shahriar, Maj Humayun, Maj Habib, Maj Alamgir, Maj Salauddin (2007). 'An Analysis of AW to Integrate Historical Lessons into Unconventional Warfare Doctrine of Bangladesh Army,' *Group Research Paper,* Defence Services Command and Staff College, Mirpur.

Internet Sources

Thom Shanker, "Rumsfeld's Search for a Way to Fight a New Type of Foe," *New York Times*, September 4, 2002, www.nytimes.com/2002/09/04/international/ 04RUMS.

H.R. McMaster, "A Crack in the Foundation: Defense Transformation and the Underlying Assumption of Dominant Knowledge in Future War," *Student Issue Paper*, CSL, U.S. Army War College, Vol. S03-03, November 2003.

Jeremy Gwinn, "Organizing for Counterinsurgency at the Company and Platoon Level," *Small Wars Journal*, August 2, 2007, http://www.smallwarsjournal.com/blog/2007/08/organizing-forcounterinsurgen/.

Lee G. Bolman and Terrence E. Deal, Reframing Organizations (San Francisco: Jossey-Bass,2003), p-42.

RAND Corporation, https://www.rand.org/topics/asymmetric-warfare.htm

https://www.globalresearch.ca/strategy-and-military-tactics-asymetric-war.../5366329

Interviews Taken by author

BA 2666 Major General Ataul Hakim Sarwar Hasan, ndc, afwc, psc, PhD - Area Commander, Logistic Area, Bangladesh Army

BA 3124 Brigadier General Ejazur Rahman Chodhury, ndc, hdmc, psc - Director Infantry, Infantry Directorate, General Staff Branch, Army Headquarter, Bangladesh Army

BA 3144 Brigadier General Ashraful Quader Chowdhury, ndc, afwc, psc – Commandant Bangladesh Infantry Regiment (telephone interview).

BA 3227 Brigadier General Md Kamrul Ahsan, ndc, psc, Acting Commandant, School of Infantry and Tactics, Bangladesh Army (telephone interview).

BA 3329 Brigadier General Md Main Ullah Chowdhury, awc, psc – Director Military Training, General Staff Branch, Army Headquarter, Bangladesh Army.

BA 3335 Brigadier General Sayeed Siddiki BSP, awc, psc - Commander, 46 Independent Infantry Brigade, Bangladesh Army.

BA 4218 Colonel Md Ziaul Houque, afwc, psc – Chief Instructor, Tactics Wing, School of Infantry and Tactics, Bangladesh Army (telephone interview).

BA 4457 Colonel Md Motiur Rahman, Chief Instructor, Unit Command and Staff Wing, School of Infantry and Tactics, Bangladesh Army (telephone interview).

Major Mohammad Farhan Monir, Infantry was commissioned in the Corps of Infantry in December 2004. He served in two infantry battalions. Besides regimental appointments he also held Instructor and staff appointments. Notable one are Instructor, Tactics Wing, School of Infantry and Tactics and Staff Officer in Rapid Action Battalion. Under 'Blue Helmet' he served in Western Sahara, Morocco as United Nations Military Observer. He also had two years tenure in Chittagong Hill Tracts with 9 East Bengal Regiment. Besides various courses in Bangladesh Army, he also attended Junior Staff Course and Mid-Career Course from School of Infantry and Tactics, Quetta, Pakistan. He is happily married.

TRAINING OF BN GUNNERY SAILORS TO MEET THE PRESENT AND FUTURE FLEET REQUIREMENTS

Lieutenant Commander Abdullah Al Noman, (G), BN

ABSTRACT

This research endeavours to find out the core predicament which is slowing down the headway of BN training system despite significant remedial actions. Gunnery School at BNS ISSA KHAN has been conducting the gunnery training of BN Officers and sailors with age old limitations of BN training system. Reality is that, the impediments of BN Gunnery training system are embedded in the challenges of BN training system. However, challenges are not unmarked. As a matter of fact, analysis of the various policies, study paper, and instructions issued by DNT, NHQ reveals that numerous pragmatic and significant steps were undertaken in past to eradicate the age old problems of BN training system. Yet substantial improvement in this sector is far from reality. Further, investigation of various reminders and correspondence from DNT, NHQ regarding adherence of various enforced training policies exposes the dissatisfaction of NHQ and realism on ground. A good number of researches have been conducted on BN training system previously. However, previous researchers did not evaluate the existing training system by any reputable training evaluation method. At this backdrop, this research chose to evaluate the existing training system of BN Gunnery Sailors by Donald L Kirkpatrick's ***"Four steps to measure training effectiveness."*** *After identifying problem areas through said evaluation method, researcher aimed to segregate those problems against which remedial measures had been taken by NHQ. Thereafter, analysis was carried out to reveal the core predicament behind the lack of improvement of training system, regardless of remedial measures by NHQ. The researcher opines that the main stumbling block will be revealed through this process, which if solved, would bring qualitative improvement to the BN training system in general and training system of BN Gunnery Sailors in particular.*

INTRODUCTION

Unlike Bangladesh Army and Bangladesh Air Force, Bangladesh Navy (BN) started out of a scratch after Liberation War of 1971. BN inherited nothing from Pakistan Navy but two barren naval bases in Chittagong and Khulna with a transit camp in Dhaka. That toddler navy has transformed into a three dimensional navy within 4 decades. Relentless hard work and dedication of our predecessors made it possible to leapfrog within such a short span of time. However, a linear increase in combat capability through induction of new ships is not sufficient to keep up with present and future fleet requirement. Fleet modernization and enhancement of the skills to operate that modern fleet should go hand in hand.

Gunnery School at BNS ISSA KHAN (IK) has been conducting the gunnery training of BN Officers and sailors with age-old limitations like: absence of a training philosophy,

lack of qualified instructors, inadequate training facilities, old syllabus, etc. Analysis of the various policies, study paper, and instructions issued by DNT, NHQ reveals that many of the aforementioned problems were rightly identified in past. Accordingly numerous pragmatic and significant steps were undertaken (DNT, 2011). Yet substantial improvement in this sector is far from reality. Further, investigation of various reminders and correspondence from DNT, NHQ regarding adherence of various enforced training policies exposes the dissatisfaction of NHQ and realism on ground.

A good number of researches have been conducted on BN training system previously. However, previous researchers did not evaluate the existing training system by any reputable training evaluation method. At this backdrop, this research paper initially evaluates the existing training system of BN Gunnery Sailors (FC-III Q, FC-II Q, FC-I Q and GI 'Q' training excluding MODC training) by Donald L Kirkpatrick's **"Four steps to measure training effectiveness."** After identifying problem areas through said evaluation method, researcher aims to segregate those problems against which remedial measures had been taken by NHQ. Thereafter, the paper carries out analysis to reveal the core predicament behind the lack of improvement of training system, regardless of remedial measures by NHQ. Finally, the paper proposes an effective training system for BN gunnery sailors which will meet present and future fleet requirement.

EXISTING TRAINING SYSTEM OF BN GUNNERY SAILORS

Courses Conducted at Gunnery School

The present training system of BN gunnery branch sailors is a single stream system rather than a multi-stream approach. No GA and QA trade training exists any more. All gunnery rate sailors are now FC rates. Among these few are chosen or selected from volunteers for GI course which is equivalent to a first rate course with additional parade training and instructional skills. Presently the courses are designed to have roughly 45:55 ratio for practical and theory.

Interrelation of Major Components

The major components of BN training system are as follows:-

a. NHQ (DNT in particular)

b. Admin Authorities

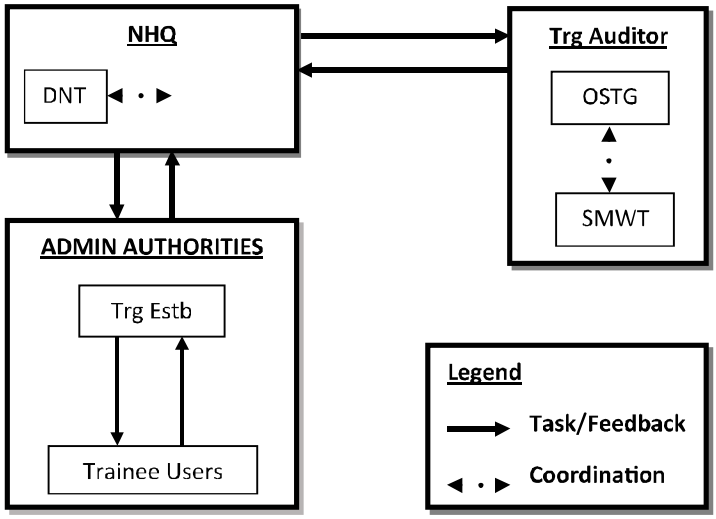
c. Training ships/ establishments

d. Trainee users (Ships/ establishment)

e. Training auditors (OSTG, SMWT)

The above mentioned major components of existing BN Training System operate by continuous flow of information amongst them. For smooth functioning information flow in between the functional components of training as per the following diagram:-

Figure-1: Interrelation of Major Components

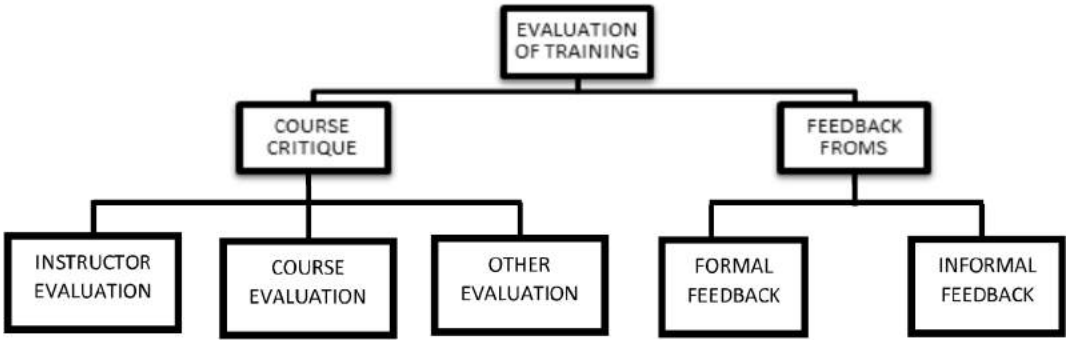


Source: DNT (2011)

Existing Training Evaluation System in BN

The existing training evaluation system of BN was introduced in 2011 with a view to measure the effectiveness of BN training activities. In existing evaluation system, major role is played by the feedback reports at different levels. TDEC section of DNT, NHQ is responsible for overall evaluation of the BN training system. All components of BN Training System conduct evaluation at their end on the basis of following diagram:

Figure-2: Training Evaluation System of BN



Source: DNT (2011)

Present and Future Fleet Requirements From BN Gunnery Sailors

Present Fleet Requirements. According to the "Syllabus Review Committee", (formed vide BNTM 35/2011 dated 29 September 2011) the main objective of professional courses of Gunnery branch sailors in Gunnery school is to prepare the Gunnery sailors for the prescribed tasks compatible for their rank and trade onboard ship. In order to fulfill this objective the "Syllabus Review Committee" has revised and prepared professional syllabuses as per the contemporary task requirement and enabling objectives of the each course. From the analysis of the syllabus proposed by the "Syllabus Review Committee", present fleet requirements out of Gunnery branch sailors can be enumerated as below:-

a. **FC-III 'Q'**. The present fleet requirements expected out of FC-III sailors are as follows:-

(1) They should have a basic knowledge on various guns, small arms, ammunition and missiles and NA store keeping.

(2) Act as loader & supply number of various guns.

(3) Act as communication number & action lookout duties.

(4) Act as a member of a landing platoon of a ship's landing party including boarding operation & disaster management.

(5) Act as Sentries in various operations.

(6) Act as a member of ceremonial guards.

(7) Assist in the maintenance of guns and armaments.

(8) Assist in maintaining Watch and Station Bill and NA Store Keeping duties.

b. **FC-II 'Q'**. The present fleet requirements expected out of FC-II sailors are as follows:-

(1) To act as Captain of the gun house, second Captain of the turret and breech worker and Captain of the Mounting of Guns.

(2) To act as fire control system operator and assistant to the fire control system controller.

(3) To act as a Layer and TDS Operator.

(4) To maintain Watch and Station Bill, NA Store Keeping, Gunnery Returns and Gunnery Books and Records.

(5) To act as Gunnery Yeoman.

(6) To act as section commander of ships landing platoon and members of ships landing party including aid to civil power and boarding operation.

(7) To act as Guard Commander.

(8) To assist ordnance/ electrical staff for maintenance of Fire Control Equipment and carry out simple routine test of that equipment.

(9) To act as in-charge of a squad.

c. **FC-I 'Q'**. The present fleet requirements expected out of FC-I sailors are as follows:-

(1) To act as fire control system controller including Chaffs and Rocket.

(2) To act as Captain of the Turret.

(3) To attain the ability to train junior rates on Gunnery Duties.

(4) To Supervise on maintenance Watch and Station Bill and NA Store Keeping.

(5) To act as a Petty Officer of the gunnery team and in charge while ammunitioning ship.

(6) To act as a Petty Officer of the ships landing party including aid to civil power & boarding operation.

(7) To act as In Charge of Operational Sentries and Guard Commanders.

(8) To assist the ordnance & electrical maintenance staff while carrying out the periodical examination of fire control systems/equipment (SRGM and OTOBREDA associated with SMCS.

(9) To act as in charge of ceremonial platoon and Guide of Ceremonial Guard/POG.

d. **GI 'Q'**. The present fleet requirements expected out of GI 'Q' sailors are as follows:-

(1) To assist GO to organize parade, divisions and other Gunnery drills and ceremonies.

(2) To assist GO in preparing the Watch and Station Bill according to the Quarter Bill and organize gunnery office & gunner's party.

(3) To act as a Petty Officer in-charge of ship's Gunner's party, ship's landing organization including duties in aid to civil power & boarding operations and in charge while ammunitioning or de-ammunitioning of the ship/ establishment.

(4) Take charge of Gunnery quarters during action and defence stations.

(5) To act as the Instructor of Gunnery Branch sailors.

(6) To impart training for officers and sailors on Gunnery Weapons, Fire Control Systems, Gunnery Equipment including Small Arms.

(7) To act as an active participant to assist ordnance and electrical maintenance staffs in carrying out periodical checks/ inspections of fire control systems and equipment.

(8) To be able to conduct maintenance of gun mountings and assist the Ordnance staffs for necessary sentencing of Guns.

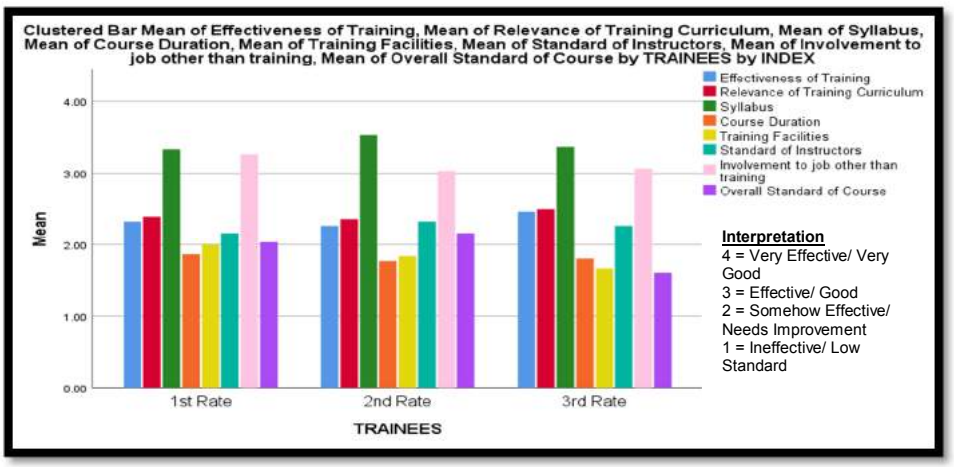
Future Fleet Requirements. Considering the 'Forces Goal- 2030' of BN, it can be envisaged that number of automatic guns in the BN fleet will increase manifold. Operations room/ Combat Information Centers of the ships will be equipped with modern sensors and associated computer consoles. As such, future gunnery sailors have to be competent enough to operate these modern gadgets (DNO, 2017). On the other hand, BN should also be capable of ensuring gapless coverage of its maritime space against evolving maritime challenges. In that pursuit, its fleet will have to have the capability to access shallow waters with smaller crafts (CNS Vision, 2016). Hence, presence of manual and small caliber guns in BN fleet cannot be ignored. Therefore, by 2030 BN gunnery sailors' training can have more emphasis on modern automatic guns and associated system. However, training on manual guns can also continue (DNO, 2017).

EVALUATION OF BN GUNNERY TRAINING SYSTEM THROUGH SCIENTIFIC METHOD

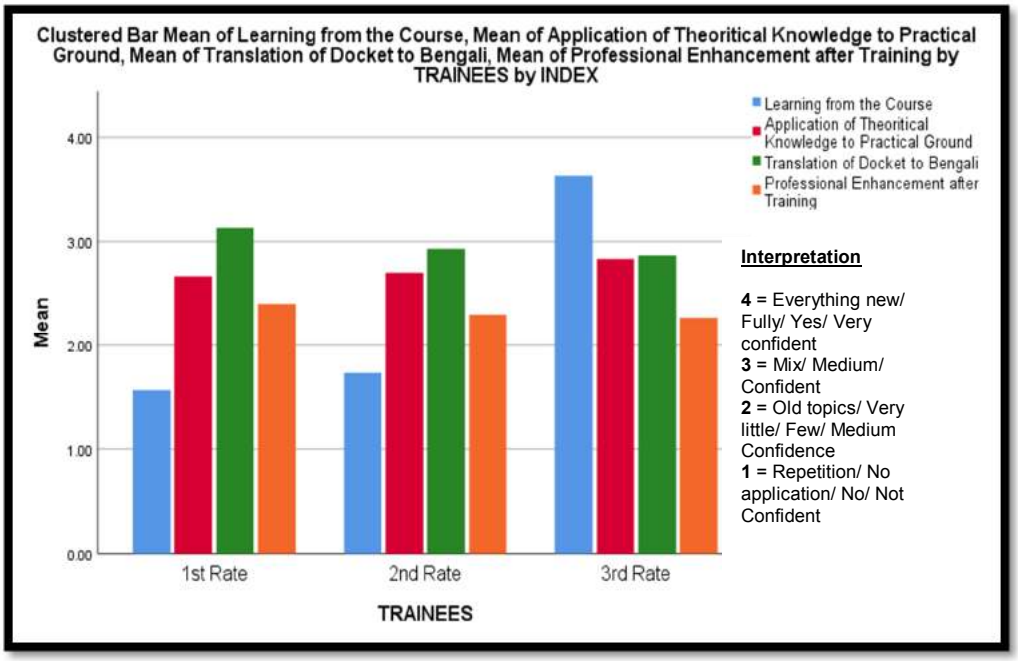
Evaluation of BN Gunnery Training System by Kirkpatrick's Model

For evaluating BN Gunnery Training System by Kirkpatrick's model, a questionnaire (in Bengali) was sent to Gunnery School at BNS IK, Chittagong. Trainees, who have completed the 1st rate, 2nd rate and 3rd rate course and/ or at the end stage of their course, were asked to fill up questionnaire. Collected answers were analyzed by SPSS software to identify the effectiveness of the present BN Gunnery training system. Total sample size was taken 90 based on sample calculation.

a. **Level-1: Evaluation of Reaction**. To evaluate the reaction of the trainees, they were asked about effectiveness of the training, relevancy of the training curriculum, adequacy of the course duration, training facility, over all standards of the instructors and course as a whole. After analyzing the data in detail through SPSS software following results have been found:

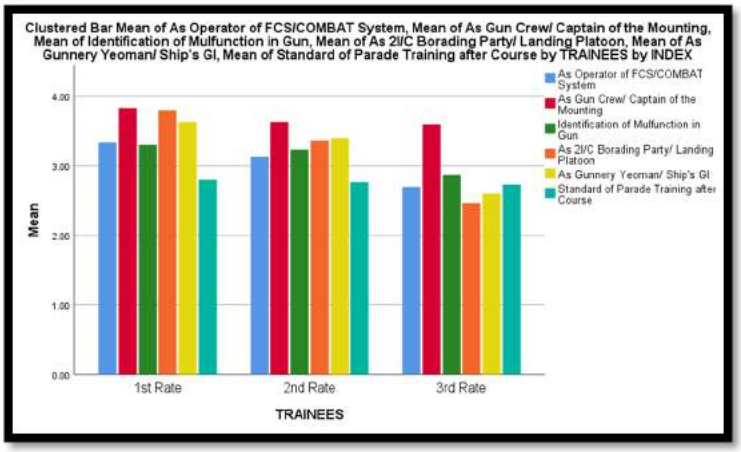


b. **Summary of Evaluation (Reaction)**. In view of the above analysis, it can be deduced that over all reaction of trainees regarding the effectiveness of training do not give any 'Smile Sheet'. They think that many of the curriculums of the training have little relevance with their regular professional activities. Many of them believe that the syllabus was little vast in comparison with duration of the course. Needs improvement. Further, half of the responders replied that their involvement with base activities was too much. However, majority of them (80%) are not happy with the overall standard of the course.



c. **Level-2: Evaluation of Learning**. To evaluate the reaction of the trainees, they were asked about learning from the training, application of theoretical knowledge into practical ground, necessity of translation of docket to Bengali, and change in professional ability after training.

d. **Summary of Evaluation (Learning)**. From aforementioned analysis, it can be deduced that trainees' learning state from the training is not up to the expectation. Many of the 2nd and 3rd rate qualified trainees believe that they have not learnt much new topics since their last 3rd rate training. Almost all the responders do not feel fully confident to apply their theoretical knowledge into practical jobs. All the trainees face difficulties to study dockets in English. Majority of them (66.7%) feel medium level of confidence after the training.



e. **Level-3: Evaluation of Behaviour**. To evaluate the change of behaviour of the trainees after the training, they were asked about the skills and knowledge they acquired and whether they are confident to perform the duties expected out of them.

f. **Summary of Evaluation (Behaviour)**. In light of the above analysis, it can be deduced that 1st rate qualified trainees are more confident in doing various tasks expected out of them. However, in general trainees are not much confident in performing various tasks assigned to them.

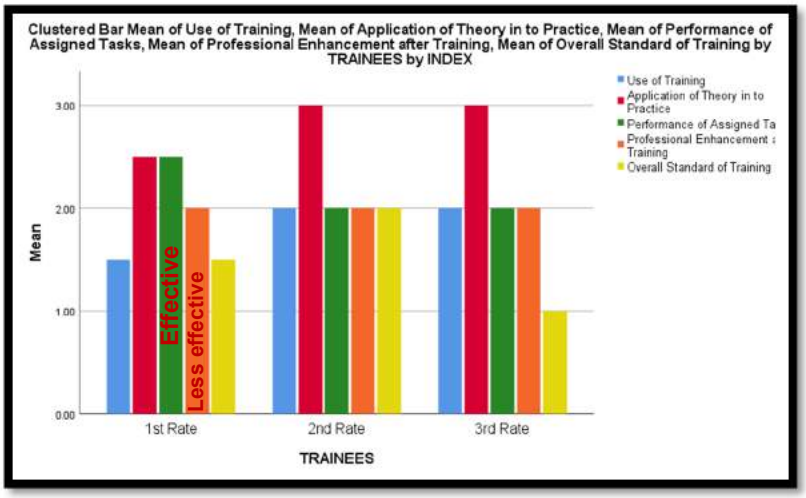
g. **Level-4: Evaluation of Result**. After comparing evaluation result of previous three levels following major findings have been derived:

(1) 62.2% trainees find Gunnery Training as somehow effective/ineffective.

(2) 92% trainees feel medium or very little confidence in applying theory into practice.

(3) 67.8% trainees feel medium or less confident in their profession.

(4) Approximately, 60-65% trainees can somehow manage the assigned tasks.



h. **Limitation of Result**. Evaluating results is the most challenging part of evaluation. According to Kirkpatrick's Model, to evaluate the results of previous three levels few factors must be kept in mind. Such as-change in the quality of work, impact of training on organization, cost vs benefit analysis, etc. Such evaluation requires considerable amount of time (5-6 months) to observe the training impact on the organization. It also requires feedback from the trainee users to assess the on ground performance of the trainees. Besides, effectiveness of the training can be affected by factors other than the training standard. Researcher did not get enough time, scope and manpower to carry out such evaluation of level 4. Hence, a controlled (selected as sample) group of trainees can be observed and evaluated through questionnaire and feedback from school and trainee users for about 5-6 months to get a good evaluation result.

CHALLENGES TO EXISTING GUNNERY TRAINING SYSTEM OF BN SAILORS AND IDENTIFICATION OF CORE PREDICAMENT

Existing Challenges

Based on the above mentioned evaluation results of **'Kirkpatrick's Model'**, major challenges of BN Gunnery Training System are as follows:-

a. Compatibility of syllabus with course duration.

b. Lack of relevance of training curriculum with regular professional life.

c. Inadequate training facilities.

d. Standard of instructors needs improvement.

e. Involvement of instructors and trainees to jobs other than training.

f. English language barrier of sailors.

Identification of Core Predicament

Curative Measures Taken by NHQ in Past. Above mentioned challenges, which is the outcome of the survey and data analysis of this research paper are not some brand new findings. In fact, these are longstanding shortcomings of BN training system which were identified by many researches and studies done previously. In pursuant to the recommendations of past studies DNT, NHQ undertook various curative measures which were pragmatic and achievable. Few of the important measures are mentioned below:

a. Formulation of Standing Syllabus Committee.
b. Introduction of Feedback and Evaluation System.
c. Policy to enhance the standard of instructors.
d. Reducing the involvement of trainees and instructors to jobs other than training.
e. Policy to overcome English language barrier of sailors
f. OSTG and SMWT in the role of Training Auditor.

Future Plan by DNT. Recently BN has taken following measures (DNT, 2017) to improve the effectiveness of the training system:

a. Introduction of Practical Training Guide Book for sailors.

b. Ensuring every sailor undergoing 3 months OJT (On Job Training) on board ships.

c. Translation of all dockets into mix of Bengali and English.

d. Establishment of three small arms simulators at BNA, IK, TMR.

e. Introduction of Training Management Software.

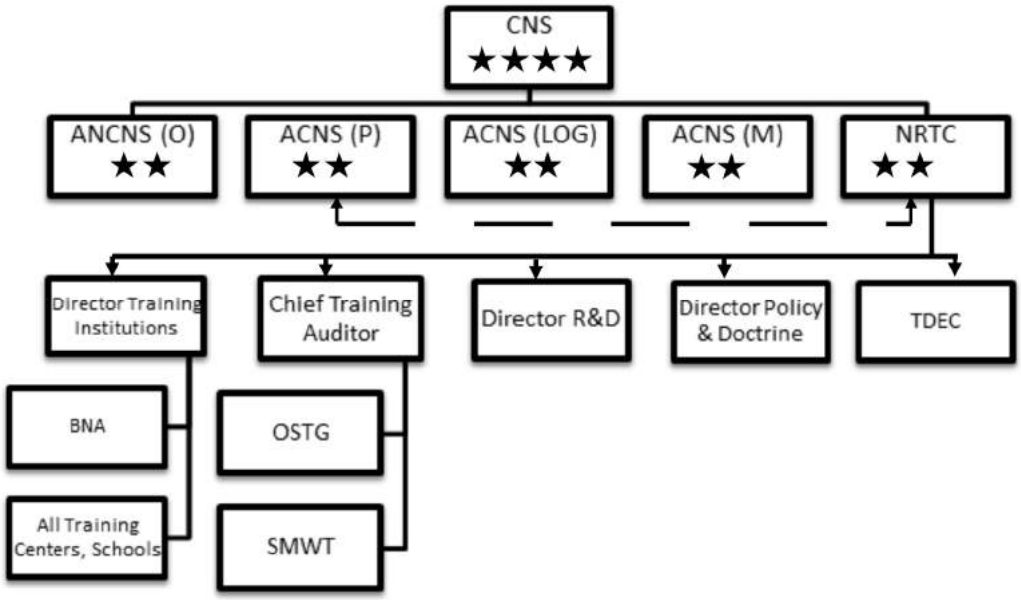
Core Predicament. After analyzing the above mentioned challenges and curative measures taken by NHQ against those challenges as well as basing on the comments made by few Key Informant Interviewees, researcher identified absence of a separate training command as the core predicament for such shortfall (Summary of Interview). A dedicated training command will have more manpower, better infrastructure than now to implement the noteworthy steps undertaken by NHQ to maintain an effective training system.

Proposals to Overcome Core Predicament

Establishing a Separate Training Command. The Military Training (MT) Directorate at Army Headquarters (AHQ) was responsible for carrying out different types of research works related to training of the Bangladesh Army. However, due to limited resources and a manpower shortage, they could not do any comprehensive research and study in the field of doctrine and development. To strengthen the research and development capability for strategic, operational, tactical and technological enhancement, and to keep up with continual changes in the complexities of the battlefield scenario as well as rapid technological advancement, Bangladesh Army raised ARTDOC (Army Training and Doctrine Command) on 25 July 2007. The mission of this Command is to develop training and operational standards of Bangladesh Army with special emphasis on research and development in various fields (Bangladesh Army Official Website. nd).

The Indian Navy also has a full-fledged Training Command. The Training Command is functionally responsible for the organization, conduct and overseeing of all basic professional and specialist training throughout the Navy. To enable this, the Training Command continuously evolves policies, formulates syllabi, reviews and restructures the scope of training in various schools and establishments (Indian Navy Official Website. nd). Hence, BN may also establish a separate training command, Naval Research & Training Command (NRTC) headed by a three star/ two star Admiral. A proposed organogram for the NTRC is appended below:-

Fig-3: Proposed Command Relationship of NRTC



Source: Author's construct

Preparation of Training Manual. BN may prepare a Training Guide Book/ Manual as BN publication which will provide a central philosophy, goal or mission to the force to achieve a desired effect in the training system.

CONCLUSION

BN has transformed into a three dimensional navy within a short span of time since independence. Yet, a linear increase in combat capability through induction of new ships is not sufficient to keep up with present and future fleet requirement. Fleet modernization and enhancement of the skills to operate that modern fleet should go hand in hand. It requires an effective training system which is great challenge for BN at present.

Gunnery School at BNS IK has been conducting the gunnery training of BN Officers and sailors with age-old limitations as previously mentioned. Analysis of the various policies, study paper, and instructions issued by DNT, NHQ reveals that many of the aforementioned problems were rightly identified in past. Accordingly numerous pragmatic and significant steps were undertaken (DNT, 2011). Yet substantial improvement in this sector is far from reality. Further, investigation of various reminders and correspondence from DNT, NHQ regarding adherence of various enforced training policies exposes the dissatisfaction of NHQ and realism on ground.

To evaluate the existing BN Gunnery system researcher used Kirkpatrick's Four Level Training Evaluation Model. After comparing evaluation result major findings are:

62.2% trainees find Gunnery Training as somehow effective/ ineffective. 92% trainees feel medium of very little confidence in applying theory into practice. 67.8% trainees feel medium or less confident in their profession. Approximately, 60-65% trainees can somehow manage the assigned tasks.

After analyzing the above mentioned challenges and curative measures taken by NHQ against those challenges as well as basing on the comments made by few Key Informant Interviewees, researcher identified absence of a separate training command as the prime reason for such shortfall (Summary of Interview). A dedicated training command will have more manpower, better infrastructure than now to implement the noteworthy steps undertaken by NHQ to maintain an effective training system.

RECOMMENDATIONS

From above analysis following are recommended:

a. BN may take necessary steps to establish a separate training command, Naval Research & Training Command (NRTC) headed by a three star/ two star Admiral as proposed.

b. DNT may prepare a Training Guide Book/ Manual as BN publication.

BIBLIOGRAPHY

Books

Kirkpatrick Donald L. and Kirkpatrick James D. (2006). *Evaluating Training Programs-The Four Levels.* San Francisco, Berrett-Koehler Publishers Inc.

Hays Robert T & Singer Michael J. (1988). *Simulation Fidelity in Training System Design: Bridging the Gap Between Reality and Training*. New York. Springer Publishing Company

Leggett Don (2015). *Shaping the Royal Navy: Technology, Authority and Naval Architecture, c 1830-1906*. Manchester, Manchester University Press.

Dissertations

Masud, Ezaz. (2016). *Enhancement of Bangladesh Navy's Operational Capability Through Introduction of New Training Package: A Step* Forward. Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2016.

Sharif, M N I. (2012). *Limitations of Training System Of Bangladesh Navy Technical Branch Sailors and Ways To Overcome.* Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2012.

Braunbeck M. C. (1989). *Technology's Impact on the Navy.* US Naval War College, 1989.

Internet Documents

US Navy (2010). Navy School Management Manual. Available at http://www.netc.navy.mil/ile/_Documents/NETCResource/NAVEDTRA_135C.pdf

US Navy (2014). Naval Instructional Theory (14300A). Available at http://homeport.seacadets.org/pages/viewpage.action?pageId=3047544

Paul F. Watson (2014). The Evolution of Naval Gunnery (1900 to 1945). Available at https://www.navygeneralboard.com/evolution-naval-gunnery-1900-1945/

BN History (n.d). Available at http://www.navy.mil.bd/bn_history3.php

Other Documents

Various Letters, policies and instructions promulgated by Directorate of Naval Training, Naval Headquarters.

Interview taken by author

Ali Commodore Mir Ershad, (G), NPP, psc, BN, Director Naval Operations, Bangladesh Navy. (Personal communication, 2017, October 19).

Musa Commodore Mohammad, (G), NPP, rcds, afwc, psc, BN, Commanding Officer, BNS ISSA KHAN. (Personal communication, 2017, October 26).

Mondal Captain Mohammad Hasan Tarique, (G), NPP, psc, BN, Director of Naval Training, Bangladesh Navy. (Personal communication, 2017, October 19).

Bhuiyan Commander Md Abdullah Al Moin, (G), psc, BN, Commanding Officer, BNS DURGOM. (Personal communication, 2017, November 29).

Sharif Commander Mufakhkharul Islam, (C), psc, BN, Training Commander Bangladesh Naval Academy. (Personal communication, 2017, November 29).

Siddique Lieutenant Commader Mohammad Hamja Bin, (G), BN, OIC, Gunnery School, BNS ISSA KHAN. (Personal communication, 2017, November 29).

Wahid Lieutenant Commader Razeen Ibne, (G), BN, Instructor, Gunnery School, BNS ISSA KHAN. (Personal communication, 2017, October 4).

Ahmed Lieutenant Commander Arif, (X), BN, Training Commander, SMWT, BNS ISSA KHAN. (Personal communication, 2017, October 4).

Lieutenant Commander Abdullah Al Noman, (G), BN was born on 8th July 1983 in Comilla. He passed both Secondary School Certificate and Higher Secondary Certificate Examinations from Mirzapur Cadet College, Tangail. He was commissioned from Bangladesh Naval Academy with 2002/A batch (49th BMA Long Course) in the Executive branch on 1st December 2003.

He served on board various ships of BN and held appointments like Executive Officer, Gunnery Officer and Navigating Officer. In his service career, he has served both as staff and instructor. He has served as General Staff Officer - Grade 2 at Directorate General of Forces Intelligence and Instructor at Bangladesh Naval Academy. He is a Gunnery Specialist. He has participated in United Nations Peacekeeping Mission in Lebanon. He is married, and blessed with two sons.

EXPLOITING THE POTENTIALS OF NOU KOLLAN FOUNDATION FOR NATIONAL DEVELOPMENT

Lieutenant Commander M Baizid Hossain, (G), BN

ABSTRACT

The research on 'Exploiting the Potentials of Nou Kollan Foundation (NKF) for National Development' provides foreknowledge on the potentials of NKF and identify the potentials sectors where it can undertake its activities for national development. Welfare activities of BN through NKF are in a developing state. In comparison with sister services in general and SKS of Bangladesh Army (BA) in particular, activities of NKF are in a nascent state. SKS in addition to rendering welfare services, is also providing remarkable service to the national development of the country. In this regard, BN should undertake intensive activities through NKF utilizing the expertise of its retired personnel. Considering the overall commitment of BN to the nation, NKF should be developed with a systematic approach to promote not only welfare activities for its personnel but also contributing to the national development. This particular research is an exploratory one based on qualitative approach. The researcher personally visited the offices of NKF, SKS and BAFWT to acquire first-hand knowledge through observation of the day to day activities and the working procedures of the mentioned organizations. Interviews and expert opinions have been taken to validate the concept and data. In comparison with other welfare organizations of the Armed Forces, NKF also have huge potentials as an organization. Retired personnel of BN being employed in NKF, BN's support and strict quality control to project work are the core potentials of NKF. Moreover, dredging sector, deep sea fishing and inland shipping sector offer good prospects for NKF. However, the very nature of environment where the projects of NKF are being conducted poses challenges. Finally, NKF should promote re-employment of retired BN personnel in the project activities, carry out own capacity building, capitalize experience of senior naval officers, train its personnel and promulgate HRD policy with a holistic perspective plan for national development.

INTRODUCTION

Bangladesh Navy (BN) started its journey with only two patrol boats and few naval personnel after the Liberation War in 1971. With the passage of time and consistent efforts, BN has transformed into a three dimensional Navy. Apart from active participation in operational activities, BN is now closely focused on welfare activities through setting up Nou Kollan Foundation (NKF) in 2011 under the auspices of the Directorate of Welfare.

Welfare activities of BN through NKF are in a developing state. In comparison with sister services in general and Bangladesh Army (BA) in particular, activities of NKF are in a nascent state. BA runs its welfare activities through Sena Kalyan Sangsha (SKS)

since 1972 and Army Welfare Trust (AWT). Bangladesh Air Force (BAF) is also pursuing welfare activities through Air Force Welfare Trust (AFWT) since 2010. Besides, running welfare activities for retired Armed Forces personnel and their beneficiaries, SKS is rendering remarkable service to the national development of the country.

In this regard, BN should undertake intensive activities through NKF utilizing the expertise of its retired personnel. Considering the progress of welfare organizations in the sister services, NKF has started exploring comparatively unexplored avenues to conduct its activities. To undertake these activities, NKF has opened two commercial enterprises, namely Nou Kollan Foundation Trading Company Limited (NKFTCL) and Nou Kollan Shipping Lines Limited (NKSLL). In this context, considering the overall commitment and contribution of BN to the nation, NKF should be developed with a systematic approach to promote not only welfare activities for its personnel but also contributing to the national development. NKF should be involved in the maritime sector, pursue Blue Economy, promote maritime awareness, develop energy and power projects in the coastal areas, mitigating challenges encountered and capitalizing its potentials with a well planned and directed roadmap.

The paper initially outlines the foundation of NKF, describes its organization and working procedure as well as its present activities. Thereafter, present activities, challenges and achievements of other welfare organizations in Bangladesh Armed Forces are discussed. The paper then examines the potentials of NKF for national development, discusses the challenges faced by NKF while undertaking its different projects for pursuing national development. Finally, the paper outlines the suggested imperatives by which NKF can pursue national development mitigating challenges encountered and capitalizing its potentials with a perspective plan.

GENERAL OVERVIEW OF NKF

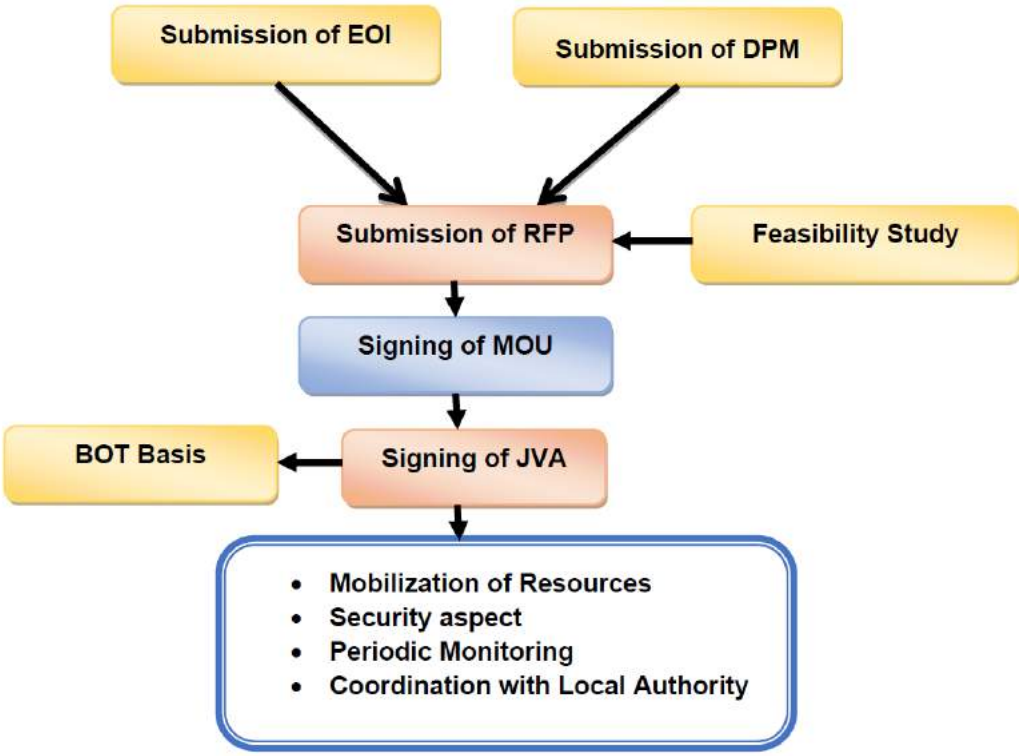
NKF is a commercial enterprise of BN. It is formed as a welfare trust organization of BN. It is a self-supporting organization being governed by a Board of Trustee (BOT). It is formed to provide welfare of the serving and retired Naval personnel and their families (the beneficiaries). It operates in the private sector and its expenditures are addressed with funds generated through industrial and commercial projects. The Directorate of Welfare regulates the welfare activities in BN. After setting up in 2011 under the auspices of the Directorate of Welfare, NKF is contributing to the welfare activities of BN through profit earning from its different projects.

NKF was founded on 13 Dec 2011 as a non-profitable, non-political, charitable and venture based foundation and registered as a Joint Stock Company under Societies Registration Act 1860. Its registered office is in Naval Headquarters, Banani, Dhaka. After foundation, NKF initiated its activities utilizing the expertise of retired personnel of BN. To undertake the activities, NKF has opened two commercial enterprises, namely NKFTCL and NKSLL.

Working Procedure

NKF undertakes projects with different national, international and private companies through providing Expression of Interest (EOI). Once EOI is accepted initially, a Request for Proposal (RFP) is sent to the respective organization. Thereafter, NKF completes the formalities of signing of the Memorandum of understanding (MOU) and Joint Venture Agreement (JVA). NKF also conducts project work by providing subcontract to different reliable contractors and entrepreneurs. Moreover, NKF also considers partnership in the Build, Operate and Transfer (BOT) method. At present, NKF is also participating in projects being offered by different Ministries of the Government through Direct Procurement Method (DPM). These projects are supervised by the personnel of NKF and the profit of the projects is contributed to the BN Welfare fund under the management of Director of Welfare.

Figure 1: Schematic Representation of Project Work by NKF



Source: Author's construct based on survey

Ongoing Activities for National Development

Dredging. NKF is undertaking dredging projects in different rivers of Bangladesh under Chittagong, Mongla and Payra port, BIWTA and BWDB. It is carrying out the

projects through the signing of JVA with national and international dredging companies working in Bangladesh.

Inland Shipping. Two container vessels MV NOU KOLLAN-1 and MV NOU KOLLAN-2 have already been constructed in KSY for NKF. These vessels transported cargo from Indian port KOLKATA to newly opened Pangaon Inland Container Terminal under the Protocol of Bangladesh - India Inland Water Transit and Trade. Moreover, through these vessel, NKF is providing commercial lightering service from Chittagong, Mongla and Payra port outer anchorages to the inland parts of Bangladesh.

Integrated Tourism Development Project (ITDP). NKF is undertaking an ITDP. The project will be composed of a Naval museum, a commercial shopping complex like Navy Exchange (NEX) along with a Sports complex. NKF has already signed a JVA with a renowned international contractor to complete the project on BOT basis.

Project in Power Sector. NKF is undertaking coal based power plant in Bashkhali, Matarbari and Patuakhali under JV. NKF is keen to develop power plants in the coastal areas in collaboration with experienced and reliable companies.

WELFARE ORGANIZATIONS OF ARMY AND AIR FORCE

Corporate Overview of SKS. SKS is a self-financing welfare organization dedicated to the welfare of retired personnel of Armed Forces and their beneficiaries. Besides, it renders service to the nation by producing quality consumer goods, providing employment to the people of different classes and contributing to the national economy.

Potential of SKS. SKS is an organization with a very high potential, the details of which are mentioned below:

a. **Brand Name.** Since its formation, SKS does not compromise with its quality. Specially for its products in the market, SKS maintains strict quality control through ensuring standard raw materials, production and monitoring of quality. Therefore, SKS has established a brand image.

b. **Potential of Retired Armed Forces Personnel**. SKS employs retired Armed Forces personnel in its activities. It utilizes the experience, expertise, professionalism and dedication of its employees. Starting from initiation of a project in a potential sector through effective coordination and collaboration with investors/ parties, feasibility study, effective monitoring for timely implementation of projects adhering to quality and safety standards requires utmost honest and sincere efforts of an employee. In this regard, SKS capitalizes the potential of retired personnel of Armed Forces who served with a disciplined way of life.

c. **Effective and Efficient R & D.** Recently a Research and Development branch has been incorporated in the organization of SKS. With the inputs from branch, SKS

will be able to conduct its operations with more opportunity and sustainability. Moreover, its effective utilization and materialization will enhance the potential of the organization and also will create new opportunities in business.

Challenges of SKS. SKS has considerable challenges, the details of which are given below:

a. **Frequent Change of Management.** Sometimes the recurrent change of officials, particularly in the higher echelons of SKS creates lack of continuity in the planning, supervision, monitoring and implementation. Therefore, the smooth monitoring process does not get the desired momentum.

b. **Lack of Automation and Financial Analysis.** SKS is yet to have a central automation system in its Head Office as well as in the projects. Thereby, the yield in terms of products and profit is not that effective. Moreover, it is difficult to a get a real representation of financial condition of SKS.

c. **Lack of Training.** Sometimes due to lack of expertise and training SKS faces difficulty in undertaking its projects effectively. It requires training on corporate matters, financial/ legal aspects as well as specialized fields Therefore, SKS often needs to depend on opinion/ expertise of an outside organization.

An Overview of BAFWT

General. To meet up the shortfall of BAF welfare fund, BAFWT was established on 29 June 2010. After its formation, it has planned to undertake different commercial ventures to generate profits. The aim is to contribute this income to the BAF welfare fund. Therefore, BAF can ensure the welfare of its personnel more effectively. Profit generated from the planned existing projects can also expand new ventures. As per the Memorandum of Association, BAFWT aims to promote and create employment opportunities. Its objective is to promote and create employment opportunities for ex-Air Force personnel and their dependants. BAFWT also undertakes industrial and commercial projects. BAFWT undertakes projects independently or in Joint Collaboration with any company, financial institution and Bank as well as with the government.

Challenges of BAFWT

Shortage of Manpower. BAFWT is running with very limited personnel in terms of officers and staffs. Officers from other organizations need to augment the activities on ad hoc basis apart from doing work in the original appointments. It creates lack of continuity in the overall monitoring and supervision of projects.

Limited Exposure. BAFWT is yet to have good exposure in the competitive business environment and to be familiar in the competitive business environment. Moreover, it does not have a webpage, corporate profile, logo and associated feature to get exposure to the general people.

Lack of Regional Offices. Presently, BAFWT does not have any branch or office outside Dhaka. Therefore, all the activities have to be centrally coordinated from Dhaka office. Moreover, for monitoring site works, BAFWT personnel have to be mobilized from Dhaka office.

Lack of Capital. Since its inception, BAFWT does not have any capital to undertake it projects independently. Therefore, BAFWT faces difficulties in achieving its objects as per its Memorandum of Association.

Lack of Human Resources Development Policy. Being at the formative stage, BAFWT is yet to formulate a comprehensive Human Resource Development (HRD) policy to get maximum output from the potential of its personnel.

POTENTIALS OF NKF FOR NATIONAL DEVELOPMENT

Uncompromised Quality Control. While undertaking different projects, NKF focuses on quality rather than making superfluous profit. Its projects often receive a good appraisal report from the personnel of Implementation, Monitoring and Evaluation Division (IMED) under the Ministry of Planning.

Rehabilitation of Retired BN Personnel. NKF provides a good platform for the retired BN officers and sailors to start a new career just after their retirement. This opportunity facilitates the rehabilitation of retired BN personnel through re-employment. With the expansion of NKF in future, the re-employment of retired BN personnel is likely to increase further.

Potential of Retired BN Personnel. NKF employs retired BN personnel in its activities. It utilizes the experience, expertise, professionalism and dedication of its employees. Starting from initiation of a project in a potential sector through effective coordination and collaboration with investors/ parties, feasibility study, effective monitoring for timely implementation of projects adhering to quality and safety standards requires utmost honest and sincere efforts of an employee. In this regard, NKF capitalizes the potential of retired BN personnel who served BN with a disciplined way of life.

Projects in Coastal Area. NKF has started undertaking projects in comparatively unexplored avenues in the coastal areas of Bangladesh. The area of deep sea fishing, dredging of riverine/ coastal routes, inland shipping, projects in the power sector in the coastal areas and infrastructure development of seaports encompass sea, rivers and coastal areas of Bangladesh. Moreover, retired personnel from BN have the experience of completing their first career mostly in connection with sea and coastal areas of Bangladesh. Therefore, NKF personnel give the strength to plan and execute projects in the coastal area.

Contribution to Blue Economy. The blue economy sector is a relatively unexplored sector in Bangladesh. However, as the maritime boundary of Bangladesh is delimited

now, deep sea fishing beyond 200 metres water depth and high sea should be explored considering the potential Tuna fishing ground.

Prospect of Inland Shipping. NKF's humble start in the inland shipping sector with cargo vessels has demonstrated huge prospect of this sector. This sector can be utilized by involvement in the commercial lightering service, transportation to / from Bangladesh and India, ferry service from Teknaf/ Chittagong to St. Martin's island. Thus, NKSLL can focus considering present and future prospects of shipping sector in Bangladesh.

Promoting Maritime Awareness. NKF has huge potentials to promote maritime awareness through the ITDP that is likely to house a naval museum. This museum may be a good platform to preserve and demonstrate maritime history, culture and practices of Bangladesh along with key aspects of maritime history of the world. This will have a positive impact on recruitment in BN, infuse nationalism through the review of the Liberation War of the country and increase maritime awareness for public engagement in the maritime sector of Bangladesh. Thus, NKF will play a key role in building a maritime nation.

CHALLENGES OF NKF

Challenges of Multifaceted Marine based Project. Considering the working experience of the retired BN personnel in the coastal area, NKF undertakes challenging and multifaceted marine-based projects. For example, the area of deep sea fishing, inland shipping, projects in the power sector in the coastal areas and infrastructure development of seaports encompass sea, rivers and coastal areas of Bangladesh. The very nature of the environment requires feasibility study, previous working experience, specialized approach and constant monitoring for efficient project implementation.

Reliable and Efficient Partner. Being a newly formed organization, NKF often needs to opt for partnership to undertake the projects. As the projects that NKF undertakes are relatively in unexplored areas, the partners need to be efficient and experienced in the concerned sector.

Expertise in Working Method. NKF undertakes projects with different national, international and private companies through providing EOI. Once EOI is accepted initially, a RFP is sent to the respective organization. Thereafter, NKF completes the formalities of signing of MOU and JVA. Therefore, NKF personnel who comes from BN needs to attain some level of familiarity and experience for effective interpretation and usage of these methods.

Lack of Capital. Though NKF was formed in 2011, it started undertaking projects from 2015. Since then, it has started working independently, not under the Directorate of Welfare. At that time NKF did not have capital to undertake projects due to lack of self reliance. Therefore, NKF had to opt for partnership for all the projects. Thus, lack of

capital poses challenges for NKF while undertaking projects on lone venture or to have a substantial share in the partnership.

Training. Working in the multifaceted, competitive and challenging sector like deep sea fishing, power sector, inland shipping, dredging and infrastructure development entail training on technical, financial and corporate matters. Moreover, NKF personnel also need to have an advanced idea to efficient planning, coordination, supervision and execution of projects. Lack of training in these aspects poses challenges to NKF personnel while undertaking the project works.

Lack of Human Resources Development Policy. Being at the formative stage, NKF employs personnel on an initial contract of two years. NKF is yet to formulate a comprehensive Human Resource Development (HRD) policy to get maximum output from the potential of its personnel. To ensure the smooth conduct of its activities in different sectors, NKF requires a trained and skilled workforce being groomed under a comprehensive HRD policy. But the lack of such policy may hinder the activities of the projects being undertaken by NKF.

Lack of Research and Development (R & D). At present NKF does not have any R & D division to clearly develop a perspective pan, organize and focus on planning, coordination, supervision and execute project works. The necessity to analyze complicacies/ difficulties/ experience of undertaking projects works requires R & D with a view to augmenting the overall efficiency of personnel and organization. Therefore, absence of a R & D division does not allow to analyze different aspects of the present and future projects to be undertaken by NKF.

WAYS FORWARD

Contribution to the Blue Economy of Bangladesh. In the present organizational structure, there is no separate Blue economy division in NKF. Moreover, it has closely supported the infrastructure development and capacity building of the seaports of Bangladesh in general and Payra port in particular. Its contribution to the dredging sector specially for the capital and maintenance dredging of Payra port is also noteworthy. All these activities of NKF significantly contribute to the Blue Economy sector in Bangladesh. Therefore, opening a separate Blue Economy division may help NKF to collaborate with the Blue Economy division of the Government and get an allocation of funds to undertake its activities in this relatively unexplored sector with immense possibilities.

Deep Sea Fishing. The maritime area of Bangladesh offers good prospect of Tuna fishing ground. The introduction of deep sea fishing requires long line/ purse seiner fishing trawler with fishing gears/ equipment, initial crew to start the operation and train own crew, designated Tuna fish landing station, preservation and processing facilities and establishing a market chain for onward export destination. Therefore, the entire activities

of deep sea fishing in Bangladesh pose significant promise in terms of employment and earning foreign currency from this unexplored sector.

Power Plants in Coastal Areas. NKF's involvement in developing coal based power plant in Bashkhali, Matarbari and Patuakhali has demonstrated its endeavour to boost up the power sector ensuring energy security as a whole in the coastal area. These projects are likely to boost up investment in the area while improving the lifestyle and ease of work.

Prospect of NKSLL. Considering the prospect of this sector, NKF in mid to long term basis can build more cargo vessels in the local shipyards to increase its operation. Thus, it will be able to employ more of its personnel in those vessels. Thus, through setting of near to long term perspective plan for NKSLL, it will be able to contribute significantly in the shipping sector thus participating in the national development of Bangladesh.

Career of Retired BN Personnel at NKF. Considering the present growth of NKF, it can be the most appropriate platform for the reemployment of retired BN personnel. At present, retired BN officers and sailors are offered employment for an initial contract of two years. Under a comprehensive HRD policy, retired BN personnel can be taken for a full tenure of five years like the SKS. BN personnel on Leave Pending Retirement (LPR) may be contacted and offered with this job opportunity in various capacities in NKF. Therefore, BN personnel need not to look for another job just after their retirement from BN.

Maritime Awareness Building. As one of the commercial enterprises of BN, NKF can approach to promote maritime awareness in Bangladesh. ITDP project is undertaken by NKF with a view to presenting the history of maritime sectors in general and naval aspect in particular with an emphasis on the Liberation War of Bangladesh. Furthermore, general people will be interested to choose BN or maritime sector as their career. Thus, NKF will play a key role in building a maritime nation.

Training of NKF's Personnel. To comprehend various financial, legal and technical aspects of the project, apart from hiring consultants, NKF's personnel should have a working background. This becomes more important during the selection of a potential project through feasibility study during the planning process. As NKF's personnel are coming from BN, therefore, training on these aspects will help them work effectively in the projects.

Effective Supervision of Project. Maintenance of the quality of work through retired personnel of BN is one of the key potentials of NKF in today's competitive environment. To meet this demand, NKF should employ competent, reliable and solely dedicated. There is no shortcut other than constant monitoring by the PD to ensure quality of work, maintenance of time schedule, adherence to safety standards and timely feedback to the NKF's head office to do the needful. As such, NKF should have solely dedicated PD backed up with some level of experience and training for effective project implementation.

Holistic Approach for National Development. NKF has started to function independently since 2015. Within these three years of time, NKF is getting impetus to work as one of the potential ventures of BN in the maritime sector of Bangladesh. Therefore, it should adopt a holistic approach to progress as a competent, trusted and effective organization through the setting of short, mid and long term goals as discussed in the next page:

Table 1: A Holistic Approach for National Development

Ser	Time	Stage	Focused Areas
1.	Short Term (0-5 years)	Formative Stage	• Development of organization and infrastructure. • Setting up of offices in Chittagong and Khulna. • Opening a Blue economy division. • Capitalizing Information and Communication Technology to develop a website, near real time monitoring of progress of project works, company profile, logo. • Develop comprehensive HRD policy, business strategy, corporate image, training policy. • Develop rapport with national/ international organizations. • Device mechanism to transfer knowledge of the outgoing/ incoming personnel. • Undertake projects on a limited scale.
2.	Mid Term (5-10 years)	Expansion Stage	• Raise capital through projects. • Set up R & D division. • Build more cargo vessels to be operated under NKSLL. • Develop own long line trawlers and purse seiner for deep sea fishing with indigenous capability.. • Undertake projects with reliable partners.
3.	Long Term(10-15 years)	Fully Operational Stage	• Set up transition of personnel from BN to NKF activities as a second career. • Undertake projects being guided by R & D. • Maintain quality of work, reputation, collaboration. • Conduct deep sea fishing with own resources. • Be the key actor for maritime awareness building.

Source: Author's construct

CONCLUSION

The researcher attempted to work on the potentials of NKF for national development as it is working as one of the key commercial ventures of BN since 2011. It is already an established fact that SKS has been very effectively involved to support the welfare aspects of Bangladesh Armed forces since long time. It is now much involved in the nation building activities as well. Through BN's transformation with the passage of time since its inception in 1971, it is now a three dimensional Navy. BN actively participates in the operational activities. However, considering the progress of welfare organization of the Army, NKF also needs to participate in the nation building activities while addressing the requirement to promote the welfare of BN personnel.

Since its foundation, NKF worked under the Director of Welfare on a limited scale. Thereafter, it has started to function independently since 2015. It is contributing to the welfare activities of BN through profit earning from different projects. To undertake the activities, it has opened two commercial enterprises, namely NKFTCL and NKSLL. NKF undertakes projects with different national, international and private companies through providing Expression of Interest (EOI), signing of the Memorandum of understanding (MOU) and Joint Venture Agreement (JVA), through subcontract, Direct Procurement Method (DPM) or Build, Operate and Transfer (BOT) method. At present, it conducts its activities in the dredging sector, inland shipping sector, development of power plant in coastal area and civil/ military construction projects. However, presently its activities are limited by shortage of manpower, limited workplace as well as lack of regional offices.

In comparison with other welfare organizations of the Armed Forces like SKS and BAFWT, NKF also have huge potentials as an organization. Moreover, there are also potentials sectors where NKF can undertake its activities for national development. Retired personnel of BN being employed in NKF, BN's support, strict quality control to project work, working experience in coastal areas and timely implementation of project works are the core potentials of NKF. Moreover, dredging sector, deep sea fishing, infrastructure development of maritime ports, inland shipping and power sectors offer good prospects for NKF. However, the very nature of environment where the projects of NKF are being conducted poses challenges. Moreover, NKF has to work in a competitive environment where it faces challenges in choosing reliable partner. Other key challenges of NKF encompass effective interpretation and usage of its working procedure that involves methods like EOI, JVA, DPM and MOU, project supervision through Project Directors, lack of capital to undertake projects independently, lack of training, Human Resources Development policy and R & D.

However, NKF should consider few imperatives by which it can pursue national development mitigating challenges encountered and capitalizing its potentials with a perspective plan. Preliminary focus was given on focusing on the Blue economy sector of the country to coordinate the activities in deep sea fishing, infrastructure development of seaports and oceanographic/ scientific research activities. NKF may also utilize the prospects of dredging sector, inland shipping sector, power plants in the coastal areas and

developing in a manner to offer jobs to the retired BN personnel. Furthermore, it can play significant role paving the way to promote maritime awareness in Bangladesh through its nation building projects. Finally, it should promote re-employment of retired BN personnel in the project activities, carry out own capacity building, capitalize experience of senior naval officers, train its personnel and promulgate HRD policy with a holistic 15-year perspective plan for national development.

RECOMMENDATIONS

Basing on the findings of the research, following recommendations are made to exploit the potentials of NKF for national development:-

Short Term.

a. NKF may set up offices in Chittagong and Khulna to have better focus and monitoring of the project activities.

b. NKF may capitalize information and communication technology to develop website, near real time monitoring of progress of project works, company profile and logo to demonstrate the activities of this newly developed organization.

c. NKF may undertake projects on limited scale upholding the quality of works undertaken and build a good reputation.

d. NKF may develop a comprehensive HRD and training policy as well as business strategy.

Mid Term

a. NKF may set up R & D division, increase capital through undertaking projects with reliable partners.

b. NKF may focus on capacity building in terms of construction of dredgers, cargo vessels, long line trawlers and purse seiner for deep sea fishing through and scientific research vessel capitalizing indigenous industry backed up by foreign expertise.

Long Term

a. NKF may undertake projects being guided by R & D.

b. NKF may set up transition of personnel from BN to NKF activities as a second career after retirement.

c. NKF may conduct deep sea fishing, dredging and oceanographic/scientific research activities with own resources.

BIBLIOGRAPHY

Dissertations

Chowdhury, Lieutenant Commander M M Karim. (2010). *Post Retirement Rehabilitation of Naval Personnel BN Initiative*, Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2010.

Islam, Major Mohammad Atikul. (2015). *Sena Kalyan Sangstha (SKS) Welfare Activities: Satisfaction Level among Retired Army Personnel.* Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2015.

Jaber, Major Abu Muhammad Jaber Bin Jabbar. (2015). *Opportunities of Services for Sena Kalyan Sangstha to Meet the Growing Requirements of Retired Army Personnel*. Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2015.

Rahman, Major Mohammad Abdur. (2015). *Resettlement Programme for the Retired Officers of Bangladesh Army: Its Impact on The Inflow of Quality Intake and Widening the Opportunities of the Retired Officers*. Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2015.

Shafique, Brig Gen Md Anwar. (2015). *Challenges and Potential of Sena Kalyan Sangstha and other Commercial Ventures of Bangladesh Armed Forces and their Impact on National Economy*. Mirpur: National Defence College, Individual Research Paper, 2015.

Siddiqua, Squadron Leader Nasrin Sultana. (2012). *Bangladesh Air Force Welfare Trust-Prospect and Possibilities*. Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2012.

Interview taken by author

Ahmed, Commodore Syed Irshad, NUP, ndc, afwc, psc, BN(retd) - Managing Director, NKF. (personal communication, 2017, November 09.

Ashraf, Commander Jamil, (G), BN(Retd), Director, Administration and Human Resources Division, Director Trade and Services Division, (NKF). (personal communication, 2017, September 11).

Haque, Captain M, (N), BCGM, PCGM, psc, BN - Deputy Director General, Human Resources Management (SKS). (personal communication, 2017, September 28.)

Islam, Commander Md. Nazrul Mina, (G), psc, BN(Retd) - Director Water and Resources Division, Director Energy and Power Division (NKF) (personal communication, 2017, September 11.)

Pahlabi, Commander M R S, (S), psc, BN - Director Finance and Marketing Division, Director Shipping Lines Ltd (NKF). (personal communication, 2017, October 05.)

Quader, Commodore M Mohammad, ndc, afwc, psc, BN(Retd) - Former Managing Director, Bangladesh Shipping Corporation. (personal communication, 2017, September 7).

Shahadat, Colonel Hossain, Deputy Director General, Head of Business Division-5, (personal communication, 2017, September 28.)

Tahidul, Wing Commander Islam, LLB - Company Secretary, Bangladesh Air Force Welfare Trust. (personal communication, 2017, September 28).

Lieutenant Commander M Baizid Hossain, (G), BN was commissioned from Bangladesh Naval Academy on 24 June 2002. He has completed Principal Warfare Officers (PWO) course from School of Maritime Warfare and Tactics (SMWT). He has also completed specialization in the field of Gunnery from BNS ISSA KHAN, Bangladesh. The officer has a fine mix of command, sea and instructional appointments in his career. He has commanded BNS APARAJEYA. He served BNS UMAR FAROOQ, BNS OSMAN, BNS SHOMUDRA JOY, BNS SHOMUDRA AVIJAN, BNS KAPATKHAYA, BNS GOMTI, BNS MEGHNA, 41 PCS in different capacities. He was a warfare instructor at SMWT and Instructor in Bangladesh Military Academy and Gunnery School. The officer served as Military Observer in UNOCI (United Nations Operations in Ivory Coast). The officer has visited USA, Malaysia, Indonesia, Phillippines, Guam, Sweden, Turkey and Ivory Coast. The officer is happily married with Mrs. Shuravi Hasneen and blessed with two daughters.

CAPABILITY ENHANCEMENT OF NAVAL AVIATION: AUGMENTING THE MARITIME SECURITY OF BANGLADESH

Commander Raqib M Habib, (C), BN

ABSTRACT

Bangladesh, an Indian Ocean littoral state, has a maritime zone that encompasses significant security implications for the country. The openness of the Bay of Bengal (BoB) is a key security concern which is exposed to maritime threats. Recent maritime boundary delimitations with neighbours have given Bangladesh exclusive right to explore and exploit the maritime resources which needs to be safeguarded. It is important for Bangladesh to address the non-traditional threats and vulnerabilities existing in the country's maritime domain alongside the traditional challenges. Bangladesh Navy (BN) is the prime organization to ensure maritime security of Bangladesh. BN has undertaken a pragmatic approach to enhance her operational capability in the last decade. Recently a good number of capable surface platforms with modern weapons and sensors were inducted in BN. Induction of Naval Aviation, Special Warfare Diving and Salvage (SWADS) and submarine is also a significant achievement for BN. However, operational capability of Naval Aviation is yet to develop as was envisaged during inauguration. Hence, this research paper endeavours to find out feasibility of Naval Aviation to augment maritime security of Bangladesh which is mainly dependent on surface platforms till date. Surface ships have specific roles to play in ensuring maritime security which will continue to remain valid. BN at present possesses around eighty ships whereas it is having only four aircraft. Considering the existing logistic and infrastructure facilities it is difficult to accommodate more ships in next few years. Hence, effective utilization of aircraft can be considered for increasing the maritime security of Bangladesh. Therefore, it is felt that BN may focus on enhancing the capability of Naval Aviation for next few years to address maritime challenges in the BoB. Capability enhancement of Naval Aviation is likely to ensure secure seas for the nation. This paper is developed by analysing both qualitative and quantitative data through interview and survey to determine the perception of respondents. This paper finds that capability enhancement of Naval Aviation is likely to augment maritime security of Bangladesh and aircraft of Naval Aviation is more effective than the surface platforms in managing maritime security challenges of Bangladesh. It thoroughly discusses about the challenges of maritime security in the BoB and required development of Naval Aviation in coming days. Therefore, this paper is expected to act as an initial step to implement the capability enhancement process of Naval Aviation in BN.

INTRODUCTION

A navy is meant to preserve the security interest of a nation at sea. Bangladesh Navy (BN) is entrusted to ensure the maritime security aspects of Bangladesh. Since inception, BN continued to develop its force structure to carry out the duties assigned by the government. It is felt that possession of a credible naval force is a requirement for

Bangladesh in order to ensure the optimum use of the sea. Recent induction of submarines alongside the surface ships, aviation and special forces has given BN the much desired three-dimensional capabilities. Generally, 'Naval Air Arm' acts as a force multiplier in respect to combat capability, surveillance, search and rescue and many other maritime operations. Maritime aircraft can fly a variety of demanding missions from shore or from the decks of different types of Navy ships. Beside the typical naval missions, maritime aircraft can play an important role to protect country's Exclusive Economic Zone (EEZ). Moreover, maritime air support can be launched instantly to meet any emergency requirement. Naval Aviation of BN stared its journey in 2011 with a view to augmenting BN capabilities which presently working with limited resources, inadequate trained manpower and base support facilities. Capability enhancement of Naval Aviation will make it more self-possessed and can serve with greater responsibilities.

Maritime security is an indispensable part of comprehensive security of a country. Bangladesh, being a small country in South Asia, faces serious maritime security threats from both traditional and non-traditional sectors due to changing geopolitical dimensions. The paradigmatic shift in the concept of security with its emphasis both on conventional and non-conventional threats in recent times, enhanced the scope and dimension of comprehensive maritime security in terms of the threats and vulnerabilities, and the means for dealing with them. Maritime security remains at the forefront of political concern in many of the littoral countries. It is a part of national security and not an isolated strategic entity by itself, thereby requiring integration with the overall national security model of a littoral state (Joy, 2009). Existing maritime security agencies lack in capabilities to ensure overall maritime security in the Bay of Bengal (BoB). BN and Bangladesh Coast Guard (BCG) are the two maritime organizations which are mainly responsible to provide maritime security in our sea area where employment of naval aircraft in surveillance and reconnaissance role is limited. It is to be borne in mind that inadequate maritime security measures may drastically reduce the chances to reap the benefits of our newfound maritime boundaries.

BN has taken a massive modernization plan to enhance her capabilities in recent years by augmenting her fleet with numerous surface platforms in recent years in a bid to provide improved maritime security in the BoB. This modernization program is largely concentrated on developing surface force structure and infrastructure developments. The requirement of capability enhancement in respect of Naval Aviation is somehow less addressed. The proposed perspective plan of Naval Aviation is far from being materialized. Lack of focus on Naval Aviation is having a significant impact on maritime security issues of Bangladesh. Naval Aviation could be a better option than the surface ships for mitigating maritime security challenges in the BoB due to the versatile nature of air power. Hence, this paper tries to find out which types of naval assets are more effective to address maritime security. This paper attempts to ascertain required capability enhancement of Naval Aviation for augmenting maritime security of Bangladesh.The purpose of this research is to identify which naval platforms are more

suitable to augment maritime security and whether capability enhancement of Naval Aviation has any impact on maritime security of Bangladesh or not. The significance of this study lies in its attempt to determine the effect on maritime security by enhancing the capability of Naval Aviation. This paper will also suggest how Naval Aviation can be utilized to enhance maritime security in an effective way.

AIM

The aim of this paper is to highlight the effect of Naval Aviation in augmenting maritime security of Bangladesh with a view to suggest some imperatives for capability enhancement.

MARITIME SECURITY CHALLENGES FOR BANGLADESH

General

Bangladesh is truly a maritime nation having a vast seaboard and wide arrays of interconnected river ways. The socio-economic lifeline is inseparably linked with the Bay of Bengal which provides passage to 92% of our trades (CPA Journal, 2017) and offers livelihood to almost fifty millions of coastal people (Bangladesh Bureau of Statistics, 2015). Our sea is an immense source of natural wealth in the form of food, minerals and fuel. The location of Bangladesh offers the most viable trans-regional gateway between South and South-East Asia. In the past several years, the US has developed new interests in the Bay of Bengal, and is in competition with India and China driven by a number of geo-strategic, economic and security considerations. There is no denying Bangladesh's rise as an important maritime centre in the international stage. Therefore, coast of Bangladesh is a zone of multiple vulnerabilities as well as opportunities.

Concepts of Maritime Security

There are many definitions and meanings for the terms “security” and “maritime security”. The meanings depend on who is using the term or in what context it is being used (Klein, 2011). Military perspective on maritime security highlights different matters than maritime industry. US Naval Operations Concept refers to the aims of maritime security operations such as ensuring the freedom of navigation, the flow of commerce and the protection of ocean resources, as well as securing the maritime domain from nation-state threats. In contrast for ship owners, maritime security mainly implies a transport system and relates to the safe transport of cargo without interference or being subjected to criminal activity (Raymond & Morrien, 2008, according to Klein, 2011). The United Nations Secretary-General has said that there is no agreed definition of maritime security, and instead of trying to define it he identifies what activities are commonly perceived as threats to maritime security (UNGA, 2008).

Maritime security is described as those measures government and other stake holders employ against both military and non-military maritime threats at sea. Maritime security

is a multi-faceted concept that not only involves domestic and international laws but also consideration of geopolitics of the area concerned. Maritime security should be viewed from global and regional geo-political perspectives. Comprehensive maritime security as understood in contemporary ocean governance has two facets – conventional/traditional and nonconventional/ non-traditional (Joy, 2009). The traditional threats refer to states with organised military capability and resources, which harbour adversarial posture and inimical intent towards any state. Traditional sources pose a higher level of threat to a country's national security interests. Due to excessive preoccupation with the traditional dimension of maritime security, a littoral country's concern for the non-traditional aspect of its maritime security somewhat remains one of indifference. Contemporary ocean governance is yet to theorize the concept of non-traditional maritime threats in precise and concrete terms. UN's convention treaty and ISPS Code by International Maritime Organization listed some illegal acts related to maritime environment which are considered as security threats.

Maritime Security Challenges: Bangladesh Perspective

Bangladesh has a maritime zone that encompasses significant security implications for the country. So far, the maritime segment of the national security is less discussed with very little endeavours to address its constituent issues. Prevailing geo-strategic environment in the BoB is characterised by concurrent rivalry and cooperation by different nations obscuring customary divisions. Nations with vastly differing international views, divergent national interests and varying security perceptions maintain postures in the BoB that are inimical to Bangladesh's security interests. There has been continued militarisation of the region and proliferation of weapons amongst non-state groups are giving rise to non-traditional threats and maritime security challenges. Increased tension in our areas of interest can adversely impact maritime security and prosperity in those areas and adjacent waters, with consequent effect on our maritime interests (India's Maritime Security Strategy, 2015). All such threats need to be thwarted by Bangladesh with means ranging from diplomacy to military option if so needed. The ambit of maritime security is very wide and covers many aspects.

Traditional Dimensions. Economically and strategically Bangladesh is mostly dependent on what happens at and from the sea. Bangladesh is open to the Bay of Bengal in the south. Maritime utilities like EEZ and SLOC are two precious natural gifts to Bangladesh which brings both advantages and difficulties.The openness and recently extended maritime boundary of Bangladesh is a key security concern which is exposed to threats from a neighbourhood that is highly unpredictable, sensitive and extremely volatile. Bangladesh has to safeguard the maritime interests by ensuring uninterrupted economic use of the sea resources. The importance of traditional maritime security cannot be overemphasized because it affects territorial integrity, human security and economic prosperity. Therefore, traditional maritime security for Bangladesh means ensuring of full control over our sea area and the activities carried out there. Advent of modern technologies along with possession of nuclear weapons by some of the

stakeholders in the BoB indicate that direct military confrontation is unlikely. However, given the current global and regional security environment, the preparedness against any sorts of traditional security challenges is always vital for Bangladesh.

Non-Traditional Dimensions. Most of the threats and vulnerabilities of non-traditional nature are related to human-beings with few among them having security implications in a conventional sense. In Bangladesh, where human security discourse remains at the apex of the current national security debate, any attempt to de-link it from the ocean or, in other words, any rejection of its marine dimension would bear serious consequences (Azad, 2009). It is important to address the non-traditional threats and vulnerabilities existing in the country's maritime domain. Most of the non-traditional threats and vulnerabilities in the ocean medium emanate from the land to the seas.

a. **Piracy and Armed Robbery**. According to Azad (2009), piracy tops the list of maritime crimes in Bangladesh. However, the nature and kind of piracy that takes place in Bangladesh marine waters do not conform to what have been envisaged in the UNCLOS. An alternative definition of piracy as provided by the IMO is normally referred to when acts of piracy in Bangladesh context are mentioned like armed robbery, theft and dacoity. Robbers usually target ships preparing to anchor in Bangladesh waters. However, attacks in Bangladesh have fallen significantly over the past few years because of the efforts by the Bangladesh Authorities. Azad also notes that Bangladeshi *jol doshus* (pirates) do not have the wherewithal to go to high seas and commit piracy. It is important to take into account following ominous features that mark the current piracy in Bangladesh's oceanic space with implications for security:

(1) A high degree of violence demonstrated by armed criminals.

(2) Money, property of the crew, negotiable goods, cargo and ship's equipment are generally the target items.

(3) Targeting ships while at anchor.

(4) Attack by pirates from neighbouring countries is common.

(5) The unarmed coastal fisherman are the victims.

b. **Maritime Terrorism**. Maritime terrorism is the newly risen phenomenon among non-conventional maritime threats, because it is easy to enter any land through sea and tough to detect location by technology. Globally, maritime security has assumed a new dimension in the post 9/11 era. Though terrorist attack in Bangladeshi waters has not taken place but future prospects cannot be ruled out.

c. **Trafficking/Smuggling**. The use of unregulated movements at sea for seaborne trafficking in narcotics and arms remains a constant threat to maritime security. The sea route has been in use for human trafficking/ smuggling for long. The threat of gunrunning also needs to be a constant consideration, requiring monitoring of the maritime spaces. The trafficking of small arms, drugs and contraband goods has

entered the list of criminal activities in Bangladesh's maritime waters in recent times. Bangladesh is a significant trafficking hub that links South Asia to Gulf region (Biswas, 2015). Again the recent ethnic clash in Myanmar has compelled thousands of Rohingya to migrate Bangladesh illegally**.** The overall study and documented statistics denote the magnitudes of the problems of the present scenario of human trafficking in Bangladesh which is shown in Table 1 below:-

Table 1: Monthly Status of Human Trafficking Cases

Period	No. of Cases Recorded	No of Victims Trafficked			No of Victims Recovered		
		Male	Female	Child	Male	Female	Child
January.17	61	27	27	14	21	16	10
February.17	62	20	11	15	15	7	15
March.17	65	25	26	5	17	20	3
April.17	64	14	21	11	5	11	5
May.17	68	39	28	5	35	19	4
June.17	68	26	24	08	20	16	02
July.17	77	29	23	6	20	6	6
August.17	79	27	28	20	13	16	15
September.17	69	35	18	14	25	9	12
October.16	61	56	33	7	51	20	6
November.16	49	19	28	2	14	16	1
December.16	41	21	17	4	16	11	3

Source: Bangladesh Police Website

d. **Illegal, Unreported and Unregulated Fishing (IUU).** IUU is a global issue, which can be a threat to ocean ecosystems and sustainable fishing. IUU also affects Bangladesh as it impacts food and related economic security, as well as the livelihood of the Bangladeshi fishing community. Transgression by fishermen between neighbouring maritime zones can aggravate sensitivities and heighten insecurities. Therefore, illegal fishing and poaching in the Bangladesh marine waters need attention. Illegal fishing takes place in the country right up from its inland waters down to deep waters in the ocean. Overexploitation of fish also takes place in EEZ and the waters beyond it which if not contained will contribute to greater reductions in production of marine fisheries in the future. Intrusion of foreign fishermen into Bangladesh waters to catch fish with mechanized trawlers and boats poses security threat to our marine fishery sector. Losses from Illegal, Unreported and Unregulated fishing in the Bangladesh EEZ are estimated to average between USD 262.41 and 762.20m as shown in Table 2 below:-

Table 2: Summary of Estimated IUU in Bangladesh

Year	Catch (t)	Illegal		Unreported		Unregulated	
		Min	Max	Min	Max	Min	Max
2010	607492	80209	309923	160207	373007	0	0
2011	546333	76715	301626	150764	358517	0	0
2012	578620	80602	316215	157812	373283	0	0
2013	588988	83651	329908	152271	351110	0	0

Source: *Bay of Bengal Large Marine Ecosystem Review* (2015)

e. **Marine Pollution**. A crime of serious magnitude in Bangladesh waters is the pollution of marine environment being caused by national, regional and international sources. Currently, the country's marine environment is being threatened by pollutants washed down directly from land and dumping. The pollution sources include oil discharge from ships and mechanized vessels, ships breaking and repairing activities, ballast and bilge water discharge, refinery waste products, handling loss and accidental spillage etc. There is also huge discharge of sewage from ships in the coastal areas of the country. In addition, rotten food grains cement dust, fertilizer, torn bags, mats and broken dungarees are frequently dumped into the marine water near the port areas of the country. Discharge through out-falls and various containments from ships, sea-based activities, in marine transportation offshore mineral exploration and productive activities, and accidental oil spills exacerbate pollution in the ocean. In this respect it is relevant to mention that because of the open nature of the ocean and continuous flow of currents (both clock and counter-clock wise), all the countries of the region feel the effects of pollution. A study report on the contamination levels of heavy metals in the coastal water of Chittagong, Bangladesh shown in Table 3.

Table 3: Mean load of heavy metals in the coastal water of Chittagong

Metals	Mean load of metals (µg/I) with seasonal variation		Standard limit (µg/I)
	Rainy	Dry	
As	3.746	3.981	2.60
Co	8.989	11.937	0.50
Cr	23.346	25.085	50
Cu	57.423	62.336	08
Fe	536.371	583.042	300
Mn	20.349	23.104	100
Ni	7.844	12.106	01
Pb	23.778	24.015	8.50

Source: *BOBLME* (2011) *Country Report on pollution – Bangladesh*

Analysis of Existing Security Agencies to Counter Maritime Threats

Bangladesh Navy. Bangladesh Navy operates at least three ships round the clock at sea. In addition to this, special operation takes place in the name of Jatka operation, anti-piracy operation etc in coastal areas and inland waters. Addition of MPA and organic helicopter enhanced the ability to carry out surveillance and reconnaissance mission in the vast sea area. The active presence of naval platforms at sea could achieve some success in curbing piracy and illegal intrusion of fishing trawlers. Again it is tough for navy to keep this vast area under surveillance. Limited resources and old aged platforms are the key impediments for naval tasks.

Bangladesh Coast Guard. Bangladesh Coast Guard has four zones among which three zones are located in the coastal area. These zones are again sub-divided into number of stations and outpost along the coast. Bangladesh Coast Guard is suffering in shortage of manpower and equipment. The vessels are old aged and hardly there is any vessel which can operate during rough weather. The forward stations and outposts have very less manpower with very limited resources. The main concentration of Coast Guard is now on Chittagong port limit area, around Sundarbans and Bhola. Coast Guard can perform very limited activities in other coastal areas due to the lack of resources**.**

Other Law Enforcing Agencies. Among other law enforcing agencies Marine Police is recently formed but yet to go for active operation at sea. Port Authorities, Department of Shipping, Forest Department and Department of Fisheries have some capacity to contribute in terms of security in the maritime sector, but these are negligible as they are still dependent on navy or coastguard to conduct any operation at sea. However, stakeholders' efforts and initiative should not be evaluated on their individual contributions but rather on their collective efforts. While there is no denying the fact that Bangladesh Navy and Coast Guard, from time to time, apprehend foreign fishing vessels of different origin, nonetheless, their capability in many instances is constrained by the lack of surveillance and monitoring vessels.

CAPABILITY AND CHALLENGES OF BANGLADESH NAVY TO ENSURE MARITIME SECURITY

General

Over the years, BN has undergone changes, not only in size and shape but also in its role, mission and vision. By now, BN has more than 80 ships of various types and capabilities to perform the assigned tasks (Official website of BN, n.d.). Construction, operations and maintenance of these high-tech man-of-war has given BN tremendous confidence to keep pace with modern day technology. Ships with modern outfits have enhanced BN war fighting capabilities to a greater extent. With the inclusion of Naval Aviation, BN capabilities in maritime surveillance have increased manifold. In recent years, BN has also acquired two vital dimensions, namely special warfare and submarines. Altogether BN has witnessed phenomenal growth in last three decades.

Today, it has not only pledges to safeguard the national territorial integrity, but also expanded its commitment to peace beyond national frontier. However, due to the changing nature of maritime security as discussed in previous chapter, BN is also facing some challenges to counter these security aspects in the BoB.

Limitations of BN in Ensuring Maritime Security of Bangladesh

BN is entrusted with certain roles and tasks both in peacetime and in wartime. Beside the traditional military role, BN is responsible for some constabulary, diplomatic and benign roles as well. These roles include maritime security aspects which is an integral part of national security. It is envisaged that, recent delimitation of maritime boundary with neighboring states reduces the traditional military threat in our maritime frontier. However, the emerging nontraditional threats in the BoB have made the overall security situation very complex. BN certainly is playing its part to counter these maritime threats to ensure maritime security. The present capability of BN Fleet is having some limitations which are hampering the overall security efforts. The challenges faced by BN in maritime security aspects are enumerated below:

Surveillance. At present, BN surveillance capability is very limited. The huge maritime area of Bangladesh requires constant vigilance at all times. BN ships patrolling in our maritime area cannot cover the whole area at a time. Coastal radar stations are also very limited with few navigation radars only. Moreover, due to adverse sea condition during monsoon period, the surveillance efforts become less effective. Again, lack of available adequate surface platforms capable to perform sustained operation at outer area of the EEZ is hindering the maritime security.

Intelligence. Intelligence is very important to ensure maritime security. BN has a limitation in maritime intelligence aspects. Lack of EW capability and real time data link systems make overall maritime intelligence efforts less effective. Maritime environment demands a different approach to gather sufficient intelligence than that of land. Therefore, maritime security aspects are facing challenge in absence of required timely intelligence.

Reaction Time. BN is presently ensuring maritime security utilizing surface ship only. Most of the BN ships are engaged in routine exercises, training, administrative and other operational commitments throughout the year. Ships at harbour especially at Ready Response Berth (RRB) always remain prepared for any emergency situation. However, due to inherent limitation of speed, ships are not always suitable to counter some non-traditional maritime security threats which hinders the overall maritime security efforts of BN. In the case of security breach in our EEZ, it is obvious that surface ships are not designed to reach the area quickly due to inherent speed limitation where aircraft can be more effective.

Access. Draught constraint of naval ships does not allow them to enter some of the coastal waters like Sangu river, Maheshkhali, Reju Khal, Bhola, Hatia, Patuakhali and some inland waterways due to navigational hazards where smaller smuggling boats with less draught can proceed through to avoid seizure. High speed boats are somehow effective in these cases but due to lack of sea keeping capability these boats are susceptible in rough sea condition. Therefore, some of the maritime security aspects remain as a concern for BN.

Maritime Domain Awareness (MDA). Recent maritime incidents necessitate maritime nations like Bangladesh to build MDA. BN is taking much initiative in the last decade to enhance the awareness by conducting regular seminar on MDA incorporating different maritime agencies. MDA is at the core of maritime security and a vital part of national security which simplifies complex and ambiguous security environment in the BoB (Huq, 2016). However, lack of infrastructure along with absence of central coordination adversely affects our MDA. Existing BN capability to address this issue by facilitating maritime data collection and processing the information for decision making is inadequate.

Information Sharing. Effective MDA needs to be supported by architecture based on net centric principles to provide a secure and collaborative information sharing system. Available BN electronic gadgets are not integrated with coastal surveillance radars, Automatic Identification System (AIS), Vessel Traffic Management System (VTMS) and registered vessels database of the country which are essential for information sharing. All the maritime stakeholders also need to join with the information sharing system for ensuring maritime security in the BoB.

Manpower. Recently BN has initiated a modernization program to meet the future maritime challenges including enhancing maritime security. This expansion drive is hampered by lack of adequate trained manpower required to support the modernization. Though BN has taken steps to increase the manpower strength but to train them properly with modern technology is time consuming and has financial limitations. Modern surface ships of BN will require enough skilled manpower to support its operation in near future which will be a challenge for BN. Inadequate manpower of BN may therefore hinder the overall maritime security situation in the BoB.

Infrastructure. Presently BN is having acute shortage of berths to accommodate the available surface combatants. Inclusion of new surface ships in her inventory is in the process which is going to make the situation worse in coming days. Again to support these ships the present logistic infrastructures are also inadequate. Absence of required logistic infrastructure is a great concern for BN to meet the maritime challenges in future.

Policy Options. Lack of sufficient policy options and necessary guidelines for maritime sector is another concern for Bangladesh. BN has published a Draft Maritime Doctrine in 2012 which is yet to be approved by concerned government authority.

Researcher asked about the adequacy of the available guidelines for ensuring maritime security in BoB to some of the respondents. The cumulative response shows that the respondents were divided in their opinion. However, about 39% participants disagreed to the fact that the available guidelines are adequate for effective maritime security. 26% remained neutral in this issue and 35% feels that the guidelines are adequate.

Data Analysis.

Present Capability of BN. Presently BN is mainly dependent on surface ships to ensure maritime security of Bangladesh. Though inclusion of maritime patrol aircraft and helicopter has enhanced BN capability but the role of these aircraft are still very limited due to lack of surveillance equipment. A close ended questionnaire was circulated to evaluate the present capability of BN in this aspect. Most respondents (69%) disagreed to the fact that existing BN capability is sufficient to ensure maritime security.

Effective Platform for Maritime Security. It is perceived that utilizing aircraft along with surface platforms would be the most suitable way to encounter maritime security threat. Respondents were asked to choose suitable platforms for ensuring maritime security of Bangladesh. It was evident that maximum (85%) was in the view of utilizing both surface ships and maritime aircraft to ensure effective maritime security.

Sufficiency of Surface Ships. It was perceived that surface ships alone cannot mitigate all the maritime security challenges of Bangladesh. However, to validate the issue a close ended question was given to the participants. Maximum respondents (70%) opined against the fact that surface vessels alone can ensure maritime security.

Capability of Naval Aviation. It was perceived that existing capability of Naval Aviation is insufficient to augment maritime security of Bangladesh. However, it was aptly clear from the survey that almost all the respondent has opined against the fact that Naval Aviation is capable to meet the present requirement of maritime security issues.

POTENTIAL OF NAVAL AVIATION IN AUGMENTING MARITIME SECURITY OF BANGLADESH

Effectiveness of Naval Aviation.

The basic attributes of air power, i.e. height, speed and reach, act together synergistically and provide Naval Aviation an array of operational capabilities fundamental to mitigate maritime security challenges. Therefore, understanding the potential of maritime aircraft is an essential component of the skills necessary to address the maritime security. Aircraft of Naval Aviation can conduct operations rapidly, over great distances in any direction, and enjoy multidimensional manoeuvring which are invariably faster and generally have greater reach than naval vessels. The core characteristics of Naval Aviation allows the rapid projection of naval power and permits missions to be completed quickly. Therefore, it generates tempo and offers the potential to exploit time- the fourth dimension.

High speed reduces exposure to hostile fire and increases survivability. Reaching isolated locations by avoiding potential restrictions is another advantage of aircraft. The advantage of height allows aircraft to observe and dominate activities on the sea better than surface ships. Aircraft are flexible to perform a wide variety of actions, produce a wide range of effects and be adapted with comparative ease to meet changing circumstances. Responsiveness enables Naval Aviation to be employed early in a crisis and may be the only option to provide an immediate response in some emergency situations. More so, wider horizon and field of view of naval aircraft is a vital enabler for the enhanced information, decision-making and command and control. Ubiquity and flight versatility make maritime helicopter a useful element to address certain maritime challenges. Hence, the potential of Naval Aviation in mitigating maritime security challenges in Bangladesh need to be utilised for ensuring safety of the BoB.

Effect of Capability Enhancement of Naval Aviation: Reduction of Surface Ship Deployment.

Existing BN capability is insufficient to mitigate maritime security challenges of Bangladesh. It is revealed that utilizing both surface ship and Naval Aviation would be more suitable. However, it is perceived that capability enhancement of Naval Aviation will augment maritime security of Bangladesh by reducing the deployment of surface ships. Here, suitability of Naval Aviation through enhanced speed and reach is the indicator of capability enhancement of Naval Aviation. Again the reduction of surface ship deployment for maritime security is the indicator of improved maritime security. During the research, it is found that Naval Aviation can be effectively utilized to augment maritime security of Bangladesh and aircraft is a suitable platform to mitigate the maritime security challenges. Moreover, it is also evident that aircraft have certain limitations like endurance, high cost and weather dependence. Again, surface ships alone cannot address the maritime security challenges of Bangladesh. Hence, the close ended survey revealed that capability enhance of Naval Aviation will reduce the deployment of surface ships to counter maritime security threats in the BoB.

Analysis of the Findings

Quantitative Analysis. A thorough analysis of the findings was carried out to find out the relation of dependent and independent variables. Here the independent variable is capability enhancement of Naval Aviation which is indicated by the survey on suitability of Naval Aviation considering its inherent capability and limitations to mitigate the maritime challenges of Bangladesh. The dependent variable is the maritime security of Bangladesh which is indicated by reduction of ships deployment and sufficiency of surface ships to mitigate maritime security challenges in the BoB. The survey result of the questionnaire was put in SPSS tool to find out the correlations between capability enhancement of Naval Aviation and its effect on deployment of surface ships. The result showed the capability enhancement indicator as 1.000 which has effect on reduction of ships deployment as indicated by -0.493. So, the more capability enhancement will be done the lesser requirement will be placed on surface ship deployment. Therefore,

capability enhancement of Naval Aviation will augment maritime security of Bangladesh. This indicates that Naval Aviation is more suitable than surface ships to mitigate maritime security challenges of Bangladesh. Hence the hypothesis is validated through SPSS as shown is Table 4 below:-

Table 4: Nonparametric Correlations

			Q_2	Q_4
Spearman's rho	Q_2	Correlation Coefficient	1.000	-.493**
		Sig. (2-tailed)	.	.000
		N	87	87
	Q_4	Correlation Coefficient	-.493**	1.000
		Sig. (2-tailed)	.000	.
		N	87	87

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Tool

Qualitative Analysis. Based on IDI and KII opinion along with researcher's experience in Naval Aviation, it is understood that naval aircraft can augment maritime security in the BoB once equipped with required sensors and avionics. Naval Aviation is basically designed to perform traditional military roles like surveillance, reconnaissance, intelligence collection, OTHT and anti-surface/submarine role, though they can effectively be employed in supporting role to counter non-traditional maritime security challenges (Ashraf, 2017). Aircraft characteristics are suitable for conducting maritime search and rescue operation to vessels at distress and may well be utilised for pollution control if equipped with necessary anti-pollution gears (Rahman, 2017). It is understood that due to high speed, naval aircraft can carry out effective scouting operation covering a large area in a short period of time in comparison to surface ships. Moreover, the cost of a capable naval surface combatant is almost three to four times than that of an aircraft. Again, surface ships require to be manned with more personnel in comparison with an aircraft which requires only two or three aircrew for operation. The operating cost of surface ship is also higher than the aircraft. Hence, considering the cost and benefit analysis, it is found that surface ships are less effective than that of a naval aircraft in pursuing maritime security.

Hypothesis Acceptance

The researcher, initially identified the indicators of capability enhancement of naval aviation and maritime security of Bangladesh through qualitative analysis. Besides, the capability and limitations of Naval Aviation and surface ships were analysed. Through mixed-method study (quantitative and qualitative analysis), the correlation between the

effects of capability enhancement of naval aviation and the indicator (deployment of surface ships) has been established. In addition, the significance of the effects of the capability enhancement of Naval Aviation and indicators of maritime security were tested by the SPSS software. This effectively validates the fact that capability enhancement of Naval Aviation will augment the maritime security of Bangladesh and thus the hypothesis as stated in Chapter I, **"Aircraft of Naval Aviation is more effective than surface platforms in managing maritime security challenges of Bangladesh"** is validated and accepted. However, the requirement of capability enhancement of Naval Aviation needs to be identified to mitigate the maritime challenges of Bangladesh.

CAPABILITY ENHANCEMENT REQUIREMENT OF NAVAL AVIATION

General

Since inception BN Naval Aviation has made significant contribution in different naval operations/ exercises and continued to develop its operational, maintenance and logistics support capability. The present fleet of Naval Aviation is expected to be augmented by two more MPA and two ASW capable helicopters in near future. This will make the Naval Aviation more self-possessed and work with greater responsibilities. Presently, Naval Aviation is working with limited trained manpower, resources and base support facilities. Existing capability is insufficient to mitigate the maritime security challenges of Bangladesh. In next few years BN is expected to have more number of surface platforms capable of operating helicopters onboard. Moreover, it is envisaged that future missiles of BN will require OTHT facilities from Naval Aviation. It is also understood that BN is likely to have more naval bases across the coastal areas in foreseeable future to enhance maritime security in the BoB. All these necessitates a capable Naval Aviation to support the overall maritime security of Bangladesh. Based on the Forces Goal 2030 the capability of Naval Aviation needs to be enhanced which will augment maritime security of Bangladesh.

Major Considerations for Capability Enhancement of Naval Aviation

Operational Considerations. Considering the existing and future maritime security challenges of Bangladesh, BN helicopters are required to be capable of undertaking tasks like surface surveillance, OTHT/ Vectoring, ASW Operation, Casualty Evacuation from Sea, vertical replenishment and VBSS etc. Similarly, BN MPAs will require to undertake tasks like surface surveillance, SAR operation, pollution control and limited surface engagement. Consideration also needs to be given for stationing all air assets in close proximity of coastal area to reduce transit time in dealing with maritime security issues. Helicopters need to be stationed preferably in close proximity at the berthing area of helicopter carrying/staging platforms.

Administrative and Logistic Support. Smooth operation of Naval Aviation necessitates a good administrative and logistic support. Co-location of Naval Aviation operating bases and maintenance facilities within close proximity of other Naval Bases

will facilitate addressing administrative, medical and other general type logistic requirements in a cost effective manner. Naval facilities in Chittagong are presently extending support to Naval Aviation in Chittagong. Similarly, future naval bases need to be well equipped to support Naval Aviation. Aviation logistic facilities will require to be developed including environment controlled storage facility.

Maintenance Infrastructures. Generally, aircraft's operational availability is hindered by both scheduled and unscheduled maintenance. At times due to non-availability of spares the Aircraft On Ground (AOG) time extends far beyond the predicted time. It entails that at least 1:1.5 ratio is to be maintained when calculating operational availability of aircraft and availability of total number of aircraft. Aircraft maintenance philosophy are 'Type Based'. It implies that most of the spares, maintenance tools, ground support equipment, etc are not inter-operable with other types of aircraft, and if new type of aircraft are inducted, most of the maintenance supports are also to be developed anew. Operation of aircraft from different places will require multiple maintenance infrastructure facilities.

Human Resource Development. Human resource development is envisaged as a major challenge for development of Naval Aviation which includes pilot, maintenance and associated aviation related training. Present dependence of Naval Aviation for training on sister services, manufacturer and friendly navies will require to be reduced by establishing own training facilities to develop future air and maintenance crew for its sustenance. Moreover, the ships' crew also will be required to handle more sophisticated and advanced aircraft in their deck for addressing future challenges at maritime area.

Analysis of the Requirement

Projection in Forces Goal- 2030.

a. **Acquisition of Aircraft**.

(1) **Helicopters**. Total twelve in two Helicopter Squadrons.

Year	No. of Hel	Remarks
2011- 2016	04	Already Procured two
2016- 2021	02	-
2021- 2026	03	-
2026- 2030	03	-

(2) **MPA**. Total six in one MPA Squadron.

Year	No. of MPA	Remarks
2011- 2016	02	Already Procured
2016- 2021	02	Procurement being processed
2021- 2026	02	-

b. **Development of Base and Other Facilities**.

(1) **2011-2016**.

(a) Establishment of COMNAV Organisation.

(b) Acquisition of land at Tejgaon, Kurmitola, Mongla, Chiringa, Patuakhali and Rabnabad for Naval Air Station.

(c) Acquisition of land at Chittagong, Cox's Bazar and Barisal for Naval Air Base.

(d) Establishment of School of Naval Aviation.

(2) **2016-2021**.

(a) Partial work of Naval Aviation School.

(b) Acquisition of land and initial works of 'Naval Institute of Aviation Technology' (NIAT) at Barisal/ Patuakhali.

(3) **2021-2026**.

(a) Establishment of Naval Aviation Base at Chittagong.

(b) Completion of works for establishment of Naval Air Base/ Station at premises of Naval Aviation School.

(c) Partial works of establishing NIAT.

(d) Establishment of Naval Aviation Store.

(4) **2025-2030**.

(a) Establishment of Flag Officer Naval Aviation (FONA) Organisation (elevating COMNAV).

(b) Expansion of NIAT.

Requirement of Aircraft

a. **Helicopter Requirement**. Considering the training requirement and cost effectiveness of maintenance, BN may consider to acquire at least 01 (One) more AW-109E helicopter. BN at this stage may not acquire helicopters for SAR purpose

as BAF is having AW 139 for this role. However, BN may coordinate with BAF to retrofit these helicopters to undertake special missions and Visit Board Search and Seizure (VBSS) operation. BN will require to acquire 6-8 suitable helicopters capable of undertaking stand-off Anti-Submarine operations using light weight torpedo, dipping SONAR and MAD. Apart from undertaking operational missions BN will require suitable helicopters to conduct basic helicopter conversion training.

b. **Requirement of MPA**. Existing Dornier 228 NG MPA with limited surveillance capability, have been found very useful and will continue to be effective as training platform in future also. Acquisition of similar type MPA in future will be cost effective for BN. BN may have following aircraft to ensure maritime security:

(1) Total six Dornier-228 NG MPA capable to undertake basic missions like Surveillance, SAR and ASW/ ASuW role including pollution control.

(2) For Surveillance and Patrol missions beyond the demarcated maritime sea area, BN may augment the MPA fleet with four suitable longer range LRMP (endurance 8-10 hours). These LRMP should also be capable of delivering air to surface missiles/ light weight anti-submarine torpedo.

Requirement of Shore Infrastructures. While planning acquisition of new aircraft simultaneous efforts be paid to construct/ develop required shore support infrastructures to house, maintain and operate the same. Following points/ considerations are paramount in this respect:

a. Suitable runway of required length will be required for operating MPA.

b. Helicopters to be located considering close proximity of deployment area.

c. For operation of aircraft from any other location other than established airport/ airbase following in house facilities are also to be developed:

(1) ATC.

(2) Met Forecast.

(3) Medical support.

(4) Air emergency handling.

(5) Fueling/ defueling.

d. Considering seasonal ‘Cyclonic Storm’ and associated ‘Tidal Surge’, shelter station for the aircraft are to be considered in safe locations like Jessore or Dhaka.

Keeping the above in view following shore support infrastructures may be developed:

a. Expansion of Hangar Complex of Chittagong Airport.

b. Development of Helicopter Operation Base in Pekua.

c. Development of Forward Operating Base at Cox’s Bazar.

d. Development of Naval Air Station at Patuakhali.

e. Development of Helicopter Operation Base at Rabnabad.

f. Development of Shelter Station in Dhaka.

g. Development of Air Support Base at Barisal.

h. Forward Air Operation Base at Bagerhat Airport.

j. Development of Air Operation Center.

Requirement of Training Infrastructure.

a. **Basic Flying for Pilots**. It will be cost effective to arrange from BAF or Private flying academy.

b. **Type Rating Training for Pilots**. Simulators being very expensive, initial and refresher training may be arranged in the simulators of aircraft manufacturer. However, type rating flying training may be conducted by BN's own instructor pilots or by foreign instructor pilots.

c. **Basic and Advance Trade Training of Aircraft Maintainers**. BN may continue to take support of BAF. However, the OJT part of the training to be arranged by Naval Aviation.

d. **Type Rating Training of Aircraft Maintainers**. It will not be practical for Naval Aviation to develop type rating training facilities and expertise for 2/3 types of helicopters and 1/2 types of MPA. It will be cost effective to arrange the same from manufacturers. However, BN may develop limited Infrastructure/ facilities to conduct theoretical part of the training.

e. **Mission-Oriented Training for Pilots**. Necessary capabilities to be developed by respective Squadrons, and required infrastructure to be developed for Squadrons to function independently.

f. **Training of Ground Support and Air Crew Personnel**. May continue to receive support of BAF for all related trades.

Requirement of Maintenance Infrastructures. Following maintenance infrastructures will be required in each of the proposed Base/ Naval Air Station:

a. At least one closed Hangar.

b. Separate Rooms for Battery charging, landing wheel servicing, preservation of inflammable materials/ consumables, storing and issue of tools, storing of ready use/ running spares, etc.

c. Airframe maintenance, aircraft painting and LSE servicing workshops may be developed adjacent to existing 'Hangar Complex' in Chittagong.

Requirement of Human Resources.

a. **Pilots**. This will be the biggest challenge for Naval Aviation as it takes quite long time to prepare an 'Operational Pilot'. BN will need to have at least 3-4 sets of Pilots and Co-Pilots for each aircraft keeping in view their other employment/ training. At the same time considering the age and other dropout factors additional 02 (two) sets of pilots are always to be kept in training pipeline.

b. **Observers for MPA**. As per proposed career plan, Observers will basically remain as surface fleet officers. As such, BN may train and prepare at least 03 (three) sets of Observers for each MPA, and employ only 01 (one) set to Naval Aviation. The rest may serve onboard ship/ other places, and remain available, if require.

c. **Maintainers**.

(1) BN will require to prepare adequate number of competent maintainer of each trade (e.g. airframe, avionics, engine) and type of aircraft.

(2) Adequate number of maintainers are also to be kept in the training pipeline.

(3) Additional sets of helicopter maintainers are to be kept ready to board surface ships if helicopter operation is planned from the ship.

d. **Ground Operation Support Personnel**. Adequate number of ground ops support personnel like Marshaller, Ground Controller, ATC personnel, Load Masters, Special vehicle operators, Fire Fighters etc are to be trained and catered for each of the operating bases.

Requirement of Logistic and Admin Infrastructures. Each of the operating bases should have following logistic support and adminstrative infrastructures:

a. Admin building with office and training facilities.

b. Accommodation facilities for ready duty/ duty watch personnel.

c. Environment controlled storing facility.

d. Parking facilities for transports.

e. Hangar and apron for aircraft.

f. Fuel stowage facility.

g. Firefighting and emergency medical facility.

h. General accommodation/ mess facilities (if not shared with other unit/ base).

j. Security arrangement.

CONCLUSION

This paper is an attempt to work on utilising the potential of Naval Aviation to augment maritime security of Bangladesh for two reasons. Firstly, maritime security challenges of Bangladesh are well discussed fact which cannot be mitigated in a short time and secondly the utilisation of Naval Aviation to address this issue is not yet

considered in Bangladesh perspective. The maritime security of Bangladesh is a complex issue and need a coherent approach to mitigate all the challenges. Presently BN is primarily responsible to ensure maritime security of Bangladesh which is mainly dependent upon surface ships. Being a naval aviator, the researcher attempts to explore the potential of lesser prioritized Naval Aviation to augment maritime security of Bangladesh. Subsequently, from the scholarly review, personal experience and few expert opinion of the key personnel, the researcher finds that capability enhancement of Naval Aviation will reduce the ships deployment at sea to ensure maritime security. As such, the researcher attempts to link between capability enhancement of Naval Aviation and maritime security of Bangladesh by hypothesizing **"Aircraft of Naval Aviation is more effective than surface platforms in managing maritime security challenges of Bangladesh"**.

Many researches have been conducted to find out different imperatives for enhancing maritime security of Bangladesh. The significance of this study lies in its attempt to determine the effect on maritime security by enhancing the capability of Naval Aviation. As such, research on this issue could create a new idea to address existing challenges in maritime security aspects of Bangladesh. It will also help in suggesting how Naval Aviation can be utilized to enhance maritime security in an effective way.

Basing on the findings of this research, it is felt that BN may consider utilizing Naval Aviation with greater involvement to augment maritime security of Bangladesh. BN surface ships have their own capabilities to perform dynamic role in the maritime environment to mitigate the security challenges emanating in the BoB. However, considering the existence of non-traditional security challenges in the present day context, BN needs to address the security issues in a cost effective way. Here, Naval Aviation can play an active role using the versatile nature of naval aircraft. Researcher emphasizes on different factors associated with development of Naval Aviation including various requirements. This paper attempts to highlight the importance of developing a capable Naval Aviation through a perspective plan to ensure maritime security of Bangladesh.

The core purpose of this research is to identify which naval platforms are more suitable to augment maritime security and whether capability enhancement of Naval Aviation has any impact on maritime security of Bangladesh. The researcher adopts a gradual and systematic process in identifying best possible findings. Initially, researcher discusses the maritime security challenges of the BoB in Bangladesh perspective. Then effort is made to find out existing capability of BN to mitigate the maritime security challenges. Researcher finds that present BN capability is insufficient and perceives that Naval Aviation would be better than surface ships to address maritime security of Bangladesh. Researcher tries to establish the relation between indicator of capability enhancement of Naval Aviation and the indicator of maritime security. Researcher attempts to find out the effect of capability enhancement of Naval Aviation on deployment of surface ships. As such, it led the researcher to analyse how this effect is

related to augmenting maritime security of Bangladesh. Finally, researcher takes an endeavor to suggest what capability enhancement is required for Naval Aviation to augment maritime security of Bangladesh.

RECOMMENDATIONS

BN needs to enhance the capability of Naval Aviation to augment the maritime security of Bangladesh. Therefore, following are recommended:-

a. BN may focus on developing Naval Aviation for next few years instead of surface fleet to address maritime security challenges in the BoB.

b. Naval Headquarters (NHQ) may take effective action to materialize the procurement of capable naval aircraft within the timeframe as per the projected 'Forces Goal 2030'.

c. A committee may be formed in the NHQ to finalize the development plan of Naval Aviation considering the special requirements of aviation facilities.

d. After finalizing the Naval Aviation development plan, a detail plan to construct aviation infrastructure may be formulated by Naval Aviation and forwarded to NHQ for approval.

e. Organization of Naval Aviation may be revised to meet the future challenges and processed for necessary Government approval.

f. Land acquisition for all the proposed operating bases may be processed immediately.

g. Concerned Administrative Authorities may be intimated about the future infrastructure requirement of Naval Aviation for incorporation in respective area's development plan.

h. Civil Aviation Authority may be approached to assist BN in developing aviation facilities for smooth operation from Chittagong, Cox'sbazar, Patuakhali, Bagerhat and Barisal airports.

BIBLIOGRAPHY

Books

Alam, Rear Admiral M K. (2004). *Bangladesh's Maritime Challenges in the 21st Century,* Dhaka: Pathak Shamabesh.

Bangladesh Navy. (2012). *Draft Maritime Doctrine of Bangladesh,* Dhaka, Bangladesh.

Integrated Headquarters of India, Ministry of Defence (Navy). 2015. *Ensuring Secure Seas: India's Maritime Security Strategy.*

Benbow, T. (2011). *British Naval Aviation: The first 100 years*. Corbett Centre for Maritime Policy Studies series, Ashgate Publishing Limited, England.

Liss, C. (2011). *Oceans of Crime.* Institute of Southeast Asian Studies, Singapore.

Michel, D. & Sticklor, R. (2012). *Indian Ocean Rising: Maritime Security and Policy Challenges.* Stimson, Washington.

Ho, J. H., & Bateman, S. (2012). *Maritime Challenges and Priorities in Asia.* Routledge, New York, USA.

Joy, A. M. A. J. (2009). *Maritime Security of Bangladesh.*

Bhuiyan, K. U., & Alam, M. J. (2015). *Maritime Crimes and Regional Cooperation.*

Journal Article

Rashid, H. (2009). 'Maritime Security: Diplomatic Initiatives,' *Journal of Bangladesh Institute of International and Strategic Studies, (BIISS), Dhaka*.

Yhome, K. (2014). 'The Bay of Bengal at the Crossroads: Potential for Cooperation Among Bangladesh, India and Myanmar,' *Friedrich Ebert Stiftung India Paper,* October, 2014.

Paper Presented

Huq, A. M. Q. (2016). 'Maritime Domain Awareness (MDA) and Bangladesh,' Paper presented at SMWT in Maritime Domain Awareness seminar arranged by BN.

Dissertation

Islam, Razibul. (2015). *Significance of Maritime Security Studies in Higher Education System of Bangladesh*. Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2015.

Rahman, Zillur. (2016). *Requirement of National Maritime Information Center for Enhanced Maritime Efficiency.* Mirpur: Defence Services Command and Staff College, Individual Research Paper, 2016.

Official Correspondences

Commodore Naval Aviation letter no 23.02.1528.700.25.001.16 dated 26 July 2016.

Internet Documents

Raju, A. S. (2016). Non-Conventional Maritime Threats for Bangladesh Security. Retrieved November 25, 2017, from http://www.banglanews24.com/open-forum/article/56143/Non-Conventional-Maritime-Threats-for-Bangladesh-Security

Rahman, A. (2015). The challenge of competitive cooperation. Retrieved September 27, 2017, from http://www.thedailystar.net/the-challenge-of-competitive-cooperation-57706

Nowshin, N. (2015). Bangladesh's Maritime Security Needs Beefing Up. Retrieved June 20, 2017 from http://www.thedailystar.net/bangladeshs-maritime-security-needs-beefing-up-59944

Kalam, A. (2013). Security of Bangladesh: Compulsions for A Maritime Strategy. Retrieved July 10, 2017 from http://www.weeklyholiday.net/homepage/pages/UserHome.aspx?ID=2&date=04/12/2013

Chowdhury, S. J. (2014). Bangladesh and The Evolving Balance of Power in The Indian Ocean. Retrieved November 25, 2017 from http://www.thedailystar.net/bangladesh-and-the-evolving-balance-of-power-in-the-indian-ocean-4956

Not Known. (2010). Transnational Security: Threats Facing Bangladesh. Retrieved November 25, 2017 from https://www.files.ethz.ch/isn/164374/Issue%208.pdf

Yousuf, A. A. (2014). Geo-strategic significance: A non-traditional perspective. Retrieved September 10, 2017 from http://www.thedailystar.net/geo-strategic-significance-a-non-traditional-perspective-14836

Interview taken by author

Ashraf, Rear Admiral M Abu, (TAS), BSP, ncc, psc, Commander Chittagong Naval Area, Bangladesh Navy. (Personal communication, 2017, October 23).

Riadh, Commander A M, (TAS), psc, Commander Helicopter Squadron, Naval Aviation, Chittagong, Bangladesh Navy. (Personal communication, 2017, October 23).

Rahman, Captain A S M Delowar, Master, MT BANGLAR JYOTI, Bangladesh Shipping Corporation. (Personal communication, 2017, November 28).

Commander Raqib M Habib, (C), BN was commissioned from Bangladesh Naval Academy in executive branch on 01 January 2001. He has completed Maritime Warfare and Tactics Course (MWTC) course from School of Maritime Warfare and Tactics (SMWT) and Allied advance EW course from PNS BAHADUR, Karachi, Pakistan. He has also completed specialization in the field of Communication from BNS ISSA KHAN. He has completed Basic Flying Course from Bangladesh Air Force Academy and Type Rating Course on AW 109E helicopter from AW training Academy, Italy. The officer has a fine mix of command, staff and instructional appointments in his career. He served as Instructor in Bangladesh Naval Academy and was in charge of Bangladesh National Cadet Corps for Naval Wing in Chittagong. He has commanded BNS DURDANTA. He is one of the pioneer aviators of Naval Aviation and has immense contribution in building up first ever helicopter squadron of Bangladesh Navy. The officer has visited Malaysia, India, Pakistan, Indonesia, Myanmar, Italy, France and Turkey. The officer is happily married and blessed with two sons.

IMPLICATION OF CURRENT CAREER PROGRESSION SYSTEM OF ENGINEERING OFFICERS ON PROFESSIONAL SPECIALIZATION IN BANGLADESH AIR FORCE

Wing Commander Tawfiqur Rahman, Engg

ABSTRACT

Forces Goal 2030 plans to make Bangladesh Air Force a technologically advanced, well-trained and well-equipped force that can deter any threat. In the process, Bangladesh Air Force has been inducting advanced equipment in its fleet. This has necessitated specialized skill of its engineers for operation and maintenance of these aircraft and equipment. Foreseeing increasing demand for specialization BAF is continually evaluating its policy for career development of engineers. As part of this BAF recently reformed the structure of engineering officers and developed an Integrated career progression system. This however, was found to falter in addressing the issue of specialization for engineering officers. As such, there a generally agreed upon understanding that the currently practised career progression system and for that matter even the previous system does not support specialization of engineering officers. An in-depth study of relevant data on officers' posting pattern, their opinion about the system and self-assessment on own expertise establish the hypothesis that BAF engineering officers' specialization and the current career progression system are negatively related. The study reveals that, the system has limited departmentalization and practices cross discipline assignment along with a high rate of rotation for engineers. These factors disallow its engineers from developing specialization. With these findings, effort was made to formulate a system which emphasizes on functional departmentalization, limited job rotation and thereby is expected to develop specialized engineers who will accelerate the process of modernization in Bangladesh Air Force.

INTRODUCTION

Background

Bangladesh Air Force (BAF) like any other air force is a specialized organization. Such organization need to operate and maintain state of the art technology and as such require specialized personnel. Specialized engineers become more important when there is a faster pace of development. When BAF has taken the course for rapid advancement it faced a shortage of technical manpower. As BAF keeps upgrading its fleet with advanced aircrafts, radars and armament it is important that BAF engineers are fully conversant with those advanced technologies. In addition, they should be able to keep abreast with ever changing development and accordingly train their subordinates. This requires a carefully organized career progression system for the officers. It would have to start from their initial specialization and continue through successive job assignments and training. To have a comprehensive system that can facilitate faster development of the air force

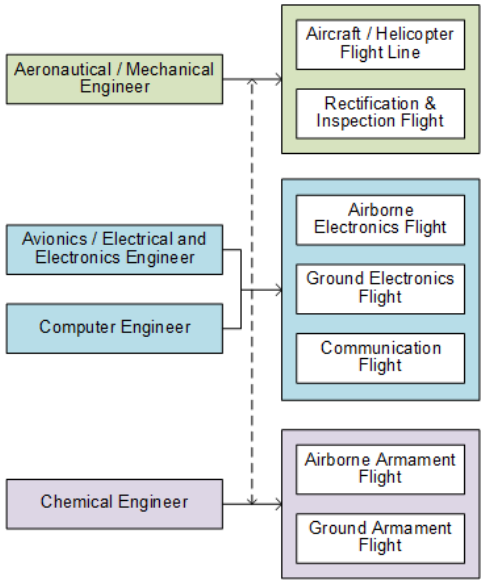
and its fleet, it is imperative that the existing system is analysed to understand the factors that affect specialization.

With the intention of gaining foresight for developing a career progression system conducive to job specialization, this research will first assess the current career progression system of BAF. The objective was to ascertain if it allows BAF engineering officers to develop professional specialization. Depending on the findings necessary measures will be proposed for improvement of the existing system if deemed necessary. The aim is to prepare BAF for faster adaptation to advanced technology.

EXISTING CAREER PROGRESSION SYSTEM FOR ENGINEERING OFFICERS AT BAF

The system for career progression for engineering officers in BAF is one which has evolved over the last 45 years or so. There has been changes in terms of intake frequency, training, promotion duration and as such nature of job assignment. However, requirement for higher level of specialization or expertise has not changed much over the years. But during recent induction of generation 4+ aircraft Yak-130 BAF felt the need for specialists on advanced systems; not someone who is short of an expert. (Wg Cdr Monzur, 23 October 2017) This realisation made it clear that, BAF may have a shortage of expert engineers.

Figure 1: Flight level appointment of engineers at BAF bases



Source: Author's construct based on survey

Previous System of Maintenance Branch of BAF

BAF had since long been following a system of 3 specialized branches of engineering officers. Bangladesh Air Force Instructions (AFI) -1/95 outlined the details of the organization of engineers at BAF. According to the system engineers were grouped under three branches namely:

a. Maintenance Technical Engineering (MT Engg)

b. Maintenance Technical Communication and Electronics (MT C&E)

c. Maintenance Technical Armament (MT Armament)

According to the AFI and the practice, MT Engg officers were responsible for maintenance of aircrafts, ground vehicles; MT C&E officers were responsible for avionics, communication and radars; MT Armt officers were responsible for armament related maintenance.

Integrated Career Progression System

In 2007 – 08 the organization of maintenance branch was changed following a detailed study by the Air headquarters. (Gp Capt Shahjahan, 12 June 2017) The three branches were merged into one single Engineering branch. The main issues were vacancy distribution and shortage of engineering officers.

Table 1: Qualification vs responsibility of engineering officers at Flight Line and R&I Flights of BAF

Flight Line / R&I Flight		Qualification of Posted Officer		Responsibilities
		Aerospace / Mechanical	Avionics / Electrical	
BAF Base Bashar	Mi-17 Flight Line	1	-	All OICs need to direct and supervise all technical defects related to mechanical, aeronautical, electrical, and avionics engineering. They are supported by 01 x Electrical engineer for communication related issues
	Mi-17 R&I Flight	1	-	
	Bell-212 Flight	-	1	
	C-130 Flight	2	-	
	L-410 Flight	1	1	
BAF Base Bangabandhu	F-7 MB Flight Line	1	-	
	F-7 MB R&I Flight	1	-	
	F-7 BG Flight	1	-	

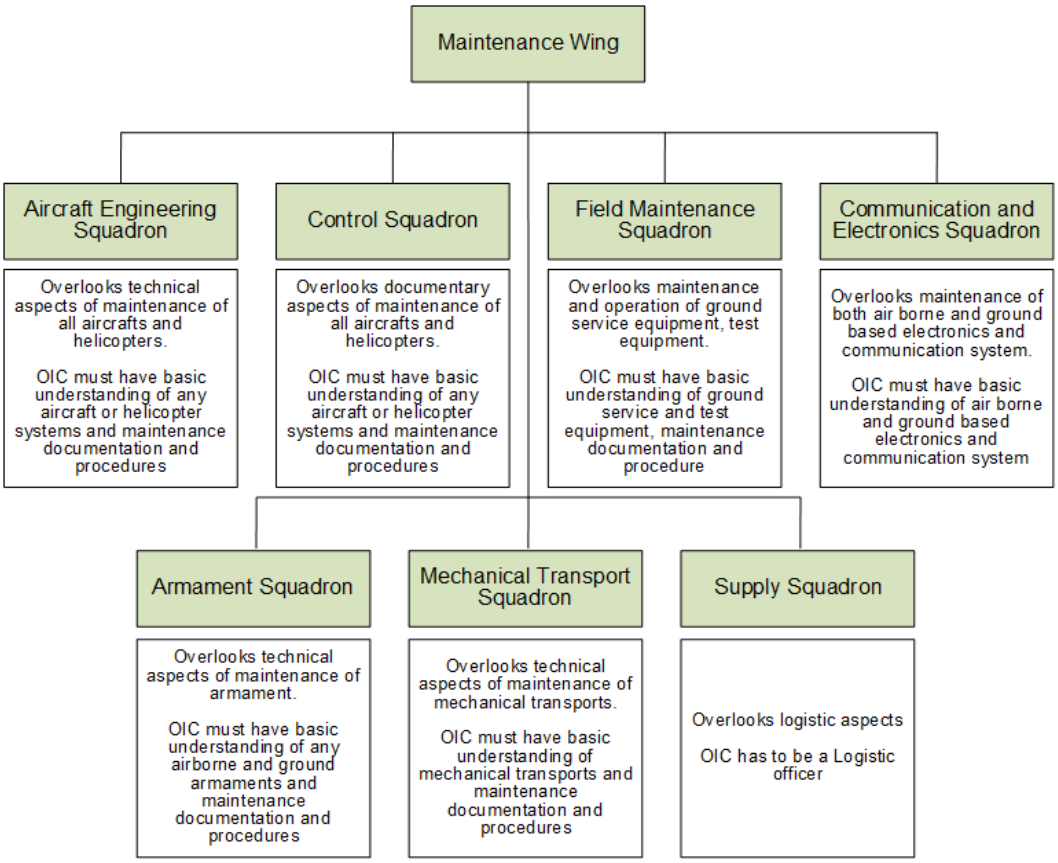
Flight Line / R&I Flight		Qualification of Posted Officer		Responsibilities
		Aerospace / Mechanical	Avionics / Electrical	
	Line			
	F-7 BG R&I Flight	1	-	
	MiG-29 Flight Line	1	-	
	MiG-29 R&I Flight	1	-	
BAF Base Birsreshtho Matiur	OIC PT-6 Flight Line	1	-	
	OIC PT-6 R&I Flight	-	1	
	OIC Bell-206 Flight	1	-	
	OIC K-8 Flight Line	1	-	
	OIC K-8 R&I Flight	1	-	
BAF Base Zahurul	OIC Mi-17 Flight Line	1	-	
	OIC Mi-17 R&I Flight	1	-	
	OIC Yak-130 Flight Line	1	-	
	OIC Yak-130 R&I Flight	1	-	
	OIC An-32 Flight	1	-	

Source: Author's construct based on survey

In the integrated system BAF inducts engineers from aerospace, avionics, mechanical, electrical, computer and chemical engineering background all of whom are allotted the single engineering branch. The details are as follows:

Initial Training. After completion of undergraduate in engineering the officers undergo Post Commission Professional Training for Engineers (PCPT (Engg)) for a duration of 19 weeks. Since the Integration, the previously taught Aero-Engg Technology (AET) Course for different streams have been merged to form a single curriculum.

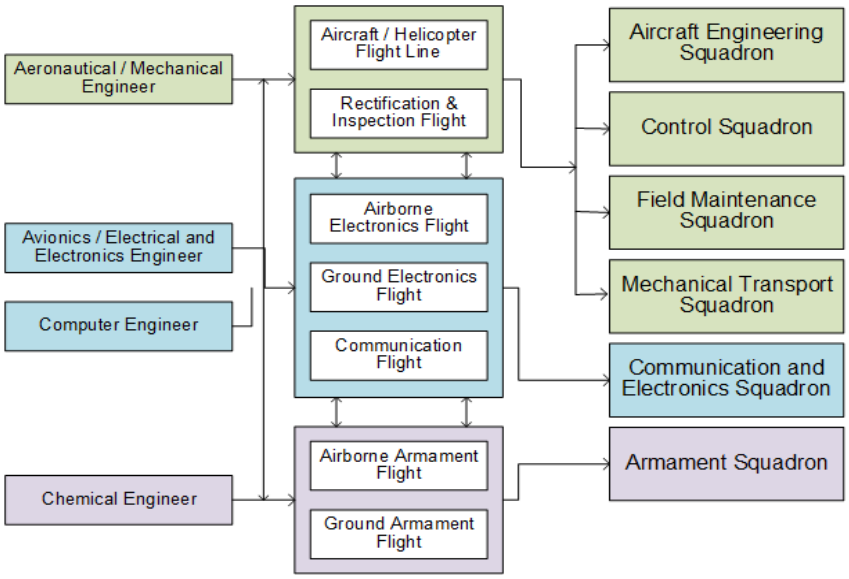
Figure 2: Squadron level assignment requirements of engineering officers in BAF bases



Source: Author's construct based on survey

Flight Level Assignment. On completion of training, engineering officers are posted to different flights, i.e. as Officer-in-Charge of Flight Line or Rectification and Inspection Flight of aircrafts or helicopters, communication or armament flights. In a flight generally one to two engineering officers are assigned. They are made responsible for all issues related to airframe, propulsion, electronics, communication and armament. Table 1 gives a breakdown of officers posted to different flight lines and R&I Flight and what their basic engineering education is vis-à-vis their responsibilities. In many cases, mechanical or aeronautical engineers are to direct and supervise technical issues related to all disciplines.

Figure 3: Squadron level assignment pattern of engineering officers in BAF



Source: Author's construct based on survey

Squadron Level Assignment. After 10 to 12 years of service, the engineers take on managerial responsibilities at the squadron level. A typical maintenance wing of a BAF base has 7 squadrons details of which are shown in figure 2 and 3. The OIC of these squadrons provide managerial guidance to under-command flights. As such, in-depth expertise is not a requirement at this level of appointment However, OIC aircraft engineering squadron and C&E Squadron must have adequate understanding in their respective systems.

Wing Level Assignment. At wing level, engineers are appointed as officer commanding (OC) of either base maintenance wing or maintenance unit responsible for 3rd line maintenance. At this stage, the assignment is solely managerial and as such, inter-disciplinary assignment is not an issue.

Benefits of Integrated system

The basic benefits BAF is getting from Maintenance branches' integration can be described as:

a. Shortage of Engineering officers have been minimized through deployment of officers in common appointments.

b. Congenial atmosphere and harmony amongst the engineering officers by ensuring posting/promotion/course.

c. Reduced number of pre-matured retirement for engineers from avionics and armament discipline.

Problems with Integrated Career Progression System

Despite the benefits, this integrated system encourages posting of engineers in diversified fields which is a constraint to specialization. Such practice will make an engineer familiar with basic maintenance of many different types of equipment, but the engineer is less likely to have expertise with any equipment. This is a general observation by mid-level officers (Wing Commander Saiful, 27 August 2017).

IMPLICATION OF CURRENT CAREER PROGRESSION SYSTEM ON PROFESSIONAL SPECIALIZATION

The existing and previous career progression system for engineers seems to have issues regarding the development of professional expertise. This however, needs to be analysed through well-defined indexes so that remedial steps can be taken.

Assessment Index for Career Progression System

For a focused analysis of the career progression system the following indexes can be used.

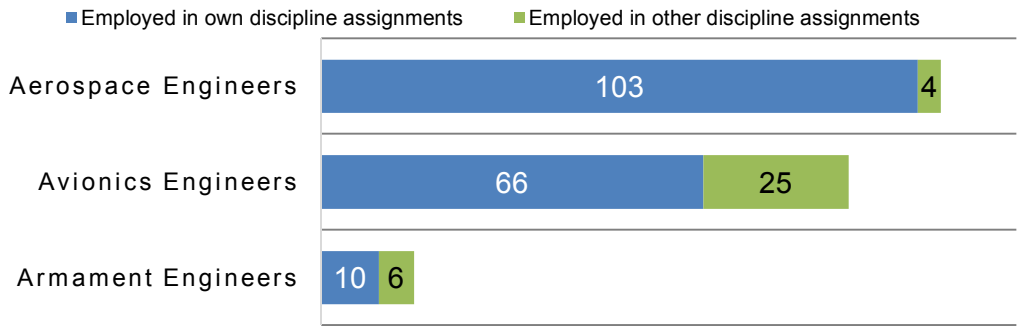
a. **Cross discipline job assignment.** In the military engineers are expected to be prepared to perform basic managerial roles for maintenance. (Nicholas Jans and Judy Frazer-Jans, 2004) This may cross across to other disciplines. Though this facilitates increased utilization of engineers it can also reduce specialization.

b. **Functional departmentalization.** It is the grouping of jobs involving similar activities. In the context of BAF, it could be aircraft, helicopter, radar, armament or system wise grouping. There could be further departmentalization based on maintenance disciplines like airframe, propulsion, communication etc. This would encourage engineers to concentrate on assigned departments creating scope for specialization.

c. **Training and Job Balance.** A planned job design would cater for training based on job requirement and successive assignment would be made accordingly. A mismatch between training and job assignment would hinder specialization. (Wing Commander Saiful, 27 August 2017)

d. **Job Rotation**. In BAF perspective, job rotation is the posting cycle of officers. This has direct link to professional specialization. Especially in profession involving advanced technology a reduced level of rotation upgrades professionalism and problem-solving skills (An Tien Hsieh and Hui-Yu Chao, 2004).

Figure 4: Interdisciplinary Assignment of engineers under the integrated system of career progression



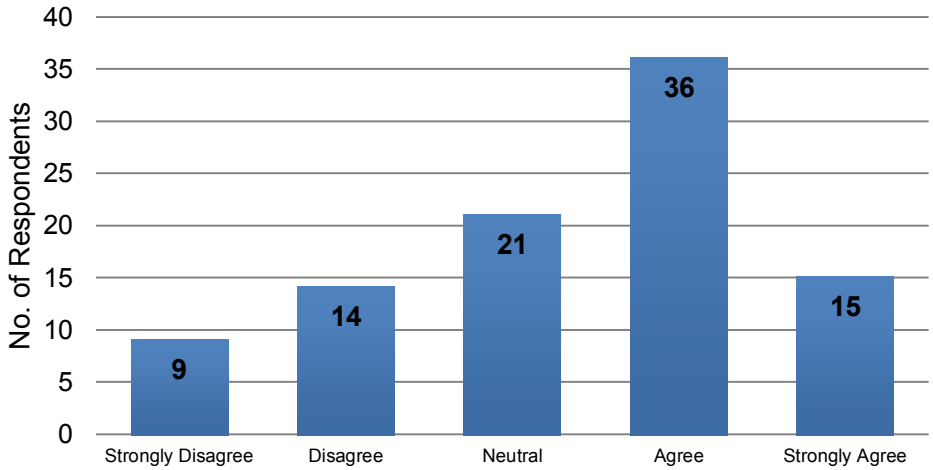
Source: Author's construct based on survey

Cross Discipline Job Assignment

Cross discipline job assignment has been assessed through survey question and data from the Engineering Directorate. The results are discussed as under:

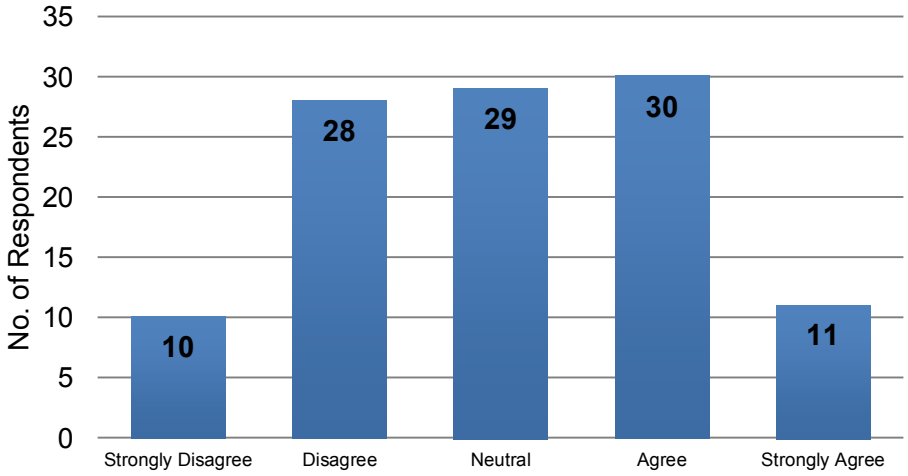
a. **Record on Cross Discipline Assignment.** Record shows since integration, many engineering officers have served and still are serving in inter-stream. More than 16% (figure 4) of the engineering officers are assigned outside their basic discipline.

Figure 5: Response to question whether engineering officers current work was consistent with their professional discipline



Source: Author's construct based on survey

Figure 6: Response to the question if engineering officers' expertise was used well by BAF



Source: Author's construct based on survey

b. **Survey Feedback on Cross Discipline Assignment.** Through survey respondents were asked two questions to understand the level of cross discipline assignment. The response is shown in figures 5 and 6. The feedback shows that 40% of the respondents said their current work was not consistent with their discipline. This indicates the prevalence of cross discipline assignment.

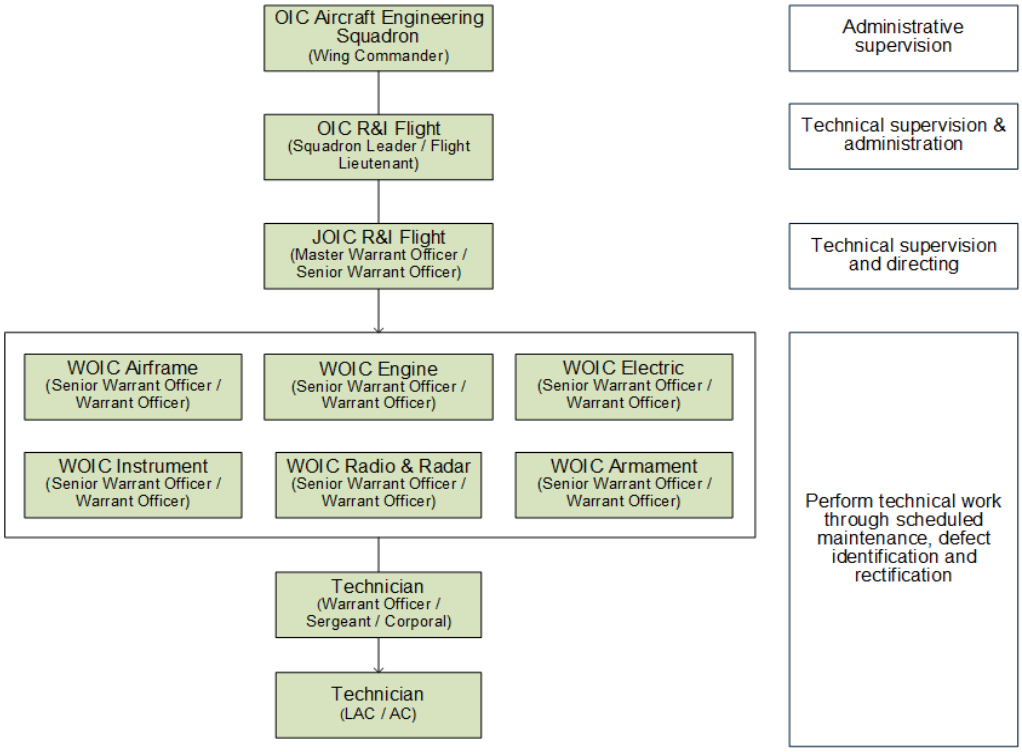
Functional Departmentalization

The level of functional departmentalization is assessed through subjective analysis of maintenance work organization and responses through survey questions. Details are discussed in following paragraphs.

a. **Subjective analysis on Engineering officers' role**. BAF engineers are mostly expected to perform managerial and supervisory role. (Wing Commander Saiful, 27 August 2017) The actual on hand job is done by technicians of the rank Corporal and Sergeant whereas ranks of Leading Aircraftman and Aircraftman undergo training. Moreover, there is another supervisory loop where the JCOIC and WOIC. The hierarchy of maintenance job in BAF is shown in figure 8.

b. **Survey Feedback on Individual Specialization.** Individual officers were asked to mention their field of specialization. Most of them replied saying they were specialized in multiple trades of their aircraft or helicopter. Many even replied they were specialized on multiple types of aircrafts. This is shown in table 2 clearly reflects limited functional departmentalization. They were also asked if current posting policy taught them a variety of tasks without emphasizing on expertise on any specific job. The respondents overwhelmingly agreed on it which indicated limited departmentalization. The result of the response in shown in the following Figure:-

Figure 7: Levels of maintenance work and responsibility in BAF



Source: Author's construct based on survey

Table 2: Response variation on engineers' specialization

Response on Specialization	No of Respondents
Avionics	15
Aircraft maintenance	19
Aerospace engineering	8
Analysis and Rectification of aircraft defects	6
Communications and, Radar systems	4
Aircraft Maintenance and Armament	4
Avionics and Aerospace systems	6
Mechanical Engineering	6
Helicopter Maintenance	4
Structure and control system of aircraft	2
Software Engineering	2

Response on Specialization	No of Respondents
Staff Duties	3
Maintenance of F-7MB and AW-139 aircraft	1
Maintenance of An-32 aircraft	2
Maintenance of F-7MB aircraft	2
Maintenance of MiG-29 aircraft	2
Maintenance of PT-6 aircraft	2
Avionics system of (Yak-130) aircraft	1
Radar system	2
Armaments	3
Networking	2
Repair and troubleshooting of digital systems.	1
I am not sure	2

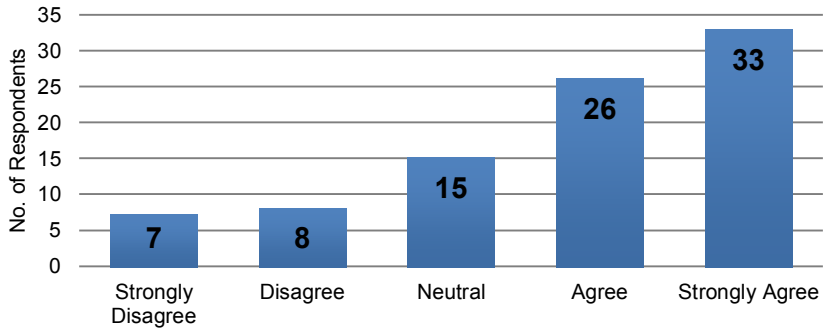
Source: Author's construct based on survey

Table 3: Breakdown of replies on specialization by OICs at Flight level appointments (out of 22 respondents)

Specialized on			
Aircraft / Helicopter	Airframe, Engine, Electric and Instrument	Analysis and rectification of defects	Specific system
24%	23%	46%	7%

Source: Author's construct based on survey

Figure 8: Response to the question if current posting policy taught them a variety of tasks without emphasizing on expertise on any specific job



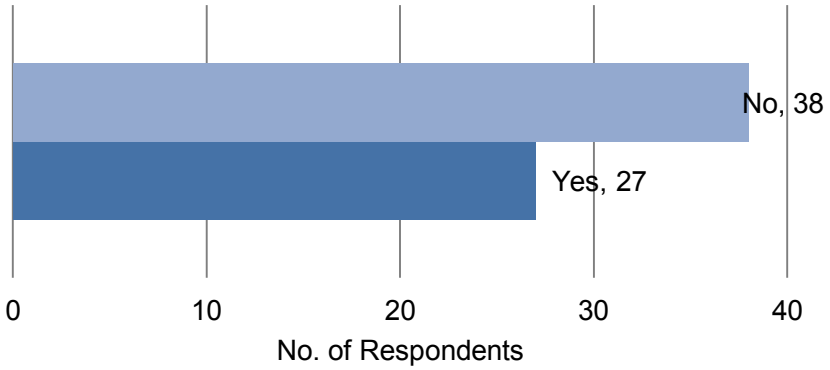
Source: Author's construct based on survey

Training and Job Balance

The measure of training – job balance is assessed through available data on training and survey questions. Details are as follows:

a. **Data on Training Relevant to Job Assignment.** From the data received from the Directorate of Engineering it was found that out of 83 aerospace or mechanical engineers only 27 underwent training that is directly related to their specialization.

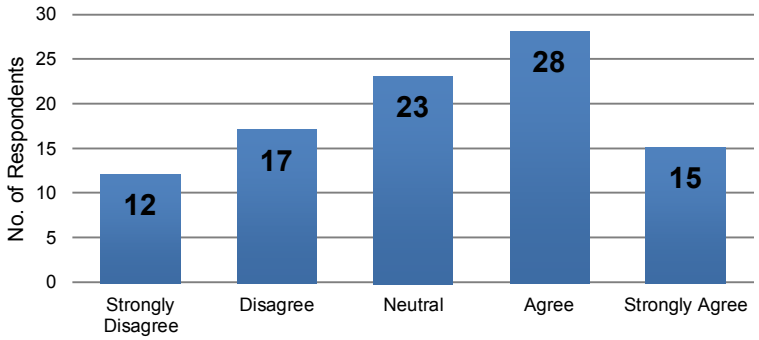
Figure 9: Response on training on current assignment of respondent engineers



Source: Author's construct based on survey

b. **Feedback on Training and Experience on Current Assignment.** Regarding training and experience on current assignment only 41.53 % said they had training on their current assignments (figure 9). In replying if their professional training prepared them well for current assignment, More than 25% replied in negative.

Figure 10: Response to whether engineers' professional training prepared them well for current assignment

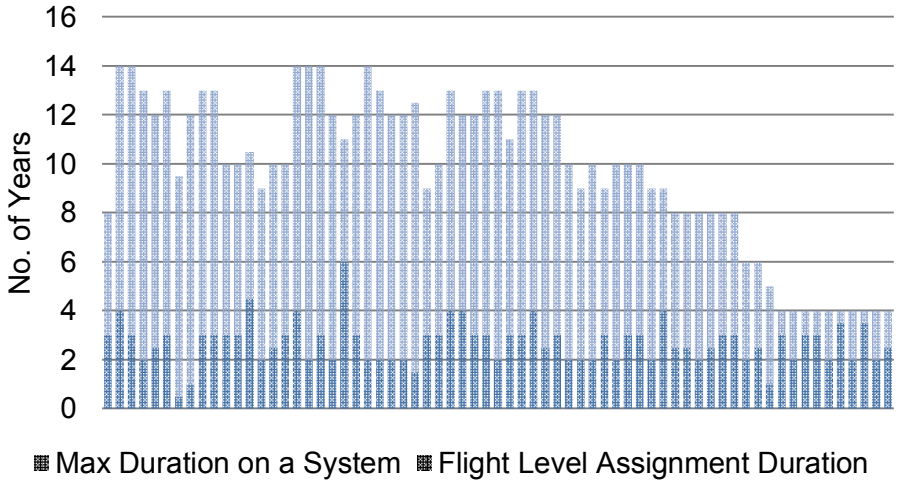


Source: Author's construct based on survey

Job Rotation

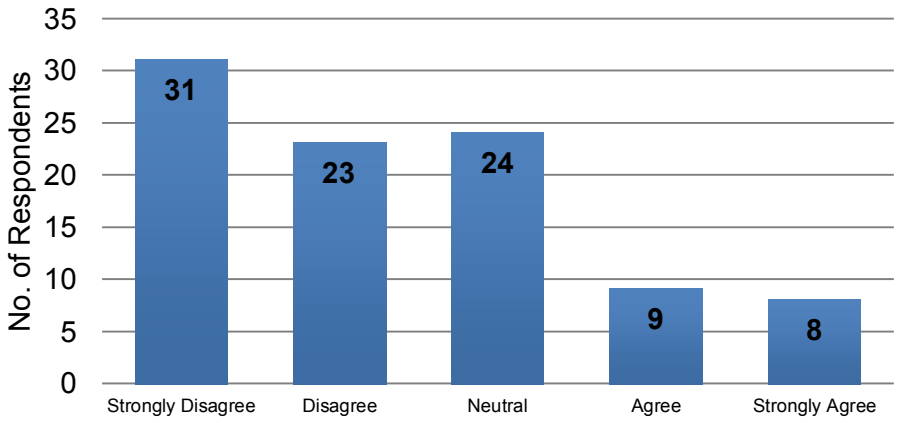
Level of job rotation or frequency of posting is assessed both through data and survey. The data is only for aerospace / mechanical engineers or more specifically MT Engg officers/'M' stream officers.

Figure 11: Maximum duration on one system against total flight level duration of 67 engineers



Source: Author's construct based on survey

Figure 12: Response to whether existing posting policy allows enough time to grow expertise on a system



Source: Author's construct based on survey

a. **Data on Job Rotation.** The data available revealed that officers were posted at an interval of 1 to 3 years in general. It shows a high level of job rotation (Figure 11).

Table 4: Engineering officer's assessment about own level of professional expertise

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
You do your current job well	-	1.5%	10.8 %	53.8 %	33.8 %
You can deal with just about any problem that arises in your current job	1.5 %	4.6 %	21.5 %	50.8 %	21.5 %
The work you do in your current job is consistent with your overall professional background	4.6 %	12.3 %	23.1 %	46.2 %	13.8 %
Your previous experience has prepared you well for your current job	4.6 %	13.8 %	21.5 %	44.6 %	15.4 %
Your professional training has prepared you well for your current job	9.2 %	16.9 %	26.2 %	33.8 %	13.8 %
How would you rate your performance in your current job?	Barely Adequate	Adequate	Good	Very Good	Outstanding
	3.1 %	5.1	21.5 %	59.1 %	11.2 %

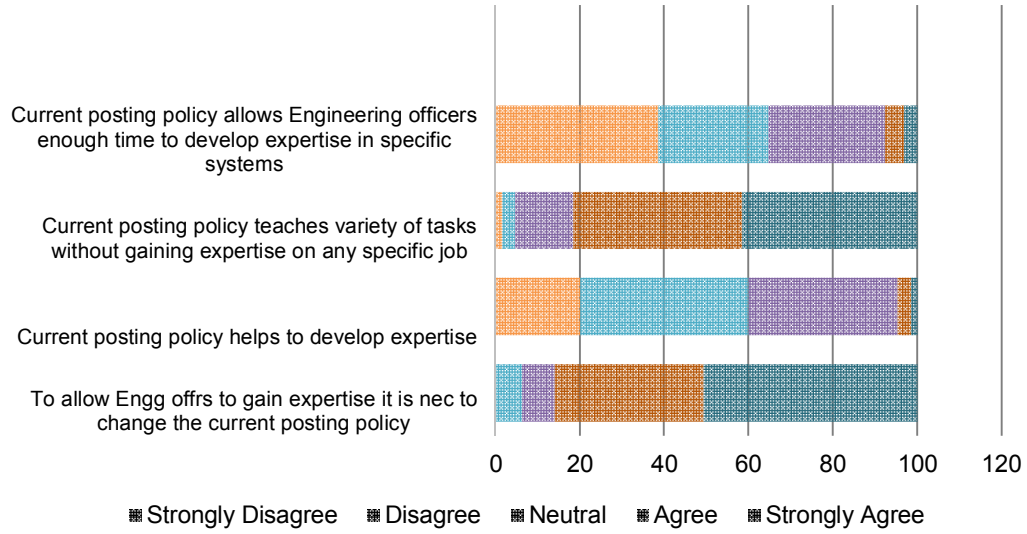
Source: Author's construct based on survey

b. **Feedback on Job Rotation.** Respondents were asked to respond to the statement "Current posting policy allows Engg officers enough time to develop expertise in specific systems". The respondents overwhelmingly disagreed (figure 12).

Officers Assessment of Own Level of Professional Expertise

From data and survey, it is evident that majority felt they had an acceptable level of 'job expertise.' This result contradicts the assessment of the career progression system based on the defined indexes of this research. BAF engineers at flight level are only expected to perform managerial responsibilities. This could be the reason for the self-assessment as Table 4.

Figure 13: Result of Survey Questionnaire on the existing career progression system



Source: Author's construct based on survey

Engineering Officers Assessment of the Current Career Progression System

The self-assessment by the engineering officers could not directly establish the hypothesis that existing career progression system negatively impacted the development of professional specialization. Therefore, questions were set for the engineers about their opinion on the existing career progression system in term of its effect on professional expertise. This part of questionnaire on Career Progression system comprised of four questions. Out of the respondents around 65% said they did not have enough time on a posting to develop expertise in a system. In response to the question on involving officers on a variety of tasks 81.6% said the system involved them in variety of tasks thus not allowing specialization. Exactly 60% said the system did not help specialization. An overwhelming 86.2% said the existing system needs to be amended to allow expertise development.

Findings

From the above following issues were identified:

a. Cross discipline job assignment or posting
b. Limited requirement for specialization or developing expertise
c. Inadequacy of specialized training
d. Mismatch between training and assignment
e. High level of job rotation or high frequency of posting

The survey also came out with the effect of the existing system. The responses highlighted the following effects:-

a. Assignment spread across multiple system thus encouraging generalization instead of specialization

b. Limited duration on assignment not allowing enough time to develop specialization

c. Less job satisfaction due to cross discipline assignments

From the analysis of data presented it can be reasonably assumed that, the existing system does not require specialization from engineering officers. As such, it is necessary that the career progression system be reviewed and reformed. Response from the survey also supports this deduction.

IMPROVING PROFESSIONAL SPECIALIZATION THROUGH CAREER PROGRESSION SYSTEM

The study was intended at ascertaining if the career progression system for BAF engineering officers was conducive to professional specialization. The study revealed that changes in the career progression system was necessary for promoting specialization. Though the system was modified issues of specialization could not be addressed adequately. Keeping experience in perspective and assessment of the system used in other air forces a proposal has been made.

Issues for Modification

Through subjective analysis, survey result analysis, interviews and discussions several issues can be identified which need to be addressed. These issues emanate from the factors through which the system affects professional specialization. Details may be discussed as in following paragraphs.

a. **Functional Departmentalization.** Maintenance jobs of BAF need to be departmentalized. It could be done on several stages. At the first stage, aircraft or helicopters can be departmentalised as fighter aircraft, transport aircraft and helicopters. In the next stage, it could be based on aircraft or helicopter types. In the last stage it could be based on systems like: airframe, propulsion, avionics, and armament.

b. **Specialization within Discipline.** Engineers specialization or branch should strictly match their engineering discipline. Though cross discipline assignment or branch allotment can alleviate the shortage of engineers, the solution is only temporary. This solution also comes at the cost of increased training requirement and hence reduction in specialization.

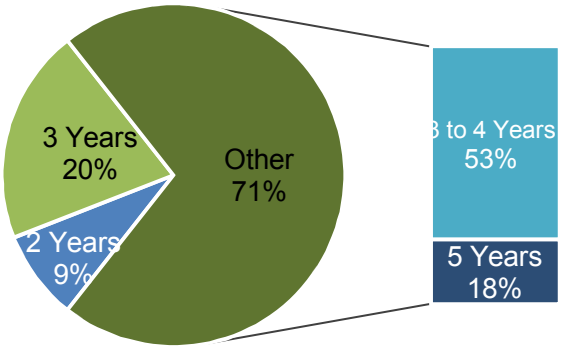
c. **Generalization at Managerial Level.** Unequal distribution of vacancies for all branches of engineers was one of the prime reasons for formulating the integrated system. This allows equal scope for promotion and progression for all branches. Adoption of functional departmentalization and specialization will make it difficult for equal scope for progression. To minimise the effect an approach of generalization may be adopted for managerial assignments.

d. **Training focusing specialization requirement.** The training for engineers should focus on the required specialization. Moreover, training should be followed by related job assignment. This will allow maturity and sharing of knowledge gained from training. Categorisation of engineers should be according to their stream of specialization.

e. **Reduction in Job Rotation.** Engineers need to be allowed increased duration at their assignments. Departmentalization coupled with reduced rate of rotation will enhance professional specialization. More than 90% of the respondents said minimum 3 years was required. As such, the reform may consider more than 3 years in each system for specialization.

f. **Increasing Number of Engineering Officers.** In the present context, BAF has a shortage of engineers compared to it commitments. Implementation of specialization based system will further increase shortage of officers. Therefore, intake process of engineers need to be reviewed so that it can meet the requirement.

Figure 14: Years in Service Required for Gaining Expertise on any Aircraft or Helicopter

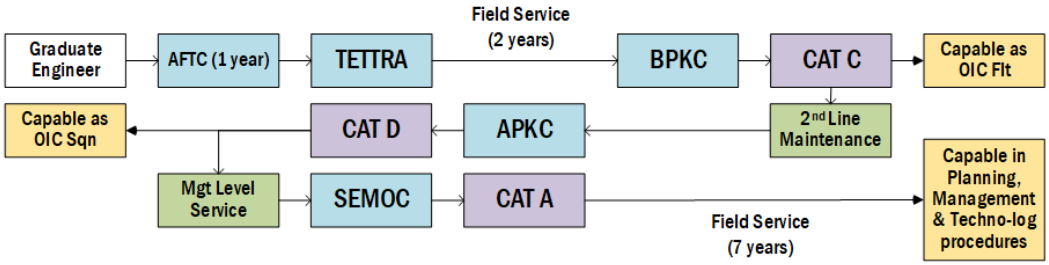


Source: Author's construct based on survey

Career Progression System of other Air Forces

Career progression system of other air forces can provide important insight for reforming BAF system. Considering the access and relevance system in air forces of India, and Pakistan was consulted. Their systems are discussed in the following paragraphs.

Figure 15: Career progression system for engineers of Indian Air Force



Source: Author's construct based on survey

Career Progression System of Indian Air Force (IAF). AT IAF enrolled officers undergo basic course for 1 year at the Air Force Technical College (AFTC). AFTC imparts this course in two streams i.e. Aeronautical Engineering (Mech) or AE (M) and Aeronautical Engineering (Elec) or AE (L). On completion of AFTC, officers are posted to Technical Type Training School (TETTRA) for 06 months of on-type specialization. After TETTRA officers have field service for 2 years. At this stage they undergo Basic Professional Knowledge Course (BPKC) followed by test for Category C test. Earning this category qualifies them for flight level appointment and performs 2nd line maintenance. In the process of flight level assignment, the officer also goes through Advanced Professional Knowledge Course (APKC). Finally, he appears for Category D certification which qualifies him for squadron level appointment. At the squadron level the officers perform management level job. Before qualifying for planning and management appointment officers must go through Senior Engineers Management Orientation Course (SEMOC) and A categorization. In their career progression IAF engineers are posted as per their specialization and continue work in the field for approximately 10 to 12 years. Change of deployment from one platform to other is rare and may take place after 7 to 8 years of work within similar system or equipment. Overall career progression of IAF engineers is shown in Figure 16.

Career Progression System in Pakistan Air Force (PAF). PAF follows a similar career progression system which is characterised by departmentalization of tasks based on both aircraft / helicopter type and engineering discipline. (Wing Commander Junaid, 20 September 2017)

Proposed Career Progression System

Considering the requirements and challenges a proposed system for career progression for engineers has been outlined. The plan is based on stream-wise training and employment of engineers. Within the stream there would be specialization on specific aircraft or system. Specialization for officers would be based on engineering discipline of officers. In addition, officers would have to work at least 7 to 9 years for specialization. The details are discussed in the following paragraphs:-

Enrolment. Induction may continue as currently done. However, speciality should be strictly based on engineering discipline.

Engineering Streams. After undergraduate education, engineers may be grouped stream wise. Probable streaming may be as shown in table 5. The first professional training at OTS would be stream wise with more generalized contents.

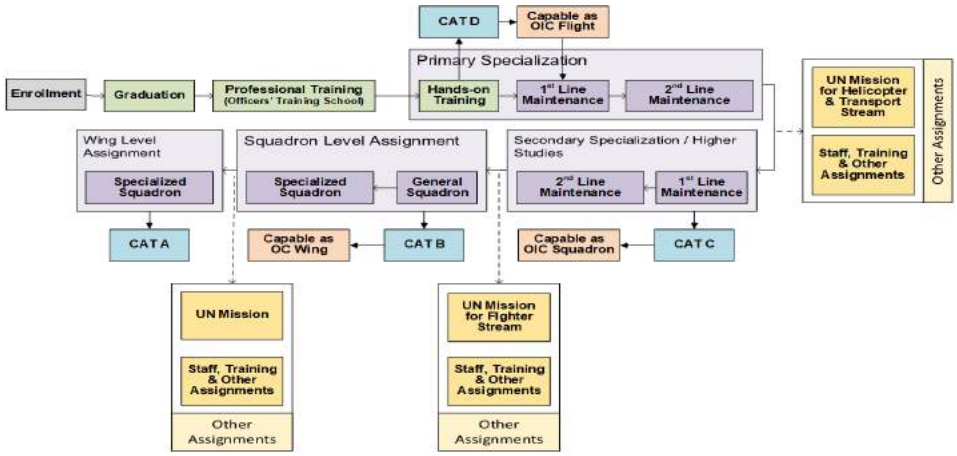
Table 5: Proposed streaming of engineering officers with functional departmentalization

Stream	Engineering discipline	Departmentalization	Specialization
Aerospace	Mechanical / Aerospace	Fighter Aircraft	Airframe Propulsion Electric & instrument
		Transport Aircraft	
		Helicopter	
		Automobile	
Avionics	Electrical / Avionics / Computer / Communication	Communication & Radar	Aircraft Avionics Radars Communications IT & Networking
		Information Technology & Networking	
Armament	Aerospace / Mechanical	Ground Armament	Ground Armament Airborne Armament
		Airborne Armament	

Source: Author's construct based on survey

Primary Specialization. After OTS officers may be allotted with field of primary specialization such as: fighter, transport, radar or airborne armament. They would then be posted as under-trainee officers to respective units for one year. In this one year the officer will undergo hands-on training physically working on maintenance after which they will be certified with category 'D' rating. Subsequently they will continue to work on the same system (not necessarily at the same base or unit) for 5 to 6 years.

Figure 16: Flow chart of proposed career progression system showing categorization and other assignments besides primary and secondary specialization

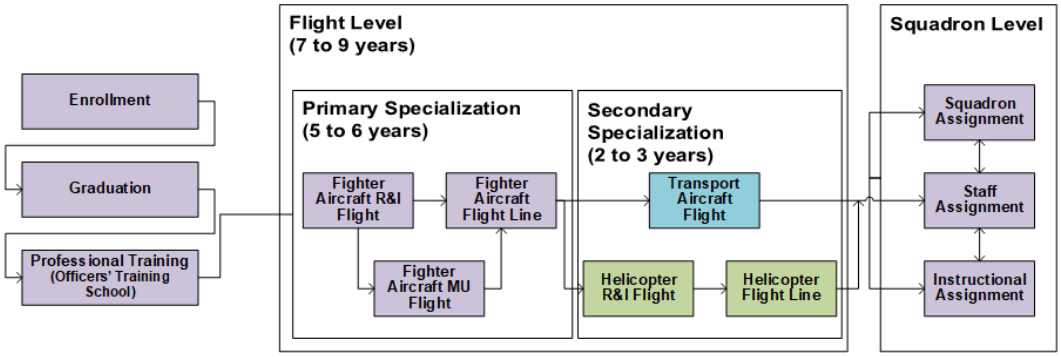


Source: Author's construct based on survey

Secondary Specialization. After work on primary specialization, an officer would go for secondary specialization. In this phase a fighter stream officer would be assigned to work either on transport or helicopter stream. On the other hand, a helicopter or transport stream officer would be assigned to any of the fighter aircraft. They would then work for 2 to 3 years on their secondary specialization.

Squadron Level Assignment. On completion of more than 10 years an engineering officer would become eligible for different staff or instructional assignments. Subsequently he would be eligible for squadron level maintenance appointment.

Figure 17: Details of Primary and Secondary specialization in proposed career progression of BAF engineering officers (only fighter stream for mechanical or aerospace engineer)



Source: Author's construct based on survey

Challenges for Implementing Proposed System

Implementation of the proposed system will face several challenges. The nature of these challenges and possible mitigation measures are briefly mentioned in the following table.

Table 6: Challenges and mitigation measures for the proposed career progression system

Challenge Area	Nature of challenge	Possible Mitigation Measure
Manpower	Three (3) aerospace engineers will be required at each flight line and R&I flight. Each Airborne electronics flight will need 2 to 3 stream wise avionics engineer. BAF Bashar, for instance, will need 15 aerospace and 2 avionics	a. Induction of officers needs increase in steps. b. Direct entry engineers may be inducted to meet requirements till the time regular entry is substantial. c. Streaming may be

Challenge Area	Nature of challenge	Possible Mitigation Measure
	engineers at flight level for aircrafts only. Currently there are 10 officers only. A 50 to 70 % increase is required.	incorporated in phases. Initially only fighter, transport and helicopter stream followed by aircraft type streaming in 5 to 10 years.
Demands for United Nations mission and outside organizational assignments	It might be difficult to maintain the proposed plan due to requirement for assignments outside air force.	The proposal considers and specifies these assignments. Some adjustments may be made to implement the plan in phases.
Specialized Training	a. There may not be enough expert officers available for imparting training. b. Training material may not be adequate	Selected officers may be trained from abroad on fields of specialization.
Unequal distribution of courses abroad	It might be difficult to give all officers equal scope for training abroad based on specialization	Management courses may be utilized to balance the shortage of specialized courses if necessary.

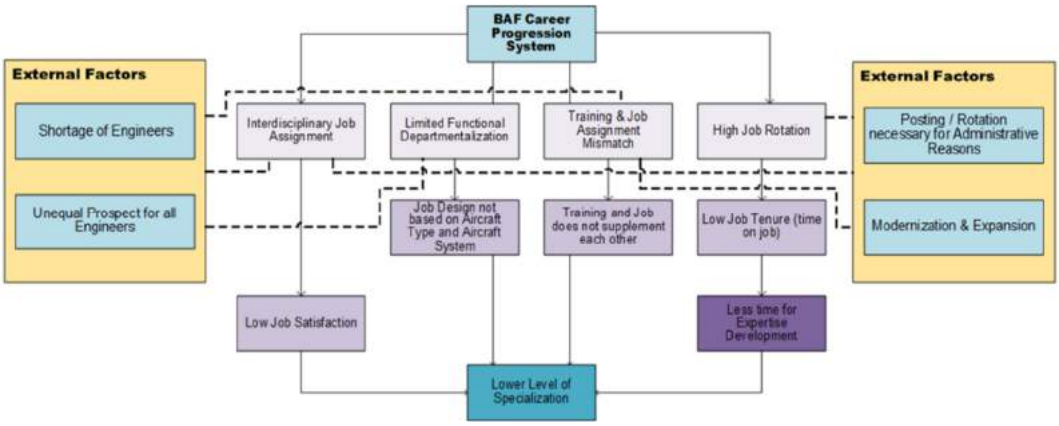
Source: Author's construct based on survey

CONCLUSION

Bangladesh Air Force though started with modest inventory has recently inducted 4th generation aircraft and equipment. BAF aims at enhancing its operational capability to emerge as an advanced and respected force This can only be achieved with incorporation of advanced technology, self-sufficiency in maintenance and limited research and development set-up. The pre-requisite for these is experienced and specialized engineers. This is where there has been concern since long.

BAF had a system of three branch engineers for maintenance activities. The system was found to falter in terms of equal job prospect for engineers of all discipline and lack of specialization. A review of the system was done, and an Integrated Career Progression System was formed. Though the reformed system could mitigate the issues related to equal prospects for all engineers it was still felt deficient in addressing the issue of technical specialization of its officers.

Figure 18: Framework for analysis of BAF career progression system for engineering officers



Source: Author's construct based on survey

This study was conducted to better understand the existing system, its deficiencies, the requirements and challenges for creating professional engineers with specialization. The study revealed that the reasons for inadequate professional specialization in BAF engineering officers were as follows:

a. Cross discipline assignment
b. Limited functional departmentalization
c. Mismatch between training and job assignment
d. High rate of job rotation
e. Less job duration

Based on the finding a career progression system has been proposed. In doing so, the challenges of the existing system and other issues that influence its implementation were kept in mind. Effort was made to develop a career progression system that addressed all the issues that impaired the existing system in developing specialized engineers. It should also appreciate that; the implementation must be synchronised with the overall modernisation plan of BAF. If this understanding is materialised the proposed system is believed to increase the level of professional specialization of engineering officers of BAF.

RECOMMENDATIONS

Building on the major findings of the research, the author recommends the following:

a. BAF may conduct further study based on this research to find and address other issues related to establishment and vacancies which were not considered in this work.

b. BAF may formulate comprehensive plan for its modernisation. This plan needs to be integrated with the career progression system and supported by a detailed plan for induction of engineering officers.

c. BAF engineers and technicians may be provided adequate training for initiating the implementation of the career progression system.

Annexes:

A. Conceptual Framework.
B. Survey Questionnaire.
C. Interview Questionnaire.
D. Focused Group Discussion.
E. Proposed Career Progression System.

BIBLIOGRAPHY

An-Tien Hsieh & Hui-Yu Chao (2004), 'A reassessment of the relationship between job specialization, job rotation and job burnout: example of Taiwan's high-technology industry,' *The International Journal of Human Resource Management*, 15:6, pp. 1108-1123.

Adeyoyin, S. O., Agbeze-Unazi, F., Oyewunmi, O. O., Adegun, A. I., & Ayodele, R. O. (2015). *Effects of Job Specialization and Departmentalization on Job Satisfaction among the Staff of a Nigerian University Library.*

Aircraft Maintenance Officer Career Field Education and Training Plan (2017), AFSC 21AX, 25 May 2017

Dimitrios, B., Dimitrios, S., (2013), 'Aspects of Job Design,' *International Journal of Human Resource Management and Research,* 3(4), pp. 85-94.

Fred C. Lunenburg, (2010), 'The Management Function of Principals,' *National Forum of Educational Administration and Supervision Journal, 27 (4)*

Nicholas Jans and Judy Frazer-Jans (2004), *Career Development, Job Rotation, and Professional Performance,* Armed Forces & Society, 30: p. 255.

Robert H. Cohn (1999), *Scientist and Engineer Career Patterns for Air Force Civilians and Officers,* Air Command and Staff College, Air University, April 1999

Scott Casad, (2012), 'Implications of Job Rotation Literature for Performance Improvement Practitioners,' *Performance Improvement Quarterly*, 25 (2), pp. 27-41

Shahin Rasouli Saravani, 'Badri Abbasi (2013), investigating the influence of job rotation on performance by considering skill variation and job satisfaction of bank employees,' *Technical Gazette*, 20, 3(2013), pp. 473-478.

Squadron Leader S K Zakir Ahmed, (2011-2012) 'Job Satisfaction of Bangladesh Air Force Officers in different ranks,' Defence Services Command and Staff College, Individual Research Paper.

Squadron Leader Md Saiful Islam, (2004 – 05), 'Improvement of Aircraft maintenance in BAF: Trade integration for first line maintenance and trade specialization for second and

third line Maintenance,' Defence Services Command and Staff College, Individual Research Paper.

Squadron Leader Mohammad Mahmudul Hasan, (2013-14), 'Job dissatisfaction of mid-level officers in BAF: Challenges and Possible Options,' Defence Services Command and Staff College, Individual Research Paper.

Lieutenant Commander Ncli S Ibanez, (2013-14), 'Relationship between job satisfaction, job performance and voluntary turnover intention of Philippine Navy Pilots at naval air group,' Defence Services Command and Staff College, Individual Research Paper.

Interviews taken by author

Group Captain M Selim Mia, Engg, ndc, psc, Deputy Director, Directorate of Engineering, Air Headquarter, interviewed on 11 June 2017.

Group Captain Md Shahjahan, Engg, ndc, psc, Officer Commanding, 214 Maintenance Unit, BAF Base Bangabandhu, interviewed on 12 June 2017.

Wing Commander Monzur-E-Alam, psc, Officer-in-Charge, Aircraft Engineering Squadron, Maintenance Wing, BAF Base Zahurul Huq, interviewed on 23 October 2017.

Wing Commander Saiful Islam, Engg, psc, Officer Commanding, 214 Maintenance Unit, BAF Base Bangabandhu, interviewed on 27 August 2017.

Wing Commander Junaid, Pakistan Air Force, Student Officer, Défense Services Command and Staff College, Mirpur, Dhaka, interviewed on 20 September 2017.

Wing Commander Tawfiqur Rahman, Engg was commissioned in Engineering branch on 27 May 2002 from Pakistan Air Force Academy on completion of Bachelors in Aeronautical Engineering from the National University of Sciences and Technology (NUST). He was awarded with NUST Rector's Gold Medal for Best Engineering Project and Best Aircraft Design Awards. He earned his Masters and Ph.D on Flight Vehicle Design from the Beijing University of Aeronautics and Astronautics (BUAA) in 2011 and 2014 respectively. He has authored 5 journal papers along with more than 10 conference papers on guidance and control of reentry vehicle and hypersonic missile systems. In his career he has worked as maintenance engineer for PT-6, C-130 and F-7BG aircraft, Bell-206 and MI-17 helicopters. He has also served as Instructor at Bangladesh Air Force Academy, Flight Safety Institute, and Flying Instructors School. In 2015 he briefly served as an Associate Professor of Aeronautical Engineering department at the Military Institute of Science and Technology (MIST). Later that year he went for United Nations mission at the Democratic Republic of Congo for one year. Before joining the Air Staff Course, he was serving at BAF Base Bashar as Officer-in-Charge of Field Maintenance Squadron and the Officer Commanding of Central Trade Test Board (CTTB). He is married and blessed with two sons.

GENDER EQUITY IN BANGLADESH AIR FORCE (BAF) AND ITS IMPACT ON MID-LEVEL MAINTENANCE

Squadron Leader Md Mashaiekh Hossain, Engg

ABSTRACT

In line with the national policy on gender equity under SDG, Bangladesh Air Force (BAF) started recruiting female candidates in different branches of officers with effect from the year 2000. The maintenance system of an air force calls for immense supervision, critical management and in-depth involvement. BAF maintenance system has a new environment of gender equity at its midlevel when Male and Female officers share the supervisory tasks to achieve the provisions of sustaining services for the operational tasks. With this connotation, the hypothesis for the study was "Present significant workload in Bangladesh Air Force mid-level maintenance system is disproportionately shared with a consideration to Gender Equity." A research was carried out to validate this hypothesis. It was observed at the end that male mid-level engineering officers share a significant proportion of the maintenance workload. An interesting aspect of the study has been the testing of the hypothesis. The conclusion stage of the paper indicated that the accumulated data for females were more varied in the range than that of males leading to an interesting indication that some female midlevel officers may have taken more of the BAF midlevel workload than that of the male counterparts. Equal distribution of workload, provision for social commitment, respite and moral incentives to the officers may impact positively in the present work load situation.

INTRODUCTION

One of the eight points in Millennium Development Goal (MDG) was empowerment of women. (Editor *Daily Star,* 2017). Bangladesh successfully fulfilled this criterion in almost all the sectors. In follow up of seventeen points of Sustainable Development Goal (SDG), another issue was gender equity. Bangladesh also contributed in this regard effectively. Bangladesh has topped the South Asian countries in gender equality for the third consecutive year, ranking 47th among 144 nations. According to Geneva based World Economic Forum report Bangladesh has improved gender parity for legislator, senior official and manager as well as professional and technical roles, in addition to estimated earned income and wage equality for similar work—despite a slight widening of its healthy life expectancy gender gap.

In line with the national policy, Bangladesh Air Force (BAF) started recruiting female candidates in different branches of officers since the year 2000. After their successful professional training and orientation these officers were integrated in the force structure from the year 2001. These officers served in the administrative branch, in the operational branch as well as in the maintenance branch of Bangladesh Air Force.

In the past one decade, female officers in maintenance branch have reached to mid-level of the organization. Maintenance branch is a critical sector of Bangladesh Air Force as it is directly related to induction, installation, rectification and repair of sophisticated war machines of the force. This critical and challenging level demands due share of workloads by all maintenance officers including female to achieve the organizational objective

MAINTENANCE STRUCTURE OF BANGLADESH AIR FORCE

In order to identify the condition of the workload of Maintenance Branch in Air Force, the origin of the system need to be studied. An endeavor was made to find out the evolution of maintenance structure from the British Royal Air Force to Bangladesh Air Force. Along with the findings, maintenance structure in BAF was studied in context to Bangladesh Air Force Manual 22-1. Subsequently the present state of gender equity in those forces has been analyzed.

AIR FORCE MAINTENANCE

Profound author R.P Chatterjee has identified air force maintenance as "*the process of sustaining the service in all the materials it needs for the fulfillment of Air Force's operational and training tasks*" (Chatterjee, 2010). Modern air force weapons are complex and highly developed machines which demands thorough periodic servicing if it is to be maintained at acceptable level of operational efficiency. Not only the aircraft itself, but the weapons which constitute Air Force's strike power and the mechanical and electronic devices which guide it to the target, must be checked at regular intervals by specialist tradesman to ensure continued serviceability. (Chatterjee, 2010). The maintenance structure of Bangladesh Air Force also follows the similar pattern. The system evolved from the pre-World War II Royal Air Force (RAF) structure and continued to present state Bangladesh Air Force (BAF).

PRE AND THROUGH SECOND WORLD WAR

In 1942, with the realization that many of the new aircraft remained grounded for wants of parts or proper maintenance, RAF established a maintenance group responsible directly to the area commander- in- chief, in charge of maintenance, repair, salvage and stores. In terms of skill the lower level of such maintenance as well as the factory level maintenance were blended with female workers supervised by the male officers.

In Russia and Britain separate maintenance and service commands were set up after levels of serviceability at the front had been found to be far from satisfactory under combat conditions. In Germany and Japan no separate command for services was created. Britain and the Allied force enjoyed higher serviceability of its weapon systems than the axial forces. (Overy, 1980).

Differences in serviceability also reflected different levels of success in coping with labor shortages. In America and Britain some of the shortages in group personnel were

met by mobilizing women for air base work, and in America women were supplemented by recruiting civilian unskilled and disabled labor for work at air depot, a total of 1,37000 between January 1942 and December 1944. In Russia, too, much of the work was undertaken by women (Overy, 1980).

Figure 1: Female worker of USAF operating bomb loader in 1st Line Maintenance

Source: Author's construct based on research

Birth of Indian Air Force Maintenance System. The Indian Air Force Act became effective on 8 October 1932 and the Indian Air Force was officially born. After selection of pilots, it was needed to select the ground Technicians for the maintenance of the aircraft. There were no aviation experienced personnel, as a result 22 railway workshop men with considerable technical experience, were selected to form the nucleus of airman cadre (Chaturvedi, 1978). During that time there was no presence of Indian women in Indian Air Force. However, with the passage of time the RAF instructors were proved completely wrong in their assessment of capability of Indian maintainers. Present Indian Air Force has a good number of women presences. According to Times of India the number of women officers commissioned in the IAF has shown a steady increase during the corresponding period.

Figure 2: First Group of Indian Railway Worker in Aircraft Maintenance

Source: Author's construct based on research

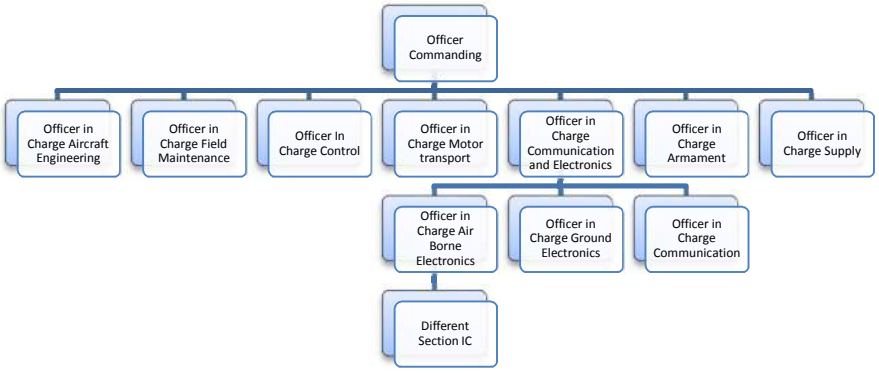
Evolution to Pakistan Air Force Maintenance System. Independence of India and formation of Pakistan, led to the division of assets of the IAF in undivided India. The maintenance crew was mostly from the male East Pakistanis (Force P. A., 1988). The structure for maintenance was also similar to the ancestral RAF structure. Unlike the British system there was no female participation in maintenance system of PAF. In the year 1995, female cadets were recruited into administrative and accounting departments. They became air traffic controllers, worked in law, logistics and education. They were also trained for aeronautical engineering, avionics and information technology; they played huge roles in designing specialized avionics software and managing hardware at air force bases. According to *New York* Times in total, there are now 339 women officers in the air force, 196 of them in medical positions — a traditional route for women that still has broad appeal.

Figure 3: BAF Female Midlevel Officer in 2nd Line Aircraft Maintenance

Source: Author's construct based on research

Bangladesh Air Force Maintenance System. Bangladesh with its independence in 16 December 1971, received a good amount of fighter aircraft from Russia and other friendly countries (Force B. A., 1987). The maintenance system also developed around these newly inducted equipments. The three tier maintenance structure of RAF was also adopted in BAF. In one side bases were administered in sections, flight and squadrons under maintenance wing; on the other hand procurement, policy and decisions were made at directorate level under maintenance branch.

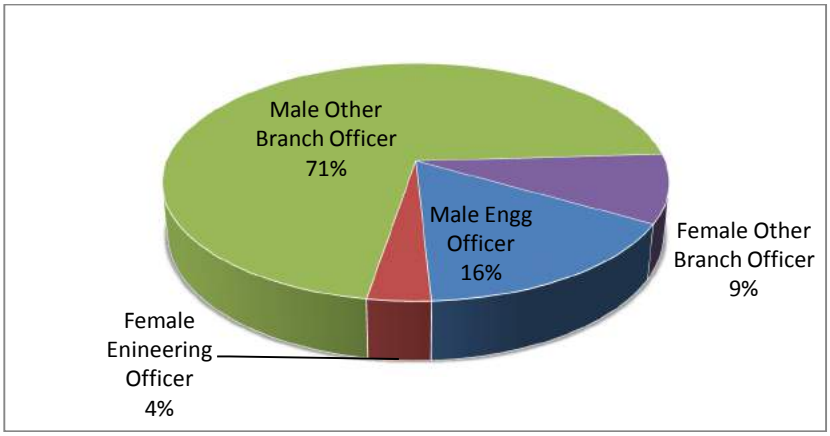
Figure 4: Organogram of Maintenance Structure of a Regular BAF Base



Source: Author's construct based on research

In between the years 1971-2000 BAF designed a robust structure of maintenance including first level maintenance, through second level rectification and inspection to the depot level disassembly and replacement. As women constitute half of the population, overall socio-economic development of Bangladesh depends on ensuring equal participation of women in every sector. In this context, BAF was pioneer to induct female officer in armed forces in 2000. Today among 1256 officers 160 female officers are working. In Engineering Branch there are 199 male engineering officers and 43 female engineering officers.

Figure 5: Gender Representation in Bangladesh Air Force Officer Post



Source: Author's construct based on research

WORK LOAD OF BAF MIDLEVEL MAINTENANCE OFFICERS

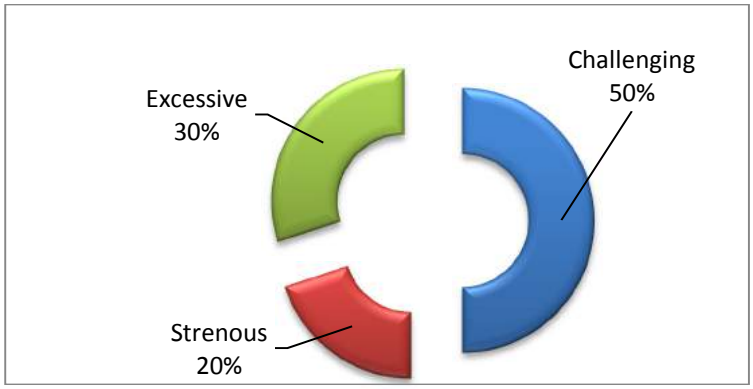
In order to make a tangible assessment of the tasks performed by the engineering officers, the duties and responsibilities of an engineering officer at mid-level need to be discussed followed by trend of work load and share of work load. All through different findings of the survey will be refereed to make further progression in validation of research Hypothesis.

DUTIES AND RESPONSIBILITIES

The maintenance system in BAF is strongly dependent on the supervision of the midlevel maintenance officers of Bangladesh Air Force. The duties and responsibilities of these officers range from rectification or repair task to any general task as ordered by the superior officer. From AFM 20-2 (Annex C), it was further learnt that mid-level maintenance officers are responsible for accountability and serviceability of all type of air force weapon systems. A sample duties and responsibilities of mid-level officers in an air force base as published in Bangladesh Air Force Organizational Structure 20-2. However, to understand the on ground situation and fact related to the exact work load a survey was

organized with self-explained questionnaire. Overall, A number of 100 engineering officers were respondents to the survey. Among the response, it was observed that 50% officers termed it as challenging, 20% termed it as strenuous and 30% identified the workload as excessive.

Figure 6: Feeling of Workload by Respondents



Source: Author's construct based on survey

TREND OF WORKLOAD

In addition to regular workloads of existing system, different new dimensional tasks related to advance technology are assigned to the midlevel officers of BAF as highlighted by three specialist directors at Air Headquarter level. It was also revealed that these increments of work load are mainly created by the acquisition of new assets and the rapid change of technology in modern air warfare weapon systems. A focus group Discussion indicated that Modern technology embedded in the advance fighters like F7BGI, solid state radars and computerized systems require critical and intense supervision from officers in comparison to their under commands. As such, at present times the workload of maintenance branch has increased manifold.

SHARE OF THE WORKLOAD

Along with the cosmic responsibility, the midlevel engineering officers are at times too riveted in their assigned task as to exclude social commitments and individual repose. Once the question of availing service transport for recreation on payment was placed in front of them, 70% replied in the minimal number. In the similar fashion, when they were asked about spending there weekends in official tasks, 100% replied in affirmation. The official involvement in weekend was more in female officers rather than male officers. In order to identify the workload and its method of sharing, questions were asked to the participants on their return time from work in daily basis. It was found that 90% officers return home after schedule office closure time. Among these respondents, female officers

return to their home in later time frame than male officers. However, when it was compared among the assignments/responsibilities given by the higher authority to the mid-level officers; major share was taken by the male officers. Several interviews with the higher echelons of Engineers also displayed the presence of work load which increased due to advancement in technology as well as other reasons such as establishment of repair and overhauling facilities.

ADDITIONAL TASK PERFORMED

In addition to professional assignments, BAF officers are also required to do general tasks as desired by the authority. Once asked about the proportion of this task to the respondents, it was found that 40% male officers have taken such additional tasks whereas only 10% female officers have undergone the same amount. The survey was further focused on the number of additional task which depended on documentary work and where physical stamina/ability is not a factor (i.e. investigation board/ tender evaluation). The respondents indicated an equal sharing of such tasks. On a different account a focus group discussion on '*Work Load Sharing in Mid-level Maintenance of BAF*' highlighted that female officers are performing few extra duties (i.e. ladies club officer, liaison officer, deployment, task force,) than male officers which are having direct impact on total work load sharing. Male officers are performing extra duties like guard of honor, deployment, task force.

On three instances three foreign officers were interviewed over telephone to know about the workload status of Indian and Pakistan Air Force. The respondent mentioned that the work load is in incremental curve due to the advance state of the art technology replacing age old technologies. Once asked about their female engineering officers performance they replied in positive.

DISPROPORTIONATE WORKLOAD ON MALE MIDLEVEL ENGG OFFICER

Establishing the presence of workload in the mid-level maintenance of BAF the study need to identify contribution of male and female officers in sharing of their workload. Endeavor was made to find out the workload experienced by male and female officers in different space and time, at the same time analysis on higher echelon's perspective on their performance. In addition, tests were carried out to give a tangible tag to this workload.

WORKLOAD CALCULATION OF THE OFFICERS

Interview with Director Engineering and Assistant Director Air Secretary Branch indicate that the present posting trend of female officer is capital centric. The same is also true for engg officers. Bangladesh Air Force has only two bases at Dhaka and four outside Dhaka. Absence of female officers in that place directly contributes in the workload of the male officers. In addition a Case study was completed on a mid-level

engg officer which indicated short tenure of her posting outside Dhaka area and being reposted at Dhaka on health issue.

Table 1: Posting Strength of Female officers

Posting Place	Female Officer
Dhaka	97
Chattagram	16
Jashore	27
Abroad	9
Bagura	6
Coxs Bazar	2
MRU	2
PP	4

Source: Author's construct based on survey

Once leave state of female officers was analyzed, it was found that major portion of female officers has undergone three types of leave. (i.e. Maternity, Annual, Ex-BD). The duration of leave was greater than few contemporary male officer's availed leave. The operational requirements of the organization run through a whole calendar year. Absence of officer at his or her duty place needs to be looked after by another officer. This in turn normally increases the pressure of the available male officers.

On basis of equal representation in workplace at a given time, Hypothesis of this research was stated as there is a disproportionate sharing of work load among the mid-level engineering officers of Bangladesh Air Force. A set of 100 respondents replied to 9 significant questions which were further categorized in respect to specific thresholds. The respondents were asked in different time frames and in different posting places. A total of 580 data were worked upon and the following findings were obtained. Chi square test was performed and it was found that there is significant presence of workload distribution among male and female officers.

The same statistics were also given to excel calculation of two end T test with mean and variance. For this research the application of the collected data were put in one tailed test. The following result was obtained. Where we see the RR (Rejection Region) starts for one tail at 1.745 and the P value is 0.5 which is well within the acceptance region. So we take the null Hypothesis and discard the alternate hypothesis. That reflects the

presence of disproportionate work load sharing by two variants (male and female) is ensured.

Table 2: One Tail T test for Hypothesis Testing

t-Test: Two-Sample Assuming Equal Variances		
	Male Officer	Female Officer
Mean	32.22222222	32.22222222
Variance	69.44444444	194.4444444
Observations	9	9
Pooled Variance	131.9444444	
Hypothesized Mean Difference	0	
Df (=(row-1)*(Column-1))	16	
t Stat	0	
P(T<=t) one-tail	0.5	
t Critical one-tail	1.745883669	

Source: Author's construct based on survey

In addition, the variance of female statistics is more than the variance of male statistics (Female officers 194 where male officers are 69). This indicates that the accumulated data for females are more varied in the range than males.

FINDINGS

The following were found out in the course of research:

a. Workload in Maintenance branch is increasing

b. The increment is due to change of technology and dimension of maintenance

c. Female officer and Male officers are working together to manage this workload.

d. Gender Equity in Bangladesh Air Force plays a vital role in work load sharing

e. Statistics of Prefered posting, Availing Leave, and Maternal issues limit female officers to give their 100%.

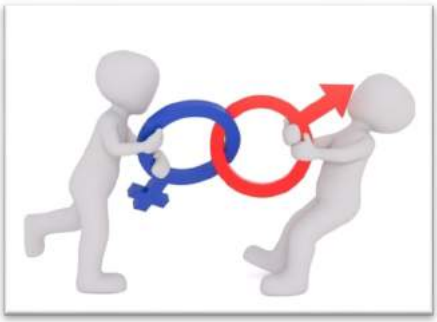
f. The workload of maintenance branch is shared disproportionately, giving major share to male officers.

g. In some cases the workload sharing is case to case basis and depends on individual officer's performance.

HYPOTHESIS VALIDATION

Research Hypothesis was stated as 'Present significant workload in Bangladesh Air Force mid-level maintenance system is disproportionately shared with a consideration to Gender Equity.' So the μ_0 = workload is not shared equallyand alternate Hypothesis was μ_1= workload being shared equally. With one end t test we found out our survey result gives μ_0 into accepted region. Hence we accept the Hypothesis. The sample data may cause us to fall into Type I error, however the possibility of sample data being erroneous is less. In addition, the logical and subjective analysis on accumulated information and statistics show male officers in mid-level maintenance taking much of the workload. So the Hypothesis is validated as shown in the Table below:-

Table: Validation of Hypothesis



CONCLUSION

In the past decade and half, female officers in maintenance branch in Bangladesh Air Force have reached to mid-level of the organization. Maintenance branch is a critical sector of Bangladesh Air Force as it is directly related to induction, installation, rectification and repair of sophisticated war machines of the force. This critical and challenging level demands due share of workloads by all maintenance officers to achieve the organizational objective. In process of research it was found that there was an impact of inequality with respect to gender in different systems of United States Armed Forces, Indian Armed Forces and in career progression of Bangladesh Armed Forces There was no research particularly carried out to quantify the work load of officers of Bangladesh Air Force specially maintenance branch officers.

In summary, it was found that there is significant presence of work load among mid-level engineering officers. The work load is created due to incremental commitment of acquisition of modern assets and associated critical events. In addition male officers are performing different extra regimental duties and the female officers are performing liaison duties. Technical and non-technical investigation works are also additional workload to these officers. In some cases work load sharing is more or less case to case basis and in a similar orientation. However, if the workload would have been divided equally among the engg officers available in the base, the stress on a particular individual may have reduced. At times Efficient officers are given more tasks as they are dependable.

RECOMMENDATIONS

Considering the findings of the research several assertions may be addressed to ease out the present work load:

a. Workload may be divided equally among all available officers.

b. Social commitment and respite between work schedule may be ensured by higher echelon among mid-level maintenance officers.

c. Moral incentives may impact positively in the present work load situation.

BIBLIOGRAPHY

Bangladesh Air Force. (n.d.). 'Duties and Responsibilities of Officers,' *Bangladesh Air Force Manual,* pp. 20-22.

Beth J Asch, T. M. (2012). 'A new look at Gender and Minority Differences in Officer Career Progression in the Military,' *RAND Papers* , pp. 10-20.

Beth J. Asch, T. M. (2016). 'Can We Explain Gender Differences in Officers Career Progression,' *RAND Papers* , pp. 10-20.

Chatterjee, R. P. (2010). *Air Force Maintenance and Planning.* New Delhi: Pentagon Security International.

Chaturvedi, A. M. (1978). *History of the Indian Air Force.* Calcutta: Vikas Publishing House Pvt Ltd.

Choe, J. (2011). 'Gender Equity in the New York Municipal Work Force,' *Periodicals Published from New York City Comptroller's Office Budget & Policy Bureau* , pp. 1-5.

Civil Aviation Authority. (1945). 'Aviation Facts and Figures,' *Aviation Facts and Figures of New York*, pp. 1-100.

Editor *Daily Star* (2017). *Gender Gap Index: Bangladesh Stays Top in South Asia.* Dhaka.

Editor *Daily Star* (2017). *Bangladesh Improves in Gender Parity Index.* Dhaka.

Force, B. A. (1987). *Hisotry of Bangladesh Air Force.* Dhaka: BAF Press Kurmitola.

Force, P. A. (1988). *The Story of Pakistan Air Force.* Islamabad: Shaheen Foundation.

Francine D. Blau, L. M. (1995). 'Wage Structure and Gender Earnings Differentials: An International Comparison,' *Cornell University Papers*, pp. 1-3.

Hornby, A. S. (2010). *Oxford Advance Learner's Dictionary.* NewYork: Oxford University Press.

Imperial War Museum Library. (1945-1949). 'United States Strategic Bombing Survey,' Report 62. *Survey Report From Imperial War Museum* .

Margaret C. Harrell, W. C. (2007). 'Assessing The Assignment Policy for Army Women,' *RAND Papers* , pp. 15-30.

Moyna Srivastava, M. D. (2008). 'Women in Defence Forces: How Relevant,' *Research Papers of Sophia College India* , pp. 1-10.

Overy, R. J. (1980). *The Air War 1939-1945.* London: Europa Publications Ltd.

Robert, A. C. (1995). *The Forgotten Air Force.* London: BPC Wheatons Exeter.

Sharmin, F. (2014). 'Sea Appointments for BN Female Officers: Challenges and Options,' *Individual Research Paper,* Defence Services Command and Staff College, pp. 1-30.

Sharmin, S. S. (2014). 'Career Progression and Challenges of Mid Level Female Officers and a Way to Solve the Difficulties in the Perspective of Bangladesh Air Force,' *Individual Research Paper,* Defence Services Command and Staff College, pp. 1-30.

Interview taken by author

Armament, G. W. (2017, November 29).

Bishwash, G. C. (2017, December 02). Performance of Indian Female Engg Officer.

Engineering, A. E. (2017, December 02). Workload and Gender Equity in BAF.

Engineering, A. E. (2017, December 02). Workload of Engg Officers.

Junaid, W. C. (2017, December 02). Female Officer's Performance in Pakistan.

Kawsar, S. (2017, December 02). Posting and Leave of Female Officers.

Moazzem, G. (2017, November 29). Officer Commanding Maintenance Wing BAF BBD.

Sarwar, W. (2017, July 28). Officer In Charge AirCraft Engineering Squadron Base Bashar.

Shawkat, A. (2017, November 29). Director Communication and Electronics.
Utkarsh, S. L. (2017, December 02). Female Officers Performance in Indian Air Force.

Squadron Leader Md Mashaiekh Hossain, Engg was commissioned in Engineering branch on 23 March, 2002 from the Bangladesh Air Force Academy. He attended different courses at home and abroad. Beside his military academic background, he earned a Post Graduate Diploma in Communication and Information Technology from Bangladesh Computer Council. He served as a maintenance Engineer in all the Bases of Bangladesh Air Force. He was also an assistant Director to Air Secretary in Air Head Quarters. He also served as a Officer In Charge of Armament Squadron in the Fighter Bases, BAF BANGABANDHU. He participated in the United Nations peacekeeping mission in DR Congo as Military Observer. At present, He is undergoing 38th Air Staff Course in Defence Services Command and Staff College, Mirpur, Dhaka. He is happily married and blessed with one charismatic daughter and one bold son.

IMPACT OF FACEBOOK ON OFFICERS IN BANGLADESH AIR FORCE

Wing Commander Raahim Mahmood, GD(P)

"There will still be things that machines cannot do. They will not produce great art or great literature or great philosophy; they will not be able to discover the secret springs of happiness in the human heart; they will know nothing of love and friendship."

–Bertrand Russell

"In modern politics, even the leader of the free world needs help from the sultan of Facebookistan."

–Rebecca MacKinnon

ABSTRACT

Facebook is a popular trend today, especially among the young people. However, the elders are also using this equally. This study examines the impact of Facebook on officers of Bangladesh Air Force. Based on own involvement, observation of peers and from the previous related research I assume that there is no such research on the use of Facebook on the officers of Bangladesh Air Force. Like any other country Bangladeshi are also addicted to Facebook and so do Bangladesh Air Force officers. As Facebook culture in an interactive fashion influences behaviour of each other in human society, it can also have an impact on the users like officers of Bangladesh Air Force. As such the purpose of this research is to how the use of Facebook has impact on the officers of Bangladesh Air Force and allow them to understand the common weaknesses of the Facebook environment and the risks of using this. While carrying out the research all the officers agreed that the use of Facebook has both negative and positive impact on the job performance, social and security of Air Force officers. There were 16 different offences related to Facebook by the officers. The nature of offences is mostly sharing post, like or comment in respect of religion, personal matter of defamatory nature, comment of the character of superior officer, post of unauthorized events, free mixing, extra marital affairs etc. However, officers cannot be prevented from using Facebook in the age of global information technology. As such they can be guided through proper motivation, religious values, ethics and increasing the awareness against the adverse effect of Facebook culture.

INTRODUCTION

Facebook, being at the forefront of the social media craze, has over 500 million active users on its website every month. It emerged on February 4, 2004, when a 19-year-old sophomore Harvard student named Mark Zuckerberg founded the revolutionary site to connect Harvard University students. But later, this site allowed users to build social networks with hundreds or even thousands of people around the world of which military

personnel are one of the primary demographics using Facebook, with features such as photo sharing, wall posts, and status updates becoming seemingly irresistible to those who want to connect with their friends.

With the ease of Facebook, in any part of the globe, at any time, a Soldier, Army civilian or family member can post pictures from a deployment or talk about an Army mission. But these seemingly innocent posts could actually contain sensitive information that endangers Soldiers by revealing locations, security measures, mission operations or troop movements. Soldiers, Army civilians and family members need to be mindful of what they put online, with operations security at the forefront of their considerations. It's as easy as a click of a mouse or a tap on a smartphone, and in a few seconds sensitive Army information might be shared that could get Soldiers killed. The present study tries to explore these types of impacts of Facebook on Air Force Officers.

Problem Statement

The emergence of Facebook has become a major trend over the years with growing popularity amongst the Air Force Officers. As Facebook becomes more popular among the Air Force Officers, life experience and present trend suggest that there is an ongoing debate on the role of Facebook in the social life, security and job performance of military users. While many researches claim they can be tempting and addictive with the use of features such as opinion sharing, photo and video-sharing, instant messaging, etc, others claim they can be advantageous as they lead to better interaction and cooperation among users. While this debate goes on, there is still lack of strong empirical evidence to show how the use of these tools affect social life and job/combat performance especially for the officers of Bangladesh Air Force. Hence, the need to study how the use of Facebook has impact on the officers of Bangladesh Air Force.

Research Question

This research has been limited to answer the following questions:

a. **Primary Question**. How the use of Facebook has impact on the officers of Bangladesh Air Force?

b. **Secondary Questions**.

(1) How is the Facebook being used by the officers of Bangladesh Air Force?

(2) How does the use of Facebook has impact on the job performance of Air Force officers?

(3) How does the use of Facebook has impact on the social life of Air Force officers?

(4) How does the use of Facebook has impact on the security of Air Force officers?

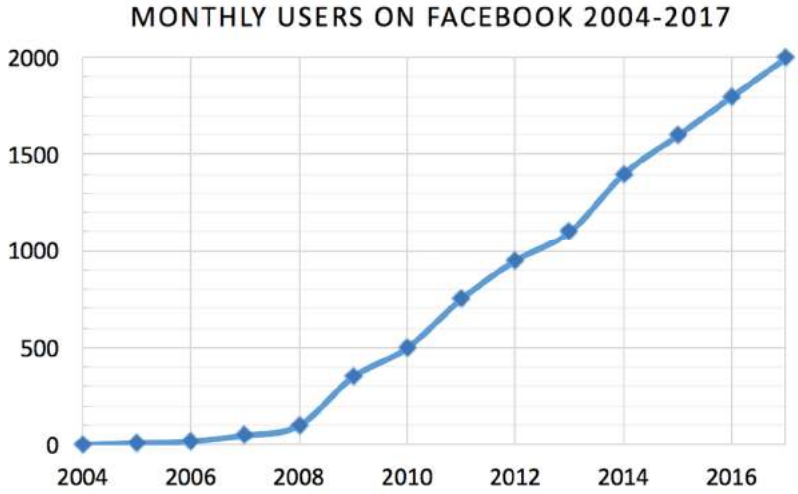
(5) What are the measures can be taken to reduce the negative impact of use of Facebook, if any?

FACEBOOK AND ITS USE BY AIR FORCE OFFICERS

Overview of Facebook

Facebook is the world's largest social network, with over 2.01 billion users. It provides a place for connection where users can post comments, share photographs and links to news or other interesting content on the Web, play games, chat live, and even stream live video. Shared content can be made publicly accessible, or it can be shared only among a select group of friends or family, or with a single person (www.lifewire.com).

Figure 1: Monthly users on Facebook from 2004 to mid-2017 in the world



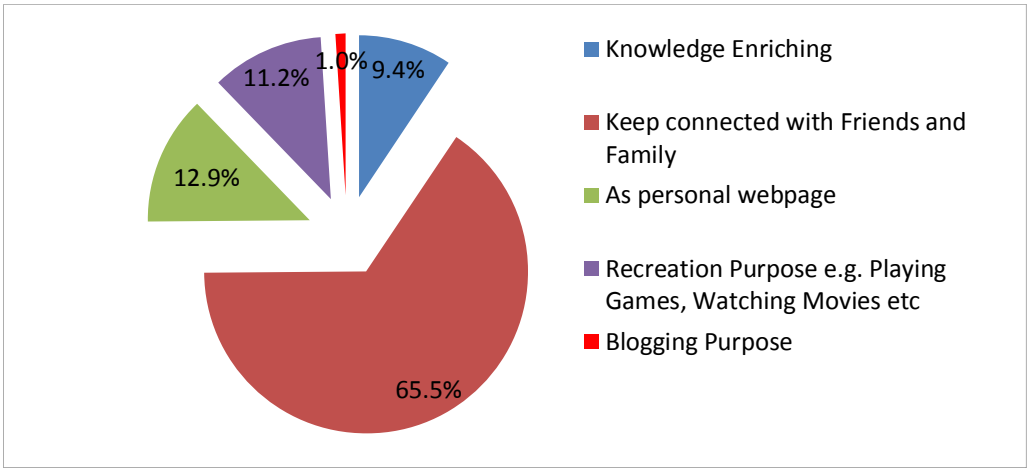
Source: https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/

Use of Facebook in Bangladesh Air Force

In the survey it was seen that 98% (136 out of 139) of Bangladesh Air Force Officers have the Facebook account and out of which 90% (125 out of 139) use it daily. Most of them use Facebook as recreation purpose. Many said they use it for keeping connection with friends and family, knowledge enriching, watching movies, etcetera. At present social media can be used in many different purposes. It is totally depends on individual how he will use it.

The result of the survey on the purpose of using Facebook by the officers of Bangladesh Air Force is shown below:-

Figure 2: Purpose of using Facebook by the Officers of Bangladesh Air Force

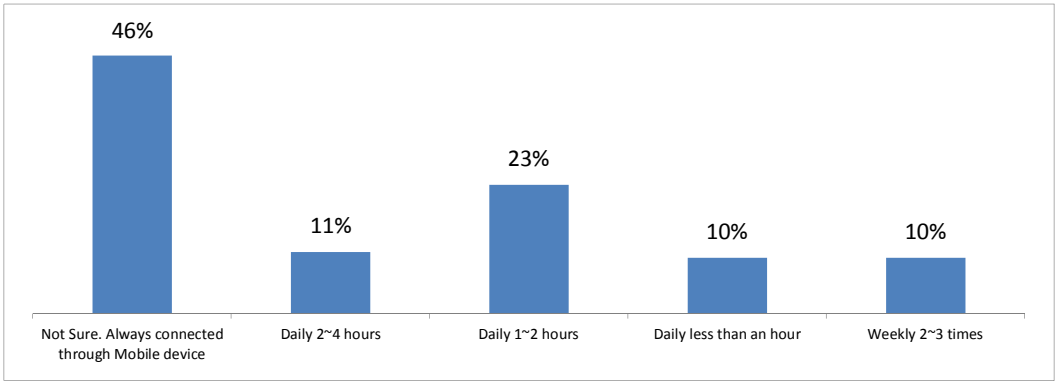


Source: https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/

During the interview, Air Chief Marshal Abu Esrar, Chief of Air Staff, Bangladesh Air Force opined that there are many good things in the Facebook like keeping connection with friend and family and knowledge enriching. There are many posts shared by friends, which can be a good help for others. But over usage and untimely usage are bad which should be guarded by the officers. Air Commodore Shafqat Ali stated that in Facebook there are many posts shared or uploaded for the family friends only, but due to the privacy settings the comments are visible to all and even sometimes in public.

Time Spent on Facebook. Bangladesh Air Force Officers spend a substantial amount of time for using Facebook (Focused Group Discussion-1). A survey was carried out for how much time they spend for using Facebook. The result is shown below:-

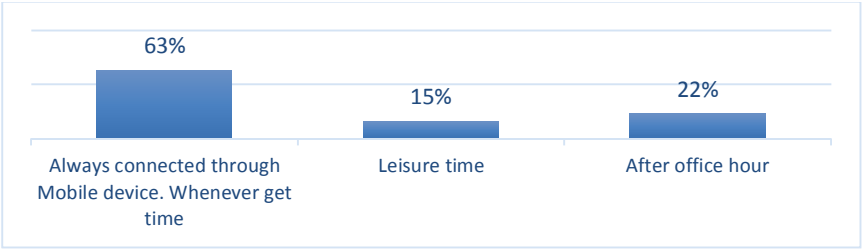
Figure 3: Time Spent on Facebook by the Officers of Bangladesh Air Force



Source: https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/

When the Officers Use Facebook. The officers sometimes use the social media during the office time and even any conference or meeting. (Akhter, Ahmed Asif, Wing Commander, 2017). The officers often use social media till late night (Focused Group Discussion - 1 and 2). When these are some of the views there are opposite views as well. As per the survey most of the officers opined that they use Facebook mainly in their leisure time or after office hour. The result of the survey is shown below:-

Figure 4: When the Officers Use Facebook



Source: Author's construct based on survey

Summary

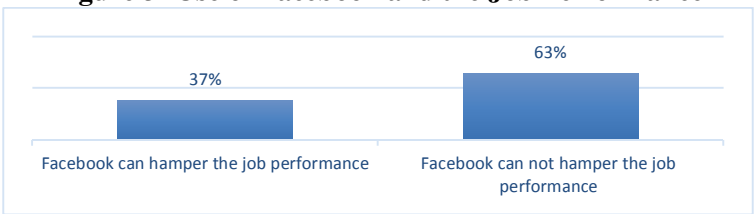
In this chapter, the overview of the Facebook and its use in Bangladesh Air Force by the officers have been discussed. Later on through survey, use of Facebook by the officers have been discovered. Thereafter through further analysis it has become evident that at present almost every officers in Bangladesh Air Force use Facebook mainly for keeping them connected with friends and family. Some of them uses it for recreation purpose and knowledge enrichment. As mobile device has the facility of using internet, most of them remains connected with the Facebook through Facebook App.

IMPACT OF FACEBOOK ON THE JOB PERFORMANCE OF AIR FORCE OFFICERS

Use of Facebook and the Job Performance

Initially a survey is conducted whether the use of Facebook has any impact on job performance of the officers in Bangladesh Air Force or not. In the survey, although a substantial amount of senior officers agreed that there is a negative impact of the use of Facebook on the job performance, but junior and middle range officers have the mixed opinion. The result of the survey is shown below:-

Figure 5: Use of Facebook and the Job Performance



Source: Author's construct based on survey

In another survey out of 139 officers, 130 (94%) stated that they did not face any problem at their job for using Facebook. However, 9 officers (6%) agreed that they faced some problems during their job which was caused due to late night use of Facebook.

Areas of Negative Impact of Facebook on the Job Performance

Effect on Discipline. Facebook can directly hamper personal discipline. It may allure an individual into virtual world and put him to involve in illegal cyber crime or other crime. Wing Commander Asif informed that number of cyber crime have increased at a high risk level in the Air Force due to Facebook. There were 16 different offences related to Facebook by the officers. The nature of offences is mostly sharing post, like or comment in respect of religion, personal matter of defamatory nature, comment of the character of superior officer, post of unauthorized events, free mixing, extra marital affairs etc. These have directly negative impact on the job performance.

Facebook during Office reduces Concentration. Although 37% officers denied using the Facebook during office hours but the rest 63% agreed that they are always connected through the Facebook App and mobile device. Thereby, if any notification comes, that can disturb their concentration during office hours. Group Captain Ataur opines that, 'if any officer uses Facebook during time of duty, definitely it is going to have a negative impact on his job performance.'

Late Night Use Hampers Unit Activities. Although very few officers agreed to use Facebook at night but 63% agreed that they are always connected through the Facebook App and mobile device. Air Commodore Hasan Mahmood Khan stated that many officers use Facebook at late night. This is well proved by their post and share in the Facebook. This late night Facebook use disturbs their sleeping cycle, thereby hampers the job performance for the flying crew. (Focused Group Discussion-1, 2, 3, 4, 5).

Reduces Cohesion Among Officers. From all the interviews and Focused Group Discussions it is learnt that whenever the officers get change, they remain busy with their mobile for using Facebook. This was opposite when there was no Facebook. In the free time the officers used to chitchat with professional subject, which could help them to increase cohesion among them and also increase professional knowledge. Over use of Facebook can reduce the cohesion among the officers.

Summary

Different surveys advocate that use of Facebook has negative impact on the job performance of Air Force officers specially using it during office hour may reduce the concentration. However, on the direct answer 63% opined that it cannot hamper the job performance. This answers the primary question of the research. Moreover, in this chapter it was revealed that the Facebook has some negative impact on the effect of discipline. It may also reduce the cohesion among officers.

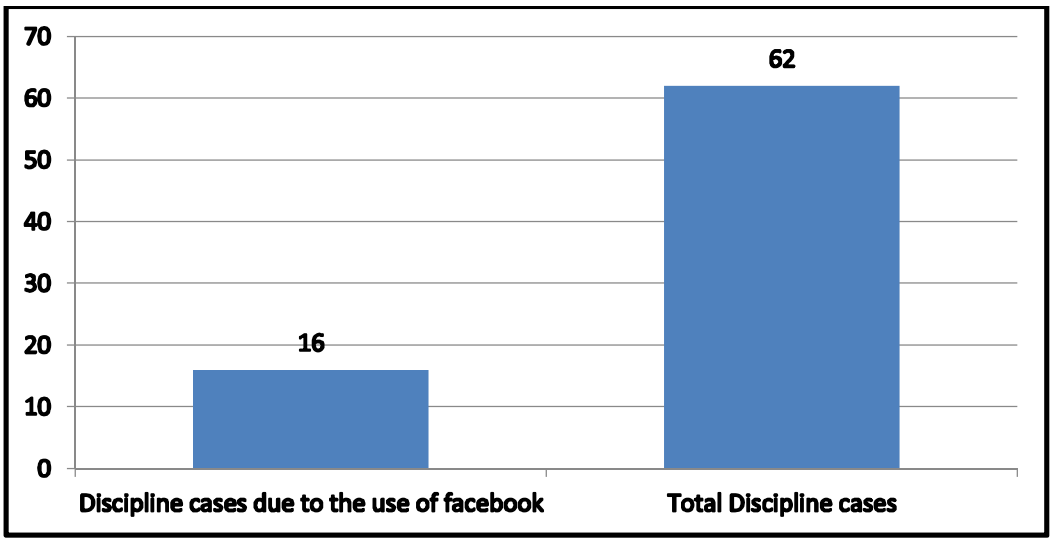
IMPACT OF FACEBOOK ON THE SOCIAL LIFE OF AIR FORCE OFFICERS

General

In a survey out of 139 officers, 88 (63%) agreed that Facebook can hamper social life while 51 others (37%) expressed opposite view. So far 18 officers (13%) confessed that they faced multiple problems in the social life for using Facebook which includes mostly misunderstanding and wrong interpretation of the comments. Another 121 officers (87%) stated that they never faced any problem in the social life for using Facebook.

Effect on Discipline. Facebook can directly hamper personal discipline. It may allure an individual into virtual world and put him involved in illegal cybercrimes or others. Officers are more prone to this and has tendency to breach discipline and sanctity of Bangladesh Air Force. Ataur, Group Captain, Judge Advocate General informed that number of crime has increased at a high risk level in the air force due to Facebook. Last two years there were total 62 disciplinary cases out of which in 16 cases (25%), use of Facebook is directly or indirectly involved. The result is shown below:-

Figure 6: Effect of Discipline due to Facebook



Source: Author's construct on the basis of survey

Family Life/Family Value. Facebook worldwide has general impact on the family life both positive and negative and it has equally impacted on Air Force. The positive impact includes officers who were deployed in UN mission could communicate with their peers and family members. Besides it has also negative impact like some of the extra marital affairs grew up through Facebook communication. Ataur, Group Captain, Judge Advocate General informed that recently 6 such cases were identified where such relationship developed on the basis of Facebook communication.

Social Value. In BAF, posting to different stations was a matter of concern for officers. Due to service requirements officers are posted to different places which at times are far from their home town and difficult to communicate. There can be no alternate of a physical communication by visiting home; yet, Facebook communication have created a virtual world with friends and family which, to some extent, can ease the communication difficulties with friends and families.

Mess Life. Use of Facebook may have created a virtual communication method worldwide, but can never be an alternate of physical communication. In Bangladesh Air Force, mess life is a very important part of officers' social life. Within the mess premises, the TV room, Billiard room and card room is a method of relieving stress in the evening gathering by officers. Due to easy access to Internet and Facebook in dormitory area, officers are more indulged in Facebook than in the mess. This has hindered the mess life in a large extent.

Promoting Bangladesh Air Force. At times, within and outside the air force communities Facebook plays vital role to promote the activities to civil societies. Officers are not only involved in Facebook groups within Bangladesh Air Force peers, but also with their school and college friends and relatives creating different community groups. These community groups at large are involved in information sharing and social awareness programs. Through this community groups BAF activities are promoted to the civil societies.

Misinterpretation. Through Facebook Officers share their good posting experiences, UN mission or visit abroad with other officers. This, at times, creates a feeling of deprivation among rest of the officers who could not avail such opportunities. This leaves a space for misinterpretation and misunderstanding within officers' communities.

Creating International Community. There are many armed forces institution in Bangladesh where officers from abroad are trained. In the past there had been no communication after these foreign officers went back to their home countries on completion of their course. Thanks to the Facebook groups through which such bondage can be retained forever.

Summary

Different surveys suggest that use of Facebook has both positive and negative effect. In terms of family life and social value it has both negative and positive effect. Again in terms of organisational culture and promoting BAF it has mostly positive effect. However, traditional aspects like mess life has largely negative effects and some misinterpretation depending on its extend may have negative effects too. This also answers the primary question of the research. In this chapter, it was revealed that the Facebook could be utilized for improving the performance of the officers in own units and as well as promoting Bangladesh Air Force at home and abroad.

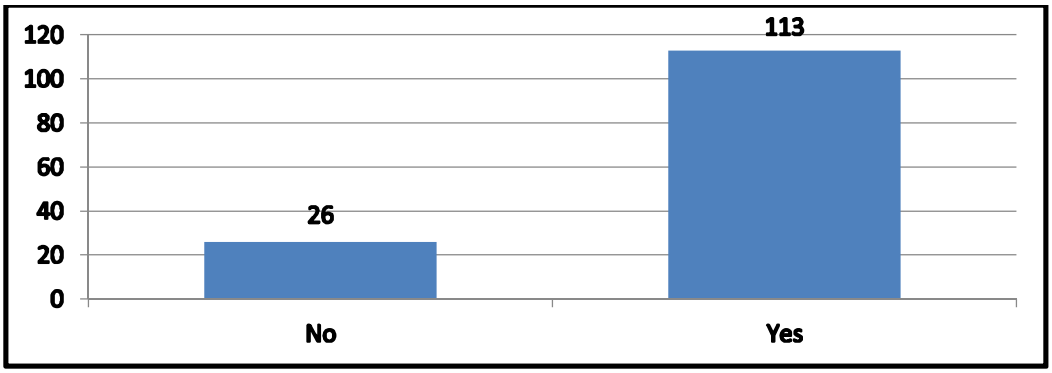
IMPACT OF FACEBOOK ON THE SECURITY OF AIR FORCE OFFICERS

General

Facebook is the fastest growing vulnerability to the air force mission and the personal security of all officers. Over the past decade, the convergence of mobile broadband devices has enabled Facebook to become more and more integrated into our everyday lives. The risks that come with being online, Bangladesh Air Force formulated related policy by AFO 200-8 dated 30 April 2016. But still there are numerous incidents where officers showed less respect to this existing order.

Threats and Vulnerabilities. Today's hackers have discovered exquisite ways to install malware on a user's computer hardware through seemingly innocuous means by exploiting security breaches in Facebook sites that use Java, Ajax, or other popular technologies. Opening up files or hyperlinks attached to Facebook messages or email attachments may contain malware that can bypass fire-walls or virus protection programs. A survey was carried out asking whether Facebook can hamper the security of the officers or not. Out of 139 officers, 26 said No and 113 said Yes. The result is shown below. However, 12 officers (9%) faced security problem which includes hacking of their password, unwanted posting to their Facebook walls etc while 127 others (91%) did not face any problem so far related to security while using Facebook.

Figure 7: Facebook can hamper the security of the officers



Source: Author's construct on the basis of survey

Mobile Device Vulnerabilities. Accessing Facebook is today's number one mobile activity from the mobile devices. Due to the proliferation of mobile devices, many officers spend more time processing information on their mobile devices than they do at home. Malicious actors can use to track an individual's location, consume personal information, or add malware to a device for future exploitation.

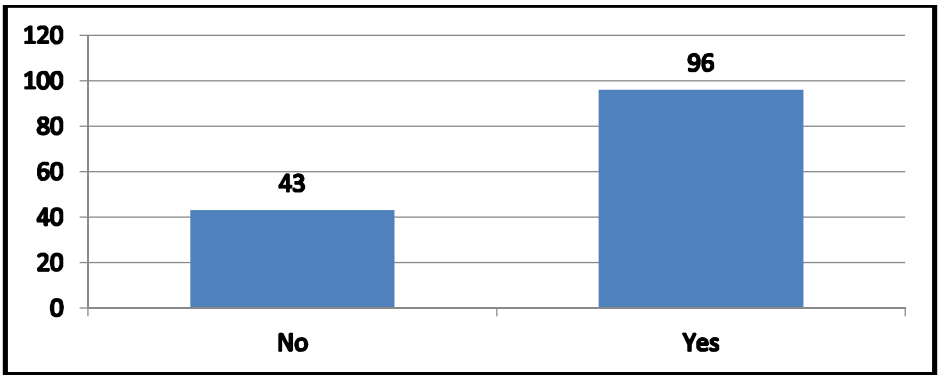
Vulnerabilities of Free Apps. Facebook programs that come preloaded on mobile devices may be appealing to use, but they may be placing personal information at risk.

Some of the free apps out there may not cost real money but can cost in terms of time spent getting past nuisance ads, limited program functionality, or exposing personal information to third party vendors.

Falling Prey. Many of the officers accept friend request from unknown persons without knowing them at all. It could be local or international. Once they become friend in Facebook, the intruder can access all the personal data of the officers and may use those for any ill purpose. Thereby there is a chance for falling prey. In a survey 80 officers (58%) said that they only accept friend request only from whom they know, while 39 officers (28%) accept from mutual friends and 20 officers (14%) accept from new friend.

Check-In/Location Sharing. Sometimes officers are sharing their location or do check-in in different places like restaurants, shopping malls, amusement parks etc. By doing so, they may become vulnerable for any security threat. A survey was carried out asking whether the officers are aware of Facebook's privacy setting and location sharing. Out of 139 officers, 43 (31%) said No and 96 (69%) said Yes and they also use the privacy settings while posting status of pictures as per their desire. The result is shown below:-

Figure 8: Awareness of Facebook's privacy setting by the officers



Source: Author's construct on the basis of survey

Sensitive Information Sharing. In a survey 76% officers (105) agreed that use of Facebook exposes the confidential information while rest 24% officers (34) expressed opposite view. Sometimes Officers are going some places for official purpose or training and they do post the same in Facebook. By doing so the sensitive information is published to the others. In one occasion, some officers went to Russia to evaluate the attack helicopter and posted the picture in Facebook with the details of the helicopter (Focused Group-1,2,3). Thereby whole world came to know that Bangladesh Air Force is planning to acquiring attack helicopter from Russia.

Summary

From different survey and case study it is learnt that there are some vulnerabilities while using Facebook. Specially using from the mobile device, using free apps, sharing locations, doing unnecessary check-in etc. It may have negative impact on the officers and as a whole Bangladesh Air Force if the uses are careless. This answers the secondary question of how the use of Facebook has the impact on the security of officers in Bangladesh Air Force.

Conclusion

In the present context, Facebook has appeared as a means of connecting people all over the world and could occupy a very important position in our society. With its user friendly features, it has become a hub of information, where everybody meets together to express views, ideas, share knowledge with each other. Due to busy human life everybody tends to complete his or her societal requirement like 'meet and greet' through Facebook. People are so committed and fascinated to Facebook that it become an inseparable event of the generation and as well as the officers of Bangladesh Air Force. Definitely use of Facebook has both positive and negative side, but it is not the Facebook but the man behind it who is responsible to use it in a right or wrong direction. Presently the state of moral discipline of the officers in Bangladesh Air Force is in a descending scale. One of the significant factors to adversely affect the moral values of the officers' in Bangladesh Air Force is the use of Facebook.

AFO 200-8 deals with the cyber policy of Bangladesh Air Force. There are some guidelines too in regards to Facebook and other social media usages. Necessary steps should be taken to implement the policy. Policy should be known to all and vigorous implementation is necessary.

Recommendations

Bangladesh Air Force officers at all levels need to be educated on the risk of posting information on Facebook, the vulnerabilities of cyberspace, and bad actor threats. The Air Force annual information awareness training is one method to educate and update the force, which may be introduced. The following steps will do a better job for educating officers on the risks and vulnerabilities of Facebook usage.

a. Officers must set the privacy setting on their Facebook account and share the post friends only, instead of public.

b. The friend list may be edited and grouped as per the requirement e.g. school friends, college friends, colleagues, family, neighbours etc and share the post visible for the target group only.

c. Officer should not share the location or check-in and avoid posting sensitive information related to service.

d. Officers should be careful enough to accept the friend request even seeing a known profile picture.

e. Periodical motivation lecture may be conducted to guide the officers to develop their sense of discipline, duty, commitment for the service and adverse effect to that.

f. A separate BAF Social Networking Site may be launched which may help to keep the officers connected to their peers as well as other officers and there by protect them from the adverse effect of Facebook culture.

BIBLIOGRAPHY

Ast, Alissa (2013) *9 Positive effects of Social media The WM Parenting Connection.*

Bangladesh Air Force (2017). Air Force Order 200-8 dated 30 April 2016. Dhaka : Air Headquarters.

Baumeister, R. F., & Leary, M. R. (1995). 'The need to belong: Desire for interpersonal attachments as fundamental human motivation,' *Psychological Bulletin*, 117(3), p. 497.

Burke, Moira, Kraut, Robert E. (2016). *The Relationship Between Facebook Use and Well-Being Depends on Communication Type and Tie Strength,* p.266.

Campbell, J. P. (1990). *Modeling the performance prediction problem in industrial and organizational psychology.*

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (2010). 'The satisfaction with life scale,' *Journal of Personality Assessment*, 49(1), pp. 71–75.

Jain, Dr. Racha (2010) '4 Ways social media is changing your relationship' Social Media Examiner 30 June 2010, http://www.socialmediaexaminer.com/ 4-ways-social-media-is-changing-your-relationships/

Katz, E., Gurevitch, M., Haas, H. (1973) 'On the use of the mass media for important things,' *American Sociological Review*, 38, pp.164-181.

Rubin, A. M. (1981) 'An Examination of Television Viewing Motives,' *Communication Research* 8, pp. 141-165.

Thoits, P. A. (2011). 'Mechanisms linking social ties and support to physical and mental health,' *Journal of Health and Social Behavior,* 52(2), pp. 145–161.

http://dictionary.cambridge.org

https://www.merriam-webster.com/dictionary/social life

https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/

http://www.thewmparentingconnection.com/2013/03/guest-post-9-positive-effects-of-social.html

https://www.zerofox.com/social-media-security

Wing Commander Raahim Mahmood, GD(P) was commissioned in GD(P) branch on 24 May 1995. He attended various courses both at home and abroad. During his service career he served in various staff and Instructor appointments in BAF. He served in the United Nations Organization Stabilization Mission in Democratic Republic of the Congo (MONUSCO) as Strategic Planning Officer at Joint Movement Control Centre (JMCC). He also served at Embassy of Bangladesh in Beijing as Assistant Defence Attache (Air). Before joining the Air Staff course, he was the Deputy Director of Directorate of Plan at Air Headquarters.

MIRPUR PAPERS, Volume 24, Issue 28, November 2018

Instructions for Authors

"Mirpur Papers" is a professional research journal of the Defence Services Command and Staff College, traditionally published once in a year. However, college decided to publish two journals in each course from 2014-2015 Course onward. The journal contains the selected research works of students and also literatures of faculty members of the College. It aims at making these articles accessible to all readers, especially those from the Armed Forces. For easy understanding of the readers, the abridged versions of the research works are published in this journal.

Primary sources of these journals were the academic studies done by the students and faculty members. However, articles received from all ranks, having special knowledge and interests in present institutional, national, regional and international issues including military and security affairs are also welcomed.

The articles must be of original works or thoughts on military or security related issues of current or historical interest and previously unpublished in any form. Notes, references and bibliography should be given where necessary.

Whilst articles of any length will be considered, the ideal is to aim for 3000-5000 words. Hard copy of the article and its abstract between 150-200 words may be submitted at any time of the year accompanied by a short biographical note of author. A CD must be submitted containing the article, the abstract and the biographical note. There is a provision of remuneration for articles published.

The views expressed in each of these papers are solely of individual author and are not to be considered as official endorsement of the views of their government or any of their departments.