

THE UNIVERSITY OF LIVERPOOL

THE ROYAL NAVAL PHYSICAL TRAINING BRANCH:

A STUDY OF INNOVATION

Thesis submitted in accordance with the  
requirements of the University of Liverpool  
for the degree of Doctor in Philosophy

by

NORMAN FOX

October 1982

ABSTRACT

The purpose of the study is to examine selected innovations in naval physical training, sport, and recreation. The Royal Naval Physical Training Branch (RNPTB) is presented as a small elite formal organization, and aspects of its doctrine, mandate, institutional plan, and image, are examined. The existence of a generalized elite is identified, and the effects of formalization and rank differential on the inherence of authority are analysed.

It was hypothesized:-

1. that organizational changes are implemented with less resistance than are content and method innovations.
2. that effective change results from the decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces.
3. that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted.

The study's conceptual framework includes a typology and examination of authority-innovation decisions. An adapted model of innovation phases is used to analyse internal and external documentation and communication. An innovation adoption model is formulated to illustrate the flow of actions and relationships that characterize innovation in naval physical training, sport, and recreation, and within this model the central role of the Directorate of Naval Physical Training and Sport (DNPTS), is emphasized. The study's methodology is based on the strategy of illuminative evaluation using the techniques of privileged access, informal interviews, and documentary analysis.

Examination of the selected innovative activities reveals the importance of advocacy and sponsorship in the facilitation of innovation. Within the institutionalization of innovation the primacy of legitimation, regulation, and habituation is established. It is concluded that the power-coercive basis of RNPTB work routines and discipline, together with notions of credibility, evaluation relevance, critical resources, and adaptability, largely account for innovation persistence.

The findings of the study do not support the first hypothesis, namely that organizational changes are implemented with less resistance than content and method innovations.

Although a participative 'bottom-up' trend is discernible in recent innovations, it is insufficient to support the second hypothesis which postulates that while effective change results from the decisions of the generalized elite, the thrust for change comes from below in response to internal and external forces.

The response to vigorous and successful strategies indicates that innovations which threaten the status and identity of the RNPTB are rejected or resisted, and provides substantial supportive evidence to uphold the third hypothesis.

Within a suggested model for RNPTB self-evaluation and accountability, recommendations are made for the future maintenance and development of naval physical training, sport, and recreation.

## Abstract

The purpose of the study is to examine selected innovations in naval physical training, sport, and recreation. The Royal Naval Physical Training Branch (RNPTB) is presented as a small elite formal organization, and aspects of its doctrine, mandate, institutional plan, and image, are examined. The existence of a generalized elite is identified, and the effects of formalization and rank differential on the inherence of authority are analysed.

It was hypothesized:-

1. that organizational changes are implemented with less resistance than are content and method innovations.
2. that effective change results from the decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces.
3. that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted.

The study's conceptual framework includes a typology and examination of authority-innovation decisions. An adapted model of innovation phases is used to analyse internal and external documentation and communication. An innovation adoption model is formulated to illustrate the flow of actions and relationships that characterize innovation in naval physical training, sport, and recreation, and within this model the central role of the Directorate of Naval Physical Training and Sport (DNPTS), is emphasized. The study's methodology is based on the strategy of illuminative evaluation using the techniques of privileged access, informal interviews, and documentary analysis.

Examination of the selected innovative activities reveals the importance of advocacy and sponsorship in the facilitation of innovation. Within the institutionalization of innovation the primacy of legitimation, regulation, and habituation is established. It is concluded that the power-coercive basis of RNPTB work routines and discipline, together with notions of credibility, evaluation relevance, critical resources, and adaptability, largely account for innovation persistence.

The findings of the study do not support the first hypothesis, namely that organizational changes are implemented with less resistance than content and method innovations.

Although a participative 'bottom-up' trend is discernible in recent innovations, it is insufficient to support the second hypothesis which postulates that while effective change results from the decisions of the generalized elite, the thrust for change comes from below in response to internal and external forces.

The response to vigorous and successful strategies indicates that innovations which threaten the status and identity of the RNPTB are rejected or resisted, and provides substantial supportive evidence to uphold the third hypothesis.

Within a suggested model for RNPTB self-evaluation and accountability, recommendations are made for the future maintenance and development of naval physical training, sport, and recreation.

## Acknowledgements

The writer wishes to extend his sincere appreciation to those who were of great assistance during the preparation and development of this study.

I thank the Defence Secretariat of the Ministry of Defence for granting me privileged-access status.

I wish to acknowledge the help given to me by Mr. A.J. Francis of the Ministry of Defence Naval Historical Library, Miss A. Wood of the Ministry of Education Library, and the staff of the Inter Library Loans Unit of Liverpool Polytechnic.

A great debt is owed to my supervisor, Professor W.A.L. Blyth, who was a constant source of conceptual challenge, guidance, and encouragement, and for this I am deeply grateful.

I express my gratitude to all my colleagues in the Department of Sport and Recreation Studies at Liverpool Polytechnic who provided much moral and practical support. In particular I thank Dr. V. Lancaster-Thomas, Head of Department, for his encouragement, and Dr. J.J. Shuttleworth who throughout the study made many valuable suggestions. To another colleague, Dr. F. Sanderson, I offer my special thanks for the thoroughness of his advice and criticism.

My grateful thanks are also extended to the personnel of the Royal Naval Physical Training Branch. I particularly thank Commander W.N.L. Woodley, Commander M. O'Reilly, Lieutenant-Commander D. Leach, M.B.E., Lieutenant-Commander J.E. Smith, Lieutenant-Commander R.A. Stokes, Lieutenant-Commander R.J. Varns (Retd.), Lieutenant-Commander H.A. Sheppard (Retd.), Lieutenant M.J. Robinson, and FCPT S. Stubbs, B.E.M., whose friendliness and cooperation made this study possible.

To Mrs. A.M. Gillespie I offer my thanks and appreciation for her

proficient typescript and immaculate diagrams.

Finally, I wish to accord my deepest thanks to my wife, Margaret, and to my children, Sarah Jane and Cameron Eldon, for their unfailing support, patience, and understanding.

## TABLE OF CONTENTS

	Page
Abstract	i
Acknowledgements	ii
Table of Contents	iv
List of Tables	vii
List of Figures	viii
Abbreviations Used	ix
<u>Chapter One</u> INTRODUCTION	1.
Notes and References	5.
<u>Chapter Two</u> A REVIEW OF THE INNOVATION LITERATURE AND DATA SOURCES	6.
1. A Categorization of the Innovation Literature	6.
a. An Overview	6.
b. Innovation and Organizations	12.
c. Innovation and Curriculum Studies	18.
d. Innovation and Physical Education Curriculum Theory	30.
e. Physical Education Innovation and the Armed Services	39.
2. Specific Sources for the Study of Innovations in Physical Training in the Royal Navy	42
Summary	45.
Notes and References	47.
<u>Chapter Three</u> THE ROYAL NAVAL PHYSICAL TRAINING BRANCH	60.
1. The Mandate	61.
2. The Institutional Plan	64.
a. The Directorate of Naval Physical Training and Sport	64.
b. The Royal Navy Sports Control Board	66.
c. The Royal Naval School of Physical Training	68.
d. Formalization and Rank Differential	70.
e. RNPTB Career Structure and Instructors' Role Definition	71.
f. Curriculum	74.
3. The Image	76.
Summary	78.
Notes and References	80.

	Page
<u>Chapter Four</u> A CONCEPTUAL FRAMEWORK	81.
1. Adoption, Diffusion, Dissemination, Implementation: A Clarification	81.
2. The Hypotheses	86.
3. An Extended Typology of Innovation-Decisions	92.
4. A Classification of Communication Domains	95.
5. An Adoption Model of Naval Physical Training, Sport and Recreation	97.
6. A Consideration of the Research Approach	97.
a. Privileged-Access Inquiry	100.
b. Interviews	101.
c. Documentary Analysis	102.
7. A Summary of the Conceptual Framework	103.
Notes and References	105.
 <u>Chapter Five</u> PREVIOUS INNOVATIVE ACTIVITIES	 108.
1. Innovation A. The Formation of the RNPTB	109.
2. Innovation B. The Adoption of the Swedish System	119.
3. Innovation C. The Introduction of Ju-Jitsu	128.
4. Innovation D. The 90% System	133.
5. Innovation E. An Attempt to Form a WRNS Physical Training Branch	142.
6. A Consideration of Common Features	149.
Summary	156.
Notes and References	158.
 <u>Chapter Six</u> RECENT INNOVATIVE ACTIVITIES	 165.
1. Innovation F. The Replacement of the Swedish System	165.
2. Innovation G. The Attempts to Amalgamate the Armed Services Physical Training Branches	175.
3. Innovation H. The Integration of WRNS Instructors into the RNPTB	188.
4. Innovation I. The Introduction of Physical Fitness Testing	194.
5. Innovation J. The Recreation Manager Concept	205.
6. A Comparison With Previous Innovative Activities	217.
Summary	221.
Notes and References	223.

	Page
<u>Chapter Seven</u> <u>ISSUES AND OUTCOMES</u>	232.
1. Innovation Progress and Status	233.
2. Innovation Facilitation	234.
3. The Institutionalization of Innovation	238.
a. Legitimation	240.
b. Regulation	242.
c. Habituation	243.
4. Models of Change	247.
5. Innovation Persistence	250.
Summary	255.
Notes and References	257.
 <u>Chapter Eight</u> <u>AN ASSESSMENT</u>	 261.
1. Summary	261.
2. Discussion and Conclusions	266.
3. Recommendations	286.
4. Suggestions for Further Research	288.
5. Conclusion	290.
Notes and References	291.
 <u>BIBLIOGRAPHY</u>	 295.
1. Admiralty Administrative Files Researched at the Public Record Office	296.
2. Army Administrative Files Researched at the Public Record Office	296.
3. Air Ministry Administrative Files Researched at the Public Record Office	297.
4. Royal Naval Physical Training Branch Administrative Files Researched at the Directorate of Naval Physical Training and Sport at HMS Nelson Portsmouth	297.
5. Royal Naval Physical Training Branch Administrative Files Researched at HMS Temeraire Royal Naval School of Physical Training Portsmouth	298.
6. Official Reports and White Papers	298.
7. Theses and Dissertations	299.
8. Admiralty Handbooks on Physical and Recreational Training	300.
9. Armed Services Sport Control Boards Publications	301.
10. Books and Journals	301.



LIST OF TABLES

<u>Number</u>	<u>Description</u>	<u>Page</u>
1.	Characteristics of Mechanistic and Organic Management Styles.	13.
2.	Structural Variables and Mediating Factors Affecting the Initiation and Implementation of Innovations.	16.
3.	Objectives of the Physical Education Programme.	33.
4.	Synopsis and Recognized Naval Sport and Recreation.	76.
5.	Types of Functions of Innovation-Decisions Processes.	93.
6.	Summary of Cost to Implement Structured Physical Training Branch in Royal Navy 1901.	113.
7.	Estimate of Expense to Introduce Curtailed Physical Training Scheme in Royal Navy 1902.	115.
8.	Current and Projected Complement Increases of Physical Training Instructors 1902.	117.
9.	Numbers of Boys and Men Undergoing Pilot Scheme of Swedish Physical Training and Hours of Instruction in Channel Fleet, March 1903.	124.
10.	Numbers of Boys and Men Undergoing Pilot Scheme of Swedish Physical Training and Hours of Instruction in Channel Fleet, April-June 1903.	127.
11.	Sample Score Sheet for 90% System One Mile Inter Divisional Race Competition.	139.
12.	Proposed Chain of Command and Duties of WRNS Specialist Physical Training Officers.	147.
13.	A Comparison of the Swedish System and PFRT System Instructional Periods for Qualifying RNPTB Instructors 1967.	174.
14.	RNPTB Relative Instructor Strengths for 1985.	192.
15.	Previous and Recent Innovations Categorized as Authoritative 'Top-Down' and Participative 'Bottom-Up'.	297.

LIST OF FIGURES

<u>Number</u>	<u>Description</u>	<u>Page</u>
1.	Organizational Structure of the RNPTB.	65.
2.	Organizational Structure of Royal Naval School of Physical Training.	69.
3.	RNPTB Career Advancement Sequence.	73.
4.	Innovation Phases and Key Communication Domains.	96.
5.	An Adoption Model of Naval Physical Training, Sport, and Recreation.	98.
6.	Commander J's Rationale for Royal Naval Physical, Recreational and Morale Training 1919.	136.
7.	Organizational Structure for Naval Recreation Management.	214.
8.	A Proposed Model for RNPTB Self-Evaluation and Accountability.	289.

Abbreviations Used

AB	Able Bodied Seaman
AIR	Air Ministry
ATS	Auxiliary Territorial Service
CGRM	Commandant General Royal Marines
CINCNAVHOME	Commander-in-Chief Naval Home Command
Cmdr.	Commander
CPOPT	Chief Petty Officer Physical Trainer
DCI	Defence Council Instruction
DGNMT	Director General Naval Manpower and Training
DGNPS	Director General Naval Personal Services
DNO	Director of Naval Ordnance
DNPTS	Directorate Naval Physical Training and Sport
DWS	Directorate Welfare Services
FCPT	Fleet Chief Physical Trainer
GL	General List
HMS	Her Majesty's Ship
Lt.	Lieutenant
Lt.Cmdr.	Lieutenant-Commander
LPT	Leading Physical Trainer
MDG	Medical Director General
PFRT	Physical Fitness and Recreational Training System
PO	Petty Officer
POPT	Petty Officer Physical Trainer
PRO	Public Record Office
P & RT	Physical and Recreational Training Centre
PTO	Physical Training Officer
Q.R.'s	Queen's Regulations
RAF	Royal Air Force
RAFPEB	Royal Air Force Physical Education Branch
RAPTC	Royal Army Physical Training Corps
(Retd)	Retired
RMPTW	Royal Marines Physical Training Wing
RNPTB	Royal Naval Physical Training Branch
RNSO	Royal Navy Sports Officer
SAPO	Sports Amenities Projects Officer
SCB	Sports Control Board
SD	Special Duties
TEM	HMS Temeraire Royal Naval School of Physical Training

(continued)

WAAF	Women's Auxiliary Air Force
WO	War Office
WRAC	Women's Royal Army Corps
WRAF	Women's Royal Air Force
WRNS	Women's Royal Naval Service

## Chapter One

### Introduction

The study explores selected innovative processes in physical training, sport, and recreation in the Royal Navy. The examination is focussed on the adaptations and modifications made by the Royal Naval Physical Training Branch (RNPTB), with whom responsibility lies for the implementation of naval physical training, sport, and recreation. Innovations are related to societal and technological forces and whenever possible the influence of cultural and material circumstances is demonstrated.

An initial clarification of certain terms used in this study is necessary. Rogers and Shoemaker's definition of innovation, as "an idea, practice, or object perceived as new by the individual"<sup>1</sup>, is unsatisfactory as it does not fully identify crucial elements of the concept. Important and relevant dimensions are suggested when innovation is regarded as:

a concept (about military organization, curriculum construction, marketing practices, agricultural methods), an attitude (about communal or racial harmony, women's voting rights), a tool with accompanying skills (16mm projector, an insecticide spray machine), or two or more of these together, introduced to an individual, group, institution or culture that had not functionally incorporated it before<sup>2</sup>.

Inherent complexity and consequent difficulties in human interaction are suggested when innovation is defined as:

the acceptance over time, of some specific item - an idea or practice, by individuals, groups or other adoption units, linked to specific channels of communication, to a social structure, and to a given system of values or culture<sup>3</sup>.

For the purposes of this study the latter definition is preferred because not only does it take into account the important dimension of

time, but it also indicates the far reaching complexities of change, particularly the significant modifications that have to be made to personal and group values.

The growth and widening scope of physical activity within British society and the Royal Navy has been accompanied by changes of terminology and definition. With the initial introduction of planned physical activity into the navy in 1888, the term 'gymnastic instruction' was used to indicate physical exercises with and without apparatus. When the Swedish system of exercises was adopted in 1903 the term 'physical training' was used, although this incorporated other activities such as fencing, boxing and swimming. From 1919 to 1949, 'physical and recreational training' denoted the official system of physical training implemented in naval training establishments and the wide range of recreational activities. From 1947 to the early 1970's, 'physical training' was accepted in the Royal Navy as embracing all forms of physical and recreational activity. Currently naval physical activity is administered under the headings of physical training, sport, and recreation, but these categories within the navy lack adequate definition.

For the purposes of this study, physical training in the Royal Navy is the official system of physical exercises and activities implemented in basic naval training establishments to secure physical fitness, discipline, and morale. Sport is regarded as institutionalized forms of competitive and skilled physical games engaged in with degrees of training, practice and commitment within clearly defined sets of formal rules and conventions. This definition is very close to that offered by Collins<sup>4</sup> which stresses that the reasons for participation and the resultant outcomes conceptually separate sport and recreation in terms of attitude, organization and function. Recreation

is therefore understood to be:

activity engaged in during leisure time and primarily motivated by the satisfaction derived from it<sup>5</sup>.

The diverse nature, incomplete philosophy and fragmented pursuit of adventure training within the navy has led the writer to exclude it as a major concern of this study. While this omission is regrettable, reference to naval adventure training is made from time to time and is best described as expeditions and a wide range of skilful activities, such as canoeing, skiing, gliding, mountaineering, that promote enjoyment of the countryside and a mastery of the environment.

In the context of these definitions and elaborations, the research for this study is presented.

The Royal Navy has an exclusive terminology and makes great use of abbreviations. To maintain clarity for the non-naval reader, these abbreviations have been kept to a minimum. In addition to RNPTB, shortened titles such as 'The Branch', or 'The Physical Training Branch' may be used from time to time when referring to the Royal Naval Physical Training Branch. A glossary of abbreviations can be found in the prefatory pages of the study, and their full meanings are also clearly indicated when first introduced in the text.

References for primary source data are delineated as follows:

ADM - Admiralty files  
 WO - War Office files  
 AIR - Air Ministry files

Documents consulted at the Public Record Office are prefixed PRO, e.g. PRO/ADM/1/6108.

Administrative files consulted at the Directorate of Naval Physical Training and Sport are prefixed DNPTS, e.g. DNPTS/16/64/1B.

Administrative files researched at H.M.S. Temeraire Royal Naval

School of Physical Training are prefixed TEM, e.g. TEM/770/1/2.

The study is organized in eight chapters. Chapter One is the introduction which briefly outlines the scope and nature of the study. Chapter Two reviews the literature of innovation and identifies the study's data sources. In Chapter Three, necessary background detail and a working knowledge of the RNPTB is provided by an analysis of its formal doctrine. Chapter Four expounds the study's conceptual framework. In Chapters Five and Six, previous and recent innovative activities of the RNPTB are examined. Chapter Seven surveys the issues and outcomes of the selected innovations. In Chapter Eight, the findings of the study are discussed and conclusions drawn. The implications for the RNPTB are raised, and recommendations for future policy made.



Notes and References for Chapter One

1. Rogers, E.M. & Shoemaker, F.F. Communication of Innovations: A Cross-Cultural Approach. 2nd Edition. Free Press Macmillan. New York. 1971. p.19.
2. Bholra, H.S. pp.47-48. 'The Configurational Theory of Innovation Diffusion'. Indian Educational Review. 2. 1967. pp.42-72.
3. Katz, E. *et al.* p.237. 'Traditions of Research on the Diffusion of Innovation'. American Sociological Review. 28. 1973. pp.237-252.
4. Collins, L. p.42. 'Sport and Physical Education: A Discussion'. Bulletin of Physical Education. 15. 3. Autumn 1979. pp.39-44.
5. Mayer, H.D. & Brightbill, C.K. Recreation Administration. Prentice-Hall. Englewood Cliffs. New Jersey. 1956. p.1.

## Chapter Two

### A Review of the Innovation Literature and Data Sources

The aim of this review is to travel a coherent path through the voluminous and diverse documentation of innovation research to identify certain terms, concepts, and issues which are significant and relevant to this study. The path is not a straight one, neither is it narrow. A brief overview of innovation research is presented prior to selected innovative activities being examined in organizations, curriculum studies, physical education, and the armed services. The review is not a mere catalogue of innovations, but is concerned with forces and processes that may shed light on the innovative practices of the RNPTB. In the last section of the chapter the study's data sources are identified.

#### 1. A Categorization of the Innovation Literature

##### (a) An Overview

A major influence on early innovation research was the anthropological debate which centred on whether new ideas and practices diffused from one original source or from parallel inventions. Later innovation studies in anthropology, such as Sharp's<sup>1</sup> analysis of the introduction of the steel axe to a tribe of Australian aborigines, emphasized the social consequences of innovation. More recently attention has turned to technical assistance programmes for developing nations which have frequently shown that little or no allowance has been made for differing cultural values<sup>2</sup>. The failure of structured large scale and well funded aid programmes suggests that the methods by which innovations are implemented can be critically important in determining whether or not they are adopted.

Guba<sup>3</sup> has stressed that even small scale change requires a well devised strategy that can be easily and effectively put into action. Even the most attractive innovation packages and materials have little or no effect unless they diffused to the level of the user. To aid diffusion he recommends a combination of practical techniques which include telling, showing, helping, training, and perhaps the most controversial technique that of intervention.

Rogers and Shoemaker's<sup>4</sup> classification of conceptually distinct innovation attributes suggests that certain characteristics may make some proposed changes more attractive and acceptable than others. The suggested characteristics include:

- a. Relative Advantage - the degree to which an innovation is perceived as being better than the one it supersedes.
- b. Compatibility - the degree to which an innovation is perceived as consistent with existing values, needs and past experiences.
- c. Complexity - the degree to which an innovation is perceived as relatively difficult to understand and use.
- d. Trialability - the degree to which an innovation may be experimented with on a limited basis.
- e. Observability - the degree to which the results of an innovation are visible to others.

The effectiveness of natural and contrived boundaries as barriers to innovation was also demonstrated in the sociological research of the 1920's and 1930's. Much of this research was inspired by the earlier work of the French sociologist, Tarde<sup>5</sup>, who was among the first to suggest the S shaped distribution of innovation, whereby a small but significant adoption is followed by a lag phase and then a rapid increase which slows to a much reduced adoption rate as the remaining and often reluctant few innovate. To indicate levels of innovativeness,

that is, the degree to which an individual or group is relatively earlier than others, has led to the formulation of such categories as innovators, early adopters, early majority, late majority, and laggards.

More recent barriers to innovation processes were identified by researchers<sup>6</sup> conducting on site observations in American schools introducing differentiated staffing which included narrower teaching roles and variations in responsibilities. The most obstructive barriers to change included an unrealistic time perspective, the absence of monitoring procedures, the inability to alter plans to cope with arising contingencies, and the fallacious assumption that statements of new objectives, changing titles, rewritten job descriptions, and altered organizational arrangements would automatically translate into new and appropriate behaviour.

A valuable contribution to innovation research has been made by Rogers and Shoemaker's<sup>7</sup> review of some 1500 innovative projects in rural and medical sociology, anthropology, education, communications, and marketing studies. The primary purpose of the review was to distil the results of known innovation research and suggest areas for further investigation. One of the many innovations examined was the classic study by Ryan and Gross<sup>8</sup> on the adoption of the hybrid corn seed by farming communities in Iowa, U.S.A. In comparison to the open pollinated seed the hybrid variety gave a 20% increase in yield, and its diffusion was aided by official agencies and competitive commercial interests. Social characteristics such as age, status, and cosmopolitan outlook of both the earliest and latest adopters were determined. Most early adopters heard about the hybrid seeds from salesmen, but for the majority the most influential persuasion agents were neighbours and other farmers in the community. The study concluded that even when an innovation has spectacular results the innovation-decision process

involves considerable deliberation.

A useful feature of Rogers and Shoemaker's review is a synthesis of generalizations which are claimed to be unaffected by cultural influences. These generalizations and the previously noted failure of many technical aid programmes serve to illustrate the gap that exists between innovation theory and practice. One reason for this disparity is the lack of any general innovation theory sufficiently viable to permit universal application.

An attempt to meet this deficiency has been made by Bholá's<sup>9</sup> Configurational Theory of Innovation Diffusion in which significant variables of change are incorporated into the functional equation:

$$D = f(\text{CLER})$$

where Diffusion D is a function of:

Configurational Relationships	C
Linkage	L
Environment	E
Resources	R

Configurations are the relationships between innovators and adopters.

Linkage is the communication between innovators and adopters.

Environment is the physical, social and intellectual system in which configurations are located.

Resources are the material and psychological capacities of innovators and adopters to cause and absorb innovations.

Within this formulation the major shortcoming is that the variables of change can not be allocated absolute or finite values. This drawback seriously inhibits the theory's predictive power and its application to innovations in the real world.

Similarly, at the conceptual level, Hemphill's<sup>10</sup> General Theory of Innovativeness based on a systems approach is useful but limited.

Within the theory the mechanisms of change are dynamically conveyed when the innovating unit is conceptualized as a system in continuous interaction with an environment. Adjustments to performance are regulated by feedback from the system's output. Some of these concepts, particularly that of feedback, have been incorporated into this writer's adoption model of naval physical training, sport and recreation in Chapter Four, see Figure 5, but several assumptions within Hemphill's theory weaken its practical application. Firstly, it is assumed that all behavioural systems are open, but a major conceptual and practical difficulty is determining the degree of openness. The second assumption is that a continuous flow of input and output places the system in a steady state or equilibrium. At best equilibrium is an obscure concept<sup>11</sup> and many systems operate with input and output greatly imbalanced. Thirdly, although a general systems approach may provide a framework its application detracts from the essentially behavioural aspects of innovation.

Leithwood and Russell<sup>12</sup> suggest that many present theories of innovation are too simplistic to be of any real value, and any future theory must have the capacity to accommodate complex interaction. The way to such a theory is through actual involvement in innovations as they occur. A different view is taken by Downs and Mohr<sup>13</sup> who account for the empirical instability and theoretical confusion by rejecting that just one theory of innovation exists. Instead they suggest that different innovations can be best explained by correspondingly distinct theories. More recently, Brewer<sup>14</sup> has scanned the literature and concurred that no single theory is satisfactory, but concludes that the theoretical perspectives of innovation are disparate, piecemeal and in disarray.

Another major research area is the planned change tradition which seeks to legitimize large scale social change through the influence and participation of social scientists and planners. The underlying rationale of this movement is that man's destiny lies in his hands, and the origin, distribution, and utilization of knowledge can not be left to chance<sup>15</sup>. Unlike innovation research, which casts those involved in innovative activities into separate roles of dispensers and receivers, the planned change movement regards everyone as equal and consenting partners to change. This distinct orientation is succinctly expressed by:

Planned change in all the different sectors of our social and economic life must be accepted because it seeks to maximize the social returns of our systems ... innovators and change agents should be enabled to work for innovation diffusion as long as they are competent, are using their social skills for the common good, have been assigned to their roles by the peoples themselves through known democratic procedures and can be removed from those positions again, through established processes; and as long as individuals, or groups, have the freedom not to consume the innovation or change offered and made available<sup>16</sup>.

In spite of these differing ideological stances the distinctions between innovation research and planned change are blurred, and issues and strategies of the two traditions often merge and sustain each other.

In summary, innovation research is voluminous, diverse and confused. Recent work has emphasized individual relationships, group decisions, communication processes and the role of opinion leaders. A major weakness characterizing much of this research has been the assumption that innovation is a well defined entity, and little attention has been paid to the origins and consequences of change<sup>17</sup>. Commenting on known innovation research, Leithwood and Russell<sup>18</sup> tartly observe that focus on the individual has obscured the system, just as the system's approach has overemphasized the organization.

(b) Innovation and Organizations

Thompson's<sup>19</sup> identification of factors which promote innovation within modern bureaucratic organizations provides a relevant and convenient starting point as many of the innovating features he highlights are not present in the RNPTB. The foremost requirement of an innovative organization in Thompson's terms is its 'structural looseness' which is characterized by less emphasis on narrow non-overlapping of duties and responsibilities, where job descriptions are drafted in professional terms rather than specific duties, where communication is free and legitimate in all directions, and assignments and resource decisions are more decentralized than customary. Operating as it does as a formal bureaucracy the RNPTB is the antithesis of structural looseness and therefore does not appear to be a highly innovative organization.

Another useful perspective with which to view the RNPTB is provided by Burns and Stalker's<sup>20</sup> concept of organic and mechanistic management styles in which they indicate the organic model as more suitable for change and therefore most conducive to innovation. The characteristics of these two managerial forms are presented in Table 1.

The mechanistic/organic concept implies that many organizations do in fact oscillate in terms of management style to accommodate change, and Thompson<sup>21</sup> agrees that the empirical evidence which suggests that different operating structures are optimal for different problems is compelling. Most pertinent to the innovations investigated in this study is the apparent persistent mechanistic mode of the RNPTB.

The literature indicates that innovation research has explored many variables characterizing the innovative organization but often the results are non-comparable and occasionally contradictory. This



Table 1Characteristics of Mechanistic and Organic Management Styles<sup>22</sup>

<u>Mechanistic</u>	<u>Organic</u>
1. Tasks defined in highly specialized abstract units.	1. Task units clearly related to organizational goals.
2. Tasks remain rigidly defined.	2. Adjustment and continual redefinition of tasks by interaction.
3. Precise definition of responsibility attached to individual's functional role.	3. Broader acceptance of responsibility and commitment to organization.
4. Strict hierarchy of control and authority.	4. Presumed community of interest and less hierarchy of control.
5. Formal leader assumed to be omniscient in all matters.	5. Formal leader not assumed to be omniscient in all matters.
6. Communication mainly vertical between superiors and subordinates.	6. Communication lateral between different ranks and resembles consultation rather than command.
7. Communication content contains instructions and decisions issued by superiors.	7. Communication content contains information and advice.
8. Loyalty and obedience to organization and superiors highly valued.	8. Commitment to tasks and progress and expansion highly valued.
9. Importance and prestige attached to identification with organization itself.	9. Importance and prestige attached to affiliations and expertise in larger environment.

---

incongruence can be partly accounted for by the polarized stances taken by those who explain innovation in terms of differing organizational structures and those who explain innovative behaviour in terms of personality characteristics. Of this dichotomy, Becker and Whisler remark:

Not only must these two positions be reconciled but relationships established between all the input variables and between the input variables and the first step of the process, the stimulus.... An adequate theory of organizational innovation, as we see it, awaits a careful statement of both environmental and internal inputs and explicit analysis of the interrelationship of these two classes of inputs<sup>23</sup>.

Following the structural as opposed to the individual tradition, Aiken and Hage's<sup>24</sup> study of 16 American health and welfare organizations found that the diversity of occupational specialisms, the intensity of formal and informal communication, and the decentralization of decision making were all highly related to innovation. The great diversity of specialist knowledge and skills led to a pooling and cross-fertilization of ideas which encouraged new processes, techniques and procedures. Ideas are maximized if there are open channels of communication in all directions and particularly between people and different perspectives, skills and training. Informal interaction is particularly vital to innovation and Blau and Scott<sup>25</sup> have noted the neglect of this form of communication. One such study<sup>26</sup> filling this void was concerned with the innovation of a continuous casting process in the steel industry. The most important finding was the existence of an exceptionally strong informal interaction marked by the significant role played by personal friendships especially in the innovation information seeking stage.

According to Aiken and Hage<sup>27</sup> the most salient factor contributing to organizational innovativeness lies in the mechanisms available to introduce new ideas, and the way such ideas can be synthesized. Thompson<sup>28</sup> has suggested that 'technical generalists' within an organization facilitate the exchange of new ideas particularly if they keep abreast of developments in their respective fields. Within an organization it is equally important that the internal mechanisms permit the upward flow of communication.

The quantity and quality of this upward flow are particularly relevant to this study as these aspects of the RNPTB's communications, as they affect innovations in naval physical training, sport and recreation, are subsequently examined. The fate of formal proposals submitted by specialists to management was investigated in Evan and Black's<sup>29</sup> study of innovations in business organizations. Proposals are more likely to be successful in organizations holding highly competitive positions who exhibit pronounced levels of rule formalization and perception of needs, and where a highly professional staff frequently communicate good quality proposals to a relatively low professionalized management, who because of this low professionalization are disposed to rely on the high quality specialists.

Elsewhere Evan<sup>30</sup> has stated that both high and low level organization members initiate innovations depending upon the type of innovation proposed. He suggests administrative innovations are initiated near the top and trickle down as opposed to technological innovations which start near the bottom and work up. The concept of two communication flows has been extended by Daft<sup>31</sup> who sees the initiation of some innovations arising from the convergence of communication from high and low levels within an organization. He proposes a dual-core model of innovation in which high level communication travelling down, perhaps in the form of newly established organizational objectives, meets and synthesizes with ideas and proposals from below to initiate new procedures.

Shepard<sup>32</sup> argues that many organizations have been designed to be innovation resisting. This is particularly so where personnel have been trained to carry out narrowly prescribed tasks repetitively and reliably. He further suggests that organizations who innovate easily and frequently are characterized by periodicity, that is, a number of

kinds of organizational forms to suit the particular phase of innovation. For instance, during the idea generation phase the organization requires a quality of openness so that alternatives can be explored; but during implementation quite different qualities are necessary such as singleness of purpose, discipline, and the demarcation of internal communication boundaries. Some organizations have natural or seasonal periodicities, but where none exist opportunities for evaluation and planning should be created.

The concept of periodicity underlies Zaltman's *et al*<sup>33</sup> theory of organizational innovativeness where the major characteristics influencing the innovation process are delineated as complexity, formalization, and centralization of authority and decision making. Included between the initiation and implementation stages of the innovation process are two mediating factors of interpersonal relation and the ability to resolve conflict. The varying organizational forms within the concept of periodicity are explicit in:

the desirable degree of organizational complexity, formalization, and centralization that facilitates initiation is opposite those desirable in magnitude and direction to be operative during the implementation stage<sup>34</sup>.

but the desired organizational variations during the major stages of innovation are demonstrated more succinctly in Table 2 below.

Table 2  
Structural Variables and Mediating Factors Affecting the  
Initiation and Implementation of Innovations<sup>35</sup>

<u>Initiation Stage</u>	<u>Mediators</u>	<u>Implementation Stage</u>
Higher complexity	High capability for effective inter-personal relations	Lower complexity
Lower formalization	High capability for dealing with conflict	Higher formalization
Lower centralization		Higher centralization

Attempts have been made to blend the organizational structure and individual personality research approaches. Utterback<sup>36</sup>, for example, investigated environmental factors and traced idea sources of selected industrial innovations. He established that up to 80% of the adopted innovations were due to market demands and needs, and the remainder originated in response to new scientific and technological advances. Most ideas came from outside the organisations because the majority of them did not have sufficient resources for research. Informal and oral sources provided the majority of key communications, and a crucial role was played by an outside expert. Mohr<sup>37</sup> found the most powerful predictor of innovation was organizational size, and after the solution of immediate problems the quest for prestige rather than efficiency or profit motivated most changes.

Baldrige and Burham<sup>38</sup> observed that the adoption of innovation was most strongly influenced by organizational personnel with power, communication linkages and the ability to impose sanctions. This conclusion is compatible with Hage and Dewar's<sup>39</sup> evidence that those who allocate organizational resources also significantly influence innovativeness. The Project SAPPHO Study<sup>40</sup> of two science based industries concluded that differences between successful and unsuccessful innovations can not be explained by superiority of any one aspect. Successful innovating organizations were found to have<sup>41</sup>:

- a. much better understanding of user needs.
- b. paid much more attention to marketing.
- c. performed their development work more efficiently but not necessarily more quickly.
- d. made more effective use of outside technology and scientific advice.

- e. personnel with greater seniority, authority and responsibility than their unsuccessful counterparts.

In summary, the literature suggests organizational innovation is influenced by the characteristics of personnel, organizational factors, and the context in which the innovation takes place. There is little evidence to suggest which variables are more important, or what determines the relative importance of each class of variables, or whether the relative importance depends on the type of innovation. While all the variables associated with personnel, organizational factors and situational context play a role in the innovative process there is little evidence to establish primacy<sup>42</sup>.

A final and sobering note is added by:

Because of the magnitude of some changes in organizations, we are inclined to look for comparably dramatic explanations for change, but the search for drama may often be a mistake. Most change in organizations results neither from extraordinary organizational processes or forces, nor from uncommon imagination, persistence or skill, but from relatively stable, routine processes that relate organizations to their environments<sup>43</sup>.

(c) Innovation and Curriculum Studies

In the broad strategy of educational curriculum studies, several typologies have provided useful frameworks in which to consider the innovation process. Prominent in this category are Schon's<sup>44</sup> three models of diffusion. Firstly he distinguishes a centre-periphery model in which the innovation is disseminated outwards from a central controlling agency to peripheral innovating units. An extension of the first perspective is the proliferation of centres model which delineates additional centres where:

secondary centres engage in the diffusion of innovations, primary centres support and manage secondary centres ... the limits to the reach and effectiveness of the new systems

depend now on the primary centre's ability to generate support and manage the new centres<sup>45</sup>.

Thirdly, a shifting centres model that parallels such interrelated contemporary social movements as civil rights and community action, posits that as movements evolve so centres appear, thrive, decline and are replaced because effective information control is not attainable within such loosely structured innovations.

MacDonald and Walker<sup>46</sup> are of the opinion that Schon's models have been most persuasive in curriculum theory, and Rudduck and Kelly<sup>47</sup> have identified the centre-periphery model in countries having a highly centralized educational system such as France, Denmark and Ireland; but Whitehead<sup>48</sup> argues their limited educational application in the United Kingdom. He maintains that it would be inappropriate to apply the centre-periphery model to British curriculum projects because the permanency and power lie not in the projects themselves but in the decision making of schools and Local Education Authorities. Similarly, the proliferation of centres model can not be applied to curriculum project teams or teachers centres, as the former are of a temporary nature and the latter are responsible to their employing authority. However, while the proliferation of centres model may be inappropriate to educational situations, it has compelling applications to the RNPTB if the Directorate of Naval Physical Training and Sport (DNPTS) is seen as the primary agency and the Royal Naval School of Physical Training and other physical training units dispersed in ships and naval establishments are regarded as the secondary agencies engaged in the dissemination of innovations in naval physical training, sport and recreation.

Focussing mainly on educational change, Chin and Benne<sup>49</sup> have developed three types or categories of strategies. Empirical-rational

strategies assume the self-interest and rationality of man leads to the adoption of change if the change can be rationally justified.

Normative-re-educative strategies are based on changing attitudes, values, and skills, as opposed to power-coercive strategies that depend upon the impositions of political, legal, administrative and economic power. Bolam<sup>50</sup> has supplied examples of how in practice various combinations of these strategies have been applied, and Hoyle<sup>51</sup> maintains that many innovations in schools might have been more effective if headteachers had employed less power-coercive procedures.

To explain how knowledge diffuses through social systems, Havelock<sup>52</sup> formulated four models. Within his social-interaction model the diffusion of an innovation is dependent upon the communication of information through personal contact. In the research-development-diffusion model, change is seen as a sequence of activities beginning with problem investigation and research, and followed by solution design and development, and planned dissemination to the user. In the problem-solving model the unit requiring change identifies its needs and draws on known solutions using its own or external resources and expertise. Havelock has synthesized these three perspectives into a linkage model which emphasizes the necessity for support agencies to anticipate, monitor and fulfil the needs of user units.

At this stage of the study the model which most succinctly conceptualizes the innovation strategies of the RNPTB can not be identified.

An important research thrust has investigated innovation and the school as an organization. Willower<sup>53</sup> identified various forms of resistance to innovation in educational organizations but found younger teachers more liberal and permissive to change. From the older teachers



resistance came in the form of a fear of status loss, lack of ability to cope, and a widely expressed opinion that benefits from innovations are frequently disproportionately accrued. Willower concluded that a critical prerequisite of change was the promotion of a supportive organizational climate, a point endorsed by Hoyle<sup>54</sup> who recommended that neutral change agents should smooth the path to successful innovation.

The study by Gross *et al*<sup>55</sup> of the attempts to radically redefine the teachers' role is one of the few accounts of innovation failure. Referred to as the catalytic role model the redefined approach required teachers to promote learning according to their students' interests rather than using traditional methods of imparting knowledge. Failure was attributed to the teachers' indistinct idea of the innovation, and the lack of skills and knowledge. Contributory factors to failure stemmed from the administration's inadequate provision of resources, and its inability to recognize and cope effectively with the teachers' difficulties and uncertainties. An important and crucial point identified by Gross *et al*<sup>56</sup> was the resistance that developed during the innovation by those teachers who were initially in favour of the change, but Klein<sup>57</sup> has indicated that such opposition to change is desirable as it is often the mechanism most likely to preserve the integrity of a social system.

In a statistically sophisticated study, Corwin<sup>58</sup> investigated 33 variables associated with the innovativeness of selected schools. He concluded that the following factors appeared to play a significant role in innovation generation:

- a. a well-educated, experienced, and predominantly male staff active in professional organizations.

- b. moral support for change from the local community and active partnership between the school and the community.
- c. resources for change from outside the school and possibly from outside of the community as well.
- d. a school that is large enough to provide the necessary manpower, freedom and perhaps pressures for change.
- e. a community that is large enough to offer a variety of sources of pressure and support for change.

The influence of these factors varied from low income, problem schools and 'middle class' schools, but commenting on Corwin's findings Harding *et al*<sup>60</sup> conclude that they contain high levels of generalization and uncertainty.

Recognizing the complex, multidimensional process of organizational innovation, Clarke<sup>61</sup> proposed a combined-process model to analyse the institutionalization of change in higher education. Elsewhere in 115 American colleges and universities, Ross<sup>62</sup> investigated the organizational conditions associated with the institutionalization of new academic programmes. He observed that some types of innovations seem to occur almost automatically given sufficient resources, but certain disciplines such as urban studies, women studies, and ethnic studies were academically disreputable because of their political implications. Instituting courses of study in these areas was in itself a political process and the activities of pressure groups were important. Another significant factor contributing to successful innovation was an authority structure that facilitated administrative leadership while being sufficiently decentralized in key areas to maintain staff security and morale.

Shaw<sup>63</sup> established similar findings when a British college of education with a high reputation in the preparation of secondary school teachers adopted a primary training orientation. He identified a period of manoeuvring when groups of clearly defined protagonists and resisters were involved in intensive tactical lobbying and rearguard actions. He concluded:

the key task for the introduction of curriculum innovations seems to be the management of working accommodations among the internal belief and priority systems whilst promoting the enterprise's adaptation to the requirements of a changing environment ... the task lies in areas of tension management and strategic policy, not in areas of operations<sup>64</sup>.

A concern of this study is to examine the origins of selected innovations in naval physical training, sport and recreation, but the generating forces and pressures leading to change have received scant attention in educational curriculum studies. To explain the changes and developments that have established the curriculum as a major area of education study, Owen<sup>65</sup> adopted a historical approach, and the germination and growth of curriculum projects in Britain in the late 1960's have been described by Banks<sup>66</sup>. Rogers and Shoemaker<sup>67</sup> have differentiated between selective, directed, and immanent change to categorize the internal and external influences that create changes within social systems. A deterministic explanation of change stresses the role of societal forces and maintains that innovation occurs when the conditions are 'right', as opposed to the 'heroic' theory which emphasizes the contribution of individuals to change<sup>68</sup>. In practice these explanations are not mutually exclusive and really serve as points of emphasis.

In suggesting that curriculum change is continuous, Lawton<sup>69</sup> has grouped the social forces affecting this process under the three general headings of economic and technological changes, ideological

changes, and secular and rational pressures. For example, in an industrialized and urbanized country such as Britain, a major economic and technological influence lies in the need to provide a skilled workforce and education for leisure in a rapidly changing society.

A significant ideological influence is the emphasis on equality of opportunity, and instead of religious instruction in schools there is now sufficient pressure and argument to support the introduction of moral education.

By far the most adequate examination of the origins of societal forces in curriculum innovation has been Waring's<sup>70</sup> study of the Nuffield Foundation Science Teaching Project where the complex dynamics of change are succinctly expressed by:

Pressure for curriculum change at any given time may be rooted in one or several areas as, for example, ideology, politics, economics, or professional knowledge and theory. Whatever the roots, such pressures generate expressions of growing concern that the curriculum, or parts of it, is no longer serving its purpose, however that is viewed. Dissatisfaction is expressed more and more widely and diagnosis and prescription offered at first by isolated individuals. This situation may obtain for many years, after which the need may disappear before the weight of new and different pressures. Alternatively, there may be an apparent crystallization of attitudes and ideas...<sup>71</sup>

Diagnosis and prescription have not been lacking in the curriculum reform movement of the last two decades, but there has been only a slow realization of the complexity and difficulty of achieving even modest changes. In this vein MacDonald and Walker<sup>72</sup> have argued that the contribution to educational change by many major curriculum projects has been emphasized at the expense of less ostentatious developments. More recently Whitehead's<sup>73</sup> analysis, which took into account research on the familiarity of headteachers with new curriculum projects<sup>74</sup> and the Schools' Council self-assessment<sup>75</sup>, concluded that the majority of projects were either failures or only marginally successful. Whitehead<sup>76</sup>

identified the main underlying reasons for failure as the laissez-faire development of resources in terms of time, money and personnel, and the over reliance on diffusion strategy rather than the organized methodical strategies of dissemination.

In part Whitehead's criticisms are supported by Lawton<sup>77</sup> who contends that the Schools' Council has persistently failed to develop adequate techniques to facilitate the implementation and successful adoption of innovations. However harsh and valid these criticisms may be, they are countered by the dangers of excessive planning and intervention highlighted by Wise<sup>78</sup>, who opines that many educational innovations fail because changes are hyperrationalized. In large part, failure can be attributed to excessive prescription especially on expected outcomes, and to procedural complexity resulting from new procedures being simply added to existing ones.

Consideration of major curriculum projects such as the Humanities Curriculum Project (HCP), and the History, Geography and Social Science Project (HGSS), and similar large scale innovations are outside the scope of this review and have been extensively examined amongst others by Biddle<sup>79</sup>, Cooper<sup>80</sup>, Reid and Walker<sup>81</sup>, Rudduck<sup>82</sup>, and Waring<sup>83</sup>. However certain lessons learnt from these innovations have relevance for the RNPTB.

Referring to actual examples, Humble<sup>84</sup> demonstrated how the Schools' Council, the materials publisher, and the Local Education Authorities involved as change agents in the HCP wavered between inconsistent policies and were reluctant to accept responsibility for the implications of their work in the project. Similar dissonance was established between federal, district, and school agencies in the Rand Corporation survey<sup>85</sup>

of innovative activities in American elementary and secondary schools. The Rand researchers recommended mutual adaptation of innovations to local needs as the key to effective implementation.

The concept of mutual adaptation raises the most complex and important problem of the gap that exists between the ideals of the innovation initiators and the interpreted practices of the users. The negotiation model proposed by MacDonald and Walker<sup>86</sup> maintains that this gap between intent and practice is not primarily caused by innovation misuse or miscommunication, but rather by the consequent 'trade-offs' or compromises that are agreed to by the involved parties.

Two basic criticisms can be levelled at the negotiation model. Firstly, it assumes that teachers are the recipients of curriculum innovation rather than the students; and secondly, the model makes no provision to accommodate the motivations and interpretations of the teachers. To overcome these difficulties, Pitman<sup>87</sup> has suggested an extended-negotiation curriculum model.

A further point raised by the fidelity or adaptation issue is the question of teacher-proof innovations. Fullan<sup>88</sup> argues that the almost continuous involvement, choice, and commitment on the part of both teachers and students renders many standardized or programmed innovations inappropriate to the educational context. However, in the context of naval physical training, where many RNPTB personnel frequently have to operate without supervision in ships or small establishments, the concept of instructor-proof innovations is attractive and relevant. A compromise or workable solution between undistorted and adopted innovation might be found in Leithwood's<sup>89</sup> proposal for a nine dimensional innovation profile. To promote innovation clarity and facilitate understanding and gradual adoption he has suggested that the

dimensions of change should be: platform or image, objectives, student entry behaviours, assessment tools and procedures, instructional material, learner experiences, teaching strategies, content, and time allocations.

Fullan and Pomfret<sup>90</sup> have assessed numerous educational innovations in America and Canada and proposed strategies and tactics to promote successful implementation. Important strategies appear to be inservice training, resource support, and feedback, but the most powerful determinant of innovation was identified as participation in decision making. These strategies are aimed essentially at the teachers as the progress and success of an innovation depend very much on the goodwill and cooperation of those involved in the project<sup>91</sup>. The development and maintenance of teacher liaison was what the Peterborough Project team had in mind when they observed:

The generation of a climate of change must be considered the most critical component of change. It is also the most elusive component to describe, since it manifests itself in many ways. One tends to gain a cumulative impression of the change climate based on diverse incidents rather than a distinctive concept of high profile<sup>92</sup>.

Characteristically educational systems are fragmented and ideas travel relatively slowly to individual schools. House maintains that the primacy of personal contact is critical for innovation and states:

direct personal contacts are the medium through which innovations must flow. Innovation diffusion is directly proportional to the number, frequency, depth, and duration of such contacts. Networks of personal contacts are not random. They are highly predictable and stable, strongly structured by the hierarchical nature of organizations and the nature of urbanization. The influence of these forces on innovation diffusion in education is profound<sup>93</sup>.

Rudduck<sup>94</sup> claims that success largely depends upon the extent to which teachers can participate and manipulate the processes of innovation to their own circumstances, but although Harding *et al*<sup>95</sup>

concede that unique patterns in a variety of forms have been perceived in curriculum development projects, they vigorously maintain that generalized explanations of innovation implementation are difficult to formulate.

One other aspect of innovation and the curriculum requiring consideration is that of effective evaluation. The main problem has always been the search to find strategies, procedures and instruments for evaluation which are effective to assist curriculum development. Traditionally curriculum evaluation has been carried out in the following four ways<sup>96</sup>:

- a. Initial evaluation concerned with planning and development.
- b. Formative or continuous evaluation as the innovation progresses.
- c. Summative or terminal evaluation of the final effects of change.
- d. Longitudinal or long term evaluation.

Using statistical procedures and experimental control the traditional empirical approach focussed mainly on the measurement of student achievement against predetermined objectives and is embodied in the work of Tyler:

The process of evaluation is essentially the process of determining to what extent the educational objectives are actually being realized by the programmes of curricula and instruction. However since educational objectives are essentially changes in human beings ... the evaluation is a process for determining the degree to which these changes in behaviour are actually taking place<sup>97</sup>.

Kerr<sup>98</sup>, Wheeler<sup>99</sup>, and Walker<sup>100</sup> have subscribed heavily to empirical techniques which assess changes related to stated objectives, but Sockett<sup>101</sup> has argued that contemporary empirical assumptions of curriculum planning and evaluation are inadequate and has offered an alternative view of evaluation based on philosophical considerations. Harlen<sup>102</sup> has attempted to steer away from measurement of student



achievement and proposed principles for formative valuation to gather information on the learning processes and the environment in which changes are intended to be produced.

Smith and Frazer<sup>103</sup> contend that in the 1970's a rift developed between those supporting quantitative techniques and those supporting qualitative techniques of evaluation. The movement towards qualitative evaluation was a reaction of dissatisfaction against quantitative procedures founded on the limitations of the information these procedures elicited. Quantitative evaluation tends to ignore the unintended outcomes of innovation and appears sensitive only to the values of the evaluators. Principles of evaluation procedure have now been proposed to include the perspectives of others involved in innovation activities<sup>104</sup>, but quantitative evaluation provides only limited information on innovation success or failure and contributes little to formative decision making<sup>105</sup>. The shortcomings of quantitative evaluation have also been expressed by Becker and Maclure:

quantitative evaluation is powerless to reconcile the untidiness of actuality with the precision of the research ideal ... samples are never really representative, variables can never be held constant, and changes in behaviour ... even if, as seldom happens, they can be accurately measured ... do not adequately reflect the intellectual processes to which they are intended to equate<sup>106</sup>.

This writer has reservations about Becker and Maclure's extreme view of analytic methods which attempt to assign the proportion of variance attributable to individual factors. Some quantitative techniques are not only compatible with, but necessary to qualitative approaches. This view is supported by Lawton<sup>107</sup> who argues that it is a mistake to think of quantitative and qualitative evaluation in terms of two distinct and divergent categories, as in practice considerable overlap exists. Essentially effective evaluation should describe:

not only the outcomes of a programme, but attempt to understand the transactions which take place both within the programme and between the programme and its audiences as a basis for improved decision making during its life<sup>108</sup>.

To achieve an overall or comprehensive evaluation, Stake has argued for the use of techniques which provide a full description<sup>109</sup>, and elsewhere<sup>110</sup> he cites the case study approach as such a method of inquiry. Shaw<sup>111</sup> has reviewed the use of case studies in a justification of this technique in curriculum evaluation and has found support from Stenhouse<sup>112</sup> who argues that the case study can be subjected to verification. Leinhardt<sup>113</sup> has made a strong argument for observation as a tool for innovation evaluation, and using questionnaires, interviews and participant-observation, a formative, flexible and illuminative evaluation strategy has been suggested by Parlett and Hamilton<sup>114</sup>. This evaluation strategy is examined and adopted in this study's conceptual framework contained in Chapter Four.

Both quantitative and qualitative methodologies were used by Smith and Frazer<sup>115</sup> in their evaluation of the High School Law Project in Australia. This dual approach is advocated by Hall and Loucks *et al*<sup>116</sup> to evaluate the levels of innovation use, and it was later refined in their evaluation model<sup>117</sup> to determine whether or not change is actually implemented. Leithwood and Montgomery<sup>118</sup> have prescribed both descriptive and empirical procedures to evaluate implied and actual innovation practices, but in propounding a decision activity evaluation model, Lutterodt<sup>119</sup> has succinctly summarized the present state of innovation and the curriculum by stating that evaluation can not wait for sophisticated theory.

(d) Innovation and Physical Education Curriculum Theory

In a generic way, developments and change in physical education have been accounted for by McIntosh<sup>120</sup>, Bilborough and Jones<sup>121</sup>, and

Whitehead and Hendry<sup>122</sup> but only a few studies, such as those by Lockwood<sup>123</sup> and Baymen<sup>124</sup>, have approached physical education innovation as a concept and process. Using the models of change advocated by Schon<sup>125</sup>, Havelock<sup>126</sup>, and Bolam<sup>127</sup>, both these latter two studies detected a wide range of change processes and support agents, but no single definitive pattern of innovation.

In an attempt to relate a physical education curriculum theory to a general curriculum theory, Jewett<sup>128</sup> designated a purpose-process model which endeavours to identify personal meaning and significance in physical activity. Within prescribed curricular considerations of fitness and performance, such dimensions as circulo-respiratory and mechanical efficiency, spatial orientation, and object manipulation can within limits be established and quantified. Examination of Jewett's model however demonstrates the major difficulty in establishing links and justifications between physical activity and self-actualization processes such as joy of movement, self knowledge, and challenge.

The most glaring deficiencies in physical education curriculum theory lie in the area of self-actualization and the claims aligned to the automatic acquisition of aesthetic, moral and social qualities. This shortfall exists because curriculum theorists have paid little attention to physical education. An exception was Bobbitt<sup>129</sup> who early in this century proposed that any theory of curriculum formulation should take into account education for physical efficiency and leisure, as well as ends and processes in education for citizenship and social intercommunication. He emphasized that the fundamental task of physical training was to develop vitality and so secure vocational, moral and civic efficiency. His attempts to achieve curriculum precepts were characterized by interminable lists of objectives not unlike some contemporary approaches to scientific management.

Attempts to make good the underdevelopment of physical education theory have centred on exploring the educative element of physical education. James<sup>130</sup>, Kerr<sup>131</sup>, and Taylor<sup>132</sup> have all placed physical education in the context of education. Physical educationists such as Cameron and Pleasance<sup>133</sup>, Pallett<sup>134</sup>, and Randall<sup>135</sup> have assumed the educational value of physical education, while Morison<sup>136</sup> has asserted that, "the inclusion of physical education as part of the school curriculum needs no justification".

Andrews<sup>137</sup> has cogently argued the case in claiming that physical education may make a positive contribution to personal fitness. He suggests there are grounds to substantiate a concept of total fitness which incorporates both mental and physical elements in keeping with Randall's *et al*<sup>138</sup> notion of fitness for positive living. According to Andrews the curricular aims of physical education which appear tenable are<sup>139</sup>:

- a. The promotion of cognitive development.
- b. The promotion of aesthetic education.
- c. The promotion of moral education.
- d. The promotion of social education.
- e. The promotion of education for leisure.
- f. The promotion of fitness for positive living.

Many similar claims for physical education exist. Sharp<sup>140</sup>, for example, suggests that the aims and purposes of physical education are to extend and develop physical competence, develop social awareness and understanding, and conceptual knowledge. Hardman<sup>141</sup> maintains that the common core of activities in the physical education curriculum, comprising of dance, gymnastics, games, swimming, and athletics, contributes not only to skills and organic development but also to attitudes, and psychological, aesthetic, social, and moral development.

These claims are supported by the findings of the Schools Council Inquiry<sup>142</sup> into the aims and practices of physical education. The nine most mentioned objectives in the literature were ranked by teachers as indicated in Table 3 below:

Table 3  
Objectives of the Physical Education Programme<sup>143</sup>

Rank for Men		Rank for Women
6	Emotional stability	3
3	Self-realization	2
1	Leisure-time pursuits	4
7	Social competence	6
5	Moral development	5
4	Organic development	8
2	Motor skills	1
9	Aesthetic appreciation	9
8	Cognitive development	7

The women teachers ranked highest motor skills, self-realization and emotional development, and allocated the lowest rankings to cognitive development, organic development, and aesthetic appreciation. The men teachers rated most highly leisure-time pursuits, motor skills, and self-realization, and gave the lowest ratings to cognitive development and aesthetic appreciation. Both groups ranked moral development in fifth position. There appears to be reasonable agreement as to objective priority but Kane<sup>144</sup> indicates there is evidence to suggest that women teachers are inclined to be more concerned with long term outcomes, such as self realization and emotional stability, rather than short term goals such as physical fitness.

At the official level the claims and curricular aims for physical education are identified and presented as 'essential areas of experience'. In the Curriculum 11-16 Supplementary Working Papers<sup>145</sup>, Her

Majesty's Inspectorate state that outdoor pursuits and activities such as athletics, gymnastics, and games can contribute to the aesthetic, creative, scientific, social, ethical and political aspects of personal development. Similar claims are made in the Munn Report<sup>146</sup> which considered the structure of the curriculum in Scottish secondary schools.

Both the Supplementary Working Papers and the Munn Report have serious deficiencies. The former rely on haphazard statements instead of presenting a case for each area of experience. Similarly, the case for justification is not argued in the Munn Report. The conservatism of these official pronouncements may reflect a response to the overstated case for physical education in the past. With this in mind, Gibbon<sup>147</sup> has made a significant contribution with his identification of fundamentally moderate and realistic claims for physical education incorporating<sup>148</sup>:

- a. scope for expression and aesthetic pleasure.
- b. sheer enjoyment of play.
- c. display of skilled performance.
- d. development of skills and interests for leisure.
- e. physical well-being.

A similar approach was followed by Groves<sup>149</sup> who in restating guidelines for the physical education of the whole person has proposed a working model for the parallel development of skill, leisure and personal factors. Although at a theoretical level Lawton<sup>150</sup> has described physical education as a low status subject, three hundred teachers ranked physical education only behind mathematics and English in the primary school curriculum<sup>151</sup>. Positive benefits in terms of coordination, physical development, and social training were identified; and many teachers regarded physical education as an essential change of

learning environment and a compensatory area for children who were academically weak.

A timely summary at this juncture is provided by Renshaw<sup>152</sup> who asserts that the crux of the education-physical education debate lies in the problems arising from the justifications and claims attached to the different types of activities. He questions how far physical activities can be considered as of educational value. He indicates that physical activities have a wide range of instrumental objectives but limited cognitive content, but argues that if they can be engaged in seriously and for intrinsic reasons, then they can be viewed as part of an educational process.

A related issue to this debate are the dimensions of the 'hidden curriculum' which can be defined as:

the unconscious but important transmission of, for example, attitudes and values as an indirect result of the application of the school curriculum. Such matters as the reinforcement of the social order, the distribution of power and the acceptance of public standards, may be an indirect result of the teaching/learning milieu<sup>153</sup>.

In the context of the hidden curriculum the inclusion of sport in the physical education programme has been questioned by Bailey<sup>154</sup>, who doubts if morals can be inculcated by competitive participation and argues for a diminution in the importance of competing and winning. Aspin<sup>155</sup> supports this view, Wilcox<sup>156</sup> argues that physical education with its emphasis on egalitarianism, cooperation and improvement can not be reconciled with sport which emphasizes elitism, competition and performance; and Copeland<sup>157</sup>, in examining intended and unintended outcomes of team games in secondary education, established discrepancies between educational intentions and resultant pupil attitudes and behaviour. Bailey's argument rests heavily upon the idea of games having winning as their main point or *raison d'etre*, but both Thompson<sup>158</sup>

and Dunlop<sup>159</sup> argue that the point of something is not necessarily the reason for doing it, and games are played for many reasons. Wilcox's<sup>160</sup> solution to his perceived incompatibility between physical education and sport is based on separate training for physical educationists and sport coaches, but the establishment of separate and distinct appointments such as these could lead to confrontations of ideology rather than balanced interpretations of the potentially powerful influences of the hidden curriculum.

The major post-war innovations in physical education have been<sup>161</sup>:

- a. developments in outdoor pursuits.
- b. introduction of optional activities for senior secondary students.
- c. increased provision of major facilities and equipment.
- d. recognition of indoor space as an essential facility.
- e. provision of sports halls for secondary schools and dual use.
- f. expansion of national coaching schemes.
- g. changes from formal to informal teaching methods.

The listing above is by no means exclusive and must be balanced by Whitehead and Hendry's observation that:

liberation from government-directed syllabuses seems not to have resulted necessarily in radical changes ... The reasons are not difficult to estimate, and the limitations that impose themselves on teachers who would wish to broaden or bring up-to-date their programmes of activities include lack of facilities, deficiencies in their teacher-training courses, lack of assistance from colleagues, insufficient help from 'inspectors' of physical education and insufficient 'refresher' courses for older teachers<sup>162</sup>.

Although this observation was addressed to the general situation in primary schools, Whitehead and Hendry<sup>163</sup> maintain that innovations in secondary physical education programmes are also not as prevalent as generally believed. Nevertheless the indication of innovatory trends serves to highlight the scope and content of contemporary physical



education programmes and raises several points relevant to this study's concern for naval physical training, sport and recreation.

The physical education curriculum for the senior levels of participation in secondary and further education has a sequential relevance for the RNPTB, as it is from these sectors of education that the majority of new entrants to the Royal Navy are drawn. Most pertinent in secondary and further education is the innovatory trend of physical educationists towards recreative and coaching roles which received impetus from the Department of the Environment's White Paper Sport and Recreation which stated:

Teachers of physical education can play a particularly valuable part ... They have a dual role - to encourage young people generally to take part in physical education, and to develop standards of excellence among the more gifted. The Government wish to encourage them to play an increasing part in fostering plans for physical recreation in the community generally and, in particular, ... in the planning of the provision of recreational facilities<sup>164</sup>.

There is a growing social pressure for fitness, sport and recreation which is mirrored in the RNPTB by instructors increasingly taking up the functions of recreationists rather than physical trainers. Aspects of this naval innovation are examined later in this study.

While in the navy the question of compulsory physical activity after initial basic training remains a vexed question, the case for compulsory participation for students in further education has been made by Stanton who asserts:

The mere facilitation of recreative activities in the hope that some interest will ensue and skill develop incidentally cannot be a significant part of the work of a physical education department<sup>165</sup>.

Some of the difficulties in implementing innovations in further education physical education programmes have been vividly portrayed by Casson<sup>166</sup>. Among the constraints identified are increased workloads,

suspicion of motives, post-conceptual confusion brought about by unexpected outcomes, bureaucracy, and innovation backlash. The provision of optional activities for older students is just one innovation highly characterized by these difficulties and as such may be categorized as one of Palmer's<sup>167</sup> 'conflict rousing issues'. While agreeing that optional activities are theoretically attractive, Palmer<sup>168</sup> maintains that in practice they frequently have detrimental effects because options have led to students opting out. Reasons why this opting out occurs have been identified as prejudice against physical education, limited knowledge of a small range of activities, and interest only in one sport<sup>169</sup>. A policy to facilitate teaching strategies and increased participation has been structured by Skinsley<sup>170</sup>.

- a. Provide experience of new activities and develop known ones.
- b. Use facilities outside the school.
- c. Structure work to develop mixed group work and meeting new people.
- d. Promote the attitude that health and fitness are vital to participation of regular physical activity throughout life.
- e. Allow some element of choice.

The wide diversity of unresolved problems and controversies illustrate the underdeveloped nature of physical education curriculum theory. Often the approach to innovation is erratic and irrational and evaluation is a neglected process. There is a tendency to adopt the latest innovation without completing or even contemplating an analysis of requirements or possible consequences. To aid such planning and evaluation, Luff<sup>171</sup> has proposed a curriculum innovation decision model to:

- a. Identify {
  - what to change
  - reasons for change
- b. Identify needs to be met.
- c. Collect and record data.
- d. Search the literature.
- e. Identify and analyse alternatives.
- f. Select suitable innovation.
- g. Make decision to adopt.
- h. Decide diffusion strategy.
- i. Make decision to implement.

Alternative or complementary approaches to innovation planning and evaluation could be based on the formulation of objectives, behavioural goals, Stenhouse's<sup>172</sup> planning by hypotheses, or Taylor's<sup>173</sup> planning by issues or planning by transactions. There is now some degree of urgency. If physical education is to continue to make worthwhile contributions within the education system and other societal institutions then renewed and vigorous attempts have to be initiated to secure effective and rational planning and evaluation models appropriate to the levels of participation.

(e) Physical Education Innovation and the Armed Services

There is a dearth of information relating to physical education innovation and the armed services. The documentation that exists is confined to a few and often restricted official accounts, a limited number of papers chiefly containing proposals that can be regarded as examples of idea generation, some anecdotal descriptions of innovations in regimental or departmental journals, and official handbooks outlining and prescribing principles of implementation. Following extensive searches, no work is known to this writer which has examined and evaluated physical education innovation in the armed services as a

concept and a process. In a modest way it is hoped that this study will partly fill that void.

Of the accounts available the majority are related to aspects of physical fitness. At the official level a longitudinal account of the introduction and use of physical efficiency tests in the Army from 1944 to 1960 is contained in PRO/WO/32/12957. Important features of innovation modification are demonstrated as adjustments were made to meet revised categories of medical fitness, and secure great control and prescription to safeguard against overexertion and possible fatalities. Elsewhere<sup>174</sup>, factors that sustained innovation persistence are highlighted when the Army Council met in 1949 to consider whether or not the Modern Pentathlon should continue as an army sport. As an institutionalized innovation within the British Army there had been increasing difficulty to provide horses and adequate riding practice for the event sufficient to meet the standards of international competition. It was decided to maintain the event because it was thought that the rigorous training called for high standards of courage, endurance, and self control; but also that its chief indirect value was as a prestige agent. Within the British Army the continued durability of the Modern Pentathlon is exemplified by the military contribution<sup>175</sup> to Britain's achievements in this event in the 1970's.

By contrast the recent and important innovatory activities of the Armed Services' Schools of Physical Training in the Sports Council's Centres of Excellence Scheme have barely been documented<sup>176</sup>. Similarly, an example of an attractive innovation that came to nothing in the Royal Navy was a proposal for regional naval command athletic coaches<sup>177</sup>. The idea generation was well and widely presented, but the most probable reason for failure was the relatively low rank and status of the initiator, who with humour, judgement and foresight aptly titled his

paper, "Apathletics".

During World War Two, Murray<sup>178</sup> evaluated a six week innovatory progressive resistance training scheme which enabled army gun crews to keep a new mechanical loader, which hitherto they had been unable to operate, supplied with heavy shells. A limited number of pilot studies<sup>179</sup> carried out in 1959 suggested that the introduction of weight training might be an eminently suitable leisure activity for personnel in ships at sea. Hatch's<sup>180</sup> proposal is one example of idea generation that contributed to a wider participation in adventure training within the British Armed Services, and the introduction of innovatory weight training schedules in the Royal Air Force in the 1960's has been cited by Taylor<sup>181</sup>.

More recently, a complete programme of diet and physical activity for the Israeli defence forces has been related<sup>182</sup>. Evaluations of physical fitness programmes within the armed services of the North Atlantic Treaty Organization have been published<sup>183</sup>, and recommendations made for the physical fitness screening of American military personnel over thirty-five years of age<sup>184</sup>. Innovative activities and adaptability have been described in a physical activity and recreational programme in a ship at sea<sup>185</sup>, and the results of an innovative physical fitness test for British servicewomen of the Women's Royal Army Corps (WRAC) have been released<sup>186</sup>. The main aims of the innovatory scheme were:

1. To establish that women could successfully complete the test.
2. To study test-retest suitability.
3. To compare the new test with an established test of aerobic work capacity.
4. To demonstrate that the test could distinguish between women of different physical abilities.

5. To propose a fitness standard test based on the results.

During a five week implementation process it was found that agility, coordination, and determination improved rather than aerobic work capacity, but it was concluded that the physical fitness test was practical and acceptable.

Circuit training<sup>187</sup> and the Royal Canadian Air Force 5BX Plan<sup>188</sup> were two of several innovations in fitness training used by the RNPTB in the 1960's to attain muscular and circulorespiratory efficiency, and as an alternative the British Army's Physical Efficiency Programme Exercises<sup>189</sup> (PEPEX) were also made available in the Royal Navy. These innovations are referred to again when the RNPTB's search for a new approach to naval physical training is examined in Chapter Six of this study.

## 2. Specific Sources for the Study of Innovations in Physical Training in the Royal Navy

The material for this study was drawn from a wide variety of sources. The comprehensive collection of catalogues and indexing journals at the National Documentation Centre for Sport, Physical Education and Recreation, located at the University of Birmingham, provided impetus in the early stages of the study. Naval secondary sources were in part indicated from collatory volumes such as A Guide to the Sources of British Military History<sup>190</sup>. Military socio-cultural works such as Andrzejewski's Military Organizations and Society<sup>191</sup>, Higham's Armed Forces in Peacetime<sup>192</sup>, and Marwick's Britain in the Century of Total War, Peace and Social Change<sup>193</sup> gave background and perspective.

Histories of naval establishments in the vein of Oliver's H.M.S. Excellent<sup>194</sup>, the Royal Naval Gunnery School, and seagoing autobiographies like Yexley's The Inner Life of the Navy<sup>195</sup> provided glimpses of

earlier epochs of naval physical training, sport and recreation. Further background was gained from the impelling naval social histories by Lewis<sup>196</sup>, together with the works of Kemp<sup>197</sup>, Lloyd<sup>198</sup>, and Gardiner's<sup>199</sup> account of the evolution of the British Admiralty.

Standard secondary sources of the innovation literature were supplemented using the computer based facilities of the Department of Library and Information Studies of Liverpool Polytechnic. Extensive literature searches were initiated to on-line data bases in the United Kingdom, Canada, and America, including the British Library BLAISE, Systems Development Corporation ORBIT, the Social Science Citation Index DIALOG, and the National Institute of Education ERIC.

The study's extensive primary data were researched in various locations in the United Kingdom. Two types of former departmental records belonging to the Admiralty, War Office, and Air Ministry, provided valuable information on previous physical training and sport policies within military and naval organizational frameworks. The first type consists of records over thirty years old and formerly held at the Public Record Office, Chancery Lane, London, but now relocated at Kew. The second category are official records less than thirty years old, and as a general rule can not be made accessible to the public. However the writer was granted 'Privileged-Access' status by the Defence Secretariat of the Ministry of Defence. The information contained in these particular files was valuable in that it filled certain data gaps, but because of their restricted category great care has been taken not to disclose details that may be considered indiscreet or embarrassing to the Ministry of Defence. The major source of primary material however was the administrative files of the RNPTB departments based in Portsmouth. Within the bounds of security and confidentiality, policy statements, directives, and the vast correspondence of DNPTS, SCB and

HMS Temeraire, the Royal Naval School of Physical Training, were extensively searched and examined.

The primary source data were supplemented by materials and assistance from several libraries. The value of the Naval Historical Library located in the Express State Building, Earl's Court, London, lies in its ability to provide information on past and present organizations and administration of naval departments in addition to its comprehensive collection of books, documents and papers. Particularly useful were the early editions of Admiralty Handbooks of Physical Training<sup>200</sup> and the catalogues of Admiralty files held in the Public Record Office.

The library of the Department of Education and Science in Curzon Street, London, has an extensive selection of modern works on physical education, but the most valuable item for this study was the Grenfell Collection. This collection consisting of books, pamphlets, and papers on military and naval physical training was donated by Captain Grenfell D.S.O., a former Deputy Superintendent of Naval Physical Training from the formation of the RNPTB in 1903 until 1908, and Her Majesty's Inspector of Physical Training with the Board of Education from 1909 to his retirement in 1936, with distinguished naval service between 1914-1918 in World War One.

In a similar category is the Carnegie Collection located at the City of Leeds College of Education Library, Leeds Polytechnic, Beckett Park, Leeds. Its contents, largely donated by Mr. Major, formerly Her Majesty's Inspector of Physical Education, and former Principal of Carnegie College of Physical Education, and highly ranked officer of the Royal Army Physical Training Corps (RAPTC), reflect the principles and practices of physical training in the British Army and project a valuable contrast to the Royal Navy.



A comprehensive collection of handbooks and pamphlets relating to physical training can be found at the War Office Library, Whitehall, London. It is also worth noting that the Ministry of Defence Libraries regularly publish accession lists with an index available on request. Valuable too were the bibliographic references to the large naval collection housed in the City of Portsmouth Central Library. Occasional papers on physical training, sport, and recreation within the armed services were found in the Journal of the Royal United Services Institute in the Royal United Services Institute for Defence Studies Library in Whitehall; and Higham and Cox-Wing's<sup>201</sup> consolidated author and subject index to this series is indispensable.

Finally, a large number of periodicals and journals were extensively searched with varying degrees of success. Among those examined were Brassey's Annual, Army Quarterly, United Services Review, Naval Chronicle, Naval Review, Royal Air Force Quarterly, Royal Air Force Review, Soldier, and articles of the Navy Records Society. The lack of indexes to many of these publications accounted for some long and fruitless searches. More rewarding were Mind, Body and Spirit, the Journal of the RAPTIC, and The Clubswinger, the Journal of the RNPTB Association. Many Sport Control Board Yearbooks of the Army, Royal Air Force, Royal Marines and Royal Navy were referred to, and using the Aslib Index selected higher degree dissertations were consulted.

Finally in summary, the overview presented past and recent research findings and theories which illustrated the volume, diversity and confusion that characterizes the innovation literature. Within organizations it was shown that innovation is influenced by the characteristics of personnel, organizational factors, and the situational context, but there is little evidence to establish factorial primacy.

In considering innovation and curriculum studies, several models which have influenced educational change were presented. Social pressures leading to change were reviewed, and the problems of effective evaluation were highlighted. The underdeveloped nature of physical education curriculum theory was noted, and the education-physical education debate was examined. Problems relevant to the RNPTB, such as the hidden curriculum, compulsory participation, and optional activities, were identified. The paucity of physical education innovation research in the armed services was demonstrated, and the chapter closed with an identification of data material and sources.

Notes and References for Chapter Two

1. Rogers, E.M. & Shoemaker, F.F. Communication of Innovations: A Cross Cultural Approach. 2nd Edition. Free Press Macmillan. New York. 1981. p.49.
2. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.*
3. Guba, E.G. 'Diffusion of Innovations'. Educational Leadership. 25.4. 1968. pp.292-295.
4. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* pp.137-157.
5. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* p.52.
6. Charters, W.W. & Pellegrin, R.J. 'Barriers to the Innovation Process: Four Case Studies of Differentiated Staffing'. Educational Administration Quarterly. 9. 1. 1972. pp.3-14.
7. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.*
8. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* pp.54-55.
9. Bohla, H.S. 'The Configurational Theory of Innovation Diffusion'. Indian Educational Review. 2. 1967. pp.42-72.
10. Hemphill, H.D. 'A General Theory of Innovativeness'. Alberta J. Educational Research. 14. 2. June 1968. pp.101-114.
11. For an opposite view see Chin, R. 'The Utility of System Models and Developmental Models for Practitioners'. in Bennis, W.G. *et al.* The Planning of Change. Holt, Rinehart & Winston. New York. 1976. pp.90-102.
12. Leithwood, K.A. & Russell, H.H. 'Focus on Implementation'. Interchange. 4. 1. 1973. pp.10-25.
13. Downs, G.W. & Mohr, L.B. 'Conceptual Issues in the Study of Innovation'. Administrative Science Quarterly. 21. 1976. pp.700-714.
14. Brewer, G.D. 'On the Theory and Practice of Innovation'. Technology in Society. 3. 3. 1980. pp.337-363.
15. See Bennis, W.G. *et al.* 1976. *op cit.* especially Chapter 2 for an intellectual perspective on the planned change movement.
16. Bohla, H.S. 1967. *op cit.* pp.44-45.

17. Harding, J.M. *et al.* p.3. 'The Study of Curriculum Change'. Studies in Science Education 3. 1976. pp.1-30.
18. Leithwood, K.A. & Russell, H.H. 1973. *op cit.* p.24.
19. Thompson, V.A. 'Bureaucracy and Innovation'. Administrative Science Quarterly. 10. 1965. pp.1-20.
20. Burns, T. & Stalker, G.M. The Management of Innovation. Tavistock. 1968. pp.119-122.
21. Thompson, V.A. 1965. *op cit.* p.16.
22. Burns, T. & Stalker, G.M. 1968. *op cit.* pp.119-122.
23. Becker, S.W. & Whisler, T.L. p.467. 'The Innovative Organization: A Selective View of Current Theory and Research'. J. of Business. 40. 1967. pp.462-469.
24. Aiken, M. & Hage, J. 'The Organic Organization and Innovation'. Sociology. 5. 1971. pp.63-82.
25. Blau, P.M. & Scott, W.R. Formal Organizations. Routledge & Kegan Paul. 1970. pp.5-6.
26. Czepiel, J.A. 'Patterns of Interorganizational Communications and the Diffusion of a Major Technological Innovation in a Competitive Industrial Community'. Academy of Management J. 18. 1. 1975. pp.6-24.
27. Aiken, M. & Hage, J. 1971. *op cit.* p.80.
28. Thompson, V.A. 1965. *op cit.* p.11.
29. Evan, W.M. & Black, G. 'Innovations in Business Organizations: Some Factor Associated with Success or Failure of Staff Proposals'. J. of Business. 40. 1967. pp.519-530.
30. Evan, W.M. 'Organizational Lag'. Human Organizations. 25. 1966. pp.51-53.
31. Daft, R.L. 'A Dual Core Model of Organizational Innovation'. Academy of Management J. 21. 2. 1978. pp.193-210.
32. Shepard, H.A. 'Innovation-Resisting and Innovation-Producing Organizations'. J. of Business. 1967. 40. pp.470-477.
33. Zaltman, G. *et al.* Innovations and Organizations. John Wiley. New York. 1973. pp.158-167.
34. Zaltman, G. *et al.* 1973. *op cit.* p.159.
35. Zaltman, G. *et al.* 1973. *ibid.*

36. Utterback, J.M. 'Innovation in Industry and Diffusion of Technology'. Science. 183. 1974. pp.620-626.
37. Mohr, L.B. 'Determinants of Innovations in Organizations'. American Political Science Review. 63. 1969. pp.111-126.
38. Baldrige, J.V. & Burnham, R.A. 'Organizational Innovation: Individual, Organizational and Environmental Impacts'. Administrative Science Quarterly. 20. 1975. pp.165-176.
39. Hage, J. & Dewar, R. 'Elite Values Versus Organizational Structure in Predicting Innovation'. Administrative Science Quarterly. 18. 1973. pp.279-290.
40. SAPPHO stands for Scientific Activity Predictor from Patterns with Heuristic Origins. The report of selected innovations in the chemical and scientific instruments industries is contained in:- Science Policy Research Unit. University of Sussex. Success and Failure in Industrial Innovation. Centre for the Study of Industrial Innovation. 1971.
41. SAPPHO Project Study. 1971. *op cit.* p.5.
42. Kimberly, J.R. & Evanisko, M.J. 'Organizational Innovation: The Influence of Individual, Organizational, and Contextual Factors on Hospital Adoption of Technological and Administrative Innovations'. Academy of Management J. 24. 4. 1981. pp.689-713.
43. March, J.G. 'Footnotes to Organizational Change'. Administrative Science Quarterly. 26. 1981. pp.563-577.
44. Schon, D.A. Beyond the Stable State. Temple Smith. 1971.
45. Schon, D.A. 1971. *op cit.* p.85.
46. MacDonald, B. & Walker R. Changing the Curriculum. Open Books. 1976. p.12.
47. Rudduck, J. & Kelly, P. The Dissemination of Curriculum Development. NFER Publishing Company. 1976. p.103.
48. Whitehead, D.J. The Dissemination of Educational Innovations in Britain. Hodder & Stoughton. 1980. pp.2-5.
49. Chin, R. & Benne, K.D. 'General Strategies for Effecting Changes in Human Systems'. in Bennis, W.G. *et al.* 1976. *op cit.* pp.22-45.

50. Bolam, R. 'The Management of Educational Change Towards a Conceptual Framework'. in Harris, A. *et al.* Curriculum Innovation. Croom Helm. 1975. pp.273-290.
51. Hoyle, E. 'Planned Organizational Change in Education'. Research in Education. 3. 1970. pp.1-21.
52. Havelock, R.G. Planning for Innovation through the Dissemination and Utilization of Knowledge. Centre for Research and Utilization of Knowledge. Ann Arbor. 1971.
53. Willower, D.J. 'Barriers to Change in Educational Organizations'. Theory into Practice. 2. 5. 1963. pp.257-263.
54. Hoyle, E. 1970. *op cit.* pp.1-21.
55. Gross, N. *et al.* Implementing Organizational Innovations. Harper & Row. New York. 1971.
56. Gross, N. *et al.* 1971. *op cit.* p.209.
57. Klein, D. 'Some Notes on the Dynamics of Resistance to Change: The Defender Role'. in Bennis *et al.* 1976. *op cit.* pp.117-124.
58. Corwin, R.G. 'Innovations in Organizations: The Case of Schools'. Sociology of Education. 48. 1. 1975. pp.1-37.
59. Corwin, R.G. 1975. *op cit.* p.31.
60. Harding, J.M. *et al.* 1976. *op cit.* p.6.
61. Clarke, T.N. 'Institutionalization of Innovations in Higher Education'. Administrative Science Quarterly. 13. 1968. pp.1-25.
62. Ross, R.D. 'The Institutionalization of Academic Innovations: Two Models'. Sociology of Education. 49. 1976. pp.146-155.
63. Shaw, K.E. 'Negotiating Curriculum Change in a College of Education'. in Reid, W.A., Walker, D.F. Case Studies in Curriculum Change. Routledge & Kegan Paul. 1975. pp.54-90.
64. Shaw, K.E. 1975. *op cit.* p.82.
65. Owen, J.G. The Management of Curriculum Development. Cambridge University Press. Cambridge. 1973.
66. Banks, L.F. 'Curriculum Developments in Britain 1963-8'. J. Curriculum Studies. 1. 3. 1969. pp.249-259.
67. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* pp.8-10.

68. Susskind, C. & Zybkw, M. 'The Ecology of Innovation'. in Kelly, P., Kransberg, M. (Eds.). Technological Innovation: A Critical View of Current Knowledge. San Francisco Press. San Francisco. 1978. pp.1-17.
69. Lawton, D. Social Change, Education Theory and Curriculum Planning. Hodder & Stoughton. 1979. pp.123-138.
70. Waring, M. Social Pressures and Curriculum Innovation. Methuen. 1979.
71. Waring, M. 1979. *op cit.* p.8.
72. MacDonald, B. & Walker, R. 1976. *op cit.* p.3.
73. Whitehead, D.J. 1980. *op cit.*
74. Nicodemus, R.B. & Marshall, D. 'Familiarity of Headteachers with Twenty-Five New Curriculum Projects'. Educational Studies. 1. 3. 1975. pp.191-200.
75. Steadman, S.D. *et al.* Impact and Take Up Project. A First Interim Report to the Programme Committee of the Schools Council. Schools Council. 1978.
76. Whitehead, D.J. 1980. *op cit.* p.58.
77. Lawton, D. 1979. *op cit.* pp.119-120.
78. Wise, A.E. 'Why Educational Policies Often Fail: The Hyper-rationalization Hypothesis'. J. Curriculum Studies. 9. 1. 1977. pp.43-57.
79. Biddle, D.S. An Investigation into the Use of Curriculum Theory in the Formulation of a Systems Model for Constructing and Evaluating Secondary School Curricula in England and Wales. Ph.D. Thesis. Institute of Education. University of London. 1975.
80. Cooper, K. The Diffusion of Curriculum Innovation: The Examples of the Schools Council's Project History, Geography and Social Science. Ph.D. Thesis. University of Liverpool. 1978.
81. Reid, W.A. & Walker, D.F. Case Studies in Curriculum Change. Routledge & Kegan Paul. 1975.
82. Rudduck, J. Dissemination of Innovation: The Humanities Curriculum Project. Evans Methuen Educational. 1976.
83. Waring, M. Aspects of the Dynamics of Curriculum Reform in Secondary School Science. Ph.D. Thesis. Chelsea College. University of London. 1975.

84. Humble, S. 'Curriculum Dissemination: The Art of the Impossible'.  
Cambridge J. of Education. 2. 3. 1971. pp.139-149.
85. Berman, P. & McLaughlin, M.W. 'Implementation of Educational  
Innovation'. Educational Forum. 40. 3. 1976. pp.345-370.
86. MacDonald, B. & Walker, R. 1976. *op cit.* pp.45-50.
87. Pitman, A. 'The Necessary Distortion of Disseminated Innovations'.  
J. Curriculum Studies. 13. 3. 1981. pp.253-256.
88. Fullan, M. 'Overview of the Innovative Process'. Interchange. 3.  
1972. pp.1-45.
89. Leithwood, K.A. 'The Dimensions of Curriculum Innovation'.  
J. Curriculum Studies, 13. 1. 1981. pp.25-36.
90. Fullan, M. & Pomfret, A. 'Research on Curriculum and Instruction  
Implementation'. Review of Educational Research. 47. 1. 1977.  
pp.335-397.
91. Whitehead, D.J. 1980. *op cit.* pp.58-59.
92. Russell, H.H. *et al.* The Peterborough Project. The Ontario  
Institute for Studies in Education. Toronto. 1973. p.106.
93. House, E.R. The Politics of Educational Innovation. McCulrhan.  
Berkeley. California. 1974. p.11.
94. Rudduck, J. 'Dissemination in Practice'. Cambridge J. of Education.  
3. 3. 1973. pp.143-158.
95. Harding, J.M. *et al.* 1976. *op cit.* p.22.
96. Condensed from Gibby, B. 'Curriculum Evaluation. With Reference to  
Some Projects'. in Lawton, D. *et al.* Theory and Practice of  
Curriculum Studies. Routledge & Kegan Paul. 1978. pp.166-175.
97. Tyler, R.W. Basic Principles of Curriculum and Instruction.  
University of Chicago Press. Chicago. 1949. pp.105-106.
98. Kerr, J.F. (Ed.). Changing the Curriculum. University of London  
Press. 1970. pp.24-25.
99. Wheeler, D.K. Curriculum Process. University of London Press. 1967.  
pp.48-50.
100. Walker, D.F. 'What Curriculum Research?'. J. Curriculum Studies.  
5. 1. 1973. pp.58-72.



101. Sockett, H.T. The Philosophical Basis of Curriculum Planning. Ph.D. Thesis. University of London. 1974.
102. Harlen, W. 'Some Practical Points in Favour of Curriculum Evaluation'. J. Curriculum Studies. 3. 2. 1971. pp.128-134.
103. Smith, D.L. & Frazer, B.J. 'Towards a Confluence of Quantitative and Qualitative Approaches to Curriculum Evaluation'. J. Curriculum Studies. 12. 4. 1980. pp.367-370.
104. Kemmis, S. & Robottom, I. 'Principles of Procedure in Curriculum Evaluation'. J. Curriculum Studies. 13. 2. 1981. pp.151-155.
105. Eisner, E.W. 'Humanistic Trends and the Curriculum Field'. J. Curriculum Studies, 10. 3. 1978. pp.197-204.
106. Becker, T. & Maclure, S. The Politics of Curriculum Change. Hutchinson. 1978. p.138.
107. Lawton, D. 'Curriculum Evaluation: New Approaches'. in Lawton, D. *et al.* Theory and Practice of Curriculum Studies. 1978. pp.176-201.
108. Elliott, J. 'Evaluating the "Progress in Learning Science" Dissemination'. Interim Working Papers. No.3. Cambridge Institute of Education. 1977. p.2.
109. Stake, R.E. 'The Countenance of Educational Evaluation'. Teachers College Record. 68. 7. 1967. pp.523-540.
110. Stake, R.E. 'The Case Study Method in Social Inquiry'. Educational Research. 7. 2. 1978. pp.5-8.
111. Shaw, K.E. 'Understanding the Curriculum: The Approach Through Case Studies'. J. Curriculum Studies, 10. 1. 1978. pp.1-17.
112. Stenhouse, L. 'Case Study and Case Records: Towards a Contemporary History of Education'. British Educational Research Journal. 4. 2. 1978. pp.21-39.
113. Leinhardt, G. 'Observation As A Tool for Evaluation of Implementation'. Instructional Science. 5. 1976. pp.343-364.
114. Parlett, M. & Hamilton, D. 'Evaluation as Illumination'. in Tanney, D. (Ed.) Curriculum Evaluation Today: Trends and Implications. Macmillan. 1976. pp.84-101.
115. Smith, D.L. & Frazer, B.J. 1980. *op cit.* pp.367-370.

116. Hall, G.E. & Loucks, S.F. *et al.* 'Levels of Use of the Innovation: A Framework for Analyzing Innovation Adoption'. J. Teacher Education. 26. 1. 1975. pp.52-56.
117. Hall, G.E. & Loucks, S.F. 'A Developmental Model for Determining Whether the Treatment is Actually Implemented'. American Educational Research Journal. 14. 3. 1977. pp.263-276.
118. Leithwood, K.A. & Montgomery, D.J. 'Evaluating Program Implementation'. Evaluation Review. 4. 2. 1980. pp.193-214.
119. Lutterodt, S.A. 'A Systematic Approach to Curriculum Evaluation'. J. Curriculum Studies. 7. 2. 1975. pp.135-150.
120. McIntosh, P.C. 'The Curriculum of Physical Education'. in Kane, J.E. (Ed.). Curriculum Development in Physical Education. Crosby Lockwood Staples. 1976. pp.13-45.
121. Bilborough, A. & Jones, P. Developing Patterns in Physical Education. University of London Press. 1973.
122. Whitehead, N.J. & Hendry, L.B. Teaching Physical Education in England: Description and Analysis. Lepus Books. 1976.
123. Lockwood, A.M. 'Movement Education: An Innovation in the Physical Education Curriculum'. Physical Education Review. 1. 2. 1978. pp.129-150.
124. Bayman, D.M. A Cross Cultural Analysis of Curriculum Development Projects in Physical Education. M.Ed. Thesis. University of Liverpool. 1980.
125. Schon, D.A., 1971. *op cit.*
126. Havelock, R.G. 1971. *op cit.*
127. Bolam, R. 1975. *op cit.*
128. Jewett, A.E. 'The Status of Physical Education Curriculum Theory'. Quest. 32. 2. 1980. pp.163-173.
129. Bobbitt, F. The Curriculum. Houghton Mifflin. Boston. 1918. Reprint Edition. Arno Press and The New York Times. New York. 1971.
130. James, J.M. Education and Physical Education. Bell & Sons. 1967.
131. Kerr, J.F. 'General Review of Recent Attempts to Reform the Curriculum'. in Glaister, I.K. (Ed.). Studies in Physical

- Education. A.T.C.D.E. Conference Report. Lady Mabel College of Education. 1973. pp.5-17.
132. Taylor, P.H. 'Curricula in Transition: The Case of Physical Education'. in Glaister, I.K. (Ed.). 1973. *op cit.* pp.18-28.
133. Cameron, W.McD. & Pleasance, P. Education in Movement: School Gymnastics. Blackwell. Oxford. 1965.
134. Pallett, G.D. Modern Educational Gymnastics. Pergamon. 1967.
135. Randall, M. Basic Movement: A New Approach to Gymnastics. Bell & Sons. 1963.
136. Morison, R. A Movement Approach to Educational Gymnastics. Dent. 1969. p.2.
137. Andrews, J. Essays on Physical Education and Sport. Stanley Thornes. Cheltenham. 1979.
138. Randall, M.W. *et al.* Objectives in Physical Education. Bell & Sons. 1966. pp.147-154.
139. Andrews. 1979. *op cit.* p.25.
140. Sharpe, P.J. 'A Consideration of the Evaluation of Core Elements of the Primary School Physical Education Programme'. Bulletin Physical Education. 14. 3. 1978. pp.26-434.
141. Hardman, K. 'The Concept of Assessment'. in Glaister, I.K. (Ed.). Assessment of Physical Education in Schools and Colleges. Report of the Inaugural Conference of the British Council of Physical Education. Coventry College of Education. 1978. pp.2-4.
142. Kane, J.E. Physical Education in Secondary Schools. Schools Council Research Studies. Macmillan. 1974.
143. Kane, J.E. 'The Schools Council Inquiry: Interpretation and Social Context'. p.78 in Kane, J.E. (Ed.). 1976. *op cit.* pp.70-95.
144. Kane, J.E. 1976. *op cit.* p.79.
145. Curriculum 11-16: Supplementary Working Papers by Her Majesty's Inspectorate. Department of Education and Science. June 1979. pp.8-14.
146. Scottish Education Department. The Structure of the Curriculum in the Third and Fourth Years of the Scottish Secondary School. H.M.S.O. 1977.

147. Gibbon, A. 'The Case for Physical Education: An Overview'.  
Bulletin Physical Education. 14. 3. 1978. pp.5-11.
148. Gibbon, A. 1978. *op cit.* pp.7-9.
149. Groves, R. 'Stressing the Education in Physical Education'.  
Physical Education Review. 4. 1. 1981. pp.38-43.
150. Lawton, D. Class, Culture and the Curriculum. Routledge & Kegan Paul. 1978. pp.70-88.
151. Williams, E.A. 'Physical Education in the Primary School: A Study of Teachers Involved'. Bulletin Physical Education. 15. 3. 1979. pp.5-13.
152. Renshaw, P. 'Human Movement Studies and the Curriculum'. in Kane, J.E. (Ed.). 1976. *op cit.* pp.46-69.
153. Lyle, J. p.8. 'The Hidden Dimensions in the Physical Education Curriculum'. Scottish J. Physical Education. 8. 2. 1980. pp.8-11.
154. Bailey, C. 'Games, Winning and Education'. Cambridge J. Education. 5. 1. 1975. pp.40-50.
155. Aspin, D. 'Games, Winning and Education: Some Further Comments'. Cambridge J. Education. 5. 1. 1975. pp.51-61.
156. Wilcox, R. 'Physical Education or Sport? Finding the Balance'. British J. Physical Education. 11. 6. 1980. p.149.
157. Copeland, I.C. 'The Function of Sport in Secondary Education'. Educational Review. 25. 1. 1972. pp.34-45.
158. Thompson, K.B. 'The Point of the Activity'. Cambridge J. Education. 5. 3. 1975. pp.150-152.
159. Dunlop, F. 'Bailey on Games, Winning and Education'. Cambridge J. Education. 5. 3. 1975. pp.153-160.
160. Wilcox, R. 1980. *op cit.* p.149.
161. Condensed from Bilborough, A., Jones, P. 1973. *op cit.*
162. Whitehead, N.J. & Hendry, L.B. 1976. *op cit.* p.18.
163. Whitehead, N.J. & Hendry, L.B. 1976. *op cit.* p.41.
164. Department of the Environment. Sport and Recreation. White Paper Cmnd. 6200. H.M.S.O. 1975. p.17.

165. Stanton, J.W. 'Option or Compulsion in Further Education Physical Education'. p.16 in Glaister, I.K. (Ed.). Physical Education in Further Education. N.A.T.F.H.E. Conference Report. Sheffield Polytechnic. 1980. pp.13-17.
166. Casson, B.S. 'Curriculum Development and Role Expansion in Further Education Physical Education'. in Glaister, I.K. (Ed.). 1980. *op cit.* pp.23-26.
167. Palmer, R. 'Physical Education in Schools: Current Issues and Solutions'. Physical Education Review. 1.2. 1978. pp.101-110.
168. Palmer, R. 1978. *op cit.* p.105.
169. Daines, P.F. 'Physical Education at Brockenhurst 6th Form College'. in Glaister, I.K. (Ed.). Physical Education for 16-18 Year Old. Conference Report. Warwick University. 1978. pp.8-18.
170. Skinsley, M. 'Options'. Bulletin Physical Education. 16. 3. 1980. pp.25-29.
171. Luff, I.V. 'Curriculum Evaluation: A Neglected Process'. Physical Education Review. 3. 1. 1980. pp.18-33.
172. Stenhouse, L. 'Some Limitations of the Use of Objectives in Curriculum Research and Planning'. Pedagogica Europaca. 1971. pp.73-83.
173. Taylor, P.H. 'Curriculum Planning'. Paper presented to Teacher Involvement in Curriculum Planning Conference. North West Counties Physical Education Association. Manchester. 1972. Cited by Almond, L. 'Teacher Involvement in Curriculum Planning'. in Kane, J.E. (Ed.). 1976. *op cit.* pp.96-121.
174. PRO/WO/32/13513.
175. The best known example is Captain Jim Fox, individually placed 4th in the 1972 Olympic Games, and individually placed 15th and captain of the British Modern Pentathlon Team which won the Gold Medal in the 1976 Olympic Games; but support also extends to resource and facility provision from non-public funds.
176. DNPTS/18/1/B.
177. Brady, D.K. 'Apathletics'. J. Royal Naval Physical Training Branch Association. 1974. pp.19-21.

178. Murray, A. Modern Weight Training. Nicholas Kaye. 1963. p.10.
179. DNPTS letter March 6th 1959 in TEM/774/3.
180. Hatch, G.S. 'Adventure Training and Recruiting: Some Suggestions'.  
J. Royal United Services Institute. November 1961. pp.486-490.
181. Taylor, E. Training With Weights. John Murray. 1962. p.107.
182. Bar-Khama, A. *et al.* Israeli Fitness Strategy: A Complete Program of Diet and Exercise based on the Training System of the Israel Defense Force. Morrow. New York. 1980.
183. Proceedings of the Research Study Group Seminar on Symposium on Physical Fitness with Special Reference to Military Forces.  
Defence and Civil Institute of Environmental Medicine. Toronto. 1978.
184. Kowal, D.M. & Daniels, W.L. 'Recommendations for the Screening of Military Personnel over 35 Years of Age for Physical Training Programs'. American J. Sports Medicine. 7. 3. 1979. pp.186-190.
185. Thompson, L.W. 'Physical Activity and Recreation Program for a Training Vessel at Sea'. J. Physical Education and Recreation. 47. 2. 1976. pp.43-46.
186. Amor, A.F. & Taylor, S. 'A Step-Test of Fitness for British Army Women'. Defence and Civil Institute of Environmental Medicine. 1978. *op cit.* pp.189-201.
187. See Morgan, R.E. & Adamson, G.T. Circuit Training. Bell & Sons. 1965.
188. Royal Canadian Air Force. 5BX Plan for Fitness. Queen's Printer and Controller of Stationery. Ottawa. 1958.
189. Ministry of Defence. Physical Efficiency Programme Exercises. Army Code 70173. H.M.S.O. 1966.
190. Higham, R. (Ed.). A Guide to the Sources of British Military History. University of California Press. Berkeley. 1971.
191. Andrzejewski, S. Military Organizations and Society. University of California. Berkeley. 2nd Edition. 1968.
192. Higham, R. Armed Forces in Peacetime. Foulis. 1962.

193. Marwick, A. Britain in the Century of Total War, Peace and Social Change. 1900-1967. Bodley Head. 1967.
194. Oliver, R.D. H.M.S. Excellent 1830-1930. Charpentier. Portsmouth. 1930. see also Statham, E.P. The Story of the Britannia. Cassell. 1904. and Steel, G. Story of the Worcester. Harrop. 1962.
195. Yexley, L. The Inner Life of the Navy. Pitman. 1908. see also Knock, S. Clear Lower Deck. Allan. 1932. and Riley, P. Memories of a Blue-Jacket 1872-1918. Sampson Low Marston. 1921.
196. Lewis, M.A. The Navy of Britain: A Historical Portrait. Allen & Unwin. 1948. and A Social History of the Navy 1793-1815. Allen & Unwin. 1960. and The Navy in Transition 1814-1864. A Social History. Hodder & Stoughton. 1965.
197. Kemp, P.K. Victory At Sea. Muller, 1957. and The British Sailor: A Social History of the Lower Deck. Dent. 1970. and 'Royal Navy 1939-45'. in Higham (Ed.). 1971. *op cit.* pp.470-486.
198. Lloyd, C. The Nation and the Navy: History of Naval Life and Policy. Cresset. 1961. and The Health of Seamen, Navy Records Society. 1965. and with Coulter, J.L.S. Medicine and the Navy 1815-1900. Livingstone. 1963.
199. Gardiner, L. The British Admiralty. Blackwood. 1968.
200. A comprehensive list of the Handbooks of Physical Training known to exist and consulted by the writer is given in the bibliography.
201. Higham, R. & Cox-Wing, K. (Eds.). Consolidated Author and Subject Index to Journal Royal United Services Institute. University Micro-films. Ann Arbor. Michigan. U.S.A. 1964.

### Chapter Three

#### The Royal Naval Physical Training Branch

The aim of this chapter is to present background and detail sufficient to provide the reader with a working knowledge that will facilitate a deeper appreciation and understanding of the RNPTB and the study's arguments, goals and intentions. Through necessity the chapter is partly descriptive, but by discussion and use of an approach endorsed by Smith and Keith's Anatomy of Educational Innovation<sup>1</sup> in which they examined the formal doctrine of Kensington School, certain issues crucial to this study are illuminated and analysed. Much of the information about naval organization embodied in this chapter is derived from personal involvement and experience with the RNPTB during the research period.

An initial perspective from which to view the RNPTB is the utilitarian role that physical training, sport, and recreation plays within the context of official training in the Royal Navy. The general and specialized naval training of ratings is divided into three parts. Part One is the basic induction training required by all new entrants to the navy. Part Two constitutes the basic professional training in the branch specialization for which they have been selected. Part Three is the consolidation of specialist training at sea. Physical training is a major and compulsory component of the Part One curriculum, and also features as such at some Part Two establishments. The extension of compulsory physical training beyond these limits is variable in terms of time allocations, manpower useage and efficiency, but voluntary participation in sport and recreation is encouraged in all ships and establishments.

Following the guidelines advocated by Smith and Keith<sup>2</sup>, further



background details and deeper insights can be gained by exploring selected dimensions of the RNPTB's formal doctrine. An explanation and justification for this approach is supplied by:

All groups and organizations, in the course of their development, build a point of view or perspective about themselves, their problems, and their environment. These points of view vary in the degree to which they are visionary, conscious, and codified. We have come to use the term "formal doctrine" to represent the complex combination of a point of view that is visionary, that is highly conscious, and that is highly codified. Ideology, a visionary theorizing, could serve about as well, although it tends not to emphasize the conscious and codified aspects. The doctrine includes an elaborated system of concepts, spelling out the entire structure of means and ends within an organization<sup>3</sup>.

The dimensions selected for examination in this chapter are mandate, institutional plan, and image. The mandate is the formal charge or directive given by a legitimate authority, which in the case of the RNPTB is the Admiralty Board. The institutional plan is the conception of the doctrine together with the attendant organizational structures which operate to implement naval physical training, sport and recreation. The image is the RNPTB's phrasing and presentation of its doctrine and ethos to the Royal Navy and the public.

#### 1. The Mandate

Weber<sup>4</sup> has indicated the inevitability of bureaucracy in large scale military organizations, but within the vast and complex bureaucracy of the Royal Navy, features of the RNPTB's mandate can be clearly identified. Charged with duties to promote naval physical training, sport and recreation, the mandate has established a separate identity and bestowed formal organization status upon the RNPTB. Consequent of the RNPTB being deliberately established for achieving predetermined goals:

it is characterized by prescribed roles, and authority structure, and a formally established system of rules and regulations to govern the behaviour of its members<sup>5</sup>.

In its most authoritative form the mandate appears in various articles of The Queen's Regulations for the Royal Navy. Collectively these articles closely or broadly define the manner in which naval physical training, sport and recreation should be carried out. For example, Article 0884 prescribes the duration, frequency, manner and minimum water temperatures for swimming instruction, together with detailed instructions regarding temporary or permanent swimming disability, the requirements of the naval swimming test, the recording of instruction given, and the notations to be made on service certificates. By contrast Articles 3191 and 3192 delineate the duties of Physical Training Officers, and Sports Officers of ships and establishments in very general terms. Elsewhere Article 2919 broadly states the responsibilities of Commanding Officers:

He is to arrange for the promotion and organization of sports competitions on a broad and balanced basis to allow all officers and men the opportunity for full participation in games, sports and other forms of recreation<sup>6</sup>.

The mandate brings other elements to bear on naval physical training, sport, and recreation, for while it has created a separate identity for the RNPTB, it also functions to emphasize the link of responsibility not only to the Admiralty Board but to all personnel of the Royal Navy. This is a responsibility not shared by the majority of naval specialist branches. The response of the RNPTB has been to articulate its own long term goals to secure:

The harmonious and progressive development of the body, through balanced and enjoyable exercise. To produce men who are physically fit and thus able to perform their duties more efficiently. To foster team spirit, this being an essential part of everyday life in the service<sup>7</sup>.

The validity of underpinning the rationale of naval physical training, sport and recreation with non-physical concepts is questionable but, as Kenyon<sup>8</sup> argues, physical activities can generate highly

influential social models dependent upon the degree to which they are part of the value system of the social unit in question. It is precisely in this context that physical activities are valued in the Royal Navy as agents of socialization. Great emphasis is placed upon participation in sport and recreation to inculcate loyalty, pride in 'The Service', and team spirit. Compulsory physical training in the Part One training establishments also secures a calculability of behaviour which is the essence of naval discipline.

An additional and important element of the mandate is the almost continuous drive for economy and efficiency which has dominated not only the RNPTB but all branches of the armed services since the end of the Second World War. Investigations in the early 1960's by the Royal Naval School of Management revealed organizational and administrative shortcomings in the navy<sup>9</sup>, and subsequent Ministry of Defence policy has developed this theme to secure economic and effective use of manpower. Within the mandate for naval physical training, sport and recreation, the main developments have been<sup>10</sup>:-

1. Expanded terms of reference and statements of improvement objectives for all RNPTB personnel.
2. The provision of quantitative means of performance such as the standardization of manpower allocations and the introduction of costing systems.
3. The elimination of duplication by the analysis of tasks and training syllabuses expressed as operational performance standards.
4. The introduction of derived organizational structures to separate the primary functions of training design and training execution.

The first three innovations listed above are new kinds of change experienced by the RNPTB in the post 1945 era and certain aspects of them are later raised and examined, but at this point it is germane to note

variations of degree have occurred in their adoption and implementation. The causes of this variation are not immediately obvious, but in some way the essentially voluntary and democratic nature of naval sport and recreation has inhibited the innovative processes. By contrast, more success has been apparent in physical training and the preparation of instructors where opportunities are available to formalize instructional methods and structure syllabus content.

A final but most vital element influencing the mandate is the RNPTB's obligation to comply with the vast complexity of Queen's Regulations, Defence Council Instructions, and commands. Responses to directives such as those which particularly aim for economy and efficiency determine the RNPTB's degree of innovativeness, but the concrete and tangible mandate serves:

in clarifying the "supportive-non supportive" dimension of the environment. As organizational alternatives are raised, explored, and evaluated, the mandate is the template indicating which alternatives will be supported, which will be rejected, or which will be responded to with lukewarm interest<sup>11</sup>.

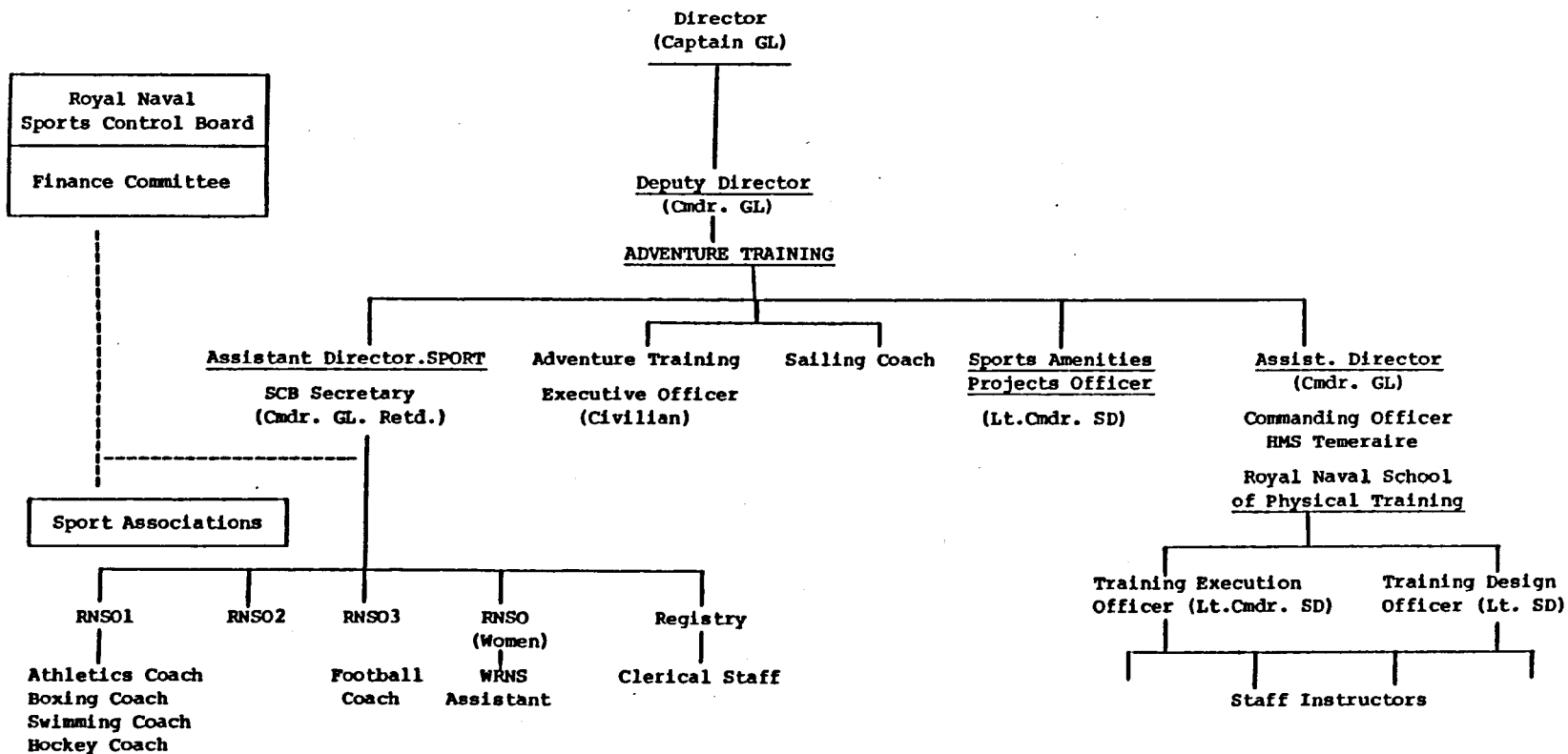
## 2. The Institutional Plan

Institutional plans of military organizations such as the RNPTB are characteristically highly formalized with rules, regulations, procedures, and organizational hierarchies. The organizational structures of the RNPTB, consisting of The Directorate of Naval Physical Training and Sport (DNPTS), The Royal Navy Sports Control Board (SCB), and The Royal Naval School of Physical Training (HMS Temeraire), are indicated in Figure 1 and described below.

### a. The Directorate of Naval Physical Training and Sport (DNPTS)

Located at HMS Nelson, Portsmouth, the DNPTS is a Ministry of Defence navy department headed by a Captain, accountable for all policy

**Figure 1**  
**Organizational Structure of RNPTB**



<b>Key:</b>	RNSO	Royal Navy Sports Officer
	GL	General List
	SD	Special Duties
	Cmdr.	Commander
	Lt.Cmdr.	Lieutenant Commander
	Lt.	Lieutenant
	SCB	Sports Control Board
	WRNS	Women's Royal Naval Service

aspects of physical training, sport, recreation and adventure training. The present organization has evolved over the last decade and reflects the Admiralty Board's continuing recognition of the utilitarian role to be played by physical and recreational activities in the navy. The close relationship between naval operational training and physical training, sport, and recreation, in terms of discipline, morale and physical wellbeing, demands a clearly defined policy recognized as logical and practical that effectively aids promotion, control, finance, and provides representation at higher administrative levels within the navy and the Ministry of Defence. It is for this reason that the DNPTS represents the Royal Navy on combined services committees and liaises with national governing bodies of sport.

Through a Deputy Director the DNPTS directs policy and finance for the conduct of adventure training, and oversees all major expeditions sponsored by the Royal Navy or led by naval personnel. The other important position within DNPTS is that of Sports Amenities Projects Officer (SAPO), who coordinates the trial and evaluation of equipment and provides specialist advice on matters of scale, layout, and design for naval sport and recreation facilities.

b. The Royal Navy Sports Control Board (SCB)

Under the presidency of the Second Sea Lord the SCB is the governing body for all recognized naval sports associations. Constituent members of the board include representatives from the Ministry of Defence and naval commands and directorates. The SCB's aims can be summarized as follows<sup>12</sup>:-

1. To encourage sports and games amongst the personnel of the Royal Navy, Royal Marines, Women's Royal Naval Service and the naval nursing services.

2. To coordinate and assist the Royal Naval Sports Associations.
3. To assist financially in providing recreational facilities which are not a legitimate charge on public funds.
4. To make grants and loans to ships and shore establishments to purchase sports equipment.
5. To provide a liaison between Royal Navy Sports Associations and similar national and service governing bodies.
6. To assist naval personnel selected for international trials and competitions.

The SCB meets twice a year and its financial committee quarterly, but the day to day work is carried out by the Royal Navy Sports Office. This administrative unit consisting of four retired physical training officers and a serving officer from the Women's Royal Naval Service (WRNS), is supervised by a retired officer appointed as an Assistant Director who also acts as Honorary Secretary to the SCB.

The primary responsibilities of the Royal Navy Sports Office include<sup>13</sup>:-

1. Logistic arrangements and supervision of all sporting events above Command level.
2. Maintenance of accounts and control of expenditure of naval sports association funds.
3. Supervision of appointed sport coaches.
4. Planning, negotiation and promulgation of annual programmes and fixtures.
5. Royal Navy representation on equivalent combined services and other sports committees, and liaison with the national press.

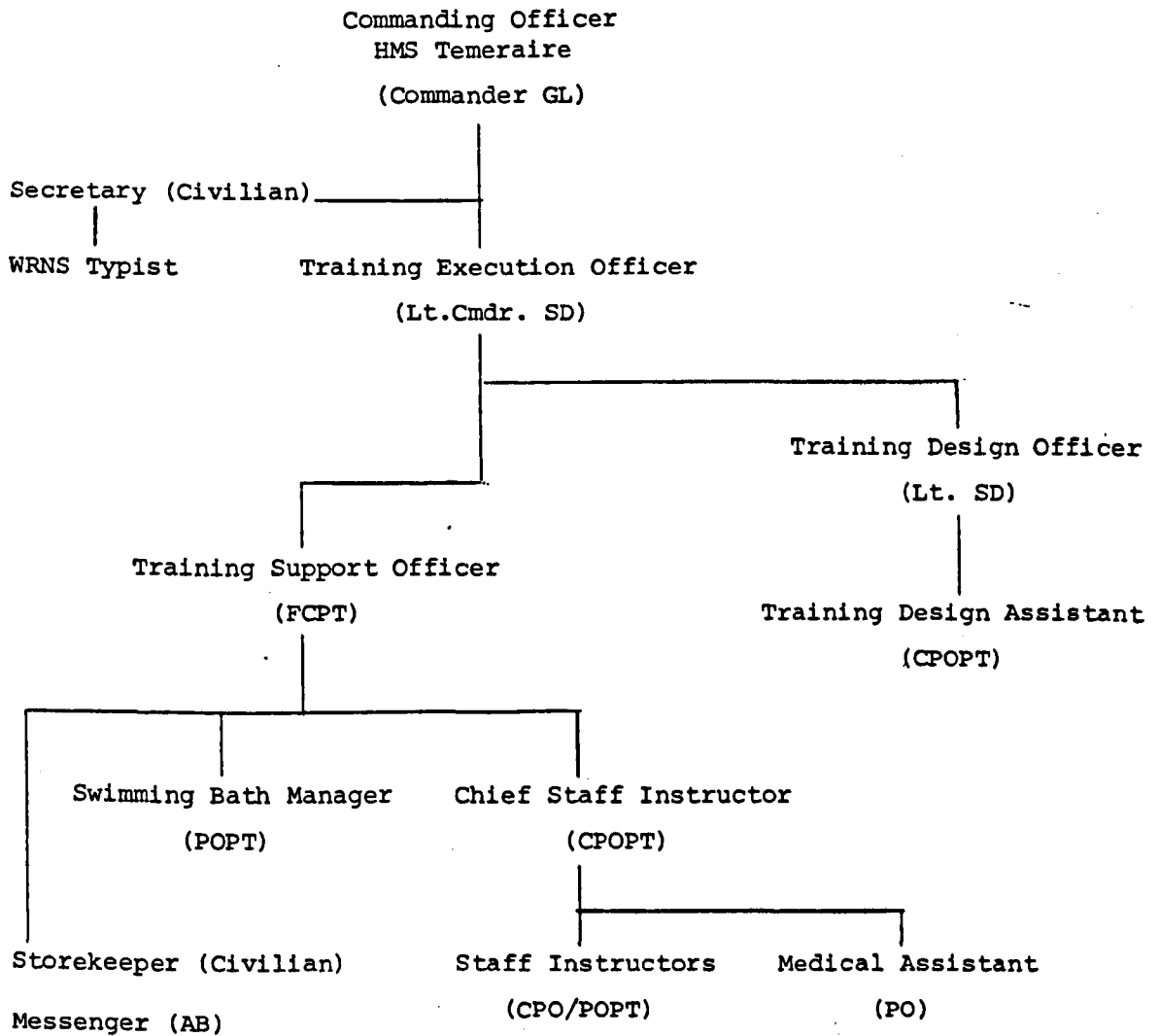
c. The Royal Naval School of Physical Training (HMS Temeraire)

Built in 1910, HMS Temeraire has ageing facilities long past their best comprising of one large gymnasium, an indoor swimming pool, changing rooms and classrooms. At the time of writing, plans to relocate to a new purpose-built sport and recreation complex have been suspended for economic reasons.

The main tasks of HMS Temeraire are to conduct career training courses for instructors who implement physical training programmes in ships and naval establishments, provide coaching, officiating and proficiency sport courses for selected personnel, and offer acquaintance courses for naval officers.

The organizational structure of HMS Temeraire, shown in Figure 2 below, requires little comment at this stage except to emphasize that the innovations for economy and efficiency referred to earlier are reflected in the derived hierarchy which separates the training design, support and execution functions. This separation was advocated because no significant increase in the availability of manpower could be anticipated in the national reductionist defence policies of the 1970's and 1980's. It was therefore postulated that the achievement of naval aims depended on the identification of priorities and the more effective use of manpower. To this end all career courses within the RNPTB are cost effected and based on behavioural objectives. Instructor allocations to ships and establishments have been standardized, and all appointments carry terms of reference, job descriptions and operational performance standards. For example, job specifications for all grades of instructor rating have been compiled based on percentage time involvement in administration and coaching of team and racquet games, aquatics, athletics, gymnastics, combat sports, recreational activities, and general fitness training and testing<sup>14</sup>.



Figure 2Organizational Structure of Royal Naval School  
of Physical TrainingKey:-

Lt. Cmdr.	Lieutenant Commander	FCPT	Fleet Chief Physical Trainer
Lt.	Lieutenant	CPOPT	Chief Petty Officer Physical Trainer
GL	General List	POPT	Petty Officer Physical Trainer
SD	Special Duties	PO	Petty Officer
		AB	Able-bodied Seaman

d. Formalization and Rank Differential

A significant element of the formalization within the RNPTB is the inherence of authority in a particular appointment rather than in the person. The maintenance of power is vested in status distance which is sustained by graded responsibilities and privileges closely defined by rank. In the Royal Navy a wide status distance exists between commissioned officers and ratings, but within the RNPTB there is a distinction between officers that has ramifications for this study. Therefore in anticipation of later discussion the inherence of authority with rank and status differentials within the RNPTB is explained.

Dependent on entry and selection procedures, terms of engagement and specialist training, naval officers are categorized to the Supplementary List (SL), General List (GL), and Special Duties (SD). SL officers serving short term engagement in branches with a requirement for junior officers, such as the Royal Naval Air Service, are not relevant to this issue, but the distinctions drawn between GL and SD officer categories in the RNPTB are most significant.

GL officers are trained as Midshipmen and Sub Lieutenants at Britannia Naval College, Dartmouth, having entered the navy direct from school or university. Selected for their potential powers of leadership, ability, character, and educational standards, these officers follow service careers structured to executive and command appointments in the Operations, Engineering, Supply and Secretariat branches. By selection they can attain the highest ranks within the Royal Navy and are guaranteed the minimum rank of Commander.

By contrast, SD officers are selected from serving ratings within the navy who show exceptional powers of leadership, personal qualities, and high technical ability, but promotion prospects are limited to

Lieutenant Commander, one rank below that of Commander. It is into this SD category of commissioned specialist physical training officers to which instructors within the RNPTB are drawn. Thus these SD officers serve most of their naval careers in the RNPTB in contrast to GL officers who normally complete a two year tour of duty.

Two points of issue arise from this situation. Firstly, the direct consequence of the rank differential is that no SD specialist physical training officer can be appointed Director or Deputy Director of the RNPTB, or command the Royal Naval School of Physical Training. From the organizational structures shown in Figures 1 and 2, it can be seen that instead they serve in subordinate positions to GL officers who possess no specialist knowledge of physical training, sport and recreation. Secondly, it is not clear if this lack of specialized knowledge together with the transient tours of duty, adversely effect long term planning and the optimum operational performance of the RNPTB.

The existence of a generalized elite within the RNPTB has been established, and the uncertainty surrounding its influence forms the basis for subsequent hypothesizing.

e. RNPTB Career Structure and Instructors' Role Definition

Following the explanation of implications surrounding officer categories, it is appropriate to indicate the advancement sequence and role definition of instructors within the RNPTB.

Recruitment to the RNPTB is from volunteer ratings who have served at least two years in the Royal Navy including a twelve month period at sea. The requirement for volunteer serving ratings and not newcomers to the navy is regarded as an important factor in instructor potential, particularly in aspects of class management, organizing ability and leadership. Qualified instructor status and advancement is gained by

successful completion of the following physical training specialization courses held at HMS Temeraire:-

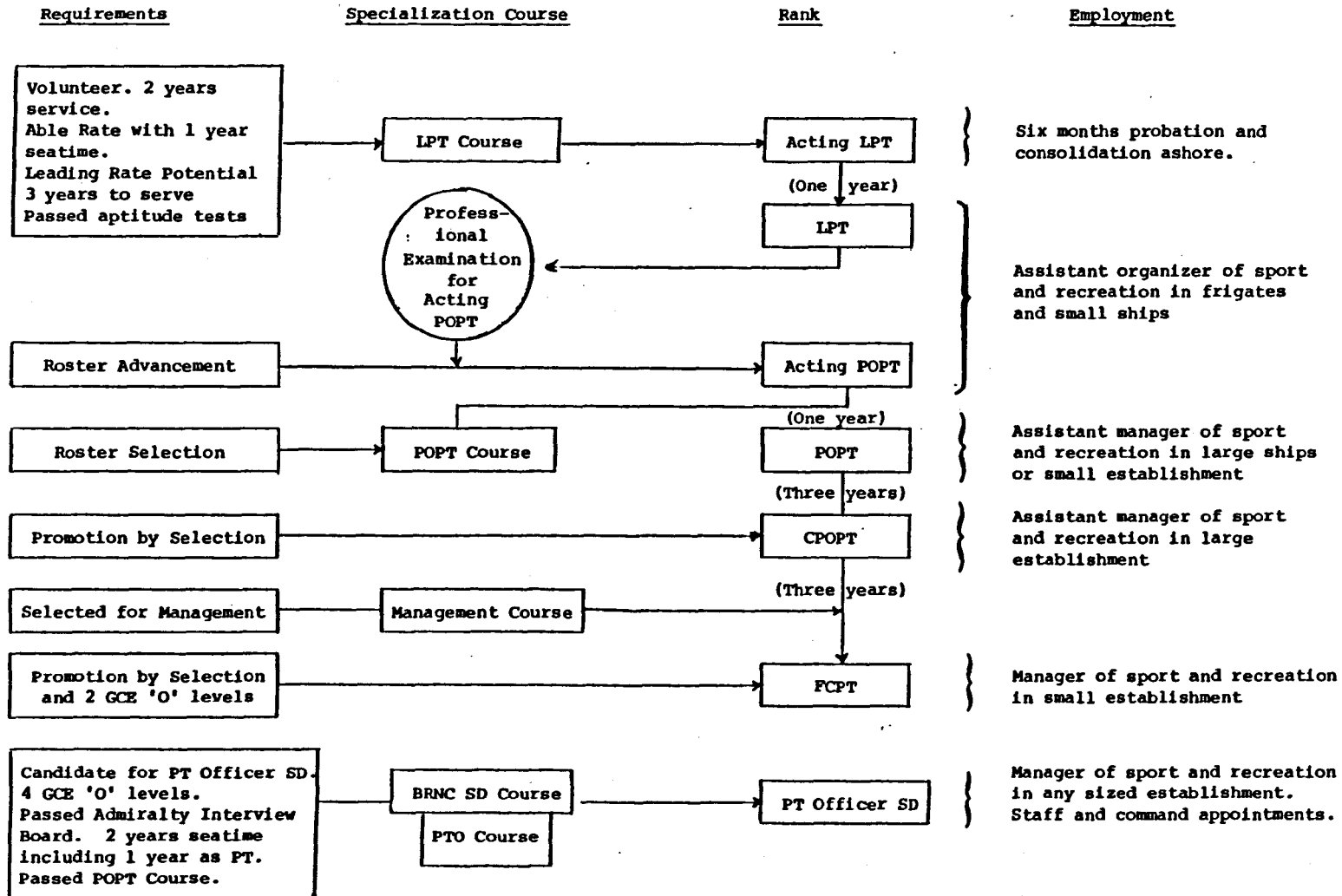
- (i) Aptitude Test (3 days).
- (ii) Leading Physical Trainer (LPT) Course (25 weeks).
- (iii) Petty Officer Physical Trainer (POPT) Course (9 weeks).
- (iv) Chief Petty Officer Physical Trainer (CPOPT) Course (6 weeks).
- (v) Physical Training Officer (PTO) Course (3 weeks).

All these courses, underwritten with objective training criteria to include terms of reference, job descriptions, behavioural objectives and performance standards, progressively increase status and responsibility. For example, it is expected that a highest ranked instructor, such as Chief Petty Officer Physical Trainer, should be capable of the same duties of a junior SD physical training officer in a small naval establishment<sup>15</sup>. At the official level this downward push of delegation from the top is seen as a response to an upward pressure generated by desires and abilities of senior ratings. From another point of view it can be interpreted as a means to secure economies at all levels of rank and rate and more particularly at the junior officer level. Promotion in a small branch such as the RNPTB is seldom fast, and the consequences of this greater delegation are not yet clear.

The rate titles are based on the term 'physical trainer'. A career sequence modelled in Figure 3 below strictly and formally structures advancement, but no one clear and total statement defines the role of physical trainers in accomplishing the RNPTB's objectives of fitness, discipline and morale. Throughout its history the RNPTB has attempted to maintain a curriculum and a system of requirements and courses, to enhance both the status of its personnel and that of naval physical training, sport and recreation. From the stereotyped portrait of the naval physical trainer as acrobat, gymnast and clubswinger, there is

Figure 3

RNPTB Career Advancement Sequence



currently a deliberate swing towards a new concept of him as a manager and organizer of leisure. This movement can be detected in contemporary interpretations of tasks and responsibilities and is reflected in the employment categories shown in Figure 3.

Emphatic recognition of the need for a change from the traditional role is expressed in another authoritative source. Personal qualities such as patience, appearance, interest, and enthusiasm are designated as important in an idealized instructor model cited in the Admiralty's Handbook of Physical and Recreational Training<sup>16</sup>. Packaged under a label of leadership qualities the application of human factors such as motivation, perception, sensitivity, discipline and communication, are all highly regarded essentials for competent teaching and sound class management. The criteria by which a successful instructor is likely to be judged is implicit in:

Learning and remembering are voluntary processes, and if the instructor is to achieve worthwhile results he must gain his pupils' full co-operation. Men will co-operate only if there is sufficient incentive to stimulate their interest and they can see a reason for doing an exercise or learning a skill. Hence the importance of the instructor's role, the measure of his ability being the extent to which he is capable of motivating his pupils through the exploitation of the wide variety of activities at his disposal<sup>17</sup>.

f. Curriculum

The chief characteristics and content of the RNPTB's curriculum are briefly examined to indicate the scope and clarify the meanings of naval physical training, sport and recreation.

Naval physical and recreational training is regarded as a system to achieve and sustain fitness, discipline, and morale. In this sense as a total planned activity the naval curriculum can be compared to programmes which schools adopt to achieve their purposes, but unlike educational curriculum development which takes place in this country

within a framework of liberalism and teacher freedom, the naval curriculum for physical training, sport and recreation is prescribed and formal.

In Part One training establishments there is a high degree of rigidity where physical training is a compulsory subject in the overall basic naval training programme. Devised physical training tables are conducted sequentially, and deviations from the prescribed order and lesson content may not be made without prior approval. Lesson contents are characterized by strength and endurance exercises, vaulting, rope climbing, circuit training, basic running and marching exercises, and instructional time for recreational activities<sup>18</sup>. The formality of these lessons is heightened by the use of command-response teaching techniques.

Much to the regret of many long serving members of the RNPTB, modern ship routines and operational priorities have eliminated the time available for formal physical training at sea. A poor substitute has been the sets of exercises recommended for daily use afloat<sup>19</sup>, but the major response to this change of policy has been a greater emphasis in motivating personnel to participate in the more informally organised sport and recreation. The wide range of naval sport and recreation is indicated in Table 4.

The comprehensive range of sport and recreation listed in Table 4 requires explanation as sources of financial support form the basis of the classification criteria. Within limits of scale laid down for all the armed services, public money under Vote A of the Defence Estimates allocated annually to the Royal Navy provides the funds to maintain resources and facilities for naval physical training, adventure training, and those activities categorized as synopsis sports. The welfare funds of individual ships and establishments, supplemented by certain

Table 4Synopsis and Recognized Naval Sport and Recreation

<u>Synopsis Sports</u>	<u>Recognized Sports</u>	<u>Adventure Training</u>	<u>Recognised Recreation</u>
Association Football	Angling	Gliding	Amateur Radio
Athletics/Cross Country	Badminton	Canoeing	Campanology
Cricket	Basketball	Mountaineering	Chess
Hockey	Beagling	Orienteering	Model Aircraft
Lawn Tennis	Boxing	Offshore Sailing	Ornithology
Netball	Cycling	Skiing	Piping
Rugby	Equestrian Sports	Sport Parachuting	
Squash	Fencing	Sub-aqua Swimming	
	Golf		
	Judo		
	Modern Pentathlon		
	Motor Sports		
	Shooting		
	Dinghy Sailing		
	Swimming/Water Polo		
	Table Tennis		
	Volleyball		

financial trusts, provide the most important and accessible sources of non-public money for activities categorized as recognized sport and recreation.

### 3. The Image

A potent part of the RNPTB's formal doctrine is the presentation of an image to those outside its ideological milieu. A useful schema with which to view this image is provided by factors related to the RNPTB's visibility and public face.

A high visibility is displayed by the distinctive dress and conduct of RNPTB personnel, and is sustained by the exceptionally high demands



made on smartness, discipline and response. Much of this ethos is generated by the Royal Naval School of Physical Training through a system of procedures and rituals not widely practised elsewhere in the navy. For example, within the buildings of HMS Temeraire, physical trainers under instruction run from lesson to lesson, command-response techniques are prevalent to an extent not found in other naval working environments, and all personnel adopt exaggerated responses of alacrity.

Elsewhere in the Royal Navy an existing sentiment that the communal character of naval life has become 'a nine to five collection of mixed tradesmen all going home to tea'<sup>20</sup> is countered by the RNPTB's high expectations of participation and performance. The vigour, vitality and length of time spent promoting naval sport and recreation outside normal working hours reinforces the image of a small, dedicated, elite body of men and women. The elitism is heightened by the aptitude tests and selection procedures of the RNPTB which 'creams off' volunteers from the other specialist naval branches. The high standard of personal attributes finds support from the many Commanding Officers who have noted outstanding qualities of leadership, organizing ability and enthusiasm amongst RNPTB personnel. Such is the esteem that in recent economic measures which threatened to reduce the RNPTB, a number of Commanding Officers protested to the Admiralty Board that they would rather lose a technical specialist than their physical trainer<sup>21</sup>.

With a relatively small complement of some thirty-six physical training officers and three hundred instructors, the RNPTB's high prestige can not be explained by its size or power. The power base of the RNPTB within the naval bureaucracy is low but its influence extends beyond that implied by the position occupied in the hierarchy of authority. Two factors account for this. At the grass roots level the RBPTB finds support from the nature and popularity of its activities.

Elsewhere in the navy the adage of friends in high places is well founded with senior officers, usually of Admiral rank, serving as presidents of the recognized naval sport and recreation associations.

Part of the SCB's responsibilities is in dealing with the press and media, and the projection of an acceptable public face is implicit in the care taken with internal and external liaisons. The importance of image as manifest through the processes of social and professional approval can be gleaned from the verbatim reports of Headteachers on naval physical trainers temporarily teaching in their schools made available to all RNPTB personnel:

The impression that they left with us is a very good one indeed. Their personal turnout has been immaculate, and the contact they achieved with the children has been first rate. ...The children and staff were totally impressed ... We thoroughly enjoyed having them with us ... anxious to obtain their services next year ... They achieved and maintained a very high standard in both their appearance and work ... Their rapport with the children was excellent, as was the response shown by the children<sup>22</sup>.

Many manifestations of the RNPTB's formal doctrine particularly its ethos of elitism have been demonstrated to the writer, but perhaps none more succinctly than during the observation of an impressive naval physical training display when an instructor proudly and emotionally exclaimed, "There's the Royal Navy and there's US!"

In summary, the RNPTB has been presented as a formal organization, and from its formal doctrine aspects of the mandate, institutional plan, and image were examined as a prelude to subsequent chapters.

In creating a separate identity for the RNPTB the mandate has emphasized the responsibility for naval physical training, sport and recreation entails a commitment to all personnel of the Royal Navy. A pervading element of the mandate is the continuous drive for economy and efficiency through the increasing application of modern management

techniques. The systematization of administrative procedures has found more success in formalized physical training than in voluntary sport and recreation. The influence of directives particularly those aiming for economy and efficiency has determined the RNPTB's degree of innovativeness.

Within the RNPTB's institutional plan the responsibilities and organizational structures of DNPTS, SCB, and HMS Temeraire The Royal Naval School of Physical Training, were presented. Aspects of formalization and rank differential as they affect the inherence of authority were examined, and the existence of a generalized elite within the RNPTB was established. The advancement sequence within the RNPTB career structure was outlined, and the changing role of naval physical trainers defined. The major characteristics of the RNPTB's curriculum were noted and the comprehensive nature of naval physical training, sport and recreation was indicated.

Visibility and public image as salient features of the RNPTB's image were scrutinized. It was concluded that the RNPTB exists as a small elite organization with a high prestige status within the Royal Navy.

1. Smith, L.M. & Keith, P.M. Anatomy of Educational Innovation. Wiley. New York. 1971. pp.21-53.
2. Smith, L.M. & Keith, P.M. 1971. *op cit*.
3. Smith, L.M. & Keith, P.M. 1971. *op cit*. p.21.
4. Cited by Gerth, H.H. & Mills, C.W. (Eds.). From Max Weber: Essays in Sociology. Oxford University Press. New York. 1946. p.222.
5. Rogers, E.M. & Shoemaker, E.F. Communication of Innovations: A Cross-Cultural Approach. Free Press. New York. 1971. pp.303-304.
6. RNPTB. Handout. No.3. September 1971. p.3.
7. Admiralty. Handbook of Physical and Recreational Training. Ministry of Defence. 1972. Section 4. p.2.
8. Kenyon, G.S. 'The Contribution of Physical Activity to Social Development'. Paper presented at the Symposium on the Role of Physical Activity in the Integrated Development of Children. Purdue University. U.S.A. June 29-30th 1964.
9. Hampshire, A.C. The Royal Navy Since 1945. Wm. Kimber. 1975. p.178.
10. CINCPACFLT letter T/5021/S October 31st 1972 in TEM 710/1.
11. Smith, L.M. & Keith, P.M. 1971. *op cit*. p.25.
12. RNPTB. Handout. No.11. December 1979. pp.1-2.
13. Terms of Reference. Annex A. Appendix 1. in DNPTS/1/15/1.
14. Naval Manpower Utilization Unit. Appendices. 535/3/12. January 1973.
15. Course Data Sheet. Objective Training Documentation. March 1973.
16. Admiralty. 1972. *op cit*. Chapter 1.
17. Admiralty. 1972. *op cit*. p.1.
18. HMS Collingwood. Physical Fitness and Recreational Training Syllabus. June 1975.
19. Ministry of Defence. Daily Exercises. BR71. HMSO. 1965.
20. Agutter, G.F. 'The Lower Deck of the Future'. J. United Services Institute. May 1946. pp.253-256.
21. Sandy, J.A. 'Her Majesty's Prison Service Physical Education Review'. Unpublished Paper. 1980. in TEM 506/2.
22. Reported in J. Royal Naval Physical Training Branch Association. 1978. p.15.

## Chapter Four

### A Conceptual Framework

The study's conceptual framework is explained in this chapter. Firstly, the meanings of the terms adoption, diffusion, dissemination and implementation which are closely associated with the concept of innovation are clarified. Certain hypotheses are raised, and a typology of innovation-decisions such as may be found in the RNPTB is presented. A classification of communication domains is proposed to identify, categorize, and examine the RNPTB's extensive documentation. An adoption model illustrates the flow of actions and relationships when innovations are implemented in naval physical training, sport, and recreation. The study's research approach is also explained and justified.

#### 1. Adoption, Diffusion, Dissemination, Implementation: A Clarification

The research literature on adoption, diffusion, dissemination and implementation is confusing, and the many pronouncements and fine distinctions drawn between these important concepts have directed and often limited the thinking and actions of those involved in innovative activities. From early studies of agricultural innovations in America an adoption process model was derived. Viewed as a process it has been observed that:

the concepts of adoption and, more rarely, that of rejection, have been used as a simply defined dependent variable for research concerned with influences affecting it<sup>1</sup>.

A central theme of this research has been the relationship between adoption and time, based on a widely held assumption that adoption is inevitable if the presentation and timing of the innovation is right<sup>2</sup>. Adoption has also been regarded as a deliberate mental act as implied in the definition, "a decision to make full use of a new idea as the best action available"<sup>3</sup>. As a working definition, this view of adoption

presents a difficulty because no provision is made for any action of rejection, but this can be partially overcome by regarding both adoption and rejection as discrete functions within the innovation-decision process. A further difficulty lies in the definition's term, 'make full use of', which implies only a total rather than a partial adoption is possible, a problem further compounded when it is argued that discontinuance of an innovation can only occur after the idea has been fully adopted<sup>4</sup>.

The inadequacies of the adoption concept are summarized by Cooper who notes:

In terms of the original use, it is quite possible to talk about the adoption of a technique or a product; it makes little sense, however, to talk about the adoption of an attitude or a concept or an idea. It would not make sense to say that we either had or did not have a particular idea, since ideas (or attitudes or concepts) are not finite in that way. In a very real sense, the idea is inevitably modified in each person<sup>5</sup>.

The distinctions drawn between diffusion and dissemination also appear to be quite arbitrary, a characteristic confirmed by Katz *et al*<sup>6</sup> who have observed the isolation and lack of communication that exists in diffusion research which has led to uncoordinated and widely varying approaches.

In defining diffusion as:

the acceptance, over time, of some specific item, - an idea or practice, by individuals, groups or other adopting units, linked to specific channels of communication, to a social structure, and to a given system of values, or culture<sup>7</sup>.

Katz *et al* do not account for the concept of dissemination, but achieve a working definition in terms of component elements which can be regarded as key variables in the diffusion process. Bhola<sup>8</sup>, on the other hand, conceives diffusion as a process involving information consumption, social interaction and behavioural change, while regarding

dissemination as a stage within diffusion when knowledge of the innovation is distributed. Like Clarke and Guba<sup>9</sup>, he sees total diffusion occurring after an innovation has received service and support to become fully integrated into a system. While eminent American diffusion theorists, Rogers and Shoemaker, commenting on the terms diffusion and dissemination observe:

A few authors restrict use of the term "diffusion" to unplanned communication of new ideas (selective contact change), as opposed to the concept of "dissemination", which they define as planned communication (directed contact change). However, we use diffusion and dissemination interchangeably<sup>10</sup>.

A different view is taken by the Peterborough Project<sup>11</sup> team concerned with educational innovations in selected elementary schools in Ontario, Canada, who emphasize it is important to recognize dissemination and diffusion as two distinct alternative processes. The essential difference is the manner in which the innovative idea is transmitted. Dissemination is seen as the communication of the innovative idea by a central authority while diffusion starts with dissemination but also involves transmission of the innovation by selected members of the recipient social system.

In Britain, clarification of these terms evolved slowly, as typified in Rudduck's<sup>12</sup> description of the Humanities Curriculum Project where no dissemination programme was incorporated into the planning because the implications surrounding the concept, particularly the distinction between diffusion as a casual haphazard process and dissemination as a deliberate strategy<sup>13</sup>, were only gradually realized.

Within the deliberations of dissemination, Elliott<sup>14</sup> suggests that strategies should aim for:

- a. Understanding - developing an understanding of the central features of the innovation among the target audience.

- b. Commitment - securing commitment to the value and desirability of the innovation.
- c. Implementation - increasing the capacity of the target audience to translate the central features of the innovation into practical realities.

Elliott's suggestions, which presuppose the crucial elements of communication, training and support within dissemination, are very close to those of Rudduck and Kelly<sup>15</sup> who see the process consisting of:

- a. Translocation - referring to the movement of people and materials required to implement an innovation.
- b. Communication - being the passage of innovative information by media and personal contact.
- c. Animation - as the provision of a stimulating environment to promote change.
- d. Re-education - of personnel to secure understanding and commitment.

The development of diffusion theory and a growing dissatisfaction with many major curriculum projects has spawned interpretations of the implementation concept. Briefly, implementation is when an innovation is put into practice, and according to Fullan and Pomfret<sup>16</sup>, it has been conceptualized in two ways. Firstly, it can be seen as the extent to which intention and practice are correlated, that is, the degree to which the innovation is implemented as originally planned; and secondly, the extent to which implementation is a product of a dynamic process of mutual adaptation amongst interested parties at the various stages of the innovatory process.

Fullan and Pomfret prefer this latter definition which recognizes that subsequent modifications by both initiators and users may occur, but an opposing point of view is taken by Waring<sup>17</sup> who insists that the term implementation may only be applied when an innovation is not in any



way distorted.

From these differing viewpoints, two important issues arise for the RNPTB as a military and formal bureaucratic organization. Firstly, both points of view imply there is something such as a plan or innovative package exists to be implemented. Secondly, as Waring emphasizes, there is a necessity for the package to be implemented with minimal distortion. In terms of uniformity and conformity which characterize naval procedures, these aspects are very important to the RNPTB, but implementation is not a straight-forward application of an innovative package to an adoption unit. As Fullan and Pomfret argue, "implementation is not simply an extension of planning and adoption processes. It is a phenomenon in its own right"<sup>18</sup>.

Some of the attendant difficulties of implementation are highlighted in the Rand Corporation survey of innovative projects in American elementary and secondary schools:

Contrary to the assumption underlying many change strategies, implementation did not involve merely the direct application of a technology. Implementation was an organizational process that implied interactions between the project and its setting; thus it was neither automatic or certain<sup>19</sup>.

The problem with this view of implementation is that it comes close to the deliberate strategies conveyed in the term dissemination; and its emphasis on organizational processes and interactions suggests links with yet another concept, that of institutionalization. The close relationship between implementation and institutionalization is further conveyed by Fullan and Pomfret's<sup>20</sup> observation that the totality of acceptance and practice of successful innovations has only come about by significant changes in materials, structure, role behaviour, knowledge, understanding, and value internalization.

In summary then, the meanings and associated functions of these

concepts have relevance for this study, particularly as it seeks to examine the strategies employed by the RNPTB to introduce and establish innovations in naval physical training, sport and recreation. The term adoption is used to convey the sense of total acceptance, an intention that characterizes the vast majority of innovations within the navy. Dissemination is taken to mean deliberate and systematic applications of communication, training and support to achieve change, as opposed to the haphazard processes of diffusion. The attempt to adopt an innovative package with minimal distortion is referred to as implementation.

## 2. The Hypotheses

Having clarified some of the difficulties and implications surrounding the terms adoption, diffusion, dissemination and implementation, the conceptual framework is now extended as a major concern of the study to identify the impetus and determine the events and influences that lead to innovations in naval physical training, sport and recreation. What forces influenced the RNPTB to make changes in its curriculum content, teaching methods, and organizational procedures? In what manner and from what sources do these forces arise? And more importantly, what factors influence the successful implementation of innovation within the RNPTB?

The answers to these questions are not readily apparent, partly because the RNPTB within the Royal Navy is a separate social unit of British society. The nature of naval responsibilities in national security and the means employed in their discharge, require that certain activities are clandestine or at least partially veiled from public scrutiny. To this end the Royal Navy is self-contained and physically isolated, with the separation from civilian society consciously promoted and reinforced by the emphasis placed on naval security, discipline, tradition and morale.

Yet while this separation exists, there is also a degree of observable interaction and openness between the Royal Navy and societal institutions. For instance, in terms of projected image and recruitment the navy has long been aware of the value of good relationships with the general public, as evidenced by naval open days and permitted visits to ships in port. In a 'give and take' process the Royal Navy has drawn upon a wide variety of innovations in society and incorporated them into its own schemes of naval procedure, while at other times it has been a prominent and influential innovator with, for example, significant contributions in the fields of hydrography, meteorology and cartography. These examples indicate a relationship between the concept of openness and innovativeness. The essential ingredients leading to potential innovations being considered rest in the personalities of the people concerned and their mechanisms for communication. Opinion leaders and those in positions of authority must be open to ideas external and internal to their social unit if innovations are to have any potential for success.

Compared to most departments within the Royal Navy the RNPTB is very open. Many naval activities are highly specialized and remote from public knowledge, but a commonality of knowledge and experience exists in physical training, sport and recreation. The inherent characteristics of physical activity provide a platform for interaction. The competitive naval gun team races, together with the cutlass swinging and window ladder displays are perhaps the most well known events. There are, however, stronger and deeper community links forged by naval sport teams and representatives to civilian clubs, associations and institutions of physical education and sport. For example, in liaison with Portsmouth Polytechnic the Royal Naval School of Physical Training serves as a regional Centre of Excellence for trampolining. RNPTB

personnel have acted in advisory capacities to Her Majesty's Prison Service, and others have taught physical education in local schools. Selected representatives also serve on inter-service committees and national sports associations.

The multiplicity and frequency of these interactions provides a fertile environment for the transmission and reception of new ideas, thus substantiating that a source of change

may originate in any institutional area, bringing about changes in other areas, which in turn make for further adaptations in the initial sphere of change. Technological, economic, political, religious, ideological, demographic, and stratificational factors are all viewed as potentially independent variables which influence each other as well as the course of society<sup>21</sup>.

A major controversy surrounding the precise nature of change is highlighted by Etzioni when he identifies those who see the prime moving forces emanating from:

the "spiritual" spheres and those who see it in the material ones; between those who stress the role of ideas and those who stress the role of economic factors; between those who stress the role of culture and those who stress the role of technology<sup>22</sup>.

To pursue a 'which came first' argument would be, as Burns and Stalker<sup>23</sup> suggest, to adopt the false antithesis that exists between material and technological progress and social change, but an investigation into the nature of prime moving forces that have influenced the RNPTB might reveal the origins and rationales of the innovations implemented in naval physical training, sport and recreation.

Previously it has been emphasized that many interactions take place even though the RNPTB operates as a formal military organization removed from the mainstream of British society. Like Goffman's total institution<sup>24</sup>, but perhaps not to the same degree, the RNPTB can exert great control over its societal contacts, as at the organizational level where

its relationships with other institutions are circumspect. If innovativeness is regarded as the tendency of a system to adopt a given innovation, then the guarded relationships of the RNPTB beg the questions of just which new ideas and institutions are influential, and what kinds of innovations are more likely to be accepted? These issues are all the more intriguing because to most problems that arise the attitude of the RNPTB is essentially pragmatic, an attribute well founded and nurtured within the naval ethos to encourage a 'PROBLEM - we can find a SOLUTION with MINIMUM DELAY' type of approach. This practical orientation is confirmed by Keegan<sup>25</sup>, who asserts that with few exceptions theory and debate have never been strong points of the Royal Navy, an argument supported by the overt emphasis within the navy on alacrity and action.

A line of inquiry therefore pursued in this study is to ascertain whether or not organizational changes within the RNPTB are implemented with less resistance than content and method innovations underpinned by theoretical considerations. Physical education, sport, and recreation in this country are guided by the principles and practices of educational theory, and it is therefore reasonable to assume that organizations involved in these physical activities are, to a greater or lesser extent, influenced by contemporary curriculum theories that suggest the content and methods of physical education. In view of the essentially practical and efficiency-seeking orientation of the RNPTB, an area worthy of investigation is the manner in which organizational innovations as opposed to theoretically based innovations of content and method are implemented. To this end the following hypothesis is suggested:

Hypothesis One: that organizational changes within the RNPTB are implemented with less resistance than content and method innovations underpinned by physical education curriculum theory.

If the RNPTB is indeed insular because it reacts guardedly to outside contacts, how do new ideas take root? For change to come about, new ideas need nourishment and support, for such nutrients are important if the ideas are to grow and flourish. Within an organization the support for innovation is initially through the perception and reaction of an individual or groups of opinion leaders or gatekeepers. Zaltman *et al*<sup>26</sup> have likened the concept of organizational perception to that of an individual which is affected by age and experience in a particular specialist field. An important point to note regarding perception and innovation is that:

the distinguishing characteristic of innovation is that instead of being an external object, it is the perception of a social unit that decides its newness. Thus a practice can be an innovation for one organization but not for another<sup>27</sup>.

An impetus for innovation arises when it is perceived that the work of an organization is unsatisfactory and there is a wish to make improvement. This discrepancy between what is done and what key personnel believe ought to be done is a performance gap<sup>28</sup>, which can be brought about by changes internal or external to the organization. For example, internally new personnel may come into the organization bringing with them new expectations of what should be done, or new procedures may alter the way personnel interact thus creating new performance gaps. Externally, there may be significant technological change that influences the attitudes of personnel to existing practices, or the power position of the organization may shift in relation to other organizations within the environment<sup>29</sup>.

The adjustments made to fill performance gaps of the RNPTB are concerns of this study. In Chapter Three the existence of a power elite was identified in the form of General List (GL) officers serving without specialist knowledge of physical training, sport and recreation in the

executive but transient appointments of DNPTS, Deputy DNPTS, and Commanding Officer of the Royal Naval School of Physical Training. Serving below this generalized elite are the permanent members of the RNPTB consisting of specialist physical training officers and instructors. The significance of this ranking and power differential is highlighted by:

In any social system there is a hierarchy of social statuses. Those at the top, often called the power elite, are mainly responsible for making decisions affecting the entire system. Because of their position of power, the elite are able to act as gatekeepers in determining which innovations enter the system<sup>30</sup>.

Status differences, particularly within a military or naval context, make it difficult to oppose the judgement of persons with superior power and prestige. Torrance<sup>31</sup>, for instance, found that the inappropriate suggestions of high status members of a military group were disproportionately accepted and the relevant suggestions of low status members were disproportionately rejected. The point of issue therefore raised is whether or not there are instances when the perception and experience of the power elite within the RNPTB in matters concerning physical training, sport and recreation, is sufficiently adequate. What influence do non-specialist personnel exert in any innovative process? To what extent do specialist but subordinate staff participate in closing performance gaps in naval physical training, sport, and recreation? To explore this problem it is hypothesized:

Hypothesis Two: that effective change results from decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces.

From its inception in 1902 the RNPTB has experienced varying fortunes as the following examples illustrate. In 1910 a major advancement was the establishment of the purpose-built School of Physical

Training in Portsmouth. With what was claimed to be the most modern and best equipped facility<sup>32</sup>, the RNPTB became the leading proponent of the Swedish system of physical training in the country. At the outbreak of World War One in 1914, the facility was converted into a convalescent hospital. To all intents and purposes the RNPTB was disbanded for the duration of the hostilities, but just before the end of the war a limited number of small qualifying classes were resumed by "Hostilities Only" instructors<sup>33</sup>.

In the years between the two World Wars, and particularly in the recession of the 1930's, the RNPTB experienced financial and manning problems that seriously curtailed naval physical training and sport. In the immediate post-war period of the late 1940's, the RNPTB narrowly escaped from an amalgamation with the DGNPS, then referred to as the Directorate of Welfare Services (DWS).

Threats to the status and identity of the RNPTB are not in any way extinct. In numerous drives for economy and efficiency, various innovations have posed serious threats to the very existence of the RNPTB, but the fact that it continues to survive suggests qualities of resilience and resistance. It is therefore hypothesized:

Hypothesis Three: that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted.

### 3. An Extended Typology of Innovation-Decisions

An important task in this study is to examine the decisions taken within the RNPTB, and at other levels within the Royal Navy, which culminate in the adoption or rejection of innovations in naval physical training, sport and recreation. This requirement is made difficult because there is a diversity of terminology and little agreement on the nature and number of stages in the innovation-decision process.



At the individual level the innovation-decision may be regarded as the consideration and assessment process from first knowledge of the innovation to confirmation of the decision to accept or reject the new idea. Within the individual it is conceived that knowledge and understanding of an innovation is followed by a favourable or unfavourable attitude that leads to adoption or rejection, and through the process confirmation and reinforcement is sought for the decision<sup>34</sup>. Based on the degree individual members of a social system participate in the initial stages of adoption, three major types of innovation-decisions have been suggested, as shown in Table 5 below:

Table 5

Types of Functions of Innovation-Decisions Processes<sup>35</sup>

<u>Collective-Innovation Decision</u>	<u>Individual-Innovation Decision</u>	<u>Authority-Innovation Decision</u>
1. Stimulation	1. Knowledge	1. Knowledge
2. Initiation		
3. Legitimation	2. Persuasion	2. Persuasion
4. Decision	3. Decision	3. Decision
—	—	4. Communication
5. Action	4. Action	5. Action

Collective-innovation decisions are reached by consensus, and seen as processes arising from the realization of a need for a new idea. Interest in the new idea is stimulated and initiated into the social system where its legitimation is sought. A decision is then reached to reject or carry out actions necessary to implement the innovation. As implied above, individual-innovation decisions are taken independently of other opinion, as opposed to authority-innovation decisions which are imposed on a social system by someone in a power position. The RNPTB

operating as a formal organization uses its own hierarchical structure, and that of the Royal Navy, to issue authority-innovation decisions to achieve change. Scrutiny of these decisions and the factors surrounding them should therefore illuminate the innovations selected for examination in this study.

The central construct of the authority-innovation decision concept is the subordination of adoption units to a decision unit occupying a position of higher authority. Theoretically, the Ministry of Defence (Navy) decides all naval policy matters; and naval commands, establishments and ships follow those policies as directed by authority decisions in Queen's Regulations (Q.R.'s), Defence Council Instructions (D.C.I.'s), and command orders and instructions. In practice however, physical training, sport and recreation policy is formulated at the DNPTS level in the RNPTB hierarchy, see Figure 5. For the purposes of this study therefore the DNPTS is regarded as the decision unit, and the remaining RNPTB personnel, together with the ships and establishments within the Royal Navy, are regarded as the adoption units.

The notion of the RNPTB as a formal organization using authority-innovation decisions is reinforced by the fact that no individual appears free to exercise choice in adoption or rejection of an innovation, but use of Zaltman's<sup>36</sup> sub-categories of decision types extends the exploration of innovations in naval physical training, sport and recreation. In formal organizations some innovations are derived from member participation, that is, the decision to adopt the innovation is taken by the decision unit but it is done in consultation with the adoption units, whilst other innovations are autocratically based. To this finer classification of authority-innovation decisions the respective terms 'participative approach' and 'authoritative approach' have been applied. These sub-categories should prove relevant and useful to pursue the study's second hypothesis where in part it was proposed that

effective change within the RNPTB results from actions of the power elite, but that the thrust for change comes from below.

#### 4. A Classification of Communication Domains

In their treatment of planned educational change, Gross *et al*<sup>37</sup> suggest that innovation should be viewed as an interrelated and changing set of complex forces acting over a period of time. Diffusion theorists such as Rogers and Shoemaker<sup>38</sup>, and Zaltman *et al*<sup>39</sup>, have argued that innovation is a process consisting of several stages, each of which is characterized by different problems requiring relevant information and appropriate decisions and strategies. A significant operating characteristic of the RNPTB is the sheer volume of paperwork in which the relevant information, decisions and strategies are communicated to the adoption units. The general practice is that even the smallest point of procedure or detail requires duplicated correspondence. To identify, categorize, and examine this documentation, Tushman's<sup>40</sup> model of innovation phases and key communication domains is adopted and modified, as illustrated in Figure 4.

The six cell model is eminently suitable in terms of the hypotheses posed in this study and the problem solving approach to innovation adopted by the RNPTB. A three step innovation process is proposed which emphasizes the importance of communication throughout all stages, but this emphasis does not imply that other features of organization, strategy, content, and methods, do not exist within the innovative process. The exchange of information and volume of correspondence generated by the RNPTB is excessive, and categorizing the communication domains in this way is an attempt to ensure that innovative aspects that otherwise might be overlooked are identified and examined.

Figure 4

Innovation Phases and Key Communication Domains

Innovation Phases		
<u>Idea Generation</u>	<u>Problem Solving</u>	<u>Dissemination and Implementation</u>
Exploration of Proposal	Development of Solution	Coordination and administration of Solution
Key Communication Domains		
<u>Extra Communication</u>	<u>Intra Communication</u>	<u>Intra and Extra Communication</u>
With other institutions:- universities, colleges, other naval directorates and armed forces	With RNPTB personnel	With RNPTB personnel and adoption units in Royal Navy

When a performance gap has been detected in RNPTB operations, proposals are explored, ideas are generated, information is sought from external sources possessing specialist knowledge of physical training, sport, and recreation, such as universities, colleges and the other armed services, as the bulk of relevant information can most effectively be found outside the innovating organization<sup>41</sup>. Referral may also be made to the research literature, or advice sought from other naval directorates such as DGNMT and DGNPS, particularly when questions of manpower and finance arise.

The problem solving cell of the model is applied to coordinate the substantial information that is exchanged within the RNPTB in the development of a suitable course of action.

In the third innovative phase, the terms dissemination and implementation are preferred to convey the deliberate and systematic implementation of packaged organization, activity contents and methods

that characteristically accompany innovations in naval physical training, sport and recreation.

#### 5. An Adoption Model of Naval Physical Training, Sport and Recreation

The model in Figure 5 illustrates the flow of actions and relationships when innovations are adopted in naval physical training, sport and recreation, and reflect much of what has been indicated in this chapter. Naval physical training, sport and recreation are important features of the national defence policy implemented to secure and maintain high levels of physical fitness, discipline and morale in the Royal Navy.

Through a simplified hierarchy of authority shown in the model, the DNPTS is accountable to two powerful directorates within the Royal Navy who may act as gatekeepers of change by exerting control on an innovation process. DNPTS, as the decision unit of the RNPTB, is accountable to DGNPS for planning and promotional aspects of naval physical training, sport and recreation, and to DGNMT for financial and manning policies. These latter two directorates are in turn responsible to the Second Sea Lord and the Admiralty Board within the Ministry of Defence.

An additional concept, shown in the model by broken lines and arrows, is that of feedback whereby information on naval physical training, sport and recreation is returned to various levels within the hierarchy of the navy and used to guide adjustment to performance gaps. The heavy broken lines in the model indicate gatekeeping functions or barriers to both innovations and feedback processes.

#### 6. A Consideration of the Research Approach

The writer's own background and preferences were salient factors determining a qualitative rather than a quantitative approach, but from the very beginnings of the study Ministry of Defence policy and

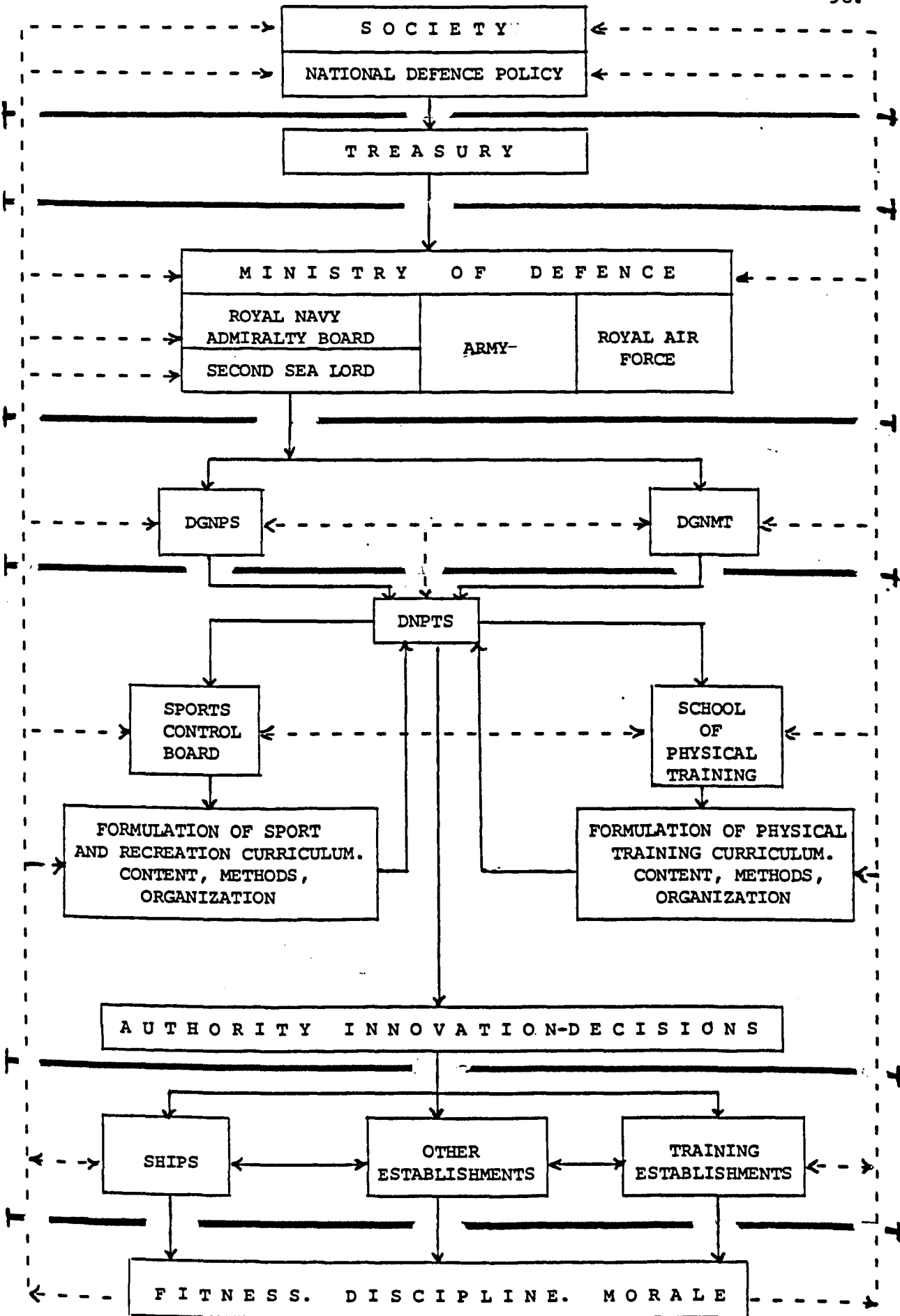


Figure 5. An Adoption Model of Naval Physical Training, Sport and Recreation.

attitudes of the Armed Services formed the major constraints that dictated the choice of research techniques. Preservation of a largely unspecified service image is regarded as extremely important, but areas of particular sensitivity are those concerned with discipline, morale, security, homosexuality, standards of physical fitness and the associated problems of excessive drinking, smoking, and obesity. The official policy strictly controls the experimentation and research required and conducted within the Armed Services, and civilian specialists are only called upon when the necessary expertise is unobtainable internally. Permission to conduct research for reasons external to service requirements is therefore difficult to obtain and bounded by severe constraints, such as the prohibition of research instruments which elicit responses and attitudes of personnel.

In a situation of overt and covert restraints it was decided that the most appropriate research approach was illuminative evaluation, the nature of which is aptly expressed by:

Illuminative evaluation is not a standard methodological package but a general research strategy. It aims to be both adaptable and eclectic. The choice of research tactics follows not from research doctrine, but from decisions in each case as to the best available techniques; the problem defines the methods used, not vice versa. Equally, no method (with its own built-in limitations) is used exclusively or in isolation; different techniques are combined to throw light on a common problem<sup>42</sup>.

Within the illuminative evaluation research strategy, three crucial stages may be identified<sup>43</sup>:

1. The thorough familiarization of the complex day-to-day reality of the setting.
2. The coherent selection of phenomena.
3. The identification and placement of underlying principles within a broader explanatory context.

The research techniques selected to operate within this three stage framework were privileged-access inquiry, interviews, and documentary analysis.

a. Privileged-Access Inquiry

Confidence and trust between all involved parties are essential ingredients of a privileged-access inquiry programme, and throughout the lengthy research period care and attention were paid to personal relationships and naval etiquette. The opportunities for personal interaction available in privileged-access were used to overcome three substantial problems inherent in an illuminative evaluation approach.

Firstly, there was the need to allay official misgivings and establish rapport with key personnel. Within the Ministry of Defence this was achieved by many telephone calls and written communications to clarify certain research issues. The success of this reassurance strategy can be measured by the writer eventually receiving privileged-access status to certain items of restricted information. The importance of this privilege, and the necessary but often tedious preliminaries leading to it, are stressed because subsequently it conveyed both to the writer and naval personnel a denoted privileged-access status that significantly facilitated the trust and confidence sought by all parties.

The second problem was to gain a general knowledge of naval procedures to cope with the host of terms, expressions, customs, traditions, practices and activities which constitute the everyday language and work of the Royal Navy. Valuable insights and experiences of the naval ethos were gained from observational visits to selected establishments, particularly HMS Nelson, the Headquarters of Naval Home Command, and HMS Excellent, the Royal Naval School of Gunnery, and formerly the original home of naval physical training.



Thirdly, it was essential to gain acceptance within the RNPTB to secure a fuller perception of naval physical training, sport and recreation and so aid the identification and analysis of the selected innovations or their remaining remnants. The major effort therefore in the privileged-access programme was to achieve these ends by involvement in a comprehensive range of activities at DNPTS, and HMS Temeraire the Royal Naval School of Physical Training. Often in separate, but sometimes in dual roles, the writer participated in and observed many morning parades and inspections, classes under instruction, periods of recreation, games afternoons, naval sports club fixtures, inter-service matches, and made numerous visits to various naval sports facilities.

The involvement had to be finely judged to maintain the separate roles of participant and observer. A major difficulty was recognizing when efforts and actions had strayed too far in one direction. Steadman succinctly expresses this problem in participant-observation:

In a sense, it is an attempt to skate safely on wet, thin ice. If the evaluator stays on the dry, firm area and merely observes systematically, he has failed to test the water. If, on the other hand, he plunges through and becomes immersed in the situation, forgetting the business of systematic observation, that too rates as failure, rendering suspect the data gathered<sup>44</sup>.

Time was also a crucial factor in the privileged-access programme. In the current security conscious atmosphere and prevailing naval manpower problems, visits to relevant establishments required prior authorization. While these restrictions did not hinder the actual research processes, much advanced planning was involved that dictated when certain aspects of investigation could be carried out.

b. Interviews

The Ministry of Defence attitude to research instruments obtaining a response which might adversely reflect the Armed Services precluded the

use of formal interviews. To avoid putting people on guard or running the risk of indiscretion, the term 'interview' was never used, but rather the request, "May I come and see you about X?".

A standardized sequence of questions was not devised but queries were structured depending on the particular innovation being investigated. These informal interviews were conducted with personnel holding a wide range of ranks and responsibilities in an attempt to elicit a broad and deep perspective. Some written notes were made during the course of the interviews and further notations made afterwards whenever possible.

c. Documentary Analysis

As indicated elsewhere the documentary data was extensive, so a primary task was to establish the relevancy of the many official records over thirty years old classified as open, and those under thirty years old classified as restricted and withheld from the public. A secondary but useful procedure was the classification of data into categories of physical training, sport, and recreation, using the definitional terms proposed in the study. Inevitably some element of overlapping occurred.

Using notions of sampling<sup>45</sup> and progressive focussing<sup>46</sup>, eleven innovations were initially selected from the official records as representative of the innovative activities of the RNPTB up to the year 1947. Applying a criteria of suitability that included an adequate continuity of documentation, the eleven innovations initially selected were reduced to five. In later chapters these five innovations are referred to as previous innovative activities.

The current administrative files of the RNPTB departments in Portsmouth consisting of DNPTS, SCB, and the Royal Naval School of Physical Training, provided the major source of primary data. The material consists of Defence Council Instructions, commands and

directives, minutes of meetings, incoming and outgoing correspondence, working papers and policy statements, submissions, internal memos and reports. The standardized filing system in use throughout the Royal Navy facilitated a systematic search, and using the same procedures of sampling and progressive focussing a further five innovations were selected and referred to in later chapters as recent innovative activities.

Personal interpretation played a significant role in the collection and analysis of material, but to reduce the degree of subjectivity a triangulation approach<sup>47</sup> was used involving the cross-checking of information in the three separate departments of the RNPTB, supplemented with viewpoints gathered from the informal interviews.

Privileged access status, personal identification and involvement facilitated access to the information, but organizational caution and security measures imposed certain restrictions. Some of the most critical information is classified 'Staff in Confidence' and was therefore unavailable to the writer. Another naval practice is to change appointments and responsibilities every two years, and destroy administrative files every five years, except correspondence and documents considered relevant or interesting. As a consequence, some developmental threads and outcomes were lost.

#### 7. A Summary of the Conceptual Framework

In the clarification of terms, adoption was seen as the total acceptance of an innovation. Dissemination implied a deliberate and systematic application of strategies to achieve change, as opposed to the haphazard processes that characterize diffusion. Implementation was viewed as the attempt to adopt an innovation with minimal distortion.

The following hypotheses were raised:

Hypothesis One: that organizational changes within the RNPTB are implemented with less resistance than content and method innovations underpinned by physical education curriculum theory.

Hypothesis Two: that effective change results from decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces.

Hypothesis Three: that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted.

An examination of authority-innovation decisions was proposed to determine whether or not a participative or authoritative approach is used to secure innovations in naval physical training, sport, and recreation. Tushman's<sup>48</sup> model was adapted to aid the analysis of innovative phases, and the intra and extra RNPTB communications and documentation.

An adoption process model was presented to illustrate the flow of actions and relationships within innovations in naval physical training, sport, and recreation. In this model the notion of DNPTS as the decision unit implementing innovations to adoption units is important.

The overall research strategy is one of illuminative evaluation using privileged-access inquiry, interviews, and documentary analysis.

Notes and References for Chapter Four

1. Harding, J.M. *et al.* 'The Study of Curriculum Change'. Studies in Science Education. 3. 1976. p.4.
2. Harding, J.M. *et al.* 1976. *op cit.* p.3.
3. Rogers, E.M. & Shoemaker, E.F. Communication of Innovations: A Cross-Cultural Approach. 2nd Edition. Free Press Macmillan. New York. 1971. p.26.
4. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* p.27.
5. Cooper, K. p.6. 'Curriculum Diffusion: Some Concepts and Their Consequences'. Research Intelligence. 3. 1. 1977. pp.6-7.
6. Katz, E. *et al.* p.240. 'Traditions of Research on the Diffusion of Innovation'. American Sociological Review. 28. 1973. pp.237-252.
7. Katz, E. *et al.* 1973. *op cit.* p.240.
8. Bholra, H.S. p.50. 'The Configurational Theory of Innovation Diffusion'. Indian Educational Review. 2. 1967. pp.42-72.
9. Bholra, H.S. 1967. *op cit.* p.50. citing Clark, D.L., Guba, E.G. 'An Examination of Potential Change Roles in Education'. Paper presented at Seminar on Innovation in Planning. October 1965.
10. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* p.9.
11. Russell, H.H. *et al.* The Peterborough Project. Ontario Institute for Studies in Education. Toronto. 1973. p.3.
12. Rudduck, J. p.143. 'Dissemination in Practice'. Cambridge J. of Education. 3. 3. 1973. pp.143-158.
13. Rudduck, J. 1973. *op cit.* p.145.
14. Elliott, J. 'Collecting Information to Test Hypotheses About Curriculum Dissemination and Implementation'. Interim Working Papers. No.11. Cambridge Institute of Education. 1976. p.3.
15. Rudduck, J. & Kelly, P. The Dissemination of Curriculum Development. NFER Publishing Company. 1976. pp.98-99.
16. Fullan, M. & Pomfret, A. 'Review of Research on Curriculum Implementation'. Ontario Institute for Studies in Education. 1975. (mimeo).
17. Waring, M. Social Pressures and Curriculum Innovation. Methuen. 1979. p.220.

18. Fullan, M. & Pomfret, A. p.336. 'Research on Curriculum and Instruction Implementation'. Review of Educational Research. 47. 1. 1977. pp.335-397.
19. Berman, P. & McLaughlin, M.W. p.352. "Implementation of Educational Innovation". Educational Forum. 40. 3. 1976. pp.345-370.
20. Fullan, M. & Pomfret, A. 1977. *op cit.* p.336.
21. Etzioni, A. & Etzioni, E. Social Change. Basic Books. New York. 1964. p.7.
22. Etzioni, A. & Etzioni, E. 1964. *op cit.* p.7.
23. Burns, T. & Stalker, G.M. The Management of Innovation. Tavistock. 1968. pp.19-20.
24. Goffman, E. Asylums. Doubleday. New York. 1962. p.3.
25. Keegan, J. p.456. 'The Inter War Years'. in Higham, R. (Ed.). A Guide to the Sources of British Military History. University of California Press. Berkeley. 1971. pp.452-469.
26. Zaltman, G. *et al.* Innovations and Organizations. John Wiley. New York. 1973. pp.12-14.
27. Zaltman, G. *et al.* 1973. *op cit.* p.14.
28. Downs, A. Inside Bureaucracy. Little & Brown. Boston. 1966. p.191.
29. See Zaltman, G. *et al.* 1973. *op cit.* pp.55-58 for further examples.
30. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* p.340.
31. Torrance, E.P. 'Some Consequences of Power Differences on Decision Making in Permanent and Temporary Three Man Groups'. in Hare, A.P. *et al.* (Eds.). Small Groups. Knopf. New York. 1955. pp.482-492.
32. Dwyer, D.J. A History of the Royal Naval Barracks Portsmouth. Gale & Polden. Aldershot. 1961. p.39.
33. Dwyer, D.J. 1961. *op cit.* p.40.
34. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* p.25.
35. after Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.* p.306.
36. Zaltman, G. *et al.* 1973. *op cit.* p.80.
37. Gross, N. *et al.* Implementing Organizational Innovations. Harper Row. New York. 1971. pp.30-31.

38. Rogers, E.M. & Shoemaker, E.F. 1971. *op cit.*
39. Zaltman, G. *et al.* 1973. *op cit.*
40. Tushman, M.L. 'Special Boundary Roles in the Innovation Process'. Administrative Science Quarterly. 22. 1977. pp.587-605.
41. Utterback, J.M. 'The Process of Technological Innovation Within The Firm'. Academy of Management Journal. 14. 1971. pp.75-88.
42. Parlett, M. & Hamilton, D. p.92. 'Evaluation as Illumination'. in Tawney, D. (Ed.). Curriculum Evaluation Today: Trends and Implications. Macmillan. 1976. pp.88-101.
43. Parlett, M. & Hamilton, D. 1976. *op cit.* pp.92-93.
44. Steadman, S. 'Techniques of Evaluation'. p.74. in Tawney, D. (Ed.). 1976. *op cit.* pp.55-83.
45. Travers, R.M.W. An Introduction to Educational Research. Macmillan, New York. 1969. pp.204-209.
46. Parlett, M. & Hamilton, D. 1976. *op cit.* p.93.
47. Elliott, J. & Adelman, C. 'Innovation at the Classroom Level'. in Innovation, the School and the Teacher. E203. Unit 28. Open University Press. 1976. pp.74-80.
48. Tushman, M.L. 1977. *op cit.* p.588.

## Chapter Five

### Previous Innovative Activities

Guided by an adaptation of Tushman's<sup>1</sup> model of innovative phases and key communication domains, selected innovations within the RNPTB are presented. These innovations are also referred to as previous innovative activities to indicate that they are much older than the relatively recent innovative activities which are considered in Chapter Six. Therefore the expedient criterion used to differentiate between these innovatory categories is a temporal one.

The main innovative phases examined are idea generation, problem solving, and dissemination and implementation, using the key communication domains that exist between the DNPTS as the decision unit, and other external institutions and the adoption units within the Royal Navy. Whenever possible the influence of cultural and material factors on innovation is demonstrated. To aid referral and comparison the innovations are individually coded, and the identities of personnel directly involved are safeguarded in a similar manner, but ranks are retained as indicators of power and status. All naval officers referred to in this chapter were in the General List (GL) category. The previous innovative activities selected for examination are:-

1. Innovation A. The Formation of the RNPTB.
2. Innovation B. The Adoption of the Swedish System.
3. Innovation C. The Introduction of Ju-Jitsu<sup>2</sup>.
4. Innovation D. The 90% System.
5. Innovation E. An Attempt to Form a WRNS Physical Training Branch.



1. Innovation A. The Formation of the RNPTB

No documentation is known to exist which precisely pinpoints the idea generation that led to the formation of the RNPTB in 1902. Following the defeats of the British Army in the Boer War there was a good deal of official and public concern at the time about the efficiency and capability of the army and the Royal Navy which focussed on the necessity for improving national standards of health and fitness<sup>3</sup>. A further impetus must have been the proposals of Lord Selborne, the First Lord of the Admiralty<sup>4</sup>, to upgrade the entry, training, and employment of officers and men of the navy. Lord Selborne addressed both Houses of Parliament in December 1902 and stressed that the navy was in a critical stage of development. The continuous technological advances in the latter half of the nineteenth century and the expansion of naval personnel from 60,000 to over 120,000 men since the mid 1880's had emphasized the need for changes in training and education to meet rapidly changing conditions. Previously the ordinary sailor had been a jack of all trades and had lived and worked afloat but now there was a need for specialization which had brought about:

..... an accumulation of men in barracks on shore is a new feature in naval life, and the utmost care must be taken to establish a system whereby the time of the men in barracks may be utilized to the greatest advantage of the navy and themselves<sup>5</sup>.

Whether or not physical training was a part of the system envisaged by Lord Selborne can not be fully ascertained, but preliminary discussions to bring about changes in naval physical training had been initiated in September 1901 between the Director of Naval Ordnance (DNO), Rear Admiral A., and Captain B, Commanding Officer of HMS Excellent, The Royal Naval School of Gunnery.

MacLaren's<sup>6</sup> system of physical training had been in use in the navy since 1888<sup>7</sup>, but there was a general opinion that its principles and practice were inappropriate for naval purposes<sup>8</sup>. Doubts on its suitability were based upon the system requiring costly and elaborate gymnasia, much apparatus and special machines; facilities that could not readily be incorporated into contemporary warships. MacLaren's system also had a decidedly military bias with great emphasis placed on surmounting obstacles.

Linked to the doubts raised about the suitability of MacLaren's system were serious misgivings regarding the lack of any structure and organization to administer physical training in the navy. The practice since 1888 had been for some seamen gunnery instructors to attend the army physical training course at Aldershot<sup>9</sup> and thereafter return to naval gunnery duties and conduct physical training unsupervised and at the discretion of Commanding Officers. Within the navy, little interest had been shown towards physical training in the past. No officers were specifically charged to supervise physical training. No systematic instruction was carried out, and no methods existed to promote physical training throughout the navy<sup>10</sup>.

Embodied within the idea generation for changes in naval physical training were the following proposals<sup>11</sup>:

- a. The navy should possess an efficient and self-contained physical training system quite independent of the Army and Royal Marines<sup>12</sup>.
- b. Selected junior officers should receive the best instruction available prior to specified full time appointments and special pay allowances to supervise naval physical training.
- c. Gunnery schools, depots, and flagships that had access to gymnasia should carry specialist physical training officers and instructors of petty officer and chief petty officer rank.

- d. Certain home ports, all flagships abroad, and the Channel and Reserve Squadrons should carry specialist officers as Inspectors of Gymnasia.
- e. A handbook should be compiled delineating the theory and practice of naval physical training.

The proposals of this major innovation met resistance and barriers to change within the navy. It was argued that extra and unnecessary demands would be placed on training programmes and ships' routines would be interrupted. In relation to the importance of physical training it was thought that the ranks of Petty Officer and Chief Petty Officer for seamen instructors were too high. Doubts were expressed about the autonomy of physical training implied by the special pay allowances and personnel being extra to normal complements. At the Admiralty level it was noted that the Royal Marines had a well established system of physical training. In view of this it was questioned whether or not a system for the navy should develop quite separately, as it was felt that Royal Marine officers on board ships were never sufficiently worked and could therefore supervise physical training at sea<sup>13</sup>.

Two possible schemes were drawn up<sup>14</sup> in an attempt to overcome resistance to change, particularly those objections concerned with expenditure and staffing levels. Plan A provided for one naval Commander as Superintendent of Gymnasia, three naval Lieutenants as Inspectors of Gymnasia at the three major naval depots at Portsmouth, Devonport and Chatham, and fourteen naval Lieutenants in flagships, at an estimated cost of £3000 per annum. Plan B was based on one naval Commander as Superintendent, three naval Lieutenants as Inspectors at the naval depots, and fourteen Royal Marine officers in flagships, at an annual cost of £1500.

Costing for the officer personnel<sup>15</sup> was based on the assumption that the Superintendent of Gymnasia would be placed on the same footing as the Commander Superintendent of the Royal Naval School of Signals, being granted two shillings and sixpence a day in lieu of command money for captaining a ship. Royal Marine and Royal Navy Lieutenants would receive a special allowance of two shillings and sixpence a day, the mean rate for gunnery and torpedo Lieutenants. The naval officers would be drawn from the Half Pay List and thus the estimated sums of £3000 or £1500 represented the net costs after deducting the savings on the Half Pay Finance Vote.

Costing for seamen instructors was not as straight forward. Difficulties arose because instructors also carried gunnery ratings and the proposed changes also affected complement numbers and billets<sup>16</sup>. The effect of ranking instructors at not less than Petty Officer and entirely separate from the established Petty Officer complement would increase the number of Petty Officers and reduce the number of Able Bodied and Leading Seamen to the same extent. The annual expense of this change based on the estimated current number of one hundred and forty instructors amounted to £1700. It was evident that any limitation of gunnery pay to two pence a day as a qualified gunner would counterbalance the increase of pay resulting from paying every physical training instructor as a Petty Officer. A rough approximation indicated a reduction of gunnery pay amounting to £500 to the pool of physical training instructors.

Even if steps were taken to ensure that the changes would not prejudicially affect men already serving, it was nevertheless clear that many seamen, particularly senior ratings, would receive less pay in the future if the proposed allowances were adopted. The question of whether or not the reduction in gunnery pay should be offset by an

increase in the gymnastic allowance was resolved when the latter was increased from fourpence to sixpence a day, at a total cost of approximately £400 per annum. This increased gymnastic allowance compared very favourably with other specialist pay and served to enhance the status of physical training in the navy.

A summary of the costing to implement the innovation of a structured physical training branch is shown below:

Table 6  
Summary<sup>17</sup> of Cost to Implement Structured  
Physical Training Branch in Royal Navy 1901

	<u>Plan A</u>	<u>Plan B</u>
Officers' Pay and Allowances	£3000 <u>Running Total</u>	£1500 <u>Running Total</u>
Men's Pay and Allowances	£1700	£1700
	£4700	£3200
Saving if reduction in gunnery pay maintained	£ 500	£ 500
	£4200	£2700
Cost of increasing gymnastic allowance from 4d to 6d per day	£ 400	£ 400
	<u>£4600</u>	<u>£3100</u>

Plan B using fourteen Royal Marine officers as Inspectors of Gymnasia was by far the most economical, but the system would not be exclusive to the Royal Navy. Further, while the award of Petty Officer ratings to physical training instructors required only Admiralty authorization, the increase of allowances and the employment of naval officers on full pay with allowances required Treasury sanction and an Order in Council.

Thus, the innovation suffered a serious setback when the Treasury announced<sup>18</sup> that only £1000 was available. Approximately one half of

this amount was provided for the appointment of four officers to supervise naval physical training. The other £500 was allocated to pay the new gymnastic allowance of 6d per day to instructors.

The curtailed provision for the innovation in the 1902-03 naval estimates is shown in Table 7, and indicates that the number of officers was reduced from the proposed eighteen to four. The tight budgeting for the men also necessitated stringent measures to maximize the £500 allocated for the increased gymnastic allowance. No change in pay and rating was given to men already serving as physical training instructors. Requalification became mandatory in order to receive the new scale of 6d per day and the promotion to Petty Officer. In all cases where men received the new scale, the maximum gunnery pay allowed was that of qualified gunner at 2d a day.

The much reduced innovation came into effect by an Order in Council dated April 1st 1902. In the context of the staffing and financial limitations its implementation was remarkable and in large measure due to the charisma, drive and vitality of the newly appointed Superintendent of Gymnasia. Commander C had a very successful career in the Royal Navy, and was known as a capable officer of sound judgement, as attested by his ultimate promotion to the rank of Admiral<sup>19</sup>.

Immediately upon his appointment in March 1902, he launched a campaign to enlarge, improve and enhance physical training throughout the navy. His first concern was to acquire a trained body of men with special qualities and knowledge to teach physical training. This approach was an entirely different departure and emphasis. Under the new organization a primary consideration was the capacity to teach and handle men rather than the former emphasis on physical ability and achievement. At Commander C's instigation the Admiralty informed the

Table 7

Estimate<sup>20</sup> of Expense to Introduce Curtailed Physical Training Scheme  
in Royal Navy 1902

1 Commander as Superintendent of Gymnasia	
on Full Pay	£ 365
Special Allowance	<u>£ 46</u>
	£ 411
1 Lieutenant R.N. as Inspector of Gymnasia	
on Full Pay	£ 219
Special Allowance	<u>£ 46</u>
	£ 265
2 Lieutenants Royal Marines as Inspector of Gymnasia.	
Officers already in established billets with no addition to complement. Additional expense therefore special allowance 2/6d per day to each officer	£ 91
Physical Training instructors qualified under new system.	
Difference between pay as Petty Officers and lower gunnery pay supplemented by difference between present 4d a day and proposed 6d per day gymnastic allowance	£ 500
	<hr/>
Estimated charge on Vote 1. 1902-03	£1267
Estimated charge on Vote 2. 1902-03	<u>48</u>
	£1315
Less saving on Vote 13 of £283 with suspension of half pay of Commander £155, and Lieutenant £128	<u>- 283</u>
	<u>£1032</u>
	<hr/>
say	£1000.

Commanders in Chief at Sheerness, Portsmouth, Devonport and all foreign stations, that until sufficient qualified officers were available, physical training in ships and establishments was to be supervised by an officer. The officer detailed for this duty in a flagship was also to supervise instruction throughout that particular fleet<sup>21</sup>. Where and whenever possible the release of such officer was secured to attend physical training courses, initially at ~~army~~ ~~gymnasia~~. The Commanding Officers of the gunnery schools at Portsmouth, Plymouth and Sheerness were approached to each select twelve intelligent men of good character who were willing to undergo the army instructor course at the Military School of Physical Training at Aldershot, subject to Commander C's opinion on their suitability<sup>22</sup>.

During the implementation stage, continued resistance and further difficulties were encountered. Some men declined to requalify because of loss of pay under the new conditions. For a time at Devonport, physical training was carried out by the gunnery school staff. This resistance was supported by the Commanding Officer of the training ship HMS Duke of Wellington, who was opposed to the establishment of Portsmouth as the centre for instructor training, being of the opinion that each naval command should train and requalify its own instructors. This barrier was overcome when Commander C secured authority to conduct inspections of physical training at Devonport. Further opposition came from the President of the Complement Committee<sup>23</sup>, but Commander C persistently and successfully pressed for more instructors as additions to the complements of ships and establishments. His success in increasing the complements and the strength and disposition of the new RNPTB, and incidentally that of the Royal Navy in 1902, is shown in Table 8.



Table 8

Current and Projected Complement Increases of Physical Training  
Instructors 1902<sup>25</sup>

<u>Seagoing Ships</u>	<u>Present</u>			<u>Projected</u>		
	No. of Ships	No. allowed per ship	Total	No. allowed per ship	Total	Increase
<u>Flagships:</u>						
Battleships	8	2	16	4	32	16
1st class Cruisers	6	2	12	4	24	12
2nd class Cruisers	2	2	4	3	6	2
<u>Others:</u>						
Battleships	27	1	27	3	81	54
1st class Cruisers	12	1	12	3	36	24
2nd class Cruisers	36	1	36	2	72	36
3rd class Cruisers	27	nil	nil	1	27	27
<u>Shore Establishments</u>						
<u>Boys Training Ships:</u>						
HMS Lion		2	9*	5	32	3
HMS Impregnable		2		7		5
HMS St. Vincent		1		4		3
HMS Boscawen		1		4		3
HMS Ganges		1		4		3
HMS Caledonia		1		5		4
HMS Black Prince		1		3		2
<u>Harbour Depots:</u>						
Portsmouth		6	11	6	11	Nil
Chatham		3		3		
Devonport		2		2		
<u>2nd class Stoker, Training Depots:</u>						
HMS Nelson		Nil	2	4	14	12
HMS Vivid		Nil		5		
HMS Northumberland		2		5		
<u>Gunnery Schools:</u>						
Portsmouth		3	6	3	8	2
Sheerness		1		2		
Devonport		2		3		
<u>Cadets: HMS Britannia and Keyham</u>						
		<u>Nil</u>	<u>Nil</u>	<u>5</u>	<u>5</u>	<u>5</u>
<b>TOTALS</b>		<u>37</u>	<u>135</u>	<u>90</u>	<u>348</u>	<u>213</u>

\* including 7 Royal Marine Instructors.

From Table 8 it can be seen that in seagoing ships, complements of physical training instructors were generally doubled, but the most spectacular changes were implemented at Boys' Training Ships and Stoker Training Depots with almost four and fourteen fold increases respectively.

Certain strategies ensured the development of quantity and quality within the RNPTB. Particularly significant was the appointment of a small staff of instructors specially selected for excellence in particular specialisms in physical training<sup>24</sup>. To promote continuity such men were appointed to Portsmouth for three years with the status of Staff Instructors, the beginnings of the exalted and coveted staff appointments which exist within the RNPTB today. Twelve additional officers were selected to hold appointments as Inspectors of Gymnasia in the home ports and all flagships, thus rescinding the earlier curtailment of such specialist responsibilities. Attempts at evaluation were also made by imposed requirements on ships and establishments to submit quarterly returns and half yearly reports on physical training to the Flag Captain Portsmouth for the Superintendent of Gymnasia.

Incentives and conditions of service for physical training instructors were not particularly attractive or advantageous. Some senior ratings had suffered a reduction in pay and the system placed all instructors on a common level irrespective of age, experience or ability. Apart from a staff appointment there was no reward for special effort or excellence, and these factors deterred ambitious, energetic and capable young men.

To secure good quality volunteers and provide incentives, a scheme of rating and pay was designed to provide long term careers in naval physical training<sup>26</sup>. The graded categories of instructor

ratings introduced were:- Senior Staff Instructor, Staff Instructor, 1st Class Instructor, 2nd Class Instructor, and 3rd Class Instructor. Graduated gymnastic allowances were paid ranging from 6d per day to a 3rd Class Instructor to 1/6d a day to a Senior Staff Instructor, with duties and responsibilities assigned according to position and status within the career structure. Opposition to the career structure argued that age would compel instructors to discontinue physical training and revert back to gunnery and torpedo skills.

Several other important factors contributed to the nurture of the RNPTB at critical points during its implementation and institutionalization within the naval training and operational framework. Foremost was the appointment in June 1902 of Admiral Sir John Fisher, later Lord Fisher, as the Second Sea Lord with responsibility for the manning and training of the Royal Navy. The reforming spirit of Admiral Fisher was felt throughout the navy and not least in the embryo RNPTB, sustained by the proposals of the Selborne Memorandum<sup>27</sup>. Secondly, the attempts to establish a centralized organization for naval physical training were ably supported by Lieutenant D, the deputy to Commander C, Superintendent of Gymnasia. He argued eloquently<sup>28</sup> for one central authority where supervision would be uniform, consistent and efficient. He reasoned that defects in one system could be more easily identified and rectified, and rivalry between different naval schools of physical training would prove disruptive and objectionable.

## 2. Innovation B. The Adoption of the Swedish System

The adoption of the Swedish system shortly followed the formation of the RNPTB in 1902. For some time in the navy there had been dissatisfaction with MacLaren's system of physical training that required cumbersome apparatus and expensive gymnasia which were

inappropriate to naval needs<sup>29</sup>. It was the Age of Exercise Systems<sup>30</sup>, but although the classification of physical training into national systems as practised in the latter half of the nineteenth and early twentieth centuries was convenient, it was also incomplete and historically imprecise. Systems were modified, reconstructed and blended, and a lucid description and analysis in 1892 by Treves<sup>31</sup> confirms these adaptations and the many similarities that existed.

Upon his appointment in the Royal Navy as Superintendent of Gymnasia, Commander C visited Berlin to appraise the German system and attended the British Army School of Physical Training at Aldershot to acquaint himself with the MacLaren system. Both Commander C and Lieutenant D came to the opinion that the systems examined consisted of mere collections of exercises based on no order or principle. Lieutenant D was particularly scathing of MacLaren's system, referring to it as:

a miserable collection of meaningless exercises, with no reason and little interest. What wonder then it received scant attention afloat or that the instructor of it was not held in high esteem<sup>32</sup>.

Attention was focussed on the Swedish system when a report from Captain E, the British Naval Attaché in Stockholm, gave a glowing account<sup>33</sup> of the high standards of instruction given to Swedish army and navy personnel at the Royal Gymnastics Central Institute of Stockholm. He recommended to the Admiralty that it would be worthwhile for an officer of the Royal Navy to visit Stockholm to study the Swedish system of physical training. At this time the Swedish system was gaining ground internationally, and its diffusion in state schools in England has been accounted for by May<sup>34</sup>, Woodward<sup>35</sup> and Surridge<sup>36</sup>. The reputation of the Royal Gymnastics Central Institute in Stockholm attracted visitors eminent in physical education from Europe and

America<sup>37</sup>. Mr. H.O. Box-Ironside, the British Chargé d'Affaires in Stockholm, obtained permission from the Swedish Minister of Foreign Affairs and Commander C went to the Royal Gymnastics Central Institute on November 10th 1902 to appraise the Swedish system.

The Swedish system included free standing exercises, the use of certain apparatus, and a number of gymnastic games and recreative movements. No fine distinction was drawn between physical exercises and gymnastic games, and many exercises intermediate between these two categories were termed 'application exercises'. Dancing and swimming movements were derived from application exercises, and running, jumping, vaulting, and climbing are other examples<sup>38</sup>.

The purpose of the Swedish system was to build a sound constitution to secure health and endurance; and through a degree of body control obtain efficiency and economy of effort<sup>39</sup>. The exercises were allocated a definite order so that such effects could be monitored and controlled by the teacher. The exercises were also arranged in a graduated progression of strength demands and complexity to suit varying ages. Activities were presented within a structured lesson plan to achieve a three-fold aim. Firstly, a lesson plan ensured that each part of the body received a prescribed amount of exercise at each lesson to secure even development. Secondly, it permitted each exercise to secure its maximum effect. Finally, it was claimed that the lesson plan allowed the maximum amount of work to be done in the time available.

In its complete form the Swedish system involved the use of a certain amount of apparatus. The most common pieces of apparatus were wallbars, beams, low benches, climbing ropes, jumping lines, vaulting boxes, and vaulting horses and bucks. The use of apparatus was seen as adding interest, and it was regarded as a great advantage that all

participants could be engaged at the same time as a class activity as distinct from isolated individual work. Unlike the MacLaren system, the Swedish free standing exercises were performed without any apparatus in the hands, such as dumb-bells or wands. Music was only occasionally employed as it was thought inconvenient to stop for the purposes of observation and correction of faults, and some loss of class control was feared in stoppages.

Teacher control appeared to be an important requisite in the Swedish system, so much so that its inherent disciplinary value was a significant commendation to the Education Department in England and to many school boards<sup>40</sup>. There is no doubt that the qualities of sharp obedience, smartness and order demanded by the Swedish system appeared eminently appropriate for physical training in the Royal Navy and strongly appealed to Commander C.

The adoption of the Swedish system by the RNPTB was based on an innovation-authority decision taken by Commander C. Dissemination and implementation followed rapidly. Naval officers selected as Inspectors of Gymnasia who had received army gymnastic instruction at Aldershot based on MacLaren's system underwent a conversion course in Portsmouth on the principles and practices of the Swedish system.

Sixty officers and men attended the first Swedish course in Portsmouth directed for the Royal Navy by an outside expert, Allan Broman, a 1883 graduate of the Royal Gymnastic Central Institute in Stockholm. Broman was a tantalizing figure who appeared intermittently in the field of physical training at the end of the nineteenth and early twentieth centuries. He was brother-in-law of Madam Bergman-Osterberg, the second Lady Superintendent of Gymnastics for the London School Board. Broman was also employed by the London School Board for a time circa 1884-1893. He assisted in the production

of one of the first naval handbooks on the Swedish system, viz.

Principles and Practice of Educational Gymnastics<sup>41</sup>. For his services to the RNPTB he was awarded a silver trophy by his Lordships of the Admiralty. On his death his widow returned the trophy and it is now housed in HMS Temeraire, the Royal Naval School of Physical Training.

The Swedish system was launched as a trial scheme in certain seagoing ships at the beginning of 1903. Based on the results of this pilot scheme the system was to be implemented in naval establishments and seagoing routines. The trial took place in the Mediterranean and Channel Fleets in selected ships of each type, viz:- flagship, battleship, first, second and third class cruisers. The numbers of physical training instructors borne in these ships were temporarily doubled. Criticism was levelled at this apparent excess of Petty Officer instructors seemingly capable of only physical training activities. Typical criticism was voiced by the Admiral of the Channel Fleet, Vice Admiral F, who remarked:

the introduction of a separate class of instructors into seagoing ships who contribute nothing to their fighting efficiency can hardly be justified<sup>42</sup>.

The implementation of the Swedish system of physical training was done in divisions<sup>43</sup> for thirty minutes weekly until proficiency in the exercises was obtained. Special 'setting up'<sup>44</sup> classes were conducted for cases of underdevelopment, bad carriage, slouching habits and for those who showed want of attention. Evaluative testing included heaving on the horizontal bar, dipping on the parallel bar, jumping in the air and landing with style, and a subjective assessment of general appearance. Other evaluative procedures were carried out by Inspectors of Gymnasia who were instructed to identify deficiencies, check the exercises were properly taught, keep records, and compile detailed monthly and quarterly reports.

The first quarterly returns submitted in early April 1903 from ships in the Channel Fleet<sup>45</sup> were not very encouraging. Lieutenant G, Inspector of Gymnasia Channel Fleet, reported that the trial had not commenced until March 16th and had terminated March 31st 1903. The token gesture to the scheme is exemplified in his quarterly return<sup>46</sup> partially illustrated in Table 9 below.

Table 9

Numbers of Boys and Men Undergoing Pilot Scheme of Swedish Physical Training and Hours of Instruction in Channel Fleet, March 1903

Ship	Ordinary Seamen	Hours of Instruction	Boys	Hours of Instruction	Stokers	Hours of Instruction	Nos. in Setting Up Class
HMS Majestic	142	5.4	83	5.5	20	2.5	12
HMS Jupiter	27	2.0	91	7.5	21	3.0	*
HMS Hogue	†	†	19	3.5	29	2.7	5
HMS Doris	102	2.6	16	4.4	*	nil	4

\* scheme not yet started.

† not available.

The low values of instructional hours in Table 9 are apparent, as are the non-commencement of physical training classes for stokers on HMS Doris, and the setting up class on HMS Jupiter. Lieutenant G also reported he had been unable to visit HMS Doris, and that HMS Pactolus had yet to join the Channel Fleet. Except for on the flagship, HMS Majestic, there had been little opportunity to fully assess the capabilities of the physical training instructors. Two new instructors newly qualified under the recent reorganization were very good and keen, but of the incumbent instructor, presumably only conversant with the MacLaren system, it was thought he was incompetent



and too old to learn the new Swedish system. It was noted that the apparatus available for physical training was worn or deficient.

Similarly, the reports on the trial from the Commanding Officers of HMS Majestic, HMS Jupiter, HMS Hogue, and HMS Doris<sup>47</sup>, indicated the difficulties that physical training imposed on the training and operational routine of their ships. All Captains supplied details of the size of classes and numbers of boys and men instructed on fore-castles and quarterdecks, but they also emphasized that other training such as anchor work, gunnery drills, and signals practice were seriously obstructed. The other major criticism was levelled at the status and role of the physical training instructors. It was not appreciated that the instructors were additions to complement to specifically direct and supervise physical training. Complaints were levied that the instructors could not perform the duties normally assigned to Petty Officers, such as Coxswain of Boats or Quartermaster. Another problem was the question of physical training for the older ratings who were apprehensive of taking exercise later in life and feared also ridicule from younger members of ships' companies.

The opinions expressed by the Captains of the trial ships were endorsed by Vice Admiral F, Admiral of the Channel Fleet<sup>48</sup>. He argued that gunnery and torpedo instructors had a definite role in the organization of a ship and important duties in action, but physical training instructors had none. Time and deck space were required for more important work, and he recommended that physical training be restricted to training ships and naval barracks.

In countering this stiff opposition to the innovation, Commander C pointed out<sup>49</sup> that as the Swedish system became more established, less time and space would be required as instruction to the older men would be discontinued when the exercises had been learnt. If that was the

case it is difficult to appreciate the reason why older ratings were compelled to participate in the first instance. Equally difficult to understand is the proposed discontinuance when the exercises had been learnt, unless it was a placatory tactic in the face of resentment and opposition. In defence of his instructors, Commander C argued that the value of the Swedish system lay in the careful and intelligent employment of the exercises, and only the instructors had the specialist knowledge for conducting such work in seagoing ships.

The particular stance adopted by Commander C was to a degree conciliatory, but sufficiently staunch to pursue successful implementation. The trial period in the Channel and Mediterranean Fleets was extended to continue in the spring and early summer of 1903. Facilities and staff resources in shore establishments and depots were increased. In the Portsmouth depot the drill shed was fitted out with Swedish apparatus. Swedish physical training of second class stokers was carried out on board HMS Nelson. At Chatham, Swedish physical training was conducted in the naval barracks. On boys' training ships the system progressed with an increase of the instructor complement. The majority of naval buildings employed for physical training were inadequate but by the middle of 1903 the design and provision of gymnasia were well advanced<sup>50</sup>. Large quantities of fixed and movable apparatus, including Swedish beams, wallbars, springboards, mats, vaulting horses and boxes, were supplied to training establishments in the three major home ports of Portsmouth, Plymouth, and Chatham<sup>51</sup>.

Additionally, an important example<sup>52</sup> of innovation adaptation to naval requirements was evidenced by the inclusion within the Swedish system of drills with light sheers and derricks for hoisting heavy weights, as it was reasoned that these particular seafaring skills should be preserved. Such work was referred to as repository drill,

and was taught by physical training instructors to boys and young seamen in training ships and depots.

The second quarterly reports for the trial of the Swedish system in seagoing ships were more encouraging<sup>53</sup>. In the Channel Fleet, difficulties were reported, but support for the system was evident. While instances were cited to encroachment on other instructional subjects, such as seamanship, the benefits of physical training were acknowledged. Improvements in the cheerfulness, appearance and general bearing of seamen were highlighted. Particular difficulties were identified in third class cruisers where low freeboards and very limited deck space made physical training at sea very difficult except in very calm waters.

The quarterly return for the Channel Fleet confirmed that the Swedish system was carried out more extensively for the period April to June 1903, as shown in Table 10 below:

Table 10

Numbers of Boys and Men Undergoing Pilot Scheme of Swedish Physical Training and Hours of Instruction in Channel Fleet, April-June 1903

No. of Instr-uctors	Ship	Ordinary Seamen	Hours of Instr-uction	Boys	Hours of Instr-uction	Stokers	Hours of Instr-uction	Nos.in Setting Up Class
4	HMS Majestic	123	18.5	74	19	20	5	variable
3	HMS Jupiter	28	8	80	18	20	2	"
3	HMS Hogue	nil	nil	14	14	25	6	"
2	HMS Doris	99	16	14	29	nil	nil	"
1	HMS Pactolus	17	17	16	27	nil	nil	nil

Compared to the initial trial shown in Table 9, the above values based upon the report and returns<sup>54</sup> of Lieutenant G, Inspector of Gymnasia Channel Fleet, show vastly increased hours of instruction; but certain problems were apparent. Most disturbing was the fact that the majority of the remedial or setting up classes were mainly used as punishment periods for inattention and slackness. Regular classes for stokers were not possible, and difficulties were reported in doing apparatus work in ships especially the problem of stowage. Continued resistance to imposed and compulsory physical training was evident in HMS Hogue where classes for Ordinary Seamen were made optional until the Captain received orders to the contrary<sup>55</sup>. Lieutenant G recommended that compulsory participation for senior ratings and men over thirty-five years old should be abolished.

Similar values and conclusions were received by Commander C from the Mediterranean Fleet, from HMS Bulwark, HMS Implacable and HMS Vindictive at Lagos, HMS Aboukir at Valencia, and HMS Pandora at Gibraltar. The wide dispersal of adoption units made innovation implementation difficult, but on the basis of the pilot studies it was concluded that the Swedish system of physical training could be institutionalized within the Royal Navy.

### 3. Innovation C. The Introduction of Ju-Jitsu<sup>56</sup>

The idea for the martial art of ju-jitsu to be introduced into the naval physical training curriculum generated from several sources. In this country at the turn of the nineteenth century, ju-jitsu was increasingly being taken up in universities and public schools, and its general popularity was growing<sup>57</sup>. Early in 1906, an officer in the Royal Navy, Commander H, submitted a proposal to the Director of Naval

Intelligence for the adoption of ju-jitsu in the navy<sup>58</sup>. The lengthy justification was well reasoned with variegated arguments.

Commander H's main contention was that steam power had replaced seamanship and the manipulation of sails, masts and yards which had previously provided the necessary physical and mental preparation for operational readiness. It was argued that it was necessary to find some form of physical training to fill this void. He acknowledged that various systems had been tried and some adopted, but it was maintained that the majority of these took the form of drill and as such did not impart the same benefits of seamanship and sail.

In following this argument it is well to remember that the newly formed RNPTB was but four years old and this was a marked criticism of the Swedish system and of the Physical Training Branch itself. This criticism was not isolated. Medical opinion<sup>59</sup> within the navy thought that certain exercises in the Swedish system impeded respiration and circulation, and even with only slight pitching and rolling of a ship the majority of exercises were quite impossible to perform. The instructional handbooks were too complicated, and there was doubt about the wisdom of physical training conducted in dusty gymnasia.

Commander H strongly argued that physical training as then practised in the Royal Navy was not greatly appreciated by the men as it was too mechanical. This argument was succinctly demonstrated by:

We have not found a physical exercise which is good for training men to fight. What is required is that the brain is trained to perceive, estimate the extent, and provide a remedy for danger .... the body should be trained to carry out automatically the rapid directions of the brain<sup>60</sup>.

To strengthen the case for ju-jitsu, supportive accounts and descriptions by Naval Attachés were taken from The Russian-Japanese War Reports<sup>61</sup> to illustrate the advantages of skilled lighter men

against heavier opponents. This line of argument was relevant and persuasive for two reasons. Firstly, national concern had been recently expressed in public and parliamentary debate on the physical deterioration of the populace that led to a governmental inquiry<sup>62</sup>. Secondly, within the navy there was a well held sentiment among many older and senior officers that serving personnel were not as tough as or imbued with the fighting qualities of their forbears. For many the vast technological advances in the navy had not altered their view<sup>63</sup> of the sailor as a fighting man as opposed to a technical specialist. Bayonet fighting and cutlass drills were regarded as invaluable, and naval brigades and boarding parties were held in high esteem<sup>64</sup>. High ranked scepticism of the Swedish system and recreation provision, and support for such activities as ju-jitsu which inculcated fighting qualities was endorsed by:

importance and usefulness of these manly exercises that in every way tend to develop our business which is fighting. They certainly deserve more encouragement than Canteens, Sailors' Homes and Football Matches, by the aid of which the men under my command at Portsmouth are fast deteriorating in all that makes for a fighting man<sup>65</sup>.

To counter this type of opposition, Commander H cited the opinion of Admiral Kamimora of the Japanese Imperial Navy:

However expert a man may be in the technical education of a navy, his service counts very little in time of war if he lacks presence of mind .... ju-jitsu develops a man's physical power and agility but also tends to make him resourceful in meeting all kinds of emergencies and surprises<sup>66</sup>.

Reference to Japanese opinion, the world's foremost exponents of the martial arts, was significant in the international relationships that existed at that time. In the aftermath of the Boxer Rising in China in 1900, the Anglo-Japanese alliance of 1902 aimed to secure the balance of power in the Far East. In the Japanese-Russian War 1904-05, the effectiveness of the Imperial Japanese Navy resulting in the

crushing defeat of the Russian fleet in the Straits of Tsushima was in great part due to British built warships and operational training directed by the Royal Navy. Consequently in Japan the Royal Navy was held in high regard, and a strong Japanese Naval Attaché legation in London nurtured close and cordial ties with the Admiralty and Royal Navy in this country.

Other subsidiary arguments to support ju-jitsu pointed out the simplicity of equipment and the easy storage of mats, the possible uses by ships' police, and that the activity promoted the discipline of temper. To aid the innovation-decision process, Commander H enclosed six copies of a ju-jitsu textbook recommending their distribution to the Second Sea Lord, the Inspecting Captain Boys' Training Ships and others, including Commander I who had just succeeded Commander C as Superintendent of Gymnasia. In conclusion Commander H personally recommended ju-jitsu having participated for five months, and suggested sending physical training instructors to the ju-jitsu school in Oxford Street, London, or procuring ju-jitsu instructors to initiate the activity in the navy.

Commander I's reaction<sup>67</sup> to the proposal was cool and defensive, and he pointedly noted the extent of Commander H's personal experience of five months! He emphasized that the question of introducing ju-jitsu into the navy had been under consideration for over a year. During that time the Oxford Street School of Ju-Jitsu had been visited, communications established with officers serving in Japan, displays had been witnessed, and the report of an officer who had attended a one month's ju-jitsu course had been considered. He submitted that ju-jitsu had no claim to be compared with the Swedish system and defended naval physical training by this poignant remark that has contemporary significance:

If the principle of training and exercising men in small parties throughout the day is adopted, if the responsibility of Divisional officers and Petty Officers is recognized, and physical training and exercise routines are authorized in all Squadrons by Commanders-in-Chief, the irksomeness will cease, widespread ideas will be involved and the popularity of personal exercise will be largely increased<sup>68</sup>.

Commander I suggested that ju-jitsu was an interesting form of game or sport likely to appeal to all ranks as a recreational amusement, and well suited to take its place in the curriculum along with bayonet fighting, wrestling, boxing and fencing. He argued that these latter activities were of old established English origin and as such should not be abandoned lightly for a foreign sport. However it was conceded that any activity likely to enlist individual keenness and desire to keep fit was worthy of consideration, and he suggested a feasibility study prior to a decision to adopt ju-jitsu in the navy.

There is limited information on the feasibility study or the innovation's implementation and evaluation. An outside expert, M. Kimotsuki, formerly a ju-jitsu instructor at the Japanese Naval College, was appointed having been recommended to Captain S. Nicholson, Assistant Director of Naval Intelligence, by Lieutenant Commander Kogo Sato, Japanese Assistant Naval Attaché in London.

Basic equipment sufficient for sixteen participants was purchased<sup>69</sup>. Ju-jitsu coaching to physical training instructors was given three times weekly at HMS Excellent, Royal Naval Gunnery School and the Royal Naval Barracks Portsmouth between October 2nd and December 20th 1906. Private fee paying classes were held in the evenings<sup>70</sup>.

At the beginning of January 1907 a further sum of £75 was granted to extend the tuition to the end of March 1907. A policy of self-sufficiency was established with the proposal<sup>71</sup> to appoint the best naval physical training instructor to the Staff of the Royal Naval School of Physical Training at the end of this period.



The evaluation was subjective, but Commander I's carefully worded assignment of category and status to ju-jitsu should be noted:

The introduction of ju-jitsu into the course of Physical Training Instructors has been attended with success. I consider this form of Wrestling as a valuable recreative adjunct to Naval Physical Training in developing activity and muscular quickness, and in training men to be resourceful and quick in combined mental and physical alertness. I believe it will be a popular form of recreative amusement amongst the men of the Fleet<sup>72</sup>.

#### 4. Innovation D. The 90% System

At the outbreak of World War One in 1914 the Royal Naval School of Physical Training in Portsmouth was converted into a convalescent hospital<sup>73</sup>, and physical training instructors were drafted to gunnery duties in the fleets. Before the end of the war in 1918, a few instructor qualifying courses were resumed by Commander J and a skeleton staff of 'Hostilities Only' instructors. As a formal organization the RNPTB did not exist, and it was only after hostilities had ceased that an attempt was possible to restore the RNPTB as a full-time naval department.

With the return to peace the Royal Naval School of Physical Training was reopened in 1918 and a committee convened by the Second Sea Lord to consider the future development and reorganization of naval physical training, sport and recreation. The convening of the conference was in itself an innovation as from its inception in 1902 the curricula and administrative policies of the RNPTB had been decided by authoritative innovation-decisions<sup>74</sup> taken by Superintendents of Gymnasia subject to Admiralty approval.

The conference was unanimous that the time was most opportune to redevelop the RNPTB on wider and more progressive lines<sup>75</sup>. The source of the idea to innovate is not difficult to identify. The salient influence was the experience gained in the war which had demonstrated

that physical training was of national importance, a sentiment shared and expressed by the Board of Education in their official Syllabus of Physical Training for Schools 1919<sup>76</sup>. Backed by medical opinion, physical and recreational training had been widely implemented in the British Army during the war. The role of graded physical training and recreation in recruit and battle training was acknowledged<sup>78</sup>, and in the prestigious medical journal The Lancet, the recuperative characteristics of sport and recreation in the treatment of battle fatigued personnel were cited<sup>79</sup>. Within the navy, during the war it was apparent that 'Hostilities Only' ratings with little or no preliminary training required something more than naval drill to bring them to an acceptable standard of physical fitness and discipline<sup>80</sup>. The end of the war and the prospective years of peace ahead were seen as the opportunity for the RNPTB to secure a fresh start. Large numbers of 'Hostilities Only' ratings and regular seamen whose service engagements had expired were in the process of being demobilized, and reorganization within the entire Royal Navy was anticipated.

A physical training system that stimulated interest and produced mutual trust between officers and men was sought<sup>81</sup>. Disturbances within the army in connection with demobilization delays were taking place even as the naval conference sat, and with the Scapa Flow mutiny only recently uppermost in naval minds, a system of physical and recreational training that would secure discipline and have a steadying effect was seen as a panacea for any postwar naval ills.

The innovation subsequently adopted was a comprehensive package for naval physical training, sport, and recreation, derived from a rationale formulated by Commander J. The rationale was partly based on the concepts of Muscular Christianity<sup>82</sup>, no doubt reflecting

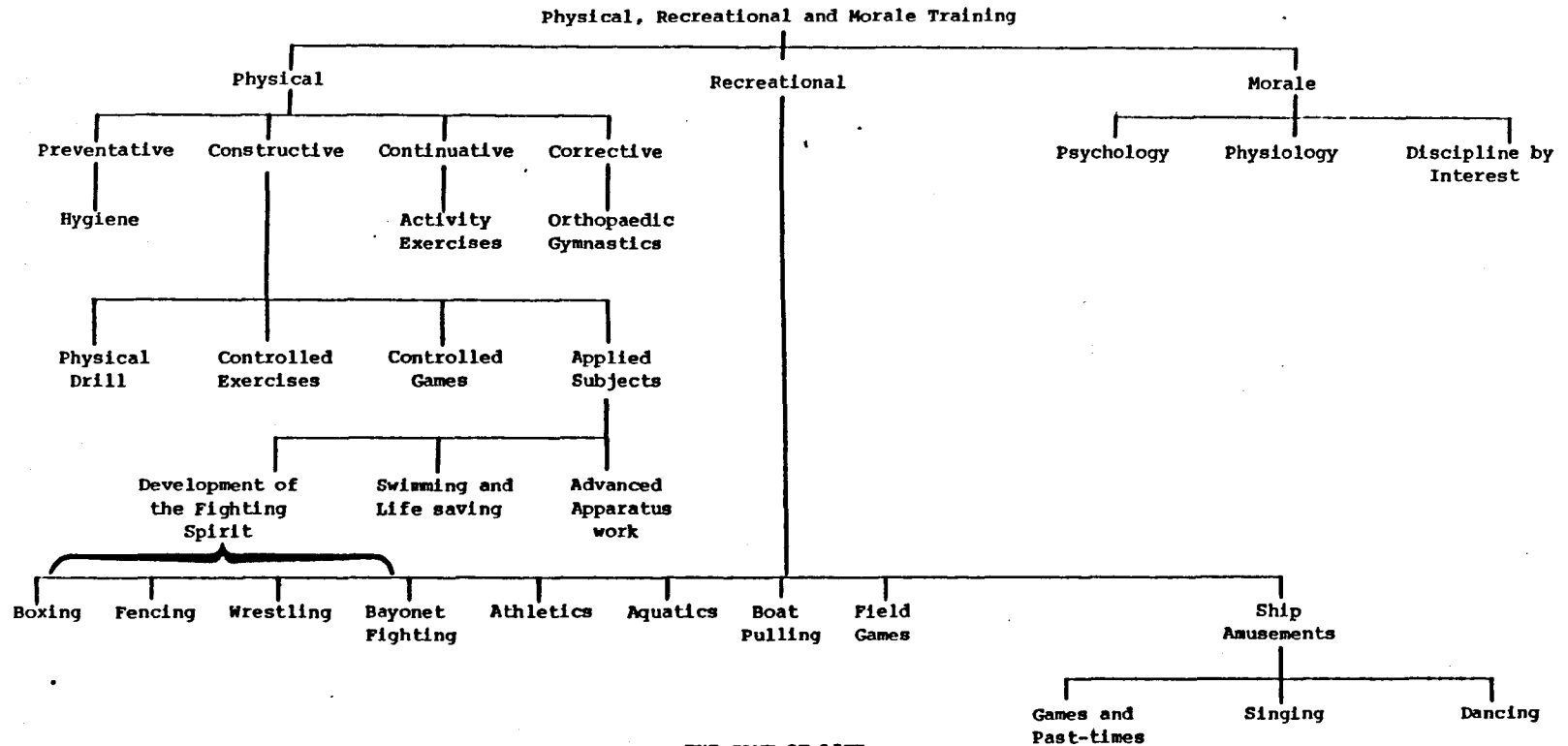
Commander J's teaching experiences as Director of Physical Training at Eton, and partly from his training in the Swedish system at the Royal Gymnastics Central Institute in Stockholm. Commander J's ideological model<sup>83</sup> is shown in Figure 6. Two weeks after the naval conference the same model, with minor adaptations, appeared in The Lancet underpinning a justification for a national system of physical education<sup>84</sup>.

Viewed from the perspective of present times the model is a solemnization of sport and exercise, and within it there is a degree of incoherence. A full assessment is hindered by the fragmentary knowledge of Commander J himself. He was a close friend of Lieutenant D, the first Deputy Superintendent and Inspector of Gymnasia Portsmouth, with whom he left the Royal Navy to study at the Royal Gymnastics Central Institute. He succeeded Lieutenant D at Eton as Director of Physical Training when the latter joined the Board of Education as His Majesty's Inspector for Physical Training. Like Lieutenant D he rejoined the Royal Navy at the outbreak of war in 1914, but unlike his friend who went on to reach the rank of Captain and the distinction of winning the Distinguished Service Order, he spent the war in Portsmouth on curtailed physical training duties.

These events can be attributed to the fortunes of war and in no way reflect his ability. There is testimony of Commander J's energy and administrative skill<sup>85</sup> resulting in over 31,000 seamen in the war years successfully passing naval swimming courses<sup>86</sup>. At the time of the 1919 conference he was the most experienced officer in naval physical training and the value of his model must be judged in the context of its own times. To the officers contemplating changes in naval physical training, sport, and recreation, and were mindful of the current civilian and military unrest, the comprehensive package was impressive and a participative authority-innovation decision<sup>87</sup> secured its adoption.

Figure 6

Commander J's Rationale for Royal Naval Physical, Recreational and Morale Training 1919



THE GAME OF LIFE

- I. Rules {
1. Don't play foul
  2. Don't chuck up the sponge
  3. Go all out to win
  4. Play for your side and not yourself.

- II. Requirements. The Achievement of the Highest Human Endurance through {
- |                |                        |  |
|----------------|------------------------|--|
| 1. Stomach     | - Food                 | - Victualling Dept.                      |
| 2. Health      | - Full Bodily Movement | - Activity Exercises                     |
| 3. Sentiment   | - Song and Dance       | } Recreational Training<br>90% Principle |
| 4. Happiness   | } Amusement            |  |
| 5. Comradeship |                        |  |

- III. Acquired by {
- Simplicity
  - Attractiveness

- IV. Result - Mental and Physical Activity leading to Perfect Morale.

The scheme was based on two simple premises. The first implied that if the innovation was adopted in its entirety it would serve as an agent of change. Shades of Muscular Christianity are evident in the claims that certain physical and mental benefits would accrue to secure a perfect state of morale. Underpinning this assumption was the second premise that reasoned that only 10% of a given population excelled in sport, and in the past only the needs of this minority had been catered for. The system was therefore regarded as a new incentive to include the remaining 90% in a wide range of physical and recreational activities<sup>88</sup>. Because of this latter assertion the scheme was referred to as 'The 90% System'.

Certain other aspects of The 90% System as delineated in Figure 6 require explanation. Physical drill was seen as the narrow interpretation of the Swedish system practised by the RNPTB in the pre-war era. Preventative, constructive, continuative and corrective activities were regarded as necessary to secure and maintain physical fitness. Constructive exercises were designed to secure fitness in the young, notably boy seamen and young ratings under training, while continuative activities were intended for other ratings in the navy. The term 'controlled exercises' was intended to convey the correct interpretation of the Swedish system, while 'controlled games' were viewed as having character forming values. The development of fighting spirit was sought. Massed singing and dancing were included to develop patriotism<sup>89</sup>. Psychology was listed as promoting a better understanding between junior officers and men. The rules, requirements, and the result, as expressed in the model are the ethics of Muscular Christianity translated into colloquialisms of the navy.

A brief explanation of The 90% System scoring schema is necessary. To encourage both personal keenness and collective effort

the scoring system consisted of two major components. A 'Score for Energy' based on the number of personnel from a division who entered a competition was added to a 'Score for Skill' which was dependent on the level of performance achieved. Scores were calculated using the simple formulae as follows:

$$\text{Score for Energy} = \frac{\text{Divisional Number of Personnel Entered}}{\text{Number of Divisional Personnel Available to Enter}} \times 100$$

A very good performance in an activity was taken as the fixed standard of skill in calculating the 'Score for Skill', viz:

For a timed event:

$$\text{Score for Skill} = \frac{\text{Standard Time}}{\text{Average Time for Division}} \times 100$$

For a measured event:

$$\text{Score for Skill} = \frac{\text{Average Distance}}{\text{Standard Distance}} \times 100$$

Thus a score sheet for a timed 90% System one mile race competition might read as shown in Table 11.

The implementation of the 90% System, which contained both physical training and recreational activities, depended greatly on the divisional system within the navy being effectively utilized. These implementation strategies and procedures are now examined.

At the ship or establishment level the 90% System was introduced through a recreation executive committee comprised of:

- |                |   |  |
|----------------|---|--|
| President      | - | Commanding Officer                                     |
| Vice President | - | First Lieutenant                                       |
| Secretary      | - | Ship's Chaplain or Medical Officer                     |
| Treasurer      | - | Accounts Officer                                       |
| Members        | - | Divisional Officers and one rating from each division. |

Table 11

Sample Score Sheet for 90% System One Mile Inter Divisional Race Competition

Division	Number in Division	<u>Score for Energy</u>			<u>Score for Skill</u>				Standard Time (secs)	% of Points Scored	Score for Skill	Final Score	Order of Merit
		Number Sick	Number Available	Number of Entrants	% Entrants	Score for Energy	Total Time (secs)	Average Time (secs)					
Forecastle	90	10	80	50	$\frac{50 \times 100}{80}$	62.5	15350	307	300	$\frac{300 \times 100}{307}$	97.72	160.22	4
Quarter Deck	86	6	80	60	$\frac{60 \times 100}{80}$	75	20400	340	300	$\frac{300 \times 100}{340}$	88.24	163.24	3
Royal Marines	70	5	65	65	$\frac{65 \times 100}{65}$	100	22685	349	300	$\frac{300 \times 100}{349}$	85.96	185.96	1
Stokers	100	10	90	80	$\frac{80 \times 100}{90}$	88.8	26240	328	300	$\frac{300 \times 100}{328}$	91.46	180.36	2

At the divisional level, similar committees were formed whose main functions were to make known their own requirements, develop recreation schemes, and disseminate information. Comprehensive instructions for successful implementation were contained in an official Handbook of Physical and Recreation Training<sup>90</sup>, but no data is known to exist by which the degree of implementation can be ascertained.

Within the RNPTB the innovative activities to implement the 90% System were comprehensive and sometimes radical. In the latter category was the elevation of the supervisory staff to the level of a naval directorate headed by a Captain<sup>91</sup>. A deputy director with the rank of Commander was appointed, and an officer of similar rank was gazetted as Commanding Officer of the Royal Naval School of Physical Training. This elevation to directorate level was important as it carried implications for branch autonomy, enhanced status, and finance allocations within the naval monetary estimates. The Royal Naval School of Physical Training became a separate establishment from the Royal Naval Barracks Portsmouth, although it remained as a lodger unit for victualling purposes. Officers and men appointed to or training at the Royal Naval School of Physical Training were exempt from all routine duties at the naval barracks. Further recognition was gained by physical training as a naval specialism in its own right by the DNPTS being granted the discretion to make drafting appointments for its own personnel.

The main barrier obstructing the implementation of the 90% System was the acute shortage of personnel qualified in physical and recreational training brought about by the operational priorities of the war. To overcome this shortfall, all officers and senior ratings with physical training qualifications were called upon to volunteer



for requalifying courses. Men on expired engagements and those who had returned to the navy for the hostilities were asked to extend their service engagements. Ten Warrant Officer ranks for physical training were instituted, and pay and distinctive badges and insignia brought into line with other specialist naval departments. Gymnasias were overhauled and refurbished. Naval medical officers attended courses at the Royal Naval School of Physical Training, and Commander J was retained in an advisory capacity for six months until a nucleus of officers and instructors had been trained in the 90% System.

A major innovative feature of the 90% System was the formation of a central committee to promote and administer naval sport and recreation<sup>92</sup>. While such a concept was new to the Royal Navy, similar committees were already operating in the Army and Royal Air Force.

A performance gap was seen by the need to coordinate existing organizations that intermittently promoted naval sport and recreation. Some control measures over the administration and distribution of non-public funds were necessary. Assistance was also needed to obtain and provide for the upkeep of recreation grounds that were urgently required at some training establishments and home and foreign ports.

A critical shortfall in recreation ground provision was anticipated as the 90% System was implemented and adopted, and a governmental grant was thought necessary to meet the initial expense in launching this feature of the innovation.

Treasury opposition to this particular aspect of the 90% System was vigorous<sup>93</sup>, and based on the grounds that the pay of the officer appointed to oversee the committee's administration should not be drawn on public funds. This barrier was removed by the allocation of these supervisory duties to the Assistant Director of Physical Training. Further public expenditure was also seen to be saved by making the

committee conjointly responsible for sport and recreation in the Royal Marines. Thus the Royal Navy and Royal Marines Sports Control Board (SCB) was formed<sup>94</sup> in June 1919, with the Second Sea Lord as President and the Assistant Director of Physical Training as Secretary.

Implementation was rapid and effective. Recreation clubs were formed in ships, shore establishments and ports. Different sports and recreational activities were categorized as official or unofficial for financial support purposes. Reports from sport and recreation committees testify to the progress and improvements that were made in the provision of resources<sup>95</sup>. Maintenance was carried out to existing facilities, and increased funds from public money made for the hire, upkeep and purchase of naval sports grounds<sup>96</sup>. Improved transport arrangements were instituted to convey naval competitors to inter-service competitions and Royal Navy championships. Allocations of sports equipment and theatrical properties were made to ships, and assistance given in the purchase of film projectors and loan of films. Four thousand SCB handbooks and port guides were produced for distribution among naval personnel. A measure of the innovative activity may be gleaned from the non-public sum of £35,000 collected from officers and men and expended in the first two years of the SCB's operations<sup>97</sup>.

##### 5. Innovation E. An Attempt to Form a WRNS Physical Training Branch

A consequence of peace in 1945 and the reorganization of the Royal Navy after the Second World War was the unsettled future of the WRNS. First established in the First World War for two years between 1917 and 1919, the small women's naval auxiliary performed valuable duties that permitted more men within the Royal Navy to be released for active service<sup>98</sup>. In July 1939, key personnel were engaged by the

Admiralty to implement the revival of the WRNS when war once again threatened Europe. By September 1944 the numerical strength of the WRNS reached its peak with some 75,000 officers and ratings serving in ninety trade categories in fifty specialist branches. The wartime roles and achievements were impressive<sup>99</sup>, but even before the end of the war in 1945 reduction proceeded with certain categories declared redundant and the future of the whole service was uncertain.

The Admiralty's decision to retain a small permanent force was in large measure based upon the WRNS's outstanding war record. It was for a projected peacetime service of some 9000 officers and ratings that a small committee was appointed in 1947 to investigate the requirements to develop physical training, sport and recreation for female naval personnel. The committee's terms of reference<sup>100</sup> required it to establish the most suitable method of achieving a high standard of physical fitness, keenness and efficiency in games, together with recommendations for staff training.

The pressures within the WRNS initiating the need to innovate can be identified. The introduction of compulsory physical training was thought to be undesirable, but there was a requirement for more recreation and to raise the standard of competitive sport. A large proportion of personnel had no exercise, there was a lack of coaching, and little provision for the promotion of recreational activities. It was a struggle to produce teams to represent the WRNS in the women's inter-service sports competitions. There was a dearth of qualified coaches, and the task of promoting sport and recreation fell on unqualified officers working unaided in difficult conditions.

The underlying causes for this state of affairs can be attributed to personnel changes in the transition from war to peace. During the war years a number of traditionally trained women physical education

specialists joined the WRNS and were employed in training establishments and ports to conduct physical training and organize sport and recreation. By 1947 these specialists had left the service except for a few senior officers engaged in administrative duties not connected with physical training and sport. Additionally, a large number of young women entering the WRNS in the immediate postwar era had little or no opportunity to play games during the hostilities and many were apathetic to sport and recreation because of this lack of participation<sup>101</sup>.

A significant activity of the committee appointed to investigate physical training, sport, and recreation for the WRNS was the search for information from external sources possessing specialist knowledge. Visits were made to the Royal Air Force School of Physical Training, and the Auxiliary Territorial Service<sup>102</sup> (ATS) School of Physical Training at Aldershot; and discussions held with ATS personnel and officers of the Women's Auxiliary Air Force<sup>103</sup> (WAAF) on training methods and organization. Consultations were held with the Central Council for Physical Recreation and with the Principals of the women's physical education specialist colleges at Dartford and Bedford. DNPTS and the staff of the Royal Naval School of Physical Training were also consulted, and the views of personnel serving in the WRNS were obtained. Unfortunately the opinions of the latter are not documented, but it is relevant to consider the postwar state of the physical training branches in the ATS and WAAF as they were most influential in the information seeking and problem solving processes. The information for this assessment is drawn from PRO/ADM/1/20822.

Staffed by forty commissioned officers who were college trained physical education specialists, the ATS had operated three schools of physical training during the war to qualify women from the ranks as

instructors. Outwardly this formal organization appeared strong and effective, but the introduction of compulsory physical training in 1942 had created many problems. There were difficulties of releasing women in working hours because many Commanding Officers were never convinced that physical training had sufficient beneficial effects to justify the time it required. Where leave from work was refused, it was done as a duty in spare time that generated some resentment. Where permission was granted, compulsory physical training often proved unpopular because it lengthened the working day. Some form of physical activity was considered necessary because of the pre-eminence of sedentary occupations in the ATS, but mandatory physical training, limited time allocations, and a lack of equipment and facilities due to wartime restrictions had created dissonance.

In the postwar rundown, physical training in the ATS fared badly. At the time of the WRNS committee's investigation the number of ATS physical training staff had been drastically reduced. One college trained specialist combined a physical training advisory capacity at the War Office with inspection duties for the whole ATS together with titular headship of a small school of physical training. This remaining school was administered by a young non-specialist officer who was about to leave the service without replacement. Trainee instructors, who were often nominated rather than volunteers, returned to their units in original trade categories. Further qualifying courses were necessary to become full-time instructors. The WRNS committee thought both the ATS staff instructors and trainees were very young and inexperienced. The instruction appeared elementary, and it was concluded<sup>104</sup> that the future outlook for physical training, sport, and recreation in the ATS was bleak.

Postwar physical training provision in the WAAF afforded a vivid

contrast. Physical training was not compulsory although Commanding Officers were empowered to order it if they wished. WAAF physical training staff instructors were an integral part of the exceptionally well equipped Royal Air Force School of Physical Training. Facilities comprised of a modern well kept swimming pool, large gymnasias, and well designed major and minor games areas. The physical training instructor category in the WAAF was a full-time trade specialism, and all trainee instructors were volunteers. The WAAF section of the Royal Air Force Physical Training Branch was under the command of WAAF specialist physical education officers.

An effective and permanent organization for the WRNS such as existed in the WAAF was an attractive innovation. The WRNS committee's proposals for such an innovation emphasized the requirement was for sport and recreation as opposed to 'physical jerks', and included all major games for women, and sailing, dancing, fencing, swimming, together with classes of recreative exercise. It was considered extremely important that any scheme approved should be administered, supervised and implemented by qualified women. To this end it was proposed that a small nucleus of seven WRNS officers should be responsible to the Director WRNS for the training and supervision of instructors, and for the promotion of sport and recreation of women serving within the naval commands. The chain of command and duties of this specialist nucleus is shown in Table 12.

Direct entry recruitment was envisaged to fill these officer appointments with women who had successfully completed a three year specialist course at a recognized female physical education college. To ensure some teaching experience, applicants were to be no less than twenty-five years old, and to be primarily interested in adult recreation. Salaries were to be slightly higher than the current

Table 12

Proposed Chain of Command and Duties of WRNS Specialist Physical Training Officers<sup>105</sup>

<u>Appointment and Duties</u>	<u>Complement Required</u>
Staff of Director WRNS	1 WRNS First Officer
Supervision and Instructor Training Duties	1 WRNS Second Officer
Naval Command WRNS Sport Officers:-	
Home Command	2 WRNS Second/Third Officers
Nore Command	1 WRNS Second/Third Officer
Devonport Command	1 WRNS Second/Third Officer
Portsmouth Command	1 WRNS Second/Third Officer

Burnham Scales for teachers. It was thought that the most able women specialists would be attracted to the appointments, a view shared by the Principals of both Bedford and Dartford Colleges of Physical Education<sup>106</sup>. The committee also expressed a strong conviction that such officers should not be expected to take naval squad drill or act as Entertainment Officers. The allocation of such duties during the war to officers qualified in physical education had discouraged them and driven them out of the service.

It was estimated that some fifty female ratings in the physical and recreational training category would be required to ensure no WRNS unit was beyond the reach of regular leadership and instruction, and numbers to be borne on complements were recommended<sup>107</sup>. Volunteers were to be drawn from all WRNS trade categories to ensure trainees of the highest quality, and promotion to Leading Wren on qualifying and possible advancement to Petty Officer Wren were requested.

A recommendation that the approach should be the same as practised in the WAAF, and that the Air Ministry should be approached

to help was a significant one. Ostensibly it was argued that using WAAF physical training staff to assist in the training of the first batch of WRNS instructors would allow some assessment of the scheme before formulating long term policy. However there was a strong wish on the part of the all female committee to avoid any possible dominance or male orientation from liaison with the RNPTB.

The most revolutionary aspect of the innovation was the proposal<sup>108</sup> to establish a Women's Combined Services Physical and Recreational Training School. Part of the justification for this idea was that once the complement of fifty WRNS ratings had been trained, then replacement and refresher courses alone would hardly justify the maintenance of a physical training school exclusively for the WRNS. A combined school would be very economical for the three women's services and would ensure all round high standards. The committee was very attracted to this concept and believed a scheme of instructor training could be devised to meet the requirements of the three women's services.

The innovation received a mixed reception<sup>109</sup> from the Admiralty Board, and DGNMT and DNPTS, the naval directorates concerned. While it was agreed that the WRNS should have organized sport and recreation, it was debatable if there was sufficient full-time employment for a special category of WRNS physical training rating. The Director of Naval Manning saw no reason why male instructors should not instruct and organize WRNS sport and recreation. He indicated<sup>110</sup> support for the direct entry of three qualified physical education officers into the WRNS, but argued that the formation of a new physical training branch and trade categories would constitute an overload on the naval financial votes that could not be justified. A combined school of physical training for the women's services was rejected as a complex idea demanding high initial capital expenditure and intricate inter-service budgeting.



Captain K, DNPTS, at some length argued<sup>111</sup> it would require at least five qualified officers to establish a satisfactory and efficient physical and recreational branch in the WRNS. Further innovation gatekeeping strategies<sup>112</sup> are evident in his suggestion that a limited number of serving WRNS officers and ratings should undergo short courses at the Royal Naval School of Physical Training to enable them to function as part-time sports officers and organizers.

Captain K's proposed radical modification was far removed from the innovation initiators' concept of a permanent and specialist branch in the WRNS, and it exemplifies the power of DNPTS as the decision unit in naval physical training, sport and recreation policy making. Director L of the WRNS had no alternative<sup>113</sup> but to regret the apparent stringent manning decisions that for the sake of two additional specialists precluded the formation of a physical and recreational branch in the WRNS. Faced with little alternative she opted for the unsatisfactory compromise of short courses at the Royal Naval School of Physical Training that would provide part-time sports officers and organizers.

#### 6. A Consideration of Common Features

This section attempts to draw together some of the common features of the change processes that have characterized the RNPTB's previous innovative activities, namely:-

- Innovation A. The Formation of the RNPTB.
- Innovation B. The Adoption of the Swedish System.
- Innovation C. The Introduction of Ju-Jitsu.
- Innovation D. The 90% System.
- Innovation E. An Attempt to Form a WRNS Physical Training Branch.

There are several inherent difficulties in trying to focus on the processes of innovation. Foremost is the lack of a rational and convincing model which articulates the dimensions of innovation in general or universal terms. A further difficulty stems from the fact that the activities considered here consist of different types of innovation. For example, innovations A and E were organizational or structural changes, C was an innovation of curriculum content, B contained changes of method and content, while D was an innovative package with structural, method and content changes. The innovations are widely separated in time over a period of some forty years and unavoidably there is a high degree of artificiality when considering an innovation in isolation from its social context. The task of comparing these different kinds of innovation is therefore difficult and can only be justified as an exploratory strategy to detect common innovative patterns and change processes within the RNPTB.

A convenient starting point from which to identify and consider some common features is an examination of the idea generation proposals which initiated the changes.

In keeping with the established procedures of a formal organization such as the Royal Navy, all the proposals without exception were formally written submissions containing lengthy justifications for the innovation in question. This formal and detailed approach characterized all the proposals irrespective of innovation type. Within the arguments contained in the submissions, several common themes are identifiable.

A common and substantial theme was the emphasis laid on the benefits that would accrue to the navy. These benefits ranged from increased physical fitness as argued in innovation B with the adoption of the Swedish system, enhanced discipline through participation in

ju-jitsu in innovation C, and heightened morale from innovations A, B, C and D. Throughout the explicit expectation was that the particular innovation would improve some personal quality that would increase the operational efficiency of the navy as a fighting organization.

A second apparent theme lay in the reassurances embodied in the proposals that the changes would not adversely affect or disrupt existing work routines, or at least that any disruption would be minimal. These reassurances were aimed at two levels of the naval hierarchy. Firstly, at the highest level the Admiralty Board who ultimately approve or disapprove all innovation decisions within the navy. Secondly, at the middle management level, such as Commanding Officers, on whose goodwill the successful implementation depended, particularly innovations requiring time allocation alterations.

A remarkable feature of the proposals considered here is that none of them, not even those for innovations B, C and D concerned with method and content, originated from within the RNPTB. The adoption of the Swedish system came from a suggestion by the Royal Naval Attaché in Stockholm. The idea for ju-jitsu in the naval physical training curriculum stemmed in part from a senior officer's participation in the sport, although some RNPTB innovative activities were initiated<sup>114</sup> prior to his proposal. The 90% System was the idea of the officer most experienced in naval physical training after World War One, but the support strategies and embellishments that accompanied this innovation can be attributed to officers external to the RNPTB who had an interest and commitment to naval sport and recreation. Outside influences such as these mirror and reinforce Rogers and Shoemaker's<sup>115</sup> paradigm of external stimulation and the initiation of innovation in social systems.

A major difference in the origins of the proposals however needs to be noted. Innovations A and E concerned with organizational changes arose from proposals made by committees, whereas content and method innovations B and C were proposed by individuals. This difference of origin holds true for the innovation package D mentioned above, where the content and method aspects were suggested by an individual officer but the organizational changes for implementation came from committee proposals.

Significant too in the innovation process was the confined nature of the input and reaction to idea generation activities. Circulation was limited to the Superintendent of Naval Physical Training and his deputy, and intermittently to a few officers external to the RNPTB who by their long association with naval sport and recreation were selected for occasional committee duties. Without exception all these officers were executive GL category and as such were not physical education specialists.

Lastly, a common proposal characteristic was the presentation of alternatives. Concomitant to this proposal pattern and within the limited circulation, the examination and articulation of arguments for and against each option formed an important aspect of RNPTB innovation processing. For example, in the proposal for innovation A, two possible schemes were suggested by which the RNPTB could be established. Even though scheme B which proposed the use of Royal Marine officers as Inspectors of Gymnasia was the most economical and therefore in most naval circumstances the one most likely to be acceptable, articulate arguments were made in favour of scheme A to maintain innovation exclusiveness to the Royal Navy.

Information seeking activities with external agencies were common features during the idea generation and problem solving phases of the

innovations. Three types of knowledge function within the decision to innovate and the adoption of the most appropriate course of action. Awareness-knowledge commences when it is known that the innovation exists. 'Know-how'-knowledge consists of information to use an innovation, principle-knowledge is the understanding of the underlying theory<sup>116</sup>.

Great variation in knowledge and understanding exists within innovations. While it is possible to use an innovation with only 'know-how'-knowledge, in the long term the lack of principle-knowledge can adversely affect subsequent decision making and policies<sup>117</sup>. In innovation A, other than awareness-knowledge of the physical training branches in the Army and Royal Marines, there is no evidence to suggest that these or other external agencies were consulted in the process of forming the RNPTB. However, in innovations, B, C, D and E, information seeking activities did take place. It is difficult to establish with any certainty the levels of knowledge reached, but in the main the consultations and appraisals were brief. For example, prior to the adoption of the Swedish system, several visits of short duration were made to European centres of physical education and the appraisal visit to the Royal Gymnastics Central Institute in Stockholm only lasted a week.

Two other factors reinforce the doubt concerning the level of knowledge attained in innovation B. Firstly, no centre for the training of men in the Swedish system then existed in this country, and the officers involved in its early implementation in the RNPTB did not attend the Royal Gymnastics Central Institute until after they had left the navy. Secondly, compared with the lengthy full-time courses in Stockholm and in women's physical education colleges in England<sup>118</sup>, the retraining classes conducted for the RNPTB by an outside expert were

only four weeks long. There are substantial reasons therefore to believe the levels of knowledge and understanding achieved were not high in the adoption and initial implementation of innovation B.

In innovations D and E, the other armed services played significant roles as external agencies, but certain information gaps and the nature of these innovations precludes similar speculation about the levels of knowledge and understanding achieved. The formation of the SCB as an implementation strategy for the 90% System was copied from successful administrative arrangements for sport and recreation operating in the Army. Information seeking activities characterized the attempts in innovation D to form a WRNS physical training branch. Consultations were made with both the ATS and WAAF (later WRAC and WRAF respectively), and it was suggested that WAAF expertise might be used to train the first WRNS instructors.

The most effective use of external expertise and information seeking activities appears to have been pursued in innovation C which introduced ju-jitsu into the RNPTB curriculum. Supportive opinions were gathered from established authorities. A London school of ju-jitsu was visited and demonstrations witnessed. A RNPTB officer attended an intensive ju-jitsu course, and an outside expert was engaged to coach selected personnel over an extended period.

Information seeking activities and help from external expertise appear to be facilitated where innovation parameters such as teaching method and content are highly visible and well defined.

Only innovations B and C, concerned with the Swedish system of physical training and the introduction of ju-jitsu respectively, were characterized by pilot studies or trials before implementation. The Swedish system was launched as a trial scheme in ships of the Mediterranean and Channel Fleets in 1903. A significant feature was

the manipulation of the conditions under which the trial was conducted. The doubling of the numbers of physical training instructors on the ships selected for the trial in effect guaranteed its successful outcome. In innovation C the pilot study of ju-jitsu was carefully controlled in terms of personnel and time. The induction training was confined to sixteen RNPTB instructors over a two phased period of six months. The second phase of three months was conditional upon satisfactory evaluation of phase one. Within this innovation, where reliance on external expertise was a prominent factor, a significant feature was the urgent policy of self-sufficiency<sup>119</sup>.

Evaluation attempts constitute a final feature of the RNPTB's previous innovative activities considered in this chapter.

Annual inspections by a high status officer, usually of Admiral rank, formed the major technique by which the newly formed RNPTB was evaluated. The only early evaluation known to be available is the report<sup>120</sup> of the inspection carried out at the Royal Naval School of Physical Training in 1906, four years after the formation of the RNPTB. This evaluation approach was essentially impressionistic and subjective. Comparisons were drawn with the large well equipped gymnasias at the Army School of Physical Training at Aldershot and it was concluded that RNPTB facilities were inadequate. Difficulties of class scheduling and overcrowding were cited and the shortfall in swimming provision was noted. Selected RNPTB officers received commendations for their work and it was concluded that zeal and enthusiasm pervaded the organization and implementation of naval physical training. The highlighting of deficiencies together with personnel recommendations, suggests that some of the evaluation was 'self-report', being based on accounts submitted by the RNPTB to the inspecting officer.

A subjective report concluded that the innovation of ju-jitsu had been satisfactorily implemented<sup>121</sup>. No evaluations of the 90% System were found by this writer, but within the naval system that requires reports to be submitted to the next highest level throughout the organizational hierarchy it may be concluded that evaluation attempts were made on innovation C.

In innovation B, simple criteria of numbers of personnel and hours of instruction received, supplemented by subjective assessments of improvement in cheerfulness, appearance and general bearing, formed the evaluation base of the Swedish system<sup>122</sup>.

In summary, an adaptation of Tushman's<sup>123</sup> model of innovative phases and key communication domains was used to examine the dimensions of idea generation, problem solving, and dissemination and implementation of previous innovative activities of the RNPTB. The selected previous innovations were:-

- Innovation A. The Formation of the RNPTB.
- Innovation B. The Adoption of the Swedish System.
- Innovation C. The Introduction of Ju-Jitsu.
- Innovation D. The 90% System.
- Innovation E. An Attempt to Form a WRNS Physical Training Branch.

Additionally, the common features within the innovation processes consisting of the proposals, external consultations, pilot studies and evaluation procedures were identified and examined. In this consideration it was established that the proposals, which were lengthy and highly formalized, did not originate within the RNPTB. Organizational innovations arose from committee proposals, whereas innovations of content and method were proposed by individuals. Most previous



innovation proposals were characterized by various alternative options, and the limited input to idea generation activities was noted. Three types of knowledge function within the innovation decision were identified but definite levels of knowledge within the innovative activities were not established. It was suggested that information seeking was facilitated where innovation parameters were well defined, and it was concluded that evaluation procedures were not strongly operative or effective.

Notes and References for Chapter Five

1. Tushman, M.L. 'Special Boundary Roles in the Innovation Process'.  
Administrative Science Quarterly. 22. 1977. pp.587-605.
2. The contemporary term for Ju-Jitsu is Judo.
3. Barnard, H.C. A Short History of English Education. University of London Press. 1952. p.262.  
See also Sir F. Maurice. 'Where to Get Men'. The Contemporary Review. 62. 1902. pp.78-86.
4. The post of First Lord of the Admiralty was filled by a Member of Parliament whose portfolio was the overall charge of the Royal Navy. Lord Selborne's proposals are also referred to as the Selborne Memorandum. viz. Admiralty. Entry, Training, and Employment of Officers and Men of the Royal Navy and Royal Marines. HMSO. 1902.
5. Admiralty. 1902. *op cit.* p.10.
6. MacLaren, A. A System of Physical Education: Theoretical and Practical. Clarendon Press. Oxford. 1869.  
See also Gerber, E.W. Innovators and Institutions in Physical Education. Lea & Febiger. Philadelphia. 1971. for an account of MacLaren's (1820-1884) life and work, and his contribution to the establishment of the Royal Army Corps of Physical Training.
7. See PRO/ADM/1/6942.
8. PRO/ADM/1/7614.
9. PRO/ADM/1/6942.
10. Admiral Douglas minute October 31st 1901 in PRO/ADM/1/7614.
11. Condensed from DNO letter September 30th 1901 in PRO/ADM/1/7614.
12. Physical training branches were well established in the Army and the Royal Marines being formed in 1864 and 1871 respectively.
13. Admiralty minute November 5th 1901 in PRO/ADM/1/7614.
14. See PRO/ADM/1/7614.
15. Based on summary of expense on personnel that required Treasury sanction in Treasury Secretary minute November 25th 1901 in PRO/ADM/1/7614.

16. Billet is a naval term for a specifically designated job within an establishment's or ship's complement.
17. Treasury minute November 25th 1901 in PRO/ADM/1/7614.
18. Treasury minute December 18th 1901 in PRO/ADM/1/7614.
19. Personal information on Commander C based on correspondence with the Naval Historical Library reference D/NHB(L) 3/3/414/1 dated December 13th 1979, Who's Who 1916-1928, and his obituary that appeared in "The Times" on January 15th 1926.
20. Treasury minute November 25th 1901 in PRO/ADM/1/7614.
21. Admiralty circular letter March 7th 1902 in PRO/ADM/1/7614.
22. Commander in Chief Portsmouth letter A328. April 24th 1902 in PRO/ADM/1/7578.
23. See Secretary of the Admiralty letters in PRO/ADM/1/7579.
24. Letter A600 June 9th 1902 in PRO/ADM/1/7579.
25. Contained in PRO/ADM/1/7614.
26. See series of Admiralty circular letters and an Order in Council March 12th 1903 in PRO/ADM/1/7679.
27. Admiralty. 1902. *op cit*.
28. See Lieutenant D's letters in PRO/ADM/1/7614.
29. PRO/ADM/1/7614.
30. Cruden, C. 'Care of the Body in the Late Nineteenth Century and Early Twentieth Century in England'. Bulletin Physical Education. 11. 1. 1975. pp.17-21.
31. Treves, F. Physical Education. J. & A. Churchill. 1892. pp.56-61.
32. Gymnasticus (pseudonym used by Lieutenant D). p.7. 'Physical Training in the Navy'. The Fleet. 1906. pp.5-15.
33. Captain E's report in PRO/ADM/1/7605.
34. May, J. The Influence of the Local Education Authority in London on the Development of Physical Education. Ph.D. Thesis. University of Leicester. 1971.
35. Woodward, A.C. The Development of Physical Education in Schools 1907-1933 with Special Reference to the Work of Sir George Newman and the Medical Department of the Board of Education. M.Ed. Thesis. University of Manchester. 1968.

36. Surridge, T.J. Swedish Gymnastics in England: The Work and Influence of Mathias Roth. M.Ed. Thesis. University of Manchester. 1974.
37. Gerber. 1971. *op cit*. p.165.
38. Board of Education. Memorandum on Physical Training in Secondary Schools. Circular 779. HMSO. 1911.
39. Board of Education. 1911. *op cit*. p.6.
40. McIntosh, P.C. Physical Education in England Since 1800. Bell & Sons. 1952. p.114.
41. Admiralty. Principles and Practice of Educational Gymnastics. HMSO. 1904.
42. Vice Admiral F letter to Secretary of the Admiralty. April 10th 1903. in PRO/ADM/1/7614.
43. Naval personnel grouped usually according to departments and work specialisms.
44. 'Setting up' a now disused naval term for achieving the desired standard of naval bearing and discipline.
45. See PRO/ADM/1/7614.
46. Lieutenant G. Quarterly Return of Physical Training of Channel Fleet. April 10th 1903. in PRO/ADM/1/7614.
47. PRO/ADM/1/7614.
48. Vice Admiral F. April 10th 1903. *op cit*.
49. Commander C's observations April 28th 1903 on Report of Admiral F Commanding Channel Fleet in PRO/ADM/1/7614.
50. Commander C. Report on the Present State of Physical Training. June 8th 1903. in PRO/ADM/1/7614.
51. Admiralty letter. NS591211636 September 2nd 1903. in PRO/ADM/1/7614.
52. Commander C's proposal. June 24th 1903. PRO/ADM/1/7614.
53. See PRO/ADM/1/7614.
54. PRO/ADM/1/7679.
55. Captain HMS Hogue to Vice Admiral F. April 9th 1903. in PRO/ADM/1/7614 and July 27th 1903. in PRO/ADM/1/7679.
56. A version of this account was published as 'A Model of Cautionary Innovation: The Introduction of Ju-Jitsu in the Royal Navy 1905'.

- in Journal of the Royal Naval Physical Training Branch Association. 1979. pp.11-14.
57. See Bankier, W. Ju-Jitsu: What It Really Is. Apollo Magazine. 1905.  
Watts, R. & Beldam, G.W. The Fine Art of Ju-Jutsu. Heinemann. 1906.  
Uyenishi, S.K. The Textbook of Ju-Jutsu As Practised in Japan.  
Athletic Publications. 1921.
  58. Commander H. February 15th 1906. PRO/ADM/1/7796.
  59. Gaskell, A. Staff-Surgeon. 'Physical Culture and its Pitfalls, with  
a Critical Analysis of Swedish Drill'. in Statistical Report of  
the Health of Navy 1905. HMSO. 1905. pp.124-129.
  60. Commander H. February 15th 1906. *op cit*.
  61. Directorate of Naval Intelligence. Russia-Japanese War Reports.  
Volume 1. HMSO. 1905. p.118.
  62. Report of the Interdepartmental Committee on Physical Deterioration.  
HMSO. 1904.
  63. The resistance to major innovation in military and naval technology  
lies in the uncertainty of strategic evaluation and partly in  
professional romanticism. The strength of this resistance is  
shown by the tenacity which twentieth century armies retained  
their cavalries in the Second World War even though their limited  
value had been demonstrated in the First World War. For a fuller  
discussion on this topic see Lang, K. 'Military Organizations'.  
in Marsh, J.G. (Ed.) A Handbook of Organizations. Rand McNally.  
New York. 1965. pp.838-878.
  64. As late as 1940 cutlasses were used by a boarding party from  
HMS Cossack on the German supply ship Altmark in Joessing Fjord,  
Norway, to rescue 300 British seamen captured by the battleship  
Graf Spee.
  65. Commander in Chief Portsmouth minute. April 16th 1906 to Secretary  
of the Admiralty. PRO/ADM/1/7796.
  66. Quotation attributed to Admiral Kamimora by Commander H. in  
PRO/ADM/1/7796.
  67. Commander I. March 31st 1906. in PRO/ADM/1/7796.
  68. Commander I. March 31st 1906. *op cit*.
  69. Equipment invoice. October 2nd 1906. in PRO/ADM/1/7796.

70. Written agreement NS10794/1906 between School of Physical Training Royal Naval Barracks Portsmouth and Japanese School of Ju Jitsu, 305 Oxford Street, London. in PRO/ADM/1/7796.
71. Commander I. December 12th 1906. PRO/ADM/1/7796.
72. Commander I. December 12th 1906. *op cit*.
73. Dwyer, D.J. A History of the Royal Naval Barracks Portsmouth. Gale & Polden. Aldershot. 1961. p.40.
74. Zaltman, G. *et al*. Innovations and Organizations. John Wiley. New York. 1973. p.80.
75. Physical and Recreational Training of the Royal Navy 1919. Report of a Conference held at the Royal Naval School of Physical Training Portsmouth. January 14-17th 1919. in PRO/ADM/1/8549/16.
76. Board of Education. Syllabus of Physical Training for Schools 1919. HMSO. 1919. p.5.
77. Tait McKenzie, R. 'The Treatment of Convalescent Soldiers by Physical Means'. Proceedings Royal Society Medicine. 11. 1916. pp.31-70.
78. Bredin, A.E.C. 'Modern Developments in Physical Training'. J. Royal United Services Institute. November 1922. pp.678-681.
79. Digby Bell, K. 'The Position of the Medical Profession in Relation to National Physical Education'. The Lancet. January 31st 1920. pp.231-235.
80. Introductory remarks in PRO/ADM/1/8549/16.
81. PRO/ADM/1/8549/16.
82. See McIntosh, P.C. Fairplay: Ethics in Sport and Education. Heinemann. 1979. pp.20-36.
83. PRO/ADM/1/8549/16.
84. Digby Bell, K. January 31st 1920. *op cit*. p.232.
85. Burnett, R.L. 'Physical and Recreational Training'. Brassey's Annual. 1934. pp.73-81.
86. See Addenda 5 in PRO/ADM/1/8549/16.
87. Zaltman, G. *et al*. 1973. *op cit*. p.80.
88. PRO/ADM/1/8549/16.

89. Digby Bell, K. January 31st 1920. *op cit.* p.234.
90. Admiralty. Handbook of Physical and Recreational Training for Use of the Royal Navy. Vol.2. HMSO. 1920. pp.5-48.
91. See PRO/ADM/1/8566/237.
92. Addenda 1. in PRO/ADM/1/8549/16.
93. See the volume of papers on this matter in PRO/ADM/1/8566/237.
94. Admiralty Order 2033. N19488/19. June 7th 1919. in PRO/ADM/1/8566/237.
95. See Committee Secretaries' reports in PRO/ADM/1/8566/237.
96. See expenditure for the years 1919-1926 in PRO/ADM/1/8699/100.
97. PRO/ADM/1/8619/24.
98. Mason, U.S. The Wrens 1917-1977. A History of the Women's Royal Naval Service. Educational Explorers. Reading. 1977. p.36.
99. See Mathews, V.L. 'The Work of the Women's Royal Naval Service in the War'. J. Royal United Services Institute. February 1942. pp.51-61.  
  
Mathews, V.L. 'Women's Royal Naval Service in the War'. J. Royal United Services Institute. February 1946. pp.83-96.  
Mathews, V.L. Blue Tapestry. Hollis. 1948.  
McBride, V. Never At Sea: Life in the Women's Royal Naval Service. Educational Explorers. Reading. 1966.  
Campbell, A.B. Customs and Traditions of the Royal Navy. Gale & Polden. Aldershot. 1956.
100. Report of the Committee to Investigate the Organization Required for the Advancement of Physical Training and Sport in the WRNS. July 8th 1947. in PRO/ADM/1/20822.
101. See minute dated July 24th 1947 in PRO/ADM/1/20822.
102. Later Women's Royal Army Corps (WRAC).
103. Later Women's Royal Air Force (WRAF).
104. Report for the Advancement of Physical Training and Sport in the WRNS. July 8th 1947. *op cit.*
105. Based on information in PRO/ADM/1/20822.

106. See Report for the Advancement of Physical Training and Sport in the WRNS. July 8th 1947. *op cit.*
107. Recommended number of WRNS instructors to be borne on complements were:
- WRNS units less than 100 personnel - Combine with other units
  - WRNS units with 100-250 personnel - One instructor
  - WRNS units with over 250 personnel - Two instructors
  - WRNS Depot Burghfield - Four instructors
  - Assistants to Naval Command
  - WRNS Sport Officer - One instructor per Command.
108. Report for the Advancement of Physical Training and Sport in the WRNS. July 8th 1947. *op cit.*
109. See PRO/ADM/1/20822.
110. Director of Manning minute dated August 23rd 1947. in PRO/ADM/1/20822.
111. DNPTS minute dated September 8th 1947. in PRO/ADM/1/20822.
112. Rogers, E.M. & Shoemaker, F.F. Communication of Innovations: A Cross Cultural Approach. Free Press. New York. 1971. p.30.
113. See Director WRNS minute dated February 12th 1948. in PRO/ADM/1/20822.
114. See Commander I letter March 31st 1906. PRO/ADM/1/7796.
115. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit.* pp.276-278.
116. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit.* pp.106-107.
117. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit.* p.107.
118. McIntosh, P.C. Physical Education in England Since 1800. Bell & Sons. 1952. pp.119-132.
119. Commander I. December 12th 1906. *op cit.*
120. Commander in Chief Portsmouth. Report on the School of Physical Training. October 25th 1906. PRO/ADM/1/7936.
121. Commander I. December 12th 1906. *op cit.*
122. See PRO/ADM/1/7679.
123. Tushman, M.L. 1977. *op cit.* pp.587-605.



## Chapter Six

### Recent Innovative Activities

In this chapter an adaptation of Tushman's<sup>1</sup> model of key communication domains and the innovation phases of idea generation, problem solving, and dissemination and implementation, is again used to examine recent innovative activities of the RNPTB. To aid referral, innovations are coded, and the identities of closely involved personnel are safeguarded in a similar manner. Ranks are retained as indicators of power and status, but in this chapter it is also necessary to distinguish between General List (GL) officers in transient positions of naval command, and specialist physical training (SD) officers who permanently serve in the RNPTB. As indicated in Chapter Five, the expedient criterion employed to differentiate between recent and previous innovative activities is a temporal one. The recent innovations selected for examination are:-

1. Innovation F. The Replacement of the Swedish System.
2. Innovation G. The Attempts to Amalgamate the Armed Services' Physical Training Branches.
3. Innovation H. The Integration of WRNS Instructors into the RNPTB.
4. Innovation I. The Introduction of Physical Fitness Testing.
5. Innovation J. The Recreation Manager Concept.

1. Innovation F. The Replacement of the Swedish System

An examination of the pressures and forces that brought about the replacement of the Swedish system in naval physical training in 1967 is a convenient starting point, because as viewed from the perspective of post Second World War social and educational change, the system was an anachronism. Contemporary educational theories stressed freedom and

choice, creativity and discovery. As high status and influential opinion leaders and change agents the Ministry of Education through Her Majesty's Inspectorate and various publications<sup>2</sup>, together with the advisory staff of Local Education Authorities, had reinforced a wide interpretation to the point where physical education was regarded as:-

the whole field of physical activity, all sports and pastimes, in and out of doors, of a competitive or recreational character involving either team cooperation or individual effort. Its variety is infinite<sup>3</sup>.

Both the Royal Air Force (RAF) and the British Army had long abandoned the Swedish system. In 1926 the army had modified the system with the rhythmic work of Denmark's Niels Bukh<sup>4</sup>, and almost simultaneously the Royal Air Force had recognized that the Swedish system exercises:-

lacked rhythm and coordination and many were found unduly exhausting. Generally they did not tend to induce interest or pleasure, and 'physical jerks' as physical training was commonly called, was looked upon as a punishment rather than something that would benefit the individual<sup>5</sup>.

After the Second World War the RAF maintained its awareness and sensitivity to contemporary ideologies through a policy of recruiting physical education officers direct from the teaching profession. The army too revised its physical training programmes in keeping with current fitness training ideas and recreational trends<sup>6</sup>. In a wider social context sport and recreation received greater emphasis from The Wolfendon Report<sup>7</sup> and the liaison of the Sports Council with statutory bodies and voluntary organizations<sup>8</sup>.

In this critical reassessment of physical education, sport and recreation, three major innovations highlighted the wide disparity that existed between the contemporary approach to physical activity and that practised by the RNPTB. Firstly, the informal teaching method in physical education which stressed teacher guidance rather than domination was a change of emphasis rather than content<sup>9</sup>. More conversational and

issuing of guidance was preferred than command-response instructions. The freer approach permitted a more informal use of apparatus that facilitated personal choice and experiment. Less insistence on rigid teaching formations and the abandonment of work in unison emphasized the individual rather than the class. Secondly, the movement approach<sup>10</sup> provided a qualitative structure to physical exercises and gymnastics. Bodily movement was assigned various graduated qualities of force, time, and shape, with varying possibilities of interpretation. Less imposed and stereotyped than traditional physical training the movement approach demanded thought and selection by the performer, and these requirements were seen as educationally attractive and advantageous. The third major innovation was a cluster of scientifically based training regimes that emphasized physical fitness. The underlying rationale of this latter approach was that the limited capacity of human performance can be increased by variations in intensity, frequency and duration of training schedules.

After nearly sixty-five years of use the formal Swedish system was entrenched in the ideology and curriculum of the RNPTB. The informal teaching method and the movement approach which both emphasized creativity, choice and experimentation, did not appear directly relevant and suitable to naval needs. The Royal Navy generally and the RNPTB in particular, believed, and still do believe, that the essence of naval discipline and efficiency is underpinned by responses secured by insistence on alacrity and conformity. These requirements were in part admirably provided by the Swedish system, and the informal method and the movement approach appeared to have little to offer.

It was in response to an operational problem that arose for the RNPTB that minor adjustments in naval physical training were made in the direction of informality and choice. As the complexity of technological

systems within ships and naval establishments increased so more and more time was required for specialist trade training. To compensate for reductions made in time allocations for physical training the RNPTB made small concessions to encourage naval personnel to participate in activities during off duty hours. For example, a free activity period was incorporated into naval physical training lessons that allowed a personal choice of activities related to sport and recreation, and the insistence of rigid discipline and no talking was relaxed to allow analysis and discussion of performance as a measure of maintaining interest and promoting enjoyment<sup>11</sup>.

Several innovations from the cluster of scientifically based fitness training regimes were introduced into naval physical activity programmes. The success of elite sport performers whose intensive preparation regimes prominently featured weight training schedules provided growing evidence<sup>12</sup> in the 1960's of the value of specialized weight training. The RNPTB explored the potential of this approach to physical fitness and sport. For the navy a major attraction of weight training was that it could be performed in a confined space and thus seemed eminently suitable for use in ships. After limited pilot studies<sup>13</sup> in HMS Raleigh, HMS Arbroath, HMS Ark Royal and HMS Cavalier, qualifying courses were held for RNPTB instructors and weight training equipment was allocated to ships. Circuit training<sup>14</sup>, the Royal Canadian Air Force 5BX Plan<sup>15</sup>, the British Army's PEPEX<sup>16</sup> programmes, and the Bullworker<sup>17</sup> exercise device, were also introduced in ships and naval establishments.

As appendages to the aged Swedish system these various minor innovations waned when the initial enthusiasm weakened. The reasons for the decline in popularity range from the lack of instructors in certain establishments, shortages of printed copies of instructions, and the solitary and non-recreational nature of the activities. The over-riding

reason for failure lay in the lack of innovation planning, as all of them were diffused hopefully rather than implemented with strategies to secure interest and maintain participation.

With these failures came the realization of a performance gap in the RNPTB efforts to promote naval physical training, sport and recreation, and the idea generation for change. There was a general feeling<sup>18</sup> within the RNPTB that the Swedish system was dull, time consuming, mechanical, repetitive and lacking variety. Modification attempts by the addition of minor innovations had been inhibited by the system's rigidity, particularly its insistence on formally executed exercises and command-response teaching techniques, but whenever possible some instructors discarded the Swedish system even though this practice was contrary to official policy and directives. Within the context of these practices and prevalent attitudes the idea generation to replace the Swedish system was kindled and a climate for change established within the RNPTB. What is significant to note here is that the thrust for change originated at the grass roots, and even DNPTS at the top of the RNPTB hierarchy acknowledged that in this instance 'the tail had wagged the dog'<sup>19</sup>.

The overt response of DNPTS to find a suitable replacement was launched at the 1967 annual meeting of physical training officers, but the recently appointed officer to supervise any new project indicated that at least a tentative format had already been decided<sup>20</sup>. Broad principles stressed that any substitute must be challenging, inculcate confidence and discipline, and enable some measurement of progress. The new system would be based on coaching and teaching with some command-response techniques, but the emphasis would be on enjoyable participation using less formal free-activity tables. Already such tables were being prepared and it was the intention to conduct the first instructor training course for the new system within three months.

It was unfortunate for those seeking change that the presentation of initial proposals was not as lucid or impressive as it should have been. The often ambiguous and contradictory nature of some proposals indicate their inadequate formulation. Some propositions were scribbled on a train journey, and the one consultation with outside experts amounted to a hurried disappointing one day visit to Loughborough College of Physical Education where "blood had to be drawn from stone"<sup>21</sup>.

At the 1967 annual meeting of the RNPTB Association the verbal response to the innovation is not documented, but the correspondence in response to the call for opinion and suggestions was extensive<sup>22</sup>. Dissatisfaction with the Swedish system was not unanimous. On the contrary, the most articulate and vociferous arguments defended it. Prominent in this category was Lieutenant Commander M (SD), Staff Recreation Officer Mediterranean Fleet, who in a letter to DNPTS used an incisive dialectic argument<sup>23</sup> to vigorously defend the Swedish system. Elsewhere<sup>24</sup>, he also criticized the innovation proposals as being badly written, poorly constructed, vague, erroneous and completely uncoordinated. He maintained that an innovation of such magnitude having significant implications for the re-training of instructors and for the curriculum of naval physical training should have received far more initial thought and investigation. No clearly defined aims had been suggested and no indication of time allocations given, or for whom the system was intended. He gave a pertinent reminder that any intended changes should be primarily for the benefit of the recipients rather than the innovation initiators.

By contrast, Lieutenant N (SD) thought that change was long overdue and that the proposals were most impressive<sup>25</sup>. He welcomed the opportunity to submit written proposals and comments as he felt

public discussion often led to opinions being unduly pressured. The majority of support for change was in this vein, but an important issue<sup>26</sup> was raised by Lieutenant O (SD) who queried whether or not the proposed free-activity method and recreational tables were indeed new or a package previously used but dressed in different wrappings. He recalled that free-activity had been tried previously but it had failed because of insufficient knowledge and guidance.

At this point a significant departure from the established RNPTB innovation process can be identified. The decision to change was autocratically taken by DNPTS, but the call for opinion and suggestions from all RNPTB officers was democratically wider than hitherto had ever been the case. Further evidence<sup>27</sup> of this participative approach that went beyond the customary formulation of policy by committee is apparent. Subsequent discussions, trials, and small pilot studies at HMS Temeraire the Royal Naval School of Physical Training, and at HMS Ganges a naval training establishment, produced a scheme for tentative use called the Physical Fitness and Recreational Training System (PFRT system).

Essentially the PFRT system was set out in five phases<sup>28</sup>. Phase One consisted of preliminary lessons to familiarize a class with apparatus, introduce team formations, and achieve response to freely spoken but slightly specialized words of command normally associated with naval physical training. Practical activities in this phase consisted of ropework, marching and running, basic vaulting, and introductory circuit training. Through vigorous exercise, Phase Two sought to promote team spirit and circulo-respiratory fitness. Using the free activity method, Phases Three and Four were attempts to stimulate interest and provide opportunities to develop games skills and recreational activities. Phase Five contained exercises and

activities designed for trainee instructors to acquire confidence and command techniques.

In practical and realistic terms the aims of the PFRT system can be identified. In the matter of training RNPTB instructors the new system had to provide opportunities to develop class control and build a working repertoire of activities and skills. There was a requirement in new entrant training establishments to inculcate naval discipline that included command response. Additionally, during this initial training period and elsewhere throughout the navy there was a need to provide challenge and foster interest in physical fitness, sport and recreation.

The tentative PFRT system underwent a wider but brief two weeks trial in other naval establishments. Valuable feedback on this pilot study can be gleaned from a meeting<sup>29</sup> of RNPTB officers convened on October 9th 1967 and from correspondence<sup>30</sup> in response to a further call for analysis and comment.

Lieutenant Commander P (SD) said the new PFRT system at HMS Collingwood had proved to be more enjoyable and beneficial than the Swedish system, but the noise level was higher. Lieutenant Commander Q (SD) believed the new system invited a lower standard of discipline. Physical training officers from junior seamen training establishments thought the activity tables in Phase One were dull and unsuitable<sup>31</sup>. Lieutenant Comander M (SD), previously the strongest opponent to change, stated he was now not so opposed to the new system but insisted that many points still required clarification<sup>32</sup>. Other reports<sup>33</sup> were characterized by the attention paid to minor problems such as when and where to teach rope climbing, but overall there was recognition that the PFRT system was a more enjoyable and suitable approach than the Swedish system.



An authority-innovation decision<sup>34</sup> in February 1968 authorized the implementation of the PFRT system and Commanding Officers of naval training establishments were requested to submit observations and recommendations in October 1968. During the implementation process, further discussions were held between the staff of the Royal Naval School of Physical Training who were the innovators and RNPTB officers and instructors, and in some instances with naval trainees who were the innovation recipients.

Problems were identified and modifications made. For example, time allowances were increased when it was ascertained that insufficient allocation had been made in the preliminary tables for rope climbing and introducing circuit training. Similarly, the activities in Phase Five designed to develop class-taking techniques were substituted for more detailed expositions of class management and lesson preparation. Sets of activity tables to accompany the different phases of the system were distributed, and experienced instructors were allowed some discretion to devise their own lessons. This latter concession was a significant advance as previously strict adherence to rigidly prescribed Swedish system tables had been required.

The rapid implementation of the PFRT system created problems for the training of instructors. To remove old loyalties to the Swedish system and retrain personnel, two main strategies were used. Firstly, several 'acquaint courses'<sup>35</sup> were held at HMS Temeraire, the Royal Naval School of Physical Training. Secondly, a small touring team from HMS Temeraire visited the naval training establishments to give on site demonstrations and training. The format of these visits consisted of a two day programme of lectures, demonstration lessons, and informal discussion.

Lieutenant Commander M (SD), the staunch opponent of change, regarded the visit to his physical training unit as being of great value, and he paid tribute to the enthusiasm of the demonstration team. The answers they provided to expressed doubts and queries were impressive. At that point in time, three months into the implementation stage, he now regarded the PFRT system as a 'fait accompli', but he still had misgivings about the system and its application within the navy generally<sup>36</sup>.

Changes in the RNPTB instructor training syllabus are indicated in Table 13 below.

Table 13

A Comparison of the Swedish System and PFRT System Instructional Periods<sup>37</sup> for Qualifying RNPTB Instructors 1967

<u>Curriculum Subject</u>	<u>No. of Periods</u>	
	<u>Swedish System</u>	<u>PFRT System</u>
Swedish Tables by Staff	30	-
Swedish Tables by trainee instructors	92	-
Swedish Theory	13	-
Free-Activity Tables by Staff	6	6
Free-Activity Tables by trainee instructors	26	45*
Free-Activity Theory	5	8
PFRT Tables by Staff	-	10
PFRT Tables by trainee instructors	-	60*
PFRT Theory	-	7
Activities to develop class-taking techniques	-	36
	<hr/>	<hr/>
Totals:	172	172

\* includes 1 assessment period per trainee assuming a class of 15.

In Table 13 the abandonment of the Swedish system is apparent, but examination of the allocation of instructional periods suggests a significant curriculum weakness can be identified. Such an allocation permitted each trainee instructor only three opportunities to take a free-activity table including one period assigned for personal assessment purposes. Similarly, the allocation of PFRT tables gave an individual just four opportunities for class-taking including assessment. This major curriculum deficiency reinforced the fears<sup>38</sup> of many of the older and long serving RNPTB officers and instructors who had questioned the standard of class-taking competence of newly qualified personnel.

As implementation progressed the innovation was boosted by a DNPTS publication of detailed guidelines contained in Physical Fitness and Recreational Training<sup>39</sup>. The PFRT system received a further major impetus from a contribution of civilian expertise in the physical education department of Saint Luke's College, Exeter. Using data from electromyographic studies, fitness training regimes and circuit training schedules for all the major sports and a wide range of recreational activities were devised and distributed throughout the RNPTB<sup>40</sup>. The significance of this input was that the work of the RNPTB became underpinned by detailed theoretical rationales and scientific concepts that had been denied by the Swedish system. By incorporating some proven disciplinary agents with the best of modern practices the PFRT system generated a common doctrine within the RNPTB that went far to meet the needs of the Royal Navy in the 1970's.

## 2. Innovation G. The Attempts to Amalgamate the Armed Services' Physical Training Branches

Dating from the coalition of Lloyd George in 1922, successive governments who considered proposals to integrate the armed services shrank from the complex problems inherent in reconciling and

administering the different specialist roles and satisfying the widely varying requirements<sup>41</sup>. Failure to integrate can also be partly attributed to the intransigence of the armed services themselves who feared the loss of identity, and reduced career and promotion prospects<sup>42</sup>.

In recent years, Britain's commitment to the United Nations peace-keeping activities and obligations under defence agreements, particularly the North Atlantic Treaty Organization (NATO), have determined a holistic approach to national defence planning and an emphasis towards a greater degree of inter-service cooperation. Economic considerations have also been important, and fuller collaboration has been brought about by the development of organizational and administrative procedures which established a unified Ministry of Defence. These procedural arrangements are set out in the 1958 and 1963 Defence White Papers<sup>43</sup>. Both these policy statements recognized the strategic interdependence of the armed services, and the latter in particular suggested that while separate traditions and battle honours were vital factors in morale and fighting efficiency<sup>44</sup>, the integration of certain support units, such as medical and education services and physical training, was economically advantageous. Ministry of Defence pressure to implement this integration policy is evident in the attempts to amalgamate the RNPTB with the physical training branches of the other armed services in 1964, 1971, and again in 1973.

Before the background, problems and processes of these innovation attempts are examined, it is worth noting at this point a previous move to some form of internal amalgamation<sup>45</sup> in 1961 when it was suggested that the Royal Naval School of Physical Training should move into accommodation within the Royal Naval Barracks Portsmouth. The response of DNPTS to this suggestion was lukewarm, and it was pointed out that

in recent years a great deal of money had been spent on ungrading and maintaining present facilities. A possible solution was to sell the naval physical training school to the City of Portsmouth and refurbish facilities in the Royal Naval Barracks, but the important point that became apparent was that support for such an amalgamation would not be forthcoming if there was any danger of the RNPTB losing its identity<sup>46</sup>. Opposition was emphatically reinforced one month later with the appointment of a new Director of Naval Physical Training who was totally opposed to the move and stressed that the cost of the transfer would be enormous.

The 1964 amalgamation attempt followed the reorganization of the Ministry of Defence when a study group under the chairmanship of the Deputy Chief of the Defence Staff was set up to review existing inter-service cooperation and explore possible new fields of liaison<sup>47</sup>. The main arguments in favour of inter-service training centred on the economic and efficient use of buildings, equipment and personnel, and the promotion of operational and administrative understanding and flexibility. It was felt there was more scope for equipment standardization supply and maintenance. Aspects of training for possible rationalization were identified as follows<sup>48</sup>: - military police and dog handling, diving, photography, meteorology, education officer teacher training, fire fighting, leadership, bomb disposal, training of musicians, air traffic control, small arms training, medical, nursing and dental training, chaplaincy, and physical training.

The problem solving phase took the form of one armed service undertaking the production of a coordinated review of a particular class of training within all the services. At the end of May 1964 the Army Inspector of Physical Training was requested to initiate and coordinate the preparation of position papers on physical training. In particular

the following were required<sup>49</sup> :

- a. a statement of the physical training requirements for each of the services.
- b. an explanation of the differences in the physical training methods and the necessary alternations required for standardization.
- c. an analysis of the syllabuses to demonstrate the extent of commonality.
- d. a consideration of what scope existed for a further examination of the joint training of physical training instructors.

The position statements<sup>50</sup> revealed considerable variation and served to emphasize that any examination of the scope of rationalization had to take account of the existing differences in the specific aims of physical training in the armed services. These aims stemmed from the different operational roles and functions of the armed services and are reflected in the organizational arrangements responsible for achieving them. For example, the concern of the Royal Navy is to maintain a high standard of physical fitness in the relatively restricted environment of a ship under varying conditions. The aim of the RNPTB therefore is to mould their instructors into the general pattern of navy life so that they are operational seamen within a ship's company as well as physical trainers. The aim of physical training in the army is to ensure that a soldier is fit to fight under conditions of modern warfare and to cope with the demands of extreme climates. This requirement calls for a tough disciplined kind of fitness and is reflected both in the selection of, and in the nature of the training received by, instructors of the RAPTC. In common with his naval counterpart the army physical training instructor is often transferred to a fighting unit where he has a dual role as a soldier and physical trainer. Physical fitness in the RAF however does not generally require to be related so precisely to the

operational role as in the army and navy. The aim of physical training in the RAF is to attain a high standard of positive health and fitness necessary to enable personnel to carry out their daily tasks efficiently. The RAF physical training instructor is not normally expected to participate in combat operations like his counterparts in the other services.

A greater part of the innovation attempt was concerned with the gathering and examination of information. To this end a small working party consisting of the Directors of Physical Training of the three services and two members of the Defence Secretariat of the Ministry of Defence, was convened to review the existing arrangements for the training of physical training instructors with a view to deciding whether, and if so how far, common or compatible syllabuses could be devised which would allow two or more physical training branches to amalgamate. Much of what follows embodies the working party's interim findings<sup>51</sup> as reported to the Ministry of Defence study group on the rationalization of training.

Much of the syllabus content of the instructor qualifying courses was common to all three services, but the degree of emphasis varied according to the needs of the particular service. For example, Swedish exercises were an important feature of the RNPTB syllabus but they were not used by the RAF; and sport and recreation figured rather more prominently in the navy and RAF than in the army.

Both the army and the navy placed great importance on progressive in-service qualifying courses for physical training instructors. The navy had a basic 23 weeks course to qualify as a Physical Trainer 2nd Class, followed after an interval of practical work in that grade by a 13 weeks course to attain Physical Trainer 1st Class. At a later stage there was a 12 week course for a comparatively small number of Staff

Physical Training Instructors. The army had three separate courses, all of 13 weeks duration, before appointment as a qualified instructor in the RAPTC. The RAF on the other hand had one basic initial 24 week course for qualified instructor status, plus a limited number of medical rehabilitation and parachute instructor courses. Nevertheless, it was thought that the differences in content, level, and duration, did not preclude the possibility of conducting separate courses in the same institution with joint use of staff and facilities.

The services' principal physical training establishments were at that time located as follows<sup>52</sup>:

HMS Temeraire Royal Naval School of Physical Training	- Portsmouth.
Royal Marines Physical Training Wing	- Deal.
Royal Army School of Physical Training	- Aldershot.
Royal Air Force School of Physical Education	- St.Athan.

There was little doubt that the navy and the army derived distinct advantages from the location of their physical training schools at Portsmouth and Aldershot respectively. Both of them were situated in areas of significant naval and military activity and played major roles in the promotion and organization of sport and recreation. Additionally, they were readily accessible centres for sport training and officiating courses. Geographically the RAF School of Physical Training was more isolated and less conveniently situated to promote sport on a joint service basis.

Another important factor was that the Army School of Physical Training was an entirely self-contained and self-accounting establishment, while the remaining schools were lodger units whose administrative costs were borne by the parent establishments on which they were housed. Additionally, a £350,000 building programme had just been completed for



the Army School of Physical Training and no provision had been made for expansion that amalgamation would entail.

The working party attached little weight to the argument that the bringing together of the physical training schools would contribute to greater inter-service understanding. It was maintained that this understanding already existed and indeed co-location might reduce the healthy spirit of inter-service competition in sport. Similarly it was believed that the savings in instructor staff would be minimal. The creation of one co-located establishment would permit economies from the joint use of administrative staff, accommodation, training facilities and equipment, but it would also require an extensive building programme involving substantial capital expenditure. In addition to this capital expenditure, some costs would continue to be incurred on the maintenance of the vacated accommodation as the use of physical training and sport facilities would still be required by the remaining large and permanent service establishments.

The interim conclusions<sup>53</sup> of the working party stated that the anomalies between the different instructor qualifying courses did not constitute an insuperable barrier to the co-location of the physical training schools provided the navy and army could maintain full responsibility for their own service sport. Furthermore the relatively small numbers of personnel trained at the navy and RAF schools suggested that all instructor training should be located with the RAPTC at Aldershot.

Two exploratory activities resulted from the interim conclusions. Firstly, the working party visited the Army School of Physical Training to consider the possibility of siting a combined school at Aldershot. Arising from the visit it was thought that while some facilities might be shared there were also service specific needs which could not be met by existing resources. It was estimated that approximately £750,000 would

be required to provide the required additional accommodation and facilities. Secondly, the Ministry of Defence study group suggested consideration be given to the idea of exchanging instructors between the services<sup>54</sup>. This proposal was considered under two headings; namely the exchange of instructors between the existing schools of physical training, and the reciprocal training on post instructor qualifying courses.

In a final report<sup>55</sup> the working party concluded that instructor exchange could lead to the introduction of physical training programmes inappropriate to the host service's requirements. Additionally, it did not make sense nor did the RNPTB and RAPTC have sufficient manpower to train visiting personnel in skills their own services did not require. On a limited scale the reciprocal training of instructors was already carried out with the RAF Physical Education Branch (RAFPEB) providing rehabilitation training and parachute instruction and the RAPTC providing courses in gymnastics and trampolining, but it was undertaken to extend the scope of these arrangements wherever practicable. It was also concluded<sup>56</sup> that short of full integration of physical training in the context of wider redeployment of service functions, there appeared not to be any economic or practical advantages to be gained from co-location of the physical training schools at Aldershot. The Ministry of Defence study group were in general agreement with these conclusions and the information gathering and problem solving activities of the innovation process ceased<sup>57</sup>.

One further significant strategy in this 1964 innovation attempt requires mention. From time to time during the information gathering and problem solving process, the Director of Naval Physical Training circulated to his colleagues on the working party details of disadvantages and problems from the RNPTB's point of view<sup>58</sup>. In a similar vein he also lobbied<sup>59</sup> the senior naval officer of admiral rank who served

on the Ministry of Defence rationalization study group. Whether or not the other Directors of Physical Training lobbied their senior officers in the study group cannot be ascertained.

The 1971 amalgamation attempt was confined to a possible merger of HMS Temeraire the Royal Naval School of Physical Training with the Royal Marines Physical Training Wing (RMPTW). The idea for this innovation arose from plans to move the naval physical training school into a new purpose-built complex elsewhere in Portsmouth. The innovation procedures adopted were similar to the 1964 merger attempt in that a small working party was convened. The composition of this group is significant, consisting as it did of a senior RNPTB physical training (SD) officer as chairman, and the three senior officers of the RMPTW. Unfortunately the documentation available<sup>60</sup> on this particular innovation attempt does not reveal individual personal opinion, but what is apparent is the predominance of the objections and difficulties identified by the RMPTW officers to such a merger.

The speed with which the working party completed and submitted its report within two weeks was remarkable even by naval standards of alacrity. Old arguments and previous comparisons were reiterated. The different aims of the RNPTB and the RMPTW were emphasized. The RNPTB sought to provide a nucleus of officers and instructors to conduct physical training, sport and recreation in Part One and Two naval training establishments and within the fleet. By contrast the RMPTW implemented fitness training systems and physical activities to prepare personnel for the intense demands of commando training in order to maintain a high standard of combat readiness.

The advantages and disadvantages of merging the two physical training schools can be summarized as follows<sup>61</sup>:-

Advantages

- a. Limited savings could be effected in personnel and materials.
- b. One school of physical training could effectively cater for the needs of the Royal Navy and Royal Marines due to projected service reductions for 1974-75 when the numbers required to qualify as instructors would be reduced.
- c. In sport and recreation, increased performance and participation levels could be achieved by a common policy and the enhanced facilities of the new purpose-built complex.
- d. The staff of the new combined school would be drawn from the most able and competent physical training officers and instructors in the two services.

Disadvantages

- a. The purpose-built complex in Portsmouth would be too far away from the major Royal Marines administrative and training centre in Lympstone which would be deprived of RMPTW expertise.
- b. An additional building programme would be required at the Portsmouth complex.
- c. The RMPTW were already scheduled to move to Lympstone where facilities had been built to accommodate them.
- d. The RMPTW could not visualize a change in their present system which had recently been radically revised to meet training requirements.
- e. An important aspect of RMPTW instructor training would be lost as opportunities to assist with recruit physical training programmes would not be available.
- f. The headquarters of the Royal Marines Sports Association was due to move to Lympstone.
- g. The RMPTW strongly felt that as a branch they would lose their identity and their present high esprit de corps and morale.

The instructor qualifying courses mounted at the two physical training schools varied in frequency and duration, and there were significant differences in the syllabuses. The RMPTW courses were shorter but intensely biased towards strength and endurance training, whereas the RNPTB concentrated on general fitness and the development of sport skills. The aquatic activities of the RMPTW were geared to battle tactics and helicopter ditching drills. Judo was taught by the RNPTB as a sport but the RMPTW combined it with unarmed combat practices to develop hand to hand fighting skills.

Amalgamation would not in itself result in any saving of manpower as the major centre of Royal Marine activity at Lympstone would still require physical training to be conducted and sport and recreation to be promoted. A limited saving in specialized gymnastic equipment would be possible, but an assault and obstacle course similar to the one at Lympstone would have to be constructed at Portsmouth in order to train RMPTW instructors. The time factor was also an important consideration in the innovation. To meet its commitment to recruit training the RMPTW had to move from Deal to Lympstone in 1973 but it was envisaged that the purpose-built complex in Portsmouth which would house the merger would not be ready until 1976.

The working party recommended<sup>62</sup> that in view of the many differences in the curriculum and instructional methods, nothing would be gained by amalgamation. Furthermore the completion date of the new complex for naval physical training and sport negated any benefit. The Admiralty Board were not as convinced, observing that the arguments for and against a merger were finely balanced<sup>63</sup>. However, it was concluded that on the whole while it might be currently expedient not to innovate, the matter should be re-examined when the Portsmouth complex was completed.

Within two years and contrary to the Admiralty Board decision, the Ministry of Defence raised the amalgamation issue again<sup>64</sup> in 1973. Within this innovation attempt, which represented the most determined effort to accomplish a merger of the armed services' physical training schools, two discernible phases can be identified.

The first phase consisted of the activities of a three man inter-service working party<sup>65</sup> led by a Royal Navy GL category officer. The concern of this working party was not confined just to physical training, but also to the examination of the following trade categories in all the armed services:- helicopter pilots, cooks, medical orderlies, vehicle mechanics, pay clerks, drivers, service police and dog handlers, and postal service personnel. For administrative purposes, but perhaps ostensibly for other reasons, the naval representative and leader of the working party was appointed as an additional member of the powerful naval directorate of manpower and training DGNMT. The working party closely liaised with the service departments concerned and examined relevant documentation and training syllabuses, but because of a limited time scale of three months a deep and protracted study of each trade category was not possible.

Previous physical training rationalization studies<sup>66</sup> were reviewed and it was reaffirmed that a significant barrier to innovation lay in the very individual nature of the service physical training branches whose vigorous and demanding traditions bred elite formations of men fiercely protective of identity and prestige. In inter-service sport this attitude sustained keen competition, but it also resulted in a guarded and conservative approach to change.

The working party concluded<sup>67</sup> that the differences in training objectives and career structures precluded any merger of the service schools of physical training, but within the report a softening

attitude to amalgamation can be detected. Firstly, a conciliatory recommendation suggested that if the physical training branch of any service moved into purpose-built accommodation then re-location for two or more branches should be reconsidered. Secondly, and more importantly, throughout the trade category study it was evident that although the RAPTC, RMPTW and the RNPTB were strongly opposed to amalgamation, the RAFPEB maintained that the different approaches adopted by the physical training branches were nevertheless underpinned by the same fundamental principles of physical education theory.

The beginning of the second phase of the 1973 amalgamation attempt stemmed from a meeting of the Defence Training Committee on Rationalization where it was argued<sup>68</sup> that the lack of unanimity identified by the trade category study reinforced the fact that cogent arguments did exist for the joint training of physical training instructors. The committee appointed Wing Commander R, Commanding Officer RAF School of Physical Education and foremost advocate of amalgamation, to once again coordinate the views of the physical training branches and make recommendations.

Wing Commander R's study<sup>69</sup> was conducted over a period of seven months and was by far the most thorough and comprehensive investigation. Senior officers of all the physical training branches were consulted and visits made to selected establishments. The training, employment, and career structures of service physical training instructors were examined and specific areas of commonality identified. For example, for both the RAPTC and the RMPTW the primary objective was to produce personnel who were highly disciplined, tough, fit, confident and courageous. Areas of incompatibility were also highlighted, such as the relatively formal approaches of the RMPTW and RNPTB as compared to the informal teaching methods of the RAFPEB.

Wing Commander R thought that the existing facilities of the individual services were inadequate to support any merger. Any proposal for a single joint school would require a further in-depth study as any major expenditure on new buildings would nullify any economic or practical advantages. Furthermore, in any merger the needs of the largest physical training branch, the RAPTC, would have to be paramount. He concluded<sup>70</sup> that there were many areas which could be beneficially conducted in a joint school, and there was no substantial evidence to suggest such an arrangement would adversely affect individual service standards. Significantly, he also concluded that at all levels in the RAPTC, RMP'W, and RNPTB, there remained a strong consensus of opinion opposed to joint service training, but the RAFPEB took the opposite view and firmly supported the concept of amalgamation. He recommended that the Defence Training Committee approve the principle of amalgamated physical training and suggested that a further working party under army chairmanship should prepare detailed proposals for a Joint Service School of Physical Training. At this point, further innovation activity ceased.

### 3. Innovation H. The Integration of WRNS Instructors in the RNPTB

In Chapter Five attention was drawn to the innovation attempt<sup>71</sup> in 1947 which failed to establish a WRNS Physical Training Branch, but resulted in a small number of WRNS officers and ratings undergoing short courses to qualify as part-time sports officers and organizers. Only seven such posts were filled by WRNS personnel, when as an unforeseen consequence of internal reorganization and manning constraints implemented in the Royal Navy in the early 1970's, an acute shortage of lower ranked instructors in the RNPTB became apparent in 1976. Low levels of recruitment to the RNPTB had created an imbalance of complement with a shortfall of Leading Physical Trainers (LPT's), and



an overbearing of Petty Officer Physical Trainers (POPT's) and Chief Petty Officer Physical Trainers (CPOPT's).

As a temporary measure to alleviate this shortage, Captain S (GL) Director RNPTB, suggested<sup>72</sup> to the Director WRNS that a modest and controlled expansion of the short course scheme would be mutually beneficial to the RNPTB and WRNS. Accordingly six WRNS ratings attended the annual qualifying course in May 1976, but such was the shortage of LPT's that Captain S (GL) proposed<sup>73</sup> that two courses should be held annually, or alternatively, a limited number of WRNS personnel could be integrated into the RNPTB. The Director WRNS quickly responded<sup>74</sup> that a fully costed and complemented physical training category was preferred to the short sport assistant courses as this would provide an additional and attractive trade specialism for the WRNS.

Surprisingly, after suggesting the idea, Captain S partially retracted from the concept of integration. He suggested that the possible courses of action were<sup>75</sup> :-

- a. Abandon the idea of integration.
- b. Continue the system of short courses.
- c. Train suitable WRNS volunteers and form a small sub-branch of the RNPTB.
- d. Train suitable WRNS volunteers and fully integrate within the RNPTB except for sea service and certain billets<sup>76</sup> ashore.

These idea generation activities were further expanded when RNPTB officers in short establishments were asked for their views<sup>77</sup>. The problem presented to these officers was that the shortfall of LPT's and the surplus of Chief Petty Officer Physical Trainers (CPOPT) and Petty Officer Physical Trainers (POPT) would seriously delay promotion prospects. Integrating WRNS instructors would increase the lower

echelons of the RNPTB and increase the promotion prospects of male instructors. For this innovation to work, approximately fifty suitable billets in shore establishments would have to be found for WRNS physical training instructors.

Approximately twenty-five suitable billets were identified, and with reservations fifteen out of the nineteen RNPTB officers commanding physical training units in shore establishments indicated that they were prepared to accept at least one WRNS instructor. Generally it was acknowledged that such an innovation was a useful stop gap measure, but concern was expressed regarding the uncertainty of policy and consequences if recruitment of male instructors improved. Other major doubts can be summarized as follows<sup>78</sup>:

- a. The resultant sea/shore ratio of male instructors.
- b. Doubt that in the long term WRNS instructors would not accept the strenuous demands and long hours which were a permanent characteristic of the RNPTB.
- c. Concern about the ability of female instructors to control groups of men participating in physical training and sport.

RNPTB officers most strongly resistant to the innovation questioned the principles of sex discrimination and women's liberation. The Royal Naval School of Physical Training too was reluctant to integrate WRNS personnel into male qualifying classes because of the great demands made on strength and endurance, and the great deal of body contact that would accrue in a mixed class<sup>79</sup>. Integration would be better served by mounting separate courses for WRNS trainee instructors!

All these preliminary and exploratory activities were overtaken by the Admiralty Board's decision to initiate a fuller investigation of opportunities for integration between the Royal Navy and the WRNS.

Under the chairmanship of DGNMT a working group, consisting of representatives from the Commander-in-Chief Naval Home Command (CINCNVHOME), HMS Centurion the navy's principal personnel management establishment, HMS Temeraire, DNPTS and Ministry of Defence departments, was convened and tasked with the detailed examination of the RNPTB. Much of the information on the following innovation activities embodied in the remainder of this section is derived from the Report of the WRNS P.T. & R. Category Integration Working Group<sup>80</sup>.

In accordance with the broad directive the working group investigated three major factors before considering the other parameters involved in the creation of a new physical training branch or naval trade category. These major factors were<sup>81</sup>:

- a. An examination of the existing state of the RNPTB.
- b. The size and structure of the male and female branches if a WRNS physical trainer category were introduced.
- c. The role of the WRNS physical trainer category.

The examination of the existing state of the RNPTB confirmed the acute shortfall of LPT's, sixty-five instead of one hundred and forty; and the surplus of POPT's, one hundred and thirty-four instead of ninety-nine. These imbalances had produced drafting problems in that many LPT billets had to be filled by POPT's or CPOPT's, and promotion was blocked from LPT to POPT, and from POPT to CPOPT. The employment of physical trainers in billets inappropriate to their rank had lowered RNPTB morale.

The working party concluded that the RNPTB had been significantly affected by manpower constraints and the formation of the Operations Branch in the navy. Prior to this latter development, promotion was linked to vacancies in the navy as a whole, whereas advancement now was dependent on vacancies and wastage solely within the RNPTB. In this

respect the RNPTB did not appear worse off than a number of other small naval branches, and there was a reluctance to recommend that the RNPTB be treated as a special case. The existing RNPTB complement did not preclude the introduction of WRNS instructors. Such a move would rapidly make good the shortfall and ease drafting problems. With a service life expectancy of some six years compared to fourteen years of male ratings<sup>82</sup>, the introduction of WRNS personnel would enhance the male promotion prospects in the RNPTB.

From an examination of the size and structure of the RNPTB, it appeared that an annual intake of ten WRNS and nineteen naval ratings to train as LPT's could be supported. Assuming no increase in established complements, the relative instructor strengths of the RNPTB projected to the year 1985 would be<sup>83</sup>:

Table 14

RNPTB Relative Instructor Strengths for 1985

Rating	FCPT	CPOPT	POPT	LPT	Total
Male	9	45	82	119	255
Female	<u>1</u>	<u>6</u>	<u>11</u>	<u>23</u>	<u>41</u>
Total:	10	51	93	142	296

The working group had some difficulty in establishing the precise role of the WRNS instructor. The majority of the group expressed the view that there was no requirement for WRNS personnel to be employed in the same role as male physical trainers whose primary task was to promote fitness ashore and maintain it at sea. However, since the Admiralty Board had indicated that if possible WRNS instructors should be utilized in the RNPTB, the group examined the levels of training and employment which could be expected and required of them.

A survey<sup>84</sup> was conducted to identify those billets in naval establishments which could be allocated to the proposed trade category. The results showed that although the majority of establishments were somewhat cautious about the concept of female physical trainers, some ten CPOPT, twenty-four POPT and thirty LPT billets could be allocated. This total was well in excess of the proposed category strength of six CPOPT's, eleven POPT's and twenty-three LPT's as shown in Table 14, and indicated that such a rating could be usefully employed if the category was introduced.

The survey indicated that the proposed strength of the new category would only amount to some 12.5% of the RNPTB complement. Of the forty-seven units and establishments who employed male instructors ashore, twelve maintained that they could not employ female instructors. This reluctance was noted but, on the other hand, establishments with some experience of the WRNS sports assistants were largely enthusiastic about the innovation. The working group also agreed that excepting certain physical differences and limitations, the employment of male and female instructors should be same and as interchangeable as practicable. At new entry Part One training establishments the role of the female physical trainer might be slanted towards sport, recreation and adventure training.

The other parameters involved in the creation of a new trade category were subsequently considered<sup>85</sup>. Of the one hundred WRNS personnel who had volunteered, approximately seventy-two were eligible, indicating that the category could be sustained by an annual intake of ten and supported within the existing WRNS strength. This WRNS intake plus nineteen male ratings annually to the RNPTB would introduce the new category slowly and prevent the build up of longer term promotion problems.

It was agreed that the training of female instructors should be as close as possible to that of their male counterparts. Training which required strength would be scaled down, but theoretical and administrative training would be identical. After some discussion it was decided that female instructors should be conversant with the skills and training requirements of the essentially male sports of boxing, rugby, soccer and cricket to the extent that they would be able to assist in the promotion and development of these activities. It was not envisaged however that they would be required to participate in these sports.

Qualifying courses for males and females would be conducted separately, but training would be integrated whenever possible, desirable and practicable. The new trade category would only marginally change existing sea/shore ratios for the male physical trainers. The working group recommended that some effort should be devoted to overcoming resistance to the innovation but failed to indicate specific strategies to achieve acceptance. It was recommended that the first course for WRNS physical trainers should start in January 1978 as this would allow trainees to participate in both winter and summer sports thus ensuring practical experience and training in all activities with which they would be concerned. Further recommendations covered the allocation of kit and the wearing of RNPTB insignia. The category was confirmed by Defence Council Instruction (DCI) 656/77 in late 1977.

#### 4. Innovation. I. The Introduction of Physical Fitness Testing

Information received from an American warship squadron visiting Portsmouth in the summer of 1963 prompted the Director RNPTB to suggest to the Captain HMS Kent that his officers and men should undergo a physical fitness test similar to that practised in the United States Navy<sup>86</sup>. In American warships, fitness testing was carried out quarterly

and the results were notated on personnel service documents. No disciplinary action was taken against those who failed the test, but medical officers gave advice on how to improve. Failure figures were extremely low as serving personnel were 'fitness test educated' and performance scores were taken into account for promotion or when applying for re-engagement<sup>87</sup>.

On HMS Kent the test was carried out by 346 officers and men of all ages, ranks and trade specialisms<sup>88</sup>. Those over 40 years old were excused but 2 men in this age group underwent the test which consisted of press ups, sit ups, pull ups, broad jump, Sargent jump<sup>89</sup> and stationary run<sup>90</sup>. The number of persons who failed one or more of these exercises was 89 or approximately 25%, and from this result it was extrapolated that some 20,000 men in the Royal Navy would fail the test.

Within DNPTS the failure rate was disconcerting. Recommendations were made that HMS Kent should conduct a further fitness test in six months time and in the meanwhile the whole matter of physical fitness in the Royal Navy should be investigated. To examine this performance gap a working party was set up with the following terms of reference to advise the naval Medical Director General (MDG):-

on the feasibility of an investigation to determine the standard of physical fitness throughout the Royal Navy, and, based on the results of studies, to consider the application of a scale of physical standards applicable to officers and men<sup>91</sup>.

To be suitable for use in the navy, any fitness test had to meet the following criteria<sup>92</sup>:-

- a. Be simple to administer and score.
- b. Require a minimum of apparatus.
- c. Be applicable ashore and afloat both at home and abroad.
- d. Require only a short testing time for each subject.

- e. Not involve any risk for the subject.
- f. Be suitable for naval personnel of all age groups.

Considerable information seeking activities were carried out with external agencies concerned with physical fitness testing. Through the Naval Member of the Canadian Joint Staff in London, inquiries were made of the practices in the Canadian armed services<sup>93</sup>. In the Royal Canadian Navy, extensive testing with shore based and seagoing personnel had been carried out from which minimum acceptable fitness standards had been formulated. Failure rates averaged only 4%. The Royal Canadian Air Force had produced its own self-testing fitness schedules in the form of the 5BX programme referred to in Chapter Five of this study. Information was also gathered from the United States Marine Corps, and from two specialist physical education institutions in the United Kingdom, St. Luke's College<sup>94</sup> and Loughborough College of Education<sup>95</sup>.

As the idea of fitness testing grew within the RNPTB, so the scope and pace of exploratory innovative activities widened and intensified. Early in 1964 the Director RNPTB addressed a meeting of high ranking Flag Officer and Commanding Officers on physical fitness in the Royal Navy. At the Royal Naval School of Physical Training the various methods of fitness testing were tried and a naval medical officer was appointed to assist in their validation. The validation of such tests was considered important to innovation success, and the following lines of work were pursued<sup>96</sup>:

- a. Relating fitness scores to individual sickness records and general shipboard efficiency.
- b. Physiological validation of the tests.
- c. Examination of physical fitness and the performance of naval tasks.

Some of the above research was done at the prestigious Applied Psychology Research Unit at Cambridge, and an extended series of testing



was conducted in some shore establishments and ships. On HMS Kent the second fitness test was carried out while on passage from Gibraltar to Singapore in July and August 1964. Of the 400 personnel who completed the test, 78 failed in one or more of the exercises which represented a 19.5% failure rate compared to 25% in the first test. The improvement was attributed to<sup>97</sup>:-

- a. Several weeks prior warning of the test enabling the idea to be accepted and some personnel to prepare themselves.
- b. A new higher level of fitness within the ship's company because of seagoing physical work and games activities on the flight deck.
- c. Allocation of marks for various standards achieved, and including the test as part of an inter-departmental competition in the ship.

The Captain HMS Kent observed<sup>98</sup> that modern missile-carrying warships had produced air-conditioned environments where personnel ate too much and exercised too little. He recommended that an established standard of physical fitness should become mandatory in the navy, and preparation for such should be part of the curriculum of all training establishments.

From the collation of 6000 tests administered in naval training establishments it was concluded<sup>99</sup> that a modified United States Navy test was suitable for use in the Royal Navy. To extend the use of this test to the navy as a whole, a tentative DCI was drafted to test opinion from highly ranked personnel. It was envisaged that the proposed physical fitness testing programme would be conducted for a trial period of 3 years, after which the results would be analysed with the view to establishing naval fitness standards.

The first documented reaction<sup>100</sup> was an objection by the Commandant General Royal Marines (CGRM) who argued that no system of tests could provide a guide to battle fitness. Physical fitness for

operational tasks must remain the individual concern of Commanding Officers. Tests to indicate fitness norms may have relevance in sedentary establishments, but annual tests in fighting units would be an administrative burden of marginal value and he strongly requested that the Royal Marines be specifically excluded from such a scheme. While in general agreement of testing as an assessment of physical fitness the MDG considered it should be undertaken on a voluntary basis. DGNMT too was of the opinion that fitness testing would place an additional burden on ships and suggested that before the innovation progressed any further, Commanders-in-Chief should be consulted<sup>101</sup>. Reaction within the RNPTB was that these reservations and objections had missed the whole point of the testing programme which was to establish naval fitness standards three years hence.

A revised DCI reinforced by extracts from reports of the working party on physical fitness was circulated to Commanders-in-Chief of Fleets and Flag Officers in April 1966 to elicit their opinion.

The replies from these officers indicated meagre support and a large measure of adverse comment. One shore establishment, HMS Collingwood, estimated that implementing, recording and reporting the physical fitness test would necessitate an additional 4400 man hours annually<sup>102</sup>. Only at HMS Mercury and HMS Vincent was it thought that the test could be effectively conducted without undue burden on the day to day routine and administration<sup>103</sup>. Medical authorities at the Royal Naval Hospital Portsmouth opined that the tests were neither necessary or desirable. It was considered that the joint service PULHEEMS<sup>104</sup> system of medical classification was a valid indicator of physical fitness and one medical consultant remarked:

Interesting though the results of these tests may be as a research project, I cannot think that they have any relevance to the fitness required for, say, watching a radar

screen or playing a teleprinter, and I would have thought the cost/effectiveness ratio would make them quite inappropriate, Indeed, I shudder to think what effect the tests themselves might have on some of the less athletic candidates<sup>105</sup>.

Both the Flag Officer Scotland and the Commander-in-Chief Home Fleet Norwood commented adversely<sup>106</sup> on the additional administrative burden such testing would impose, and submitted that the improvement of physical fitness was best achieved by the provision of facilities and the encouragement of sport and recreation. The Commander-in-Chief Portsmouth suggested that those responsible for the idea of fitness testing had lost their sense of proportion and should be given something better to do<sup>107</sup>.

The most hostile resistance came from seagoing ships. The most vehement criticism came from the Captain 27th Escort Squadron Mediterranean Fleet (later First Sea Lord and Chief of Naval Staff), who scurrilously inquired what the navy had done or not done to deserve such a ludicrous imposition. He argued that everyone in the navy was busy and had no time to:-

meddle with foolish gymnastics nor to get bogged in a morass of paperwork to record them ... the Fleet fights with its brains rather than with its brawn. I can see little relevance in the "explosive leg power" ... My sailors are perfectly capable of scaling vertical ladders with alacrity in a seaway ... If we are all so palpably unfit (which I doubt) let us provide more opportunities and facilities for organized games ... Why must physical exercise be so horrid? ... I emphatically oppose such whimsical regimentation. ... I strongly urge that this Gilbertian proposition be abandoned<sup>108</sup>.

The Commander-in-Chief Mediterranean endorsed the view expressed above and remarked that it reflected the reception the physical fitness test could expect from his fleet. He argued that mental endurance and reaction together with willpower were the key personnel factors in modern warfare. Many men kept themselves fit by participating in the wide range of naval sports and recreational activities and he was

strongly opposed to "centralized bureaucratic control and documentation of their muscles"<sup>109</sup>.

The controversial DCI was suspended but surprisingly, and for reasons that can not be ascertained, the working party survived. A number of investigations concerned with physical fitness tests and their relationship with physiological variables were pursued, and at intervals the working party met to discuss their findings<sup>110</sup>. With the emphasis on research the composition of the working party became predominantly medical, and the RNPTB involvement was considerably reduced by the intermittent attendance of its representatives.

In 1972, eight years after its inception, the working party had not conclusively defined the physical fitness concept and no practical method of mass testing had been agreed<sup>111</sup>. In 1974 the working party was disbanded in favour of a joint service committee under the auspices of the Medical Research Council, but almost immediately following this abandonment an independent two man naval working party was formed, consisting of a Surgeon-Commander (GL) and Commander T (GL) Commanding Officer Royal Naval School of Physical Training. Their terms of reference charged them 'to review existing arrangements for ensuring all naval personnel achieve and maintain an appropriate standard of physical fitness, and to make recommendations'<sup>112</sup>.

To review the official physical training directives and actual practices, and to elicit opinion and suggestions, a questionnaire was distributed to an unspecified number of senior officers and naval establishments. The purpose of the questionnaire to provoke reaction was achieved with some accusations raised that the RNPTB was seeking to promote and dictate self-interest rather than that of the navy. However, the working party concluded<sup>113</sup> that there was sufficient evidence to suggest that an improvement in the general level of

physical fitness within the navy was required. Furthermore it would be practicable to specify a minimum standard for most personnel in terms of physical tasks which they should be capable of in emergency or disaster type situations. The working party did not support formal and routine physical fitness testing but would encourage any voluntary system which gave a general indication of how fit or unfit an individual might be. It was thought that this latter approach backed by suitable educative programmes would promote a personal concern and interest in fitness.

Doubts were expressed about an apparent lack of enjoyment in physical training programmes for new entries at many Part One training establishments. It was also evident that physical exercise for ships' companies was not being carried out because of pressure of work, lack of time, and operational requirements. Recommendations<sup>114</sup> were made to redefine the official directives to reflect the accountability of officers for the recreational activity and maintenance of physical fitness of men under their command. It was suggested that a minimum of two hours per week should be allocated within normal working hours for the enhancement of fitness, and more attention given to existing regulations governing fitness in promotion assessments and advancement.

As a result of these conclusions and recommendations, Commander T (GL), Commanding Officer Royal Naval School of Physical Training, was directed by CINCPACFLT to conduct a review of physical training syllabuses and teaching methods in new entry training establishments<sup>115</sup>. The examination was broken down into the following broad headings:-

- a. The physical training requirement of new entry establishments.
- b. Current official directives and regulations, and the difficulties of implementation.
- c. Methods and practices, syllabus design, feedback and communication.

d. Standards and assessment.

Observational visits were made to new entry establishments and problem areas were discussed with physical training personnel. The requirement for regular physical fitness training for new entrants was agreed and supported by all establishments. The consensus of opinion was that most men entering the navy or going to sea for the first time were under strength and lacked stamina for the physical tasks they were expected to carry out.

The current naval directives for physical fitness training were examined and it was evident some confusion existed. The assessment of whether or not establishments were implementing the directives was complicated because there was no detailed guidance on the frequency and duration of physical training.

An examination of the syllabuses confirmed this variation in terms of content, duration and frequency. Few, if any, establishments had syllabuses designed to progressively improve strength, stamina, speed, suppleness and skill. A general lack of communication between establishments suggested little thought had been given to a comprehensive syllabus that would cater for the transfer of trainees, as they progressed through successive stages of naval training. Consequently there was unnecessary repetition to the exclusion of more enjoyable activities and the acquisition of new skills. Little attention was given to the identification and correction of individual weaknesses.

Observational visits revealed that at HMS Mercury a whole afternoon was devoted to sport as opposed to limited periods at other establishments. At HMS Raleigh the Swedish system with its emphasis on a formal and disciplined approach and response held a central position in the curriculum almost a decade after its official demise. Here it was thought noticeable that few of the participants were

motivated or enjoying the activities, and grave doubt was expressed of the possible effects on future attitudes to exercise and fitness. A contrast was witnessed at HMS Ganges where free activity work emphasized enjoyment, team spirit, and the introduction of new activities and skills. It was observed that the participants appeared fitter, happier and healthier.

An important point highlighted by Commander T was that many RNPTB personnel promoted and projected physical fitness in terms of exceedingly high and intimidating standards rather than in realistic and practical requirements to perform physical tasks without stress and strain.

Commander T again recommended<sup>116</sup> that current naval directives on physical training should be amended to give clearer guidance. Teaching methods should be reviewed and a progressive and comprehensive syllabus should be designed. Regular meetings of RNPTB personnel should be convened to keep everyone informed of up to date practices and developments. He did not support formal and routine physical fitness testing because of the administrative problems and the difficulties in defining standards.

Even as Commander T presented his report, some dissonance was evident with the disclosure by the Director RNPTB of details of a proposed physical fitness test. HMS Temeraire Royal Naval School of Physical Training had not been consulted and the first Commander T knew of the test was gleaned from local press reports.

The Director RNPTB proposed to introduce Cooper's Aerobic Test<sup>117</sup> which was used by the American and Canadian armed services. The test consisted of running  $1\frac{1}{2}$  miles or swimming 750 yards in times graded for age. For personnel over 45 years old there was a third option of walking 2 miles against the clock. In the Royal Navy the test would be

undertaken voluntarily on a non-competitive basis, but substantial modifications were made to the age graded performance standards. Cooper's 'fair' standard was designated 'poor', and the lower level 'good' standard was reassessed 'satisfactory'.

Commander G drew attention to Cooper's recommendation that personnel should undergo a medical examination and preparation training before undertaking the test; and he suggested that a 'Step Up to Fitness Test'<sup>118</sup> should be a prerequisite to monitor individual physical capacity prior to taking Cooper's test. Commander T's recommendation that both tests should be evaluated was accepted, but before the evaluation process was completed details of the tests were distributed for use throughout the navy.

Initially considerable interest was shown but this declined markedly after a short period due to the lack of compulsion attached to the tests<sup>119</sup>. To compensate for this decline, some regional naval commands introduced a competitive element based on establishment complement achievement percentages<sup>120</sup>. Immediately following the collapse and death of a sailor participating in the tests, MGD convened a naval medical working party to examine the implications of physical fitness in the Royal Navy.

The medical working party greatly deplored the introduction of the fitness tests and noted that following several deaths in the American and Canadian armed services Cooper's test had been abandoned. It was also observed that within the Royal Navy the Stepping Up to Fitness Test had been misinterpreted and was not carried out in accordance with the rigid guidelines of the originators. The medical working party requested the Professor of Naval Medicine to urgently communicate their concern to MDG to have the tests discontinued<sup>121</sup>.



The innovative activities of the next two years from 1976 to 1978 were characterized by little progress and a voluminous exchange of correspondence between various naval directorates and personnel involved and uninvolved with the physical fitness testing issue<sup>122</sup>. The sheer volume of opinion, argument, counter-argument and discussion is beyond the scope of this study and indicates the very contentious nature of this innovation. However it can be concluded<sup>123</sup> that a large body of senior naval opinion advocated prescribed and mandatory fitness standards for promotion and re-engagement.

In November 1978, DCI742/78 related to leadership courses for ratings included a requirement for the Step Up to Fitness Test to be passed at the beginning of each course<sup>124</sup> as a prerequisite to the original fitness test adopted from the United States Navy<sup>125</sup> and used in the Royal Navy in 1964. The medical working party on physical fitness completed its report early in 1979 but promulgation was delayed as the recommendations concerning fitness testing were not agreed to by MDG<sup>126</sup>. Current physical fitness testing is related to successful completion of leadership courses governed by DCI742/78.

##### 5. Innovation J. The Recreation Manager Concept

In Chapter Three of this study, reference was made to the changing role of the naval physical trainer towards the concept of him as a manager and organizer of recreation and leisure. This innovation is evident in the RNPTB's interpretation of its tasks and responsibilities, and is further reflected in the instructor qualifying courses and employment categories shown in Figure 3. External and internal trends and pressures created a climate of change within the Royal Navy which initiated this role emphasis innovation.

Externally there was a focussing on the leisure phenomenon. Freidmann<sup>127</sup>, Redlich<sup>128</sup> and Matejho<sup>129</sup> highlighted the significance

of leisure and recreation in relation to social, economic and technological changes in westernized societies. Pimlott<sup>130</sup>, Roberts<sup>131</sup>, and Smith *et al*<sup>132</sup> accounted for the unprecedented growth of recreation in Britain from the end of the Second World War in 1945 which could not solely be attributed to reduced working hours and longer holidays. Indeed subsequently, ten major determinants of British leisure patterns were identified, consisting of time, money, age, sex, family status, social class, seasonal variation, leisure supply and technology, and the impact of government and the public sector<sup>133</sup>. Central and local government expenditure on public recreation facilities was increasing, and leisure related goods and services accounted for almost 20% of all consumer expenditure<sup>134</sup>. Rationales to underpin education for leisure, such as that proposed by Basini<sup>135</sup>, demonstrated how leisure and recreation were becoming institutionalized in contemporary Britain.

Traditionally the aims of naval physical training had been seen to be achieved by regular and compulsory exercise periods characterized by large numbers of men carrying out supervised gymnastic activities. A letter<sup>136</sup> to the Treasury in 1966 from the Ministry of Public Buildings and Works, the government department responsible for the provision of sport and recreation facilities in the armed services, reveals how attitudes were changing in response to wider societal and military trends.

Firstly, it was thought there was an increased requirement for a higher level of general fitness within the armed services because trade specialization had accentuated the interdependence of military skills. There were increasing possibilities of specialists from one service being transferred to support the fighting units of another service where physical demands were more intense. Secondly, current social attitudes indicated that servicemen in peacetime should enjoy a private life no less

extensive, comfortable and affluent than that of a civilian. This reorientation of expectation had produced a fundamental change of outlook in service life. The physical fitness requirement was becoming unattractive unless a programme of interesting activities and facilities were provided. Thirdly, the prevailing emphasis on quality of training rather than quantity made it increasingly important to ensure every serviceman was physically fit.

These changes in official thinking took place in the mid 1960's in the context of joint service planning when the amalgamation movement in the British armed services was at its zenith. What did not change for the Treasury was the requirement to obtain the most suitable and adequate recreation facility for the most economical price. For the planners within the Ministry of Public Buildings and Works it was an exercise in standardizing the most desirable design features which were acceptable to all the armed services. A design guide for a standardized Physical and Recreational Training Centre (P & RT Centre) was produced, but within this general framework there was a degree of flexibility to accommodate local conditions and individual service needs.

In the late 1960's the P & RT Centre concept was adopted by the Royal Navy to replace conventional gymnasia. Where potential existed for optimum use by naval personnel and families, large complexes were developed to include a sports hall, swimming pool, hobby rooms, squash courts, community hall and shopping precinct.

Even though P & RT Centres were developed in the navy, centralized drafting, reductions in personnel, the abandonment of the old port divisions, and a restructuring of new naval regional commands reduced the time, opportunity and inclination for sport and recreation<sup>137</sup>. As the pace and intensity of everyday naval routine and operations at sea continued to increase, attention was drawn to the quality of life in the Royal Navy:

we have allowed no costed time, other than long leave, for the humanities ... It is a dangerous fallacy to aim for strictly business efficiency results which are constantly claimed but sometimes known not to be achieved by inflexible and static industries working fixed or limited hours. Such methods applied ruthlessly or unimaginately to a round the clock organization which must be available to react to anything anywhere will inevitably dash and result in the man going to the wall<sup>138</sup>.

Similar conclusions were arrived at by no less than three reports<sup>139</sup> which investigated sport and recreation in the Royal Navy in 1969 and 1970. The most definitive evidence of broad based attitudes to naval sport and recreation was contained in the second of these reports<sup>140</sup> wherein 35 visits were made to ships and establishments in the United Kingdom and nearly 400 interviews conducted with senior and junior officers and ratings. It was established that attitudes to sport and recreation varied according to age and seniority, but overall 80% of those interviewed considered sport and recreation to be essential parts of naval life, and 69% felt there was insufficient opportunity to participate. Many interviewees thought there was a serious imbalance between naval work and recreation that had reached almost intolerable proportions in recent years. The intensity of this feeling and concern is succinctly demonstrated by a senior rating who said:

Admirals and generals in high places have paid lip service to the needs of sport ... too often they seem from where I stand to have been in the pockets of the politicians and the Treasury, and the rest of us in the Navy and Marines can go to the devil with work, more work and still more work with less hands to do the work with. Look I'm old and very bitter about sport in the Service<sup>141</sup>.

A similar sentiment was echoed by a senior officer who was seriously concerned:

at the lack of balance between work and recreation ... the ridiculous pressure at which we work is madness. The Royal Navy must make a conscious effort to relax and this demands leadership from the top<sup>142</sup>.

This general dissatisfaction with naval sport and recreation and problems arising from the management of the increasing development of P & RT Centres were apparent to the RNPTB. Lieutenant Commander O (SD), a prominent opinion leader in the RNPTB who previously as a Lieutenant had championed the free activity method in the replacement of the Swedish system, wrote to the Commanding Officer Royal Naval School of Physical Training drawing attention to the need for high quality management in large and expensive facilities<sup>143</sup>. He pointed out that in the past the RNPTB had often been slow and insular to changes in society and it was timely to act as:

Recreation Management is still very much embryonic. The gathering together of essential knowledge and the development of a full range of courses has only just begun. ... We in general see recreation as being synonymous with physical activity. Both within and without the Service there are far too many concentrated pockets of interests in the form of sport, arts, entertainment, that never ever get together. We should strive to bring these ingredients together in order that a comprehensive and effective service can be made available to our customers<sup>144</sup>.

This appeal for efficient and specialized management of recreation was significant for two reasons. Firstly, it indicated within the RNPTB that there was a changing attitude which regarded naval personnel as potential customers rather than captive participants. Secondly, from 1966 DGNMT had believed<sup>145</sup> that the study of management principles should not only feature in the syllabuses of courses attended by more senior officers but should also be included in the training of younger officers and ratings at early stages of their careers. DGNMT reasoned that general awareness and an appreciation of well established management principles would improve operational efficiency and the ability to cope with problems of a modern and progressive navy.

Idea generation and problem solving activities within the concept of a naval recreation manager were evident at several levels throughout

the Royal Navy. The Commander in Chief Portsmouth suggested to DNPTS that future training in the RNPTB might include recreation management<sup>146</sup>. DNPTS also probed the relevance<sup>147</sup> of recreation management for the RNPTB and sent one officer to evaluate a short sandwich course at Loughborough University. The syllabus of a one year full-time recreation management course at North West Polytechnic in London was examined and it was proposed to send another RNPTB officer on the course in January 1973. The idea of a working party to examine RNPTB officer training and the opportunities to study recreation management in the RAF and civilian colleges was also considered.

A study<sup>148</sup> of the use of the naval P & RT Centre at HMS Neptune confirmed a national trend that the system of management was not equal to the increased demand. Care was taken to stress that this deficiency did not imply a criticism of the RNPTB staff employed there, but rather an indication of the lack of adequate and flexible management techniques. These difficulties at HMS Neptune reinforced the belief<sup>149</sup> that the short sandwich course at Loughborough University would be extremely valuable for RNPTB officers in charge of large P & RT Centres. An attractive possibility was the apparent willingness of Loughborough University to design and organize a recreation management course specifically suited to RNPTB requirements with a syllabus based on instructional units spread over twelve or eighteen months conducted at the candidate's own naval establishment.

Other important viewpoints served to emphasize that a change of approach was required in naval provision of recreational facilities. A report on naval accommodation for junior servicemen<sup>150</sup> argued that young men entering the navy were more sophisticated than their predecessors. Higher levels of education, wider knowledge, and behaviour patterns established by outside influences together with high naval

wages had created more opportunities for travel, study, need fulfilment and self expression.

The report highlighted many aspects of naval life that were in contradiction with civilian society. Isolated naval establishments were closed communities seemingly unable to provide a sufficient variety of facilities or generate community enthusiasm. In spite of attempts to retain distinct identities, such as ships' companies, the structured and centralized organization of the navy promoted mass anonymity that encouraged apathy. The ordinary sailor's link with committees concerned with social, sport and recreational activities was tenuous, and participation in the organization of such activities was almost impossible. The degree of democracy that existed in the navy varied between establishments and was dependent upon<sup>151</sup>:

- a. The degree of individual incentive related to length of stay in the establishment.
- b. The attitude of the establishment administration.
- c. The degree of dependence upon the establishment for social life.
- d. The size of the establishment.

Most naval establishments had organizing committees for off duty activities which invariably were large scale, pay at the door, have a drink in the bar, and wear a tie type dances. Financial success was more important than participant satisfaction and the prevailing large scale entertainment concept inhibited smaller group activities. An allied problem was the difficulty of meeting girls. Women were forbidden entry to naval establishments except on special occasions and then only at the closely organized dances. There was little possibility of individual hosting as in civilian life, and the atmosphere at organized events tended to be dour, male dominated and conducive to little other than drinking.

The central core of all these difficulties was the 'navalness' of off duty life with its rules and hierarchies. These aspects were so entrenched it was felt that the navy would find it very difficult to emulate the conditions for enjoyment and relaxation that existed in civilian life. Events were organized to suit the majority, but it appeared that only a minority were satisfied. Attempts to innovate were resisted by superiors and it was argued that, "where a club or activity is created by local initiative it ought to be able to win official sanction and protection"<sup>152</sup>. It was suggested that the provision and location of barrack flats outside the security perimeters of naval bases might alleviate a large part of the social and recreation problem within the Royal Navy.

Another important opinion was publicly expressed by CINCPACFLT on the occasion of the Naval Under Secretary of State's visit to Portsmouth on February 6th 1973. Referring to naval recreation he said:

In the past the Royal Navy has tended to look upon recreation in a rather traditional and narrow manner, as being concerned only with organized team events. Like the rest of the country we are now becoming more fully aware of the part that recreation plays in making up the whole man. And like their civilian counterparts, young sailors are becoming increasingly sophisticated in their outlook in this matter. They are looking more to individual activities rather than team games and are interested in such diverse activities as sk-ing, gliding, sub-aqua, and golf, to name but a few. They are prepared to spend considerable time, effort and their own money on such activities. But unlike the static civilian, who can over a period find means of following his own bent within his local area, the sailor is continually on the move and although he has the enthusiasm and the willingness to take part, he often finds the means of doing so elude him. I believe that the Navy must continue to develop the concept of recreation management, so as to provide the organization and the framework to enable a young man readily to undertake such activities<sup>153</sup>.

Other investigations into the methods of administering leisure activities within Naval Home Command, such as the one conducted at the Britannia Royal Naval College Dartmouth, HMS Fisgard and HMS Raleigh<sup>154</sup>, resulted in the concept of a naval recreation manager being adopted.



Where circumstances permitted, RNPTB officers were appointed to co-ordinate the use of leisure resources and facilities. The organizational structure of recreation management in a large naval establishment is shown in Figure 7.

As part of the implementation process, adjustments were made in the syllabuses of the RNPTB instructor qualifying courses at the Royal Naval School of Physical Training. Following a job analysis of RNPTB instructors by the Naval Manpower Utilization Unit<sup>155</sup> the syllabus modifications allowed some degree of specialization as administrators or sport coaches. In this way the RNPTB would:

1. Provide and control the supply of specialist coaches and officials for naval sport and recreation.
2. Ensure each activity had trained personnel responsible for its development and administration.

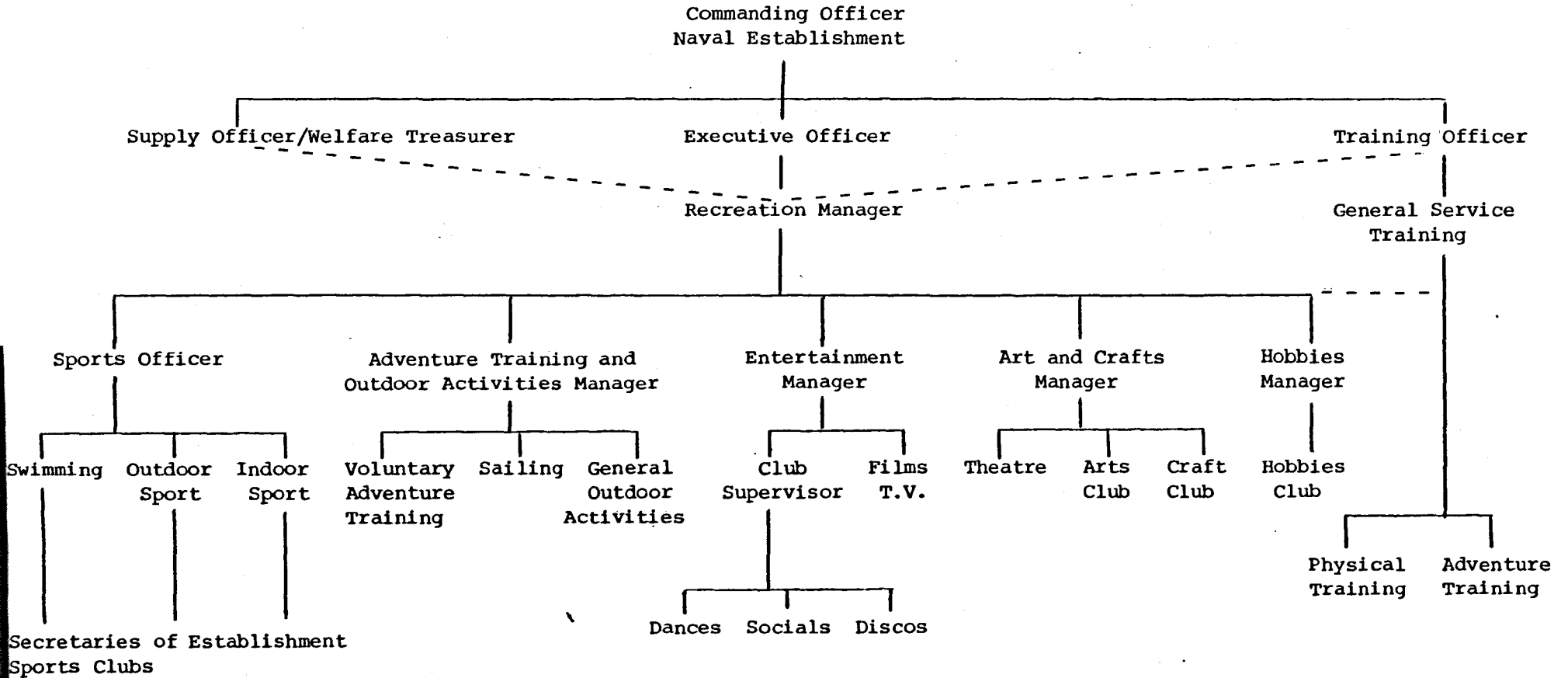
Within the implementation process the development of P & RT Centres was extended<sup>156</sup>, two periods of recreation per week in training establishments of Naval Home Command became mandatory<sup>157</sup>, and two RNPTB officers attended the one year full-time recreation management course at North West Polytechnic.

Evaluation of the implementation process characteristically followed the Royal Navy procedure of reports submitted at intervals. The report of the Commanding Officer HMS Vernon<sup>159</sup> at Portsmouth illustrates this evaluative approach and also indicates some modification of the innovation.

The concept of recreation management was introduced at HMS Vernon in March 1973 and had been operating for eighteen months. The recreation manager was assisted by a recreation secretary/sports officer and three section managers responsible for physical activities, social activities,

Figure 7

Organizational Structure for Naval Recreation Management 158



and adventure training. The functions of the management group were seen as <sup>160</sup>:

1. To impartially recommend to the welfare committee of HMS Vernon the allocation of funds available for leisure activities.
2. To assist club secretaries in the promotion of activities so that:
  - a. all establishment leisure facilities were extensively used.
  - b. all establishment personnel were aware of participation opportunities.
3. To monitor the maintenance and control of equipment.

The recreation management team met monthly prior to the meeting of the welfare committee to consider the financial bids submitted by club secretaries and to examine the promotion of certain events. An important strategy built into the arrival procedure of new personnel to HMS Vernon was to ascertain their personal interests and disseminate information on available activities.

The effectiveness of the recreation management system at HMS Vernon was considered under the headings of finance, equipment and facilities, personnel, and participation.

Finance. The major benefit was the more appropriate allocation of finance from the welfare fund. In the first year of implementation approximately £3900 was spent on over thirty different activities and sports. Minor activities such as horse riding, fishing, and choral singing had been able to develop, and teams had entered navy and civilian competitions and events.

Equipment and facilities. In the more traditional sports the representative teams of HMS Vernon were better equipped and able to entertain visiting teams without undue personal expense. The purchase of camping equipment had led to a growing demand for such activity by establishment personnel and their families. Increased participation and the

development of minor sports had created problems of facility provision.

Personnel. The only full-time member of the recreation management team was the manager of physical activities. The other members of the team, including the recreation manager, could only devote a small proportion of their time to the promotion and administration of leisure activities.

Participation. In some activities wide participation had been achieved. For example, during the summer months a lunchtime volley ball league had attracted 150 players a week. However, many personnel did not take part in any leisure time activity. Some claimed to be bored, and some indicated that lack of awareness had prevented their participation. Measures to improve communication between the management team and non-participants were being taken.

A management by objectives approach had been adopted. Key areas of operation had been identified and achieved performance standard criteria had been delineated as <sup>161</sup>:

1. When majority group requirements are met and requirements of minority groups are met when conditions permit.
2. When HMS Vernon personnel can readily discover and use existing facilities.
3. When activities operate within approved budget margins.
4. When representative sports and activities of HMS Vernon are administered efficiently.
5. When funds and stores are administered in accordance with service and establishment regulations.

It was concluded that the recreation management concept had achieved some success in providing a wide range of leisure activities and concentrated resources where they were most needed at HMS Vernon. It was thought that if wider participation was to be achieved then at least two of the positions in the recreation management team had to be

full-time appointments.

#### 6. A Comparison With Previous Innovative Activities

In this section the change processes of innovations F, G, H, I and J presented in this chapter are compared with those of innovations A, B, C, D and E previously scrutinized in Chapter Five. Broad similarities exist between the two sets of innovations. As indicated in Chapter Five, innovations A and E were organizational changes, B contained changes of method and content, while D was an innovative package containing changes of organization, content and method. Similarly, innovations G, H and J were organizational changes, method and content changes characterised innovation F, while I was a physical fitness testing method.

This typology based on an innovation's major change emphasis is simplistic but convenient. Its main limitation is that it gives no indication of accompanying or minor changes which may be vital to the innovation. For example, in innovation G, the major change emphasis in the attempts to amalgamate the physical training branches of the armed services was essentially one of organization, but changes of method and content were features of considerable importance. The typology is therefore a tenuous one, but it does serve as a reference base from which comparisons can be made between previous and recent innovative activities of the RNPTB. Here the emphasis is focussed on the change processes surrounding innovation proposals, external consultations, pilot studies, and evaluation procedures.

The most striking contrast between the proposals of previous and recent innovations is afforded by the sharply differing degree of formality in their presentation. All the proposals for previous innovations A, B, C, D and E were lengthy and formal. Only the proposal for the recent innovation G, which began as a Ministry of Defence

instruction<sup>162</sup> to explore the concept of amalgamation, can be categorized as formal. For the RNPTB innovations H and I were attractive and important. The integration of WRNS physical training instructors was an extremely advantageous expedient. The proposed compulsory fitness test for naval career advancement carried possible increments for RNPTB image and prestige. The formation of a favourable or unfavourable attitude towards an innovation does not always lead directly or immediately to a rejection or adoption decision<sup>163</sup>, but the letters<sup>164</sup> containing the initial proposals for H and I were markedly informal, friendly, and successful!

None of the proposals for previous innovations A, B, C, D and E originated from within the RNPTB. This was not the case with innovation proposals F, G, H, I and J. Innovations H and I were initiated by proposals made by DNPTS. No written proposals characterized innovations F and J concerned with the replacement of the Swedish system and the recreation manager concept respectively. The origins of these two latter innovations were gradual, emanating as they did from 'grass root' pressures from within the RNPTB. The unpopularity of the Swedish system and societal trends in recreation created a general awareness for change rather than any formal or specific proposal. In a similar fashion it was internal naval pressures, such as demanding operational work routines and inadequate recreation provision, which highlighted the need for personnel skilled in recreation management rather than any identifiable proposal.

A major difference noted in previous innovations was the tendency of proposals for organizational change to arise from committees, as opposed to the initiation of method and content innovations from proposals by individuals. Significantly, no committee proposals initiated any recent innovation considered here. Instead the main

thrust of recent committees, perhaps more aptly renamed working parties, has been in the problem solving phases of innovation. This trend is succinctly demonstrated in innovation G to amalgamate the physical training branches, where a succession of working parties concentrated their efforts to find the most acceptable alternative; or again in innovation I where working parties grappled with the problems of establishing physical fitness criteria and test selection.

A further major development in innovation processing can be identified in F where the justification for replacing the Swedish system was verbally argued at a RNPTB conference which in itself was an innovation. The subsequent call<sup>165</sup> for opinion and ideas also sharply contrasts with the narrow and limited input that characterized previous innovative activities. This widening of input can also be seen in the numerous surveys and questionnaires that were associated with recent innovations I, F and J.

External consultations featured in both previous and recent innovative activities. The extent of information seeking was innovation specific, being dependent on the nature of the innovation and of the personnel wishing to innovate. Previous external consultations tended to suggest that information seeking was facilitated where innovations possessed well defined curriculum content or highly visible instructional methods. While this tendency remained true in recent innovations, the role of innovating personnel appeared to be a more critical factor. This is demonstrated in the contrast of information seeking activity in F and I. In F, an essentially method and content innovation, external consultation was a minimal one day visit to Loughborough University where it will be recalled the information seeking activity was likened to drawing blood from stone. By contrast, the information gathering on physical fitness testing within innovation I was extensive<sup>166</sup>.

Organizational innovations H and J concerned with the integration of WRNS physical training instructors and the recreation manager concept exhibited moderate information seeking activity, but the very nature of the amalgamation attempts in innovation G necessitated inter-service consultations.

No pilot studies took place in G, H and J, which were recent innovations of organizational change. F and I, predominantly method and content innovations, were extensively featured with pilot studies. The pilot studies conducted in F to test the P & RT System induced a gradual and consolidated development of the innovation during the problem solving phase. Small pilot studies conducted initially at the Royal Naval School of Physical Training and then at HMS Ganges, a junior entrant training establishment, produced a tentative scheme. Wider trials at other establishments facilitated the identification of problems, such as insufficient time allocations for the teaching of rope climbing and circuit training. The pilot studies to test the suitability of various physical fitness tests followed a similar pattern. The first trials conducted with selected RNPTB instructors were then followed by a wider application to other naval personnel. Such feedback, problem identification, and invited discussion further signify a widening participative approach to RNPTB innovation processing.

An increasing variety of techniques characterize the evaluation procedures used in recent RNPTB innovative activities, but traditional methods such as inspections and reports on individual performance of duties continue to play a significant role. Much of the evaluation of the RFRT System of innovation I is done in this traditional way with Command Recreation Officers carrying out inspections of physical training units within naval establishments. In this respect they function as the old Inspectors of Gymnasia billeted in flagships of yesteryear.



Traditional evaluation methods have been supplemented by techniques derived from principles of modern management. Foremost of these modern techniques is the management by objectives approach used in innovation J to identify key areas of operation and to elicit whether or not delineated performance standards are achieved in the provision of recreation<sup>167</sup>. This latter approach is in keeping with a general trend to manage most areas of RNPTB endeavour by behavioural objectives<sup>168</sup>.

No specific evaluation procedures have been applied to innovation H to assess the integration of WRNS physical training instructors into the RNPTB, but an individual task book to be endorsed on satisfactory completion of specified work experiences records the progress of all newly trained RNPTB personnel.

The greatest contrast between previous and recent evaluation attempts lies in the greatly extended use of informal interview surveys and structured questionnaires. These techniques are particularly evident in innovations concerned with naval sport and recreation where RNPTB orientations to elicit the needs of customers rather than captives are increasingly manifest.

In summary, an adaptation of Tushman's<sup>169</sup> model of innovation phases and key communication domains was used to examine the dimensions of idea generation, problem solving, and dissemination and implementation of recent innovative activities of the RNPTB. The selected recent innovations were:-

Innovation F. The Replacement of the Swedish System.

Innovation G. The Attempts to Amalgamate the Armed Services' Physical Training Branches.

Innovation H. The Integration of WRNS Instructors into the RNPTB.

Innovation I. The Introduction of Physical Fitness Testing.

Innovation J. The Recreation Manager Concept.

Additionally, the change processes of innovation proposals, external consultations, pilot studies, and evaluation procedures of these recent innovative activities were compared with previous innovations which consisted of:

Innovation A. The Formation of the RNPTB.

Innovation B. The Adoption of the Swedish System.

Innovation C. The Introduction of Ju-Jitsu.

Innovation D. The 90% System.

Innovation E. An Attempt to Form a WRNS Physical Training Branch.

In this comparison it was suggested that the majority of recent innovation proposals are less formal, and except for G all the recent proposals originated within the RNPTB. Information seeking activity was innovation specific. Within recent innovations the input of opinion and ideas has widened, but only method and content innovations F and I were characterized by pilot studies. It was noted that traditional evaluative methods are supplemented by a variety of contemporary techniques.

Notes and References for Chapter Six

1. Tushman, M.L. 'Special Boundary Roles in the Innovation Process'.  
Administrative Science Quarterly. 22. 1977. pp.587-605.
2. Ministry of Education. Moving and Growing. HMSO. 1952. and  
Ministry of Education. Planning the Programme. HMSO. 1953.
3. Randall, M.W. Modern Ideas on Physical Education. Bell & Sons. 1960.  
p.47.
4. See Dyer, G.N. 'A Retrospect and a Forecast'. Mind, Body and Spirit.  
J. of the Army Physical Training Staff. 16. 1936. pp.16-18.
5. Air Ministry. Handbook of Physical Training for Use in the Royal  
Air Force. Air Publication 890. 2nd Edition. HMSO. 1934. p.11.
6. Fletcher, T.L. & Lambert, L. Army Physical Training Corps 1860-1960.  
Army Physical Training Corps. Aldershot. 1960. p.34.
7. 'Sport and the Community' (The Wolfenden Report). Central Council  
of Physical Recreation. September 1960.
8. See Central Office of Information. The Sports Council. HMSO. 1966.  
and Sports Council. A Report on Planning for Sport. 1968.
9. Randall, M.W. & Waine, W.K. Objectives of the Physical Education  
Lesson. Bell & Sons. 1963. pp.1-17.
10. See for instance Randall, M. Basic Movement. Bell & Sons. 1963.  
and Cameron, W.McD. & Pleasance, P. Education in Movement.  
Blackwell. Oxford. 1965.
11. Ministry of Defence. Physical and Recreational Training. Vol.2.  
BR51(2). 1967. chapter 7. p.3.
12. See for example Taylor, E. Training With Weights. Murray. 1962.  
and Murray, A. Modern Weight Training. Kaye. 1963.
13. See TEM/774/3 for the introduction of weight training into the  
Royal Navy.
14. Morgan, R.E. & Adamson, G.T. Circuit Training. Bell & Sons. 1965.
15. Royal Canadian Air Force. SBX Plan for Fitness. Queen's Printer  
and Controller of Stationery. Ottawa. 1958.
16. Ministry of Defence. Physical Efficiency Programme Exercises.  
Army Code 70173. HMSO. 1966.

17. The Bullworker device has spring-loaded resistance tubes. The device has particular application in small ships and where the ship's motion would make the use of heavy training weights potentially dangerous.
18. There is extensive RNPTB correspondence on this subject in TEM/860/2/3.
19. Enclosure PT/SCH/G/19/17. July 11th 1967. in TEM/860/2/3.
20. Enclosure PT/SCH/G/19/17. July 11th 1967. *op cit*.
21. Written account of the one day visit to Loughborough in TEM/860/2/3.
22. See TEM/860/2/3.
23. Undated paper by Lieutenant Commander M in TEM/860/2/3.
24. Lieutenant Commander M letter. August 5th 1967. TEM/860/2/3.
25. Lieutenant N letter. August 13th 1967. TEM/860/2/3.
26. Lieutenant O letter. July 20th 1967. TEM/860/2/3.
27. See PT/SCH/G/19/17. September 8th 1967. TEM/860/2/3.
28. PT/SCH/G/19/17. September 8th 1967. *op cit*.
29. Minutes of the Meeting held in the Conference Room of HMS Victory October 9th 1967 to discuss the Introduction of the PFRT System. in TEM/860/2/3.
30. See TEM/860/2/3.
31. Minutes dated October 9th. TEM/860/2/3.
32. Lieutenant Commander M letter. September 19th 1967. TEM/860/2/3.
33. See other letters from RNPTB officers in TEM/860/2/3.
34. PT/SCH/G/19/17 dated February 16th 1968. TEM/860/2/3.
35. Naval terminology for familiarization courses.
36. Lieutenant Commander M letter. May 17th 1968. TEM/860/2/3.
37. Enclosure 6 to PT/SCH/G/19/17. September 8th 1967. TEM/860/2/3.
38. See the correspondence on this subject in TEM/860/2/3.
39. DNPTS. Physical Fitness and Recreational Training. 1968.
40. Travers, P.R. Fitness Training. Royal Naval School of Physical Training. 1969.

41. See Robinson, C.F. 'British Organization for Defence'. Public Administration Review. 8. 1948. pp.181-187.  
and Willson, F.M.G. 'Defence Organization - 1958 Style'.  
Public Administration. Winter 1958. pp.385-390.
42. Alexander, T.G. 'Integration'. J. Royal United Services Institute.  
November 1960. pp.535-547.
43. Central Organization for Defence. Cmd. 476. HMSO. 1958.  
Central Organization for Defence. Cmd. 2097. HMSO. 1963.
44. Cmd. 2097. 1963. *op cit*. p.1.
45. See TEM/504/1.
46. DNPTS letter. March 29th 1962. TEM/504/1.
47. NP1/N1/9/1/64/A. September 17th 1964. TEM/765/4.
48. NP1/N1/9/1/64/A. September 17th 1964. *op cit*.
49. 43/hys/908/AT5. undated but probably early June 1964. in TEM/860/2.
50. See TEM/765/4 and TEM/860/2.
51. Interim Report of the Working Party on the Training of Physical  
Training Instructors. January 8th 1965. in TEM/765/4.
52. The Royal Marines Physical Training Wing is now located at  
Lympstone in Devon, and the RAF School of Physical Education is  
now at Cosford in Shropshire.
53. Interim Report. January 8th 1965. *op cit*.
54. AF/CX479/64/DP Ed/RAF. May 11th 1965. TEM/860/2.
55. Final Report of the Working Party on the Training of Physical  
Training Instructors. November 24th 1965. in TEM/765/4.
56. Final Report. November 24th 1965. *op cit*.
57. Minutes of the Meeting of the Principal Personnel Officers  
Committee Study Group on Training. December 16th 1965. in  
TEM/765/4.
58. For example see DNPTS letter April 9th 1965. TEM/765/4.
59. See arguments and interviews arranged in DNPTS letters dated  
July 1st and August 20th 1964. in TEM/765/4.
60. Confined to TEM/130/1.

61. Royal Naval School of Physical Training: Royal Marine Physical Training Wing Amalgamation Report. April 7th 1971. TEM/130/1.
62. Amalgamation Report. April 7th 1971. *op cit.*
63. N/NP1/383/1/71B. December 13th 1971. TEM/130/1.
64. N/DGNM/1/32/157. September 24th 1973. TEM/765/2.
65. Report on the Joint Training of Servicemen: Physical Training Instructors. February 12th 1974. TEM/765/2.
66. Interim and Final Reports of the Working Party on the Training of Physical Training Instructors. January 8th and November 24th 1965. in TEM/765/2.
67. Report on the Joint Training of Servicemen: Physical Training Instructors. February 12th 1974. *op cit.*
68. Extract from the Minutes of the Defence Training Committee. February 12th 1974. in TEM/765/2.
69. Physical Training Instructor Training: An Inter-Service Study. November 15th 1974. TEM/765/2.
70. Physical Training Instructor Training: An Inter-Service Study. November 15th 1974. *op cit.*
71. PRO/ADM/1/20822.
72. Captain S letter. January 14th 1976. DNPTS/1/18.
73. Captain S loose minute. May 25th 1976. DNPTS/1/18.
74. Director WRNS loose minute. June 7th 1976. DNPTS/1/18.
75. Captain S to DGNPS. June 17th 1976. DNPTS/1/18.
76. Billet is a naval term for a specifically designated job within an establishment or ship's complement.
77. See correspondence in DNPTS/1/18.
78. DNPTS/1/18.
79. Commanding Officer HMS Temeraire. December 2nd 1976. DNPTS/1/18.
80. Report of the WRNS P.T. & R. Category Integration Working Group. July 19th 1977. TEM/765/2.
81. WRNS Integration Report. July 19th 1977. *op cit.*
82. DNPTS/1/18.

83. WRNS Integration Report. July 19th 1977. *op cit*.
84. WRNS Integration Report. July 19th 1977. *op cit*.
85. WRNS Integration Report. July 19th 1977. *op cit*.
86. See SECNAV Instruction 6100.1. August 14th 1961. in TEM/150/1.
87. Minute dated July 10th 1963. in TEM/150/1.
88. HMS Kent Physical Fitness Test. October 14th 1963. TEM/150/1.
89. A vertical jump test of leg power in relation to body weight.  
See Morgan, R.E. & Adamson, G.T. 1965. *op cit*. p.90.
90. Running on the spot.
91. Extract from Working Party Report on Physical Fitness. April 1966.  
TEM/150/1. p.1.
92. Report on Physical Fitness. April 1966. *op cit*.
93. Minute dated October 17th 1963. TEM/150/1.
94. Now part of Exeter University.
95. Now part of Loughborough University.
96. Report on Physical Fitness. April 1966. *op cit*.
97. HMS Kent Physical Fitness Test. September 15th 1964. TEM/150/1.
98. HMS Kent Physical Fitness Test. September 15th 1964. *op cit*.
99. Report on Physical Fitness Test. April 1966. *op cit*.
100. Commandant General Royal Marines letter November 23rd 1965.  
TEM/150/1.
101. Director General Naval Manpower and Training letter December 7th  
1965. TEM/150/1.
102. Captain HMS Collingwood letter June 9th 1966. TEM/150/1.
103. Letters from Captain HMS Mercury and Captain HMS Vincent dated  
June 8th 1966 and May 20th 1966 respectively in TEM/150/1.
104. A Joint Service System of Medical Classification where

P = Physical Capacity  
 U = Upper Limbs  
 L = Locomotion  
 H = Hearing Acuity  
 EE = Eyesight (Visual Acuity)  
 M = Mental Capacity  
 S = Stability (Emotional).

105. Surgeon-Captain Royal Naval Hospital Portsmouth letter May 16th 1966. TEM/150/1.
106. See letters dated July 19th and August 2nd 1966. in TEM/150/1.
107. Commander-in-Chief Portsmouth letter July 29th 1966. TEM/150/1.
108. Captain 27th Escort Squadron letter May 17th 1966. TEM/150/1.
109. Commander-in-Chief Mediterranean Fleet letter July 11th 1966. TEM/150/1.
110. Minutes of the 14th Meeting of the Working Party on Physical Fitness. February 7th 1968. TEM/150/1.
111. Minutes of the 18th Meeting of the Working Party on Physical Fitness. July 10th 1972. TEM/150/1.
112. Physical Fitness Report. January 27th 1975. TEM/770/1/2.
113. Physical Fitness Report. January 27th 1975. *op cit*.
114. Physical Fitness Report. January 27th 1975. *op cit*.
115. Physical Fitness Training New Entry Personnel Study Report. February 9th 1976. TEM/770/1/2.
116. Physical Fitness Training New Entry Personnel Study Report. February 9th 1976. *op cit*.
117. Cooper, K.J. The New Aerobics. Evans. New York. 1970.
118. Also known as the Ohio State University Test. See Johnson, B.L. & Nelson, J.K. Practical Measurement for Evaluation in Physical Education. 2nd Edition. Burgess. Minneapolis. 1974. pp.140-141.
119. CINCNVAHOME letter. March 30th 1977. TEM/770/1/2.
120. See Annex A to Flag Officer Naval Air Command letter. September 15th 1976. TEM/770/1/2.
121. Minutes of the 2nd Meeting of the Medical Working Party on Physical Fitness in the Royal Navy. November 25th 1976. TEM/770/1/2.
122. The files at HMS Temeraire range from TEM/770/1 to TEM/770/1/6 and a similar number on physical fitness testing are held by DNPTS.
123. See for example Captain HMS Pembroke paper March 13th 1978 and Deputy Director RNPTB loose minute dated October 24th 1978. in TEM/770/1/2.



124. Enclosure B to DNPTS 1/7 dated January 19th 1979. TEM/770/1/6.
125. SECNAV Instruction 6100. 1. August 14th 1961. TEM/150/1.
126. Enclosure B to DNPTS 1/7. January 18th 1979. *op cit*.
127. Friedmann, G. 'Leisure and Technological Civilization'.  
International Social Sciences J. 4, 1960. pp.509-521.
128. Redlich, F. 'Leisure Time Activities: A Historical, Sociological,  
and Economic Analysis'. Explorations in Entrepreneurial History.  
3. 1. 1965. pp.3-23.
129. Matejko, A. 'Culture, Work and Leisure'. Society and Leisure. 2.  
1971. pp.21-42.
130. Pimlott, J.A.R. Recreations. Studio Vista. 1968.
131. Roberts, K. Leisure. Longmans. 1970.
132. Smith, M. *et al* (Eds.). Leisure and Society in Britain. Allan Lane.  
1973.
133. Kinsman, F. United Kingdom Leisure Markets: Survey and Forecasts  
to 1985. Staniland Hall Associates. 1979.
134. Veal, A.J. 'Sport and Recreation in England and Wales'. Research  
Memorandum 74. Leisure and Tourism Unit. University of Birmingham.  
July 1979. p.1. citing Martin, W.H. & Mason, S. The Prospects for  
Leisure: The Next Five Years and Beyond. Leisure Consultants.  
1975.
135. Basini, A. 'Education for Leisure: A Sociological Critique'.  
Paper to Symposium on Work and Leisure. University of Salford.  
September 22nd 1973.
136. Ministry of Public Buildings and Works letter July 15th 1966.  
DNPTS/6/64/4.
137. There is ample evidence of the reduced participation in naval sport  
and recreation in TEM/770/1, TEM/770/1A, TEM/770/1B, and  
DNPTS/20/1.
138. Unsigned and undated paper (but circa 1970) 'Quality of Life  
Afloat'. in DNPTS 20/2.
139. Sport and Recreation in the Royal Navy. October 15th 1969.  
Sport and Recreation in the Royal Navy and Royal Marines. March  
9th 1970.  
Opportunities for Recreation in the Royal Navy, Royal Marines

- and Womens Royal Naval Service. June 26th 1970. all in DNPTS/20/1.
140. Sport and Recreation in the Royal Navy and Royal Marines. March 9th 1970. *op cit*.
  141. Sport and Recreation in the Royal Navy and Royal Marines. March 9th 1970. *op cit*. p.14.
  142. Sport and Recreation in the Royal Navy and Royal Marines. March 9th 1970. *op cit*. p.15.
  143. Lieutenant Commander O letter May 19th 1971. TEM/505/1.
  144. Lieutenant Commander O letter May 19th 1971. *op cit*.
  145. DGNMT letter August 15th 1966. TEM/820/4.
  146. Commander-in-Chief Portsmouth letter September 29th 1971. TEM/770/1/5.
  147. See DNPTS letter October 18th 1971. TEM/770/1/5.
  148. Cited in CINCPACFLT letter April 12th 1972. TEM/770/1/5.
  149. Study of Courses in Recreational Management at Loughborough University and Other Centres. April 12th 1972. TEM/770/1/5.
  150. Elvin, K. & Harris, P. Report on Social Accommodation for Junior Servicemen Royal Navy and Royal Marines Off Duty. User Requirement Studies 2. Directorate of Building Development. Department of Environment. February 1973.
  151. Elvin, K. & Harris, P. 1973. *op cit*.
  152. Elvin, K. & Harris, P. 1973. *op cit*. p.7.
  153. Enclosure 1 to CINCPACFLT A/5064/167. February 7th 1973. in TEM/502/1.
  154. DNPTS Physical Recreation Questionnaire. December 6th 1971. TEM/770/1.
  155. Naval Manpower Utilization Unit. Job Analysis: Physical Training Instructors. January 1st 1973.
  156. See DNPTS/6/64/1B for details of P & RT Centre development.
  157. CINCPACFLT letter February 15th 1972. TEM/770/1.
  158. Enclosures 1 and 2 to CINCPACFLT letter March 8th 1973. TEM/770/1/5.
  159. Recreational Management Report in HMS Vernon. December 5th 1974. in TEM/770/1/5.

160. Recreational Management Report in HMS Vernon. December 5th 1974.  
*op cit.*
161. Recreational Management Report in HMS Vernon. December 5th 1974.  
*op cit.*
162. NPl/Nl/9/1/64/A September 17th 1964. TEM/765/4.
163. Rogers, E.M. & Shoemaker, F.F. Communication of Innovations: A Cross-Cultural Approach. Free Press. New York. 1971. p.112.
164. See Captain S letter January 14th 1976. in DNPTS/1/18. and Minute dated July 10th 1963. in TEM/150/1.
165. See TEM/860/2/3.
166. Especially files TEM/770/1 to TEM/770/1/6.
167. Recreational Management Report in HMS Vernon. December 5th 1974.  
*op cit.*
168. TEM/860/3/1.
169. Tushman, M.L. 1977. *op cit.* pp.587-605.

Chapter Seven  
Issues and Outcomes

One analysis in the early 1970's of nearly 1500 innovation studies indicated that only 38 of them investigated consequences<sup>1</sup>. Many evaluation programmes of education curriculum projects have been concerned primarily with questions of content, arrangement and presentation<sup>2</sup>. This evaluative bias has often arisen from the tacit assumption that innovation consequences will be positive and beneficial. Consequences are also difficult to evaluate because they occur over extended periods of time, and it is necessary to judge them in the context of the innovating unit's own needs and values<sup>3</sup>.

Consequences are changes that occur as a result of the adoption or rejection of an innovation<sup>4</sup>, and have been classified as<sup>5</sup>:-

- a. Function or dysfunctional depending on whether the effects of an innovation are desirable or undesirable.
- b. Direct or indirect depending on whether the changes occur as an immediate response or as a result of the direct consequences of an innovation.
- c. Manifest or latent depending on whether or not the changes are recognized or intended.

In this chapter the emphasis is on issues and outcomes relevant to this study rather than on innovation consequences. Issues are regarded as matters arising from the exposition within the study, while outcomes are considered to be circumstances which emanate from the innovations in naval physical training, sport, and recreation. In particular, there is a brief indication of the innovations' progress and present status. The processes of innovation facilitation and institutionalization within the RNPTB are scrutinized. The applicability of recognized models of change is examined. Finally, the concept of

innovation persistence is explored.

1. Innovation Progress and Status

As a reference base to facilitate further examination the generalized progress and status of the previous and recent innovations in the RNPTB can be summarized as:-

Innovation A. The formation of the RNPTB was implemented in 1902, and except for the World War One years 1914-18, has operated as a formal organization with various changes of structure, teaching methods and curriculum content.

Innovation B. The Swedish system of physical training was adopted in 1903, and with only minor modifications persisted until 1967.

Innovation C. Introduced as ju-jitsu in 1905, judo continues in the curriculum of RNPTB instructor qualifying courses, and features in the PFRT syllabuses of naval training establishments.

Innovation D. The demise of the 90% System can not be precisely dated. Introduced in 1919, remnants of it are evident in the Handbook of Physical and Recreational Training<sup>6</sup> published in 1940, and certain embellishments of the innovation, such as the SCB, continue to flourish in support of naval sport and recreation.

Innovation E. The attempt to form a physical training branch in the WRNS in 1947 did not succeed. Instead, a greatly reduced innovation permitted a few WRNS officers and ratings occasional training to become part-time organizers of sport and recreation.

Innovation F. In 1967 the PFRT system replaced the Swedish system and continues as the mainstay of naval physical training in training establishments.

- Innovation G. The innovation attempts in 1964, 1971, and 1974 to amalgamate the physical training branches of the armed services did not succeed.
- Innovation H. WRNS physical training instructors were trained and integrated into the RNPTB in 1977 and continue to serve in selected billets.
- Innovation I. Starting in 1963 the innovation attempts to establish a compulsory fitness test were eventually modified in 1978 to permit limited testing in selected leadership courses and promotion procedures.
- Innovation J. With various minor adaptations related to local conditions, the recreation manager concept was implemented in 1972 and continues in selected naval establishments.

## 2. Innovation Facilitation

The success or failure of these innovations can in part be explained in terms of facilitation within the RNPTB. The concept of facilitation is used here to connote how certain elements of the communication and support system<sup>7</sup> within the infra-structure of the innovation process contribute to success or failure.

Elliott<sup>8</sup> has classified dissemination programmes of educational innovation according to whether they express an advocacy or experimental approach. The former is a non-neutral strategy to secure adoption, while the latter involves a neutral attempt to help the innovating unit to assess the effects of innovation by implementing it experimentally. If an innovation is thought desirable within the RNPTB, the strategy pursued by DNPTS is essentially non-neutral and closely aligns with House's factor of advocacy:-

over the short and medium term, the success of the innovation will depend on whether an enthusiastic "advocacy" develops around it. Advocacy requires a small group of people who protect and propagate the project in face-to-face contact. This is entrepreneurialism in its fundamental form — the organization of goals and people. If advocacy does not develop, the chances of the innovation being utilized at all are very slim<sup>9</sup>.

The failure of innovations E and G, the former concerned with the formation of a WRNS physical training branch, and the latter with the amalgamation of the physical training branches of the armed services, may be largely attributed to the lack of advocacy and some hostility<sup>10</sup> displayed by DNPTS.

The adoption model of naval physical training, sport and recreation, shown in Figure 5 on page 98, illustrates the dominant role played by DNPTS throughout the innovation process which serves to highlight a second essential element for success. As the decision unit of the RNPTB a primary role of DNPTS is to act as sponsor of innovations in naval physical training, sport and recreation. The importance of sponsorship has been discussed by Blyth *et al*<sup>11</sup> and features in House's analysis of factors essential for innovation success:-

One powerful factor promotes and rejuvenates innovation - sponsorship. ... If the innovation is supported by a powerful sponsor, more resources can always be found, and previous errors can be corrected. If the innovation is not sponsored by a powerful agency, it gets only one chance. When it runs into difficulties or exhausts its resources, it is finished. Like the son of a rich man, the well-endowed innovation gets many chances<sup>12</sup>.

The low formal but high informal status and influence of the RNPTB was demonstrated in Chapter Three of this study, and is mirrored in both the success and failure of innovations considered here. High informal influence accounted for the success of A, where in a relatively short time the innovation curtailment and financial constraints were overcome to permit full implementation<sup>13</sup>. Likewise,

the 90% System of innovation C was adopted on the prestige of the RNPTB<sup>14</sup>.

This support from wider and higher levels of authority is often essential, particularly where an innovation has implications for the whole navy. The approval is not always forthcoming, as was demonstrated in innovation I in the attempts to secure compulsory fitness testing, but where such support is deemed critical a great deal of lobbying is carried out among senior ranks favourably disposed towards the RNPTB. The best example of this strategy was in innovation G, where machinations by DNPTS together with a significant lack of sponsorship greatly ensured that the RNPTB was not amalgamated with the physical training branches of the other armed services.

While this high informal status exerts great influence at levels higher than DNPTS in the naval hierarchy, see Figure 5 page 98, at levels below DNPTS an additional and important factor should be noted. Unlike educational innovations in circumstances where persuasion is a vital element, a central dimension of innovation within the RNPTB is the element of compulsion and the mandatory nature of dissemination and implementation. All RNPTB personnel are compelled to implement in accordance with DNPTS instructions, although as was demonstrated in innovations B and F, when detection and sanction were not possible the dissatisfaction with the Swedish system of physical training led to discontinuance.

The concept of facilitation may be widened to appraise how far the RNPTB has evolved a general procedure for innovation. From the examination of previous and recent innovative activities undertaken in Chapters Five and Six of this study, it may be concluded that an innovation procedure or communication support system has evolved in the form of proposal examinations, external consultations, pilot



studies, retraining courses for personnel and evaluation attempts. Some aspects of this procedure, such as innovation proposals, pilot studies and evaluation attempts, have already been examined in the preceding chapters. Here some essential but less obvious facets of the system are considered.

All innovative activities are coordinated and overseen by DNPTS, but procedural arrangements vary according to innovation type. Organizational changes are implemented by DNPTS, and innovations of equipment and facilities are supervised by the Sports Amenities Projects Officer (SAPO), a SD category officer within DNPTS, see Figure 1 Page 65. In content and method changes the innovation-authority decision remains with DNPTS, but some or all aspects of idea generation, problem solving, and dissemination and implementation are delegated to HMS Temeraire Royal Naval School of Physical Training or to the SCB, see Figure 5 page 98, dependent on whether or not the innovation is primarily concerned with physical training or sport and recreation. Within these two subordinate units, small teams are appointed to process the innovation through some or all its stages, and this arrangement can be likened to the project teams of educational innovations. If HMS Temeraire or the SCB lack the capacity to process the innovation then a team may be assembled from personnel who are transient between appointments.

Further extension of the facilitation concept could be to inquire whether or not particular innovations facilitated or inhibited other changes. To start such an inquiry with innovation A by which the RNPTB was inaugurated would be to follow a pointless and empty argument as to whether or not other innovations or those considered in this study would have occurred. Yet it does appear as if some innovations did facilitate or inhibit other changes. In the latter category for instance, the

persistence of the Swedish system from 1903 to 1967 in innovation B might be cited as a notable example where change was inhibited within the RNPTB in contrast to the many radical changes in physical education that occurred in Britain during the same period. Whether the reasons lie with certain characteristics of this innovation, or with the associated personnel, or with wider societal influences, or with some or all of these considerations can not be ascertained.

In a similar fashion there may be grounds to suggest that the recreation manager concept of innovation J was facilitated by the liberalizing effect of innovation F that introduced a more informal and customer oriented approach to naval sport and recreation. In the absence of any supporting evidence, these suppositions must unfortunately remain speculative. Nevertheless this line of inquiry could prove to be a valuable one, and must be noted as a possible avenue for future research.

### 3. The Institutionalization of Innovation

Institutionalization has been the major problem in the attempts to introduce innovations in British schools<sup>15</sup>. The fundamental reasons for this difficulty have been a lack of adequate resources, and 'tissue rejection' which occurs when there is a discrepancy between the innovation and the 'pedagogical code' of the school<sup>16</sup>.

The inherent difficulty in examining the institutionalization of sport has been identified by Loy:-

I can conceive of no topic having greater significance for sport sociologists than that of the institutionalization of modern sport. Yet, one can find few insightful analyses of this general process in the sociology of sport literature<sup>17</sup>.

At a macro level of analysis, Gruneau and Albinson<sup>18</sup> have discussed the institutionalization of sport in terms of a range of processes which

includes increasing technical orientation, commercialization, bureaucratization, and democratization. Ingham<sup>19</sup> portrayed institutionalized sport as characterized by regulation, formalization, ideological justification and transmissibility. In modelling types of sport and their direction of development, Pearson<sup>20</sup> depicted institutionalization as leading to increases in competitiveness, organizational complexity and valued prowess. However, elsewhere<sup>21</sup>, he demonstrated the institutionalization of non-competitiveness and the rejection of high degrees of formalization and organization, but these latter instances are exceptions rather than the rule. In the main, the institutionalization processes of sport have been depicted as mirroring the formalized, hierarchical, rule-laden, and efficiency-seeking types of social organizations<sup>22</sup> such as government departments, large business corporations and the armed services, which are found in advanced industrial societies.

The concept of institutionalization used here<sup>23</sup> is intended to refer to the manner in which innovations are integrated with other activities of the RNPTB's standard operating procedures. Akin to Hoyle's<sup>24</sup> pedagogical code in schools, relatively self-contained organizations such as the RNPTB tend to develop their own ethos and subculture which significantly influence the process of innovation institutionalization. The view of institutionalization taken here does not intend to imply that the RNPTB innovates fully in accordance with its value system and procedures, but rather that the RNPTB is to some degree transformed by innovation and a new level of functioning is achieved<sup>25</sup>. Inevitably however, the bureaucratic characteristics of the RNPTB as a formal organization are reflected in the institutionalization of naval physical training, sport and recreation. The concepts of legitimation, regulation, and habituation have therefore been selected as those most appropriate to illustrate the process. Although

for analytical purposes each of these three dimensions of institutionalization are discussed separately, they are essentially and irrevocably interrelated.

a. Legitimation. Rogers and Shoemaker see legitimation as:

The subprocess in collective innovation-decision making at which a collective innovation is approved or sanctioned by those who informally represent the social system in its norms and values and in the social power they possess. Although the role of the legitimizer is mainly that of screening new ideas for approval, he may often alter or modify the proposals put to him by the initiators. However, seldom will legitimizers actively promote an idea for collective approval after giving their own approval. They generally play a more passive role in the collective-decision process. Legitimizers thus give sanction, justification, the license to act<sup>26</sup>.

and they argue<sup>27</sup> that this view of legitimation can be generally applied to most other types of social systems such as committees and bureaucracies. It does not however match the function and base of legitimation in the RNPTB.

There are two main reasons for this incongruence. The first lies in the weakness in Rogers & Shoemaker's<sup>28</sup> typology of innovation-decisions wherein the functions of stimulation, initiation, legitimation, decision, and action, designated to the collective innovation-decision are not necessarily mutually exclusive. Whether an innovation is initiated by an individual, collective, or authority based decision, it can be claimed that irrespective of decision type the notion of legitimation is an essential element of any innovative activity.

Secondly, no power or sanction in the Royal Navy is informally based. Weber<sup>29</sup> identified three possible bases of legitimation:

- a. Charismatic authority based on the leader's unique personal characteristics.

- b. Traditional authority based on the customary right of certain people to exercise leadership because of their inherited positions.
- c. Rational authority based on the leader's legal right to issue commands.

Within the Royal Navy the most powerful legitimator for orders, directives, work routines, and changes in these operations and procedures lies in the rational authority based on rank differentials. Irrespective therefore of decision type, legitimation for innovations in naval physical training, sport, and recreation is vested in DNPTS and downwards throughout the RNPTB. At the individual level each rank bestows innovation legitimation to those subordinate to it. Thus for each individual member of the RNPTB, an innovation is legitimated conjointly by the highest and the intermediately ranked superiors.

Another useful comparison is with the four levels of legitimation proposed by Berger and Luckmann<sup>30</sup>. The first level of legitimation is pretheoretical and invokes tradition. The second level of legitimation contains rudimentary theoretical propositions. The third level incorporates theoretical explanations and justifications; and at the fourth level, selected theoretical perspectives are synthesized into a legitimatizing ideology.

In a generalized way these levels of legitimation can be applied to the previous and recent innovations of the RNPTB. For example, innovation B containing the Swedish system of physical training was sustained over an extended period of some 65 years by what might be termed in this formulation the first, second, and fourth levels of legitimation. The PFRT system of innovation F, which replaced B, was founded and persists on legitimation at the third level. Generally all successful innovations in naval physical training, sport, and recreation eventually reach level four to become part of the RNPTB's ideology of fitness, discipline and morale.

b. Regulation. Whether or not the strategy of regulation to secure new behaviour implied by the adoption of an innovation is, as Musgrave<sup>31</sup> suggests, now ideologically acceptable only in totalitarian or underdeveloped societies, it is nevertheless extensively used by the RNPTB in the institutionalization process.

The most authoritative regulation emanates from the articles of the Queen's Regulations for the Royal Navy which include all the various orders and instructions on a multitude of matters concerning every detail of the general government of the navy. As indicated in Chapter Three of this study, these articles closely or broadly define the manner in which naval physical training, sport and recreation should be implemented. Innovations may require modified or additional clauses<sup>32</sup> to be included from time to time, as in the case of innovation J where Article 2919 delineated the responsibilities of Commanding Officers in the promotion of sport and recreation.

Supplementing the Queen's Regulations are the DCI's which are published weekly in pamphlet form, and issued to all ships and establishments to provide a rapid circulation of instructions concerning current and new administration. Innovations introducing major organizational change, such as the integration of WRNS physical training instructors into the RNPTB, are promulgated by a DCI.

Since the inception of the RNPTB in 1902, a powerful regulating function has been exercised through official Admiralty handbooks on naval physical training. Innovations of content and method in particular have been accompanied by the publication of detailed manuals to aid implementation and institutionalization. Throughout the long period of its operation, successive handbooks have been the bible of the RNPTB. The current PFRT system of innovation F is underpinned by two Handbooks of Physical and Recreational Training<sup>33</sup>, and the primacy

and reverence ascribed to these texts borders on dogmatism. Departures from the content and the message of any innovation have never been encouraged.

Even tighter innovation regulation is achieved in the physical training syllabuses formulated for naval training establishments. Deviations are difficult and officially can not be made without approval by DNPTS. A common and pervading syllabus characteristic has been the theme 'what, how and when'<sup>34</sup>.

In a similar manner, innovations involving organizational change are tightly prescribed to ensure conformity of practice. DCI's promulgating such changes are both detailed and specific; and new organizational and administrative appointments carry elaborate job specifications and performance standard criteria, as indicated in the recreation manager concept of innovation J. Even minor changes, whatever their nature, are fully documented and prescribed by their originators<sup>35</sup>. A similar regulatory function is secured by SCB handbooks published annually, which stipulate operating procedures for finance, fixtures travel, and other implementation aspects of naval sport and recreation.

c. Habituation. At this juncture, certain organizational factors and interpersonal interactions within the RNPTB that secure the habituation of innovation are examined. The examination does not focus on the process of socialization of which the notion of habituation forms such an important part. Yet in this respect it would be remiss not to mention the role of HMS Temeraire Royal Naval School of Physical Training, wherein through the processes of institutional socialization<sup>36</sup> and reciprocal typification<sup>37</sup> specific meanings are attributed to behaviour, and rigidly defined prescriptions for role performance together with stereotyped values and mores of the RNPTB, are passed on

to successive generations of naval physical trainers. Crudely put, the notion of habituation in this context means that a way of doing becomes the way of doing. To aid analysis and explanation the essentially deliberate and practical means employed by the RNPTB to achieve habituation of innovation are referred to as 'direct mechanisms'. Those factors and influences that are part of the wider ethos and structure of the navy are regarded as 'attendant mechanisms' in the habituation process.

A useful perspective of innovation habituation is afforded by the typology of change strategies proposed by Chin and Benne<sup>38</sup> where:

1. Empirical-rational strategies assume personnel will respond to rational explanation and demonstration.
2. Normative-re-educative strategies in which attempts are made to change attitudes, values, and skills.
3. Power-coercive strategies where compliance is achieved by the exercise of legitimate power.

In varying degrees all three strategies characterize the direct and attendant mechanisms of habituation, but there is a structured determinism towards power-coercive measures and the compulsory implementation of innovation in naval physical training, sport and recreation. Except in the required degree of compliance the simple and practical direct mechanisms do not vary to any great extent from the strategies employed to secure habituation of educational innovation. Many are specifically related to a particular innovation and are synonymous with the 'temporary systems' highlighted by Miles<sup>39</sup>, but a few are permanent and structurally bound to the RNPTB. Most are multi-functional in that they are used throughout the various stages of innovation to propagate knowledge, hasten dissemination, evaluate implementation, and monitor personnel performance.



Within the RNPTB the most commonly used temporary system to secure habituation is the specially mounted retraining course. This approach was evident in innovation B when an outside expert conducted numerous courses in the Swedish system of physical training for large numbers of RNPTB personnel<sup>40</sup>, and again in C where a small nucleus was trained prior to wider dissemination of ju-jitsu in the navy<sup>41</sup>. Large scale retraining courses featured in the implementation of the 90% System<sup>42</sup> and in innovation F<sup>43</sup> that replaced the Swedish system.

In so far as innovation information was disseminated and attempts made to change the perceptions, outlook and values of individual instructors, the strategies used in these innovations may be viewed as blends of empirical-rational and normative-re-educative measures as proposed by Chin and Benne<sup>44</sup>. Yet in one significant respect they sharply contrast with similar endeavours in educational innovation. Unrestrained by professional or ethical considerations the RNPTB retraining courses are characterized by far greater degrees of intensity and determination to achieve habituation of innovation. Attendance is compulsory, the hours of instruction long, and the motive blatant, notably demonstrated in innovation F where the call was made for the indoctrination of instructors in the PFRT system<sup>45</sup>.

To supplement the specially mounted retraining courses the device of the visiting demonstration team has been used to good effect, particularly in innovation F. Much depends on the quality of such a team to put over the message of the innovation and adequately deal with questions and doubts that arise. A convincing team whose members had helped with the presentation of activity tables and teaching methods such as operated in innovation F did much to secure habituation by overcoming outposts of innovation resistance<sup>46</sup>.

As Shipman<sup>47</sup> pointed out in the Keele Integrated Studies Project,

no support for innovation is more fundamental than the opportunities for training. The qualifier and upgrading courses for naval physical trainers conducted at HMS Temeraire, see Figure 3 page 73, serve as effective habituators, as into these permanent systems such innovations that occur in naval physical training, sport and recreation, bring about adjustments in the training of RNPTB instructors.

In the wider context of the navy the attendant mechanisms of habituation exist in the range of incentives and sanctions to maintain levels of discipline, conduct, and work behaviour. Relevant to these attendant mechanisms is Etzioni's<sup>48</sup> category of utilitarian compliance which operates as a reward structure to reinforce what Barton *et al*<sup>49</sup> have in the field of education termed mandatory accountability.

Within the Royal Navy, penalties against the individual for breaches of expected behaviour and work performance include fines, extra duties, confinement to barracks, detention, demotion, suspension, and dismissal. The most powerful incentive is the promise of promotion and career advancement. Within the RNPTB there are added incentives to carry out prestigious functions such as Staff Instructor at HMS Temeraire, or gain promotion as a SD category officer.

The extensive set of attendant mechanisms that achieves high levels of motivation, application, and compliance, also exerts a considerable influence on habituation. In a small elite organization of volunteers such as the RNPTB, where promotion is slow, individual opportunities to shine and impress are not wasted. Habituation is readily fostered in a highly competitive situation where innovation is seen as the brainchild of an all-powerful but benevolent sponsor such as DNPTS. In many respects these attendant mechanisms of habituation can be compared with Clark's<sup>50</sup> 'levers of change' that characterize interorganizational patterns in education, except that the former are permanent rather than transient features of RNPTB and naval life.

#### 4. Models of Change

In Chapter Two the change typologies of Chin and Benne<sup>51</sup>, Schon<sup>52</sup>, and Havelock<sup>53</sup> were presented, but at that stage the model which most succinctly embodied the innovation strategies of the RNPTB could not be established. Throughout the study, and especially in this present chapter, it has become increasingly apparent that Chin and Benne's power-coercive strategy in particular, together with their empirical-rational and normative-re-educative measures, have been employed in the adoption and rejection of innovations in naval physical training, sport, and recreation. This section therefore attempts to relate the change models of Schon and Havelock to the previous and recent innovative activities of the RNPTB.

Schon's models and their central characteristics are<sup>54</sup>:

1. The centre-periphery model which assumes:
  - a. prior to its diffusion the innovation exists and is fully realised in all its essentials.
  - b. diffusion is the movement of an innovation from a centre to its users.
  - c. directed diffusion is a centrally managed process of dissemination, training, and provision of resources and incentives.

The effectiveness of a centre-periphery system depends on the resources at the centre, the number of peripheral innovating units, and their distance and ease of communication to the centre, and the effort required to gain a new adoption.

2. The proliferation of centres model retains the basic centre-periphery structure but delineates extra centres where:-

secondary centres engage in the diffusion of innovations, primary centres support and manage secondary centres ... the limits to the reach and effectiveness of the new systems depend on the primary centre's ability to generate support and manage the new centres<sup>55</sup>.

3. The shifting centres model of innovation which has no stable or centrally established message. Centres appear, thrive, decline and are replaced. The loose structure of the innovation permits the message to shift and evolve which encourages regrouping around new meanings and direction.

To explain how knowledge was utilized and disseminated through social systems, Havelock<sup>56</sup> suggested four models:-

1. The research development and diffusion model assumes a rational sequence of innovation consisting of basic research, applied research, development and testing of prototypes, mass production and packaging, planned mass dissemination, and receipt by the users.
2. The problem-solving model describes a problem solving strategy of need detection and articulation, problem diagnosis, search and retrieval of ideas and information, fabrication of solution, and application.
3. The social-interaction model posits a natural process of innovation diffusion through personal and informal networks of communication that exist in a social system.
4. The linkage model synthesizes the perspectives of the three preceding models to emphasize the necessity of linking procedures and agencies to anticipate, monitor and fulfil the needs of user units.

The difficulty of relating these typologies to innovations in naval physical training, sport, and recreation, is that no one model is adequate to explain the process of change. Each of them illustrate different but equally important aspects of a total innovation process<sup>57</sup>, and certain innovation elements may relate to one or more models or parts of models. Dalin<sup>58</sup> has highlighted these limitations. The

research development and diffusion model seems to be applicable to technological change and certain curriculum innovations. Problem-solving models appear to be more adaptable to role changes, organizational changes, and changes in human interaction. Social-interaction and linkage models have limited focus and best explain the adoption of innovative ideas rather than the processes involved in implementation.

The lack of one-to-one correspondence between the change models and the innovations in naval physical training, sport, and recreation is readily apparent. Both Schon's centre-periphery model and Havelock's problem-solving model are compelling and appropriate if DNPTS as the decision unit and sponsor of innovation is seen as the primary agency, and HMS Temeraire Royal Naval School of Physical Training and other physical training units in ships and establishments are regarded as secondary centres.

Individual innovations and models can be matched. Schon's centre-periphery model appears eminently applicable to innovations with well defined parameters such as the Swedish system of physical training in B, or ju-jitsu in innovation C. Yet the processes involved in these two innovations are also characteristic of Havelock's problem-solving model. Again, in some content and method innovations such as B, C, D and F, where HMS Temeraire has implemented support and linking procedures, the linkage model and the proliferation of centres model of Schon appear to be appropriate.

Difficulties arise in matching the models to organizational innovations because some have originated from DNPTS, and others such as the amalgamation attempts of innovation G have been initiated from sources external to the RNPTB. In reality as opposed to theoretical models, change takes place in a variety of ways, and strategies vary according to the type of innovation involved<sup>59</sup>. It is concluded that

as macro-theories the models facilitate a generalized understanding of change, but their limitations are apparent when attempts are made to apply them to specific innovations and social systems.

#### 5. Innovation Persistence

The purpose of this section is to examine and establish why certain innovations have persisted. The concept of persistence implies certain qualities of durability that sustain an innovation over an extended period of time. The length of time before which innovations may be judged as persistent is quite arbitrary, but by definition the recent innovations F, G, H, I and J must be excluded. Innovation E was never implemented, and therefore in pursuing the concept of persistence the focus of this exploration is levelled on innovations A, B, C and D.

The innovation literature reveals a paucity of research on persistence, but Adams and Chen<sup>60</sup> have suggested that the following propositions cover some of the major issues involved in the concept:

1. The persistence of an innovation is a function of the innovation's credibility. The greater the gap between innovation promise and performance, the less the credibility and the less likelihood of persistence.
2. The persistence of an innovation is a function of the outcome and relevance of evaluation. The more positive the assessment and the more relevant the evaluation to the decision-making function, the greater the likelihood of persistence.
3. The persistence of an innovation is a function of the availability of a critical mass of resources.
4. The persistence of an innovation is a function of personnel stability. The greater the stability the longer the persistence.
5. The persistence of an innovation is a function of its adaptability. The greater the adaptability the greater the likelihood of persistence.

Innovations A, B, C and D are now examined to determine the extent to which these properties of credibility, evaluation relevance, critical resources, personnel stability and innovation adaptability are evident. There is also a deliberate attempt to search for and detect other factors that may have contributed to the persistence of these innovations. Initially innovation A appears not to be a viable example of persistence because, as related in Chapter Four, the RNPTB ceased to exist as a formal organization during the hostilities of the First World War (1914-18), and after the Second World War (1939-45) it was briefly merged with DGNPS, then referred to as the Directorate of Welfare Services (DWS). Yet these incidents may shed light on the concept of persistence, and for this reason innovation A is included in this examination.

Successful innovations possess a certain credibility that secures acceptability and adoption, but initial credibility largely based on promotion rhetoric is insufficient by itself to ensure persistence. If an innovation is to survive and persist, its credence must be reinforced and nurtured over an extended period of time. This process often entails the difficult task of widening the innovation's credibility to a larger target audience. Rogers and Shoemaker's<sup>61</sup> definition of credibility as the degree to which an innovation's communication source or channel is perceived as trustworthy and competent by a receiver, emphasizes both the crucial role of the change agent and the importance of inter-personal relationships in what is essentially the cultivation of credibility.

The notion of credibility cultivation is an important one as an innovation has to earn its own credibility to supplement that which is portrayed in its promotion. Initially with innovation A there were some misgivings<sup>62</sup> in the navy about the autonomy of a new organization that would make extra demands on training programmes and ships' routines.

The high level official endorsement ensured the formation of the RNPTB as a naval organization, but its own efforts and achievements secured its credibility. Similarly, innovations B, C and D had their own promotional and acquired reputations. On its adoption by the RNPTB the Swedish system was accompanied by its growing reputation throughout the world of physical education. Ju-jitsu was introduced on the impetus of growing Anglo-Japanese friendship and Japanese victories over Russia. The adoption of the 90% system recognized the recreational practices and organization of sport in the British Army, and the recommendations and achievements of the most experienced naval officer in physical training<sup>63</sup>.

While initial or promotional credibility is important for adoption, the persistence of innovations within the naval framework appears to be a function of their earned credence which is inextricably linked to the outcomes and relevance of evaluation. Whatever the age of an innovation its credibility is confirmed if the gap between promise and performance is convincingly closed. This maxim seems to account for the persistence of innovations A, B, C and D. The RNPTB continued to thrive because it is seen as an essential service organization that secures the naval objectives of fitness, discipline and morale. The RNPTB's temporary demise during the First World War (1914-18) was a reluctant measure necessitated by the urgent operational demands of war. The absence of naval physical training during this period served to reinforce<sup>64</sup> the value and need for such an organization within the navy. In a similar fashion the deterioration of naval physical training, sport and recreation during the merger with DWS served to strengthen the credibility of the RNPTB.

The persistence of innovation within the RNPTB also appears to be a function of the relevance of evaluation to those who exert power over the fate of innovations<sup>65</sup>. For over sixty years the Swedish system of



innovation B continued to satisfy DNPTS in spite of alternative physical training systems that were practised in the army, RAF, and in civilian colleges and universities. Dalin<sup>66</sup> has described this 'fit' between the goals, values and practices of an innovation and those of the involved personnel and institutions in his concept of consonance. The replacement of the Swedish system was only eventually brought about by the exceptional strength of grass roots pressure when the performance gap was so wide that it could not be ignored.

In innovation C the persistence of ju-jitsu in the contemporary form of judo appears relatively simple to explain. Within a national and global context the sport itself has progressed and grown in stature, and no equivalent or superior alternative exists. It is regarded by the guardians of the naval physical training curriculum within DNPTS and HMS Temeraire as an indispensable toughening activity for sailors under training<sup>67</sup>. By contrast the reasons underlying the fate of the 90% system of innovation D are more complex. Though it was introduced in 1919, certain remnants of innovation D such as the ethics of Muscular Christianity that underpinned its rationale were still evident in the 1940's<sup>68</sup>. Organizational features of the innovation such as the SCB flourished and persist because staff and finance continue to be allocated, but the scoring system to increase participation, which was the central core of the innovation, fell into disuse in the 1930's. The reasons for this discontinuance are twofold. Firstly, the calculations necessary to determine the scores for skill and energy were irksome. Secondly, its implementation was diffused rather than disseminated<sup>69</sup> throughout the divisional units of the navy.

Adams and Chen's<sup>70</sup> proposition related to the persistence of an innovation and the availability of a critical mass of resources appears to be true for the innovations considered here. Innovations in naval physical training, sport, and recreation that receive adequate resources

in the form of personnel, equipment, finance, time and attention, have persisted, but where critical deficiencies have occurred the innovations involved have eventually failed. For example, the deficiency of personnel in innovation A resulted in the suspension of the RNPTB in the First World War (1914-18). Similarly, the discontinuance of the main feature of innovation D grew from the reluctance of divisional officers to be involved in its irksome and time consuming demands. The failure of the amalgamation attempts in innovation G were also linked to critical deficiencies of resources<sup>71</sup> that could not support a combined armed services' physical training branch.

The proposition that suggests that innovation persistence is a function of staff stability<sup>72</sup> does not hold true for innovations in naval physical training, sport, and recreation. As related in Chapter Four, GL category officers who are the generalized but transient elite of the RNPTB serve only short tours of duty during the course of their naval careers of executive and command appointments. SD officers and all personnel within the RNPTB are moved to new billets and responsibilities every two or three years in accordance with naval practice. Nevertheless innovations, such as A, B and C, still persist which implies that other factors compensate for this personnel instability. It is suggested that the most significant compensatory reason is the power-coercive basis of work procedures and discipline within the RNPTB.

Adaptability is a common and prominent feature of persistent innovations in naval physical training, sport and recreation. To a certain extent the Swedish system underwent minor additions and changes until it could no longer be modified. As a martial art the ju-jitsu of innovation C can be taught at various levels of difficulty, and in this way persists and is accommodated in the naval syllabus of physical training. The features of innovation D that have persisted are those organizational aspects which have proved to be adaptable and flexible

to respond to changes in participation tastes and preference in naval sport and recreation.

Essentially then the innovation persistence propositions of Adams and Chen<sup>73</sup> concerned with credibility, evaluation relevance, critical resources and adaptability appear to be valid, but the proposition related to personnel stability appears not to hold true. In this latter instance it was suggested that the power-coercive basis of RNPTB work routines and discipline was a significant compensatory factor, as it might well be for all persistent innovations in naval physical training, sport, and recreation.

Yet other factors may account for innovation persistence. As a function of personnel serving at any given time there may be a lack of creativity within the RNPTB. Dalin<sup>74</sup> has indicated that in formal organizations such as the RNPTB there may be little radical criticism of existing conditions and greater prestige attached to internal knowledge, experience and skills. Relevant too in the context of innovation persistence in naval physical training, sport, and recreation, is the notion of organizational saga<sup>75</sup> where a social system such as the RNPTB is enhanced by mythical elements and group sentiments which promote collective understanding and solidarity. The saga helps to rationalize individual commitment to the organization and also involves the process of resisting newer and threatening changes.

In summary, certain issues arising from the study's discourse and selected outcomes which emanated from the innovations were considered. The progress and present status of the previous and recent innovations were briefly indicated. The importance of advocacy and sponsorship in the facilitation of innovation was emphasized, and the central role of

DNPTS in these activities was highlighted. The processes of legitimation, regulation, and habituation within the institutionalization of innovation were scrutinized. The limited applicability of recognized models of change was suggested. Finally, it was concluded that the power-coercive basis of RNPTB work routines and discipline, together with the notions of credibility, evaluation relevance, critical resources, and adaptability, largely account for the persistence of innovations in naval physical training, sport, and recreation.

Notes and References for Chapter Seven

1. Rogers, E.M. & Shoemaker, F.F. Communication of Innovation: A Cross Cultural Approach. Free Press. New York. 1971. p.324.
2. See for example, Rudduck, J. Dissemination of Innovation: the Humanities Curriculum Project. Evans Methuen. 1976. and Tawney, D. (Ed.). Curriculum Evaluation Today: Trends and Implications. Macmillan. 1976.
3. Elliott, J. 'Evaluating the "Progress in Learning Science" Dissemination'. Interim Working Papers No.3. Cambridge Institute of Education. 1977. p.3.
4. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit.* p.17.
5. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit.* pp.330-335.
6. Admiralty. Handbook of Physical and Recreational Training. HMSO. 1940.
7. Harding, J.M. *et al.* p.22. 'The Study of Curriculum Change'. Studies in Science Education 3. 1976. pp.1-30.
8. Elliott, J. 'Dissemination and Related Concepts'. Interim Working Papers No.1. Cambridge Institute of Education. 1977. p.4.
9. House, E.R. The Politics of Educational Innovation. McCutchan. Berkeley. 1974. p.50.
10. See TEM/130/1, TEM/504/1, TEM/765/4, and TEM/860/2.
11. Blyth, W.A.L. *et al.* Curriculum Planning in History, Geography and Social Science. Collins/ESL. 1976. p.174.
12. House, E.R. 1974. *op cit.* p.55.
13. PRO/ADM/1/7614 and PRO/ADM/1/7579.
14. PRO/ADM/1/8549/16.
15. Hoyle, E. p.334. 'The Creativity of the School in Britain'. in Harris, A. *et al.* (Eds.). Curriculum Innovation. Croom Helm. 1978. pp.329-346.
16. Hoyle, E. 1978. *op cit.* p.336.
17. Loy, J. p.76. 'The Cultural System of Sport'. Quest. 29. Winter 1978. pp.73-102.

18. Gruneau, R. & Albinson, J. Canadian Sport: Sociological Perspectives. Addison-Wesley. Toronto. 1975. pp.22-37.
19. Ingham, A. 'Occupational Subcultures in the Work World of Sport'. in Ball, D.W. & Loy, J.W. Sport and Social Order: Contributions to the Sociology of Sport. Addison-Wesley. Reading. Massachusetts. 1975. pp.333-389.
20. Pearson, K. 'Models Characterizing Play and Sporting Activities'. Conference Proceedings on Sport, Society and Personality. Department of Youth, Sport, Recreation. Victoria. 1976.
21. Pearson, K. 'The Institutionalization of Sport Forms'. International Review of Sport Sociology. 14. 1. 1979. pp.51-60.
22. Page, C. p.32. 'Pervasive Sociological Themes in the Study of Sport'. in Talamini, J. & Page, C. (Eds.). Sport and Society: An Anthology. Little Brown. Boston. 1973. pp.14-37.
23. See Dalin's concept of institutional integration. in Dalin, P. Limits to Educational Change. Macmillan. 1978. p.85.
24. Hoyle, E. 1978. *op cit*. p.336.
25. Hoyle, E. 1978. *op cit*. p.346.
26. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit*. p.280.
27. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit*. p.276.
28. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit*. p.306.
29. Cited by Corwin, R.G. p.69. 'Power'. in Sagarin, E. (Ed.). Sociology: The Basic Concepts. Holt, Rinehart & Winston. New York. 1978. pp.65-85.
30. Berger, P.L. & Luckmann, T. The Social Construction of Reality. Anchor Doubleday. New York. 1966. p.94.
31. Musgrave, P.W. Knowledge, Curriculum and Change. Angus & Robertson. 1973. p.87.
32. See RNPTB Handout. No.3. September 1971.
33. Admiralty. Handbook of Physical and Recreational Training. BR.51(1). Vol.1. Physical Training. Ministry of Defence. 1972. and Handbook of Physical and Recreational Training. BR.51(2), Vol.2. Recreational Training. Ministry of Defence. 1967.

34. See for example, DNPTS. Physical Fitness and Recreational Training.  
January 1968. and  
HMS Collingwood. Physical Fitness and Recreational Training  
Syllabus. June 1975.
35. Numerous examples of the documentation and presentation of quite  
minor changes exist in the RNPTB files.
36. Stevenson, C.L. 'An Alternative Theoretical Approach to Sport  
Socialization: A Concept of Institutional Socialization'.  
International Review of Sport Sociology. 11. 1. 1976. pp.65-75.
37. Berger, P.L. & Luckmann, T. 1966. *op cit*. pp.55-59.
38. Chin, R. & Benne, K.D. 'General Strategies for Effecting Change  
in Human Systems'. in Bennis, W.G. *et al*. (Eds.). The Planning  
of Change. Holt, Rinehart & Winston. New York. 1976. pp.22-45.
39. Miles, M.B. 'On Temporary Systems'. in Miles, M.B. (Ed.).  
Innovation in Education. Columbia University Press. New York.  
1964. pp.437-492.
40. PRO/ADM/1/7614.
41. PRO/ADM/1/7796.
42. PRO/ADM/1/8549/16.
43. TEM/860/2/3.
44. Chin, R. & Benne, K.D. 1976. *op cit*. pp.22-45.
45. Captain HMS Pembroke letter dated October 11th 1968. in TEM/860/2/3.
46. See Lieutenant Commander M letter dated May 17th 1968. in  
TEM/860/2/3.
47. Shipman, M.D. Inside a Curriculum Project. Methuen. 1974. p.167.
48. Etzioni, A. Modern Organizations. Prentice Hall. Englewood Cliffs.  
New Jersey. 1964. pp.59-61.
49. Barton, J. *et al*. 'Accountability and Education'. in Bush, T. *et al*.  
(Eds.). Approaches to School Management. Harper & Row. 1980.  
pp.98-120.
50. Clark, B.R. 'Interorganizational Patterns in Education'.  
Administrative Science Quarterly. 10. 1965. pp.224-237.
51. Chin, R. & Benne, K.D. 1976. *op cit*. pp.22-45.
52. Schon, D.A. Beyond the Stable State. Temple Smith. 1971.

53. Havelock, R.G. Planning for Innovation through the Dissemination and Utilization of Knowledge. Ann Arbor. 1971.
54. After Lockwood, A.M. 'Movement Education: An Innovation in the Physical Education Curriculum'. Physical Education Review. 1. 2. Autumn 1978. pp.129-150.
55. Schon, D.A. 1971. *op cit.* p.85.
56. Havelock, R.G. 'The Utilization of Educational Research and Development'. in Harris, A. *et al.* (Eds.). Curriculum Innovation. Croom Helm. 1978. pp.312-328.
57. Havelock, R.G. 1978. *op cit.* p.317.
58. Dalin, P. 1978. *op cit.* p.83.
59. Dalin, P. 1978. *op cit.* p.77.
60. Adams, R.S. & Chen, D. The Process of Educational Innovation: An International Perspective. Kogan Page. 1981. pp.271-275.
61. Rogers, E.M. & Shoemaker, F.F. 1971. *op cit.* p.244.
62. PRO/ADM/1/7614.
63. PRO/ADM/1/8549/16.
64. See introductory remarks in PRO/ADM/1/8549/16.
65. Adams, R.S. & Chen, D. 1981. *op cit.* p.273.
66. Dalin, P. 1978. *op cit.* p.86.
67. Admiralty. 1967. *op cit.*
68. Admiralty. 1940. *op cit.*
69. Admiralty. Handbook of Physical and Recreational Training. Vol.2. HMSO. 1920. pp.1-39.
70. Adams, R.S. & Chen, D. 1981. *op cit.* pp.273-274.
71. See TEM/130/1, TEM/765/4, and TEM/860/2.
72. Adams, R.S. & Chen, D. 1981. *op cit.* p.274.
73. Adams, R.S. & Chen, D. 1981. *op cit.* pp.271-275.
74. Dalin, P. 1978. *op cit.* p.44.
75. Clark, B.R. 'The Organizational Saga in Higher Education'. Administrative Science Quarterly. 17. 2. 1972. pp.178-184.



## Chapter Eight

### An Assessment

The assessment consists of a summary, discussion, conclusions, and recommendations for RNPTB policy and future research.

#### 1. Summary

The purpose of the study was to examine selected previous and recent innovations in naval physical training, sport, and recreation, which have been implemented or rejected by the RNPTB.

In Chapter One the concept of innovation was clarified, and the growth and widening scope of physical activity within British Society and the Royal Navy was indicated. The terms physical training, sport, recreation, and adventure training, were defined. Attention was drawn to the extensive naval use of abbreviations, and the referencing style for the study's primary source material was delineated. The format and organization of the study into eight chapters was explained.

Chapter Two presented an extensive review of the related literature. An overview illustrated the volume, diversity and confusion that characterizes the innovation literature. Within organizations it was demonstrated that innovation is influenced by the characteristics of personnel, organizational factors, and the situational context, but there is little evidence to establish the primacy of any one variable. In considering innovation and curriculum studies, several recognized models which have influenced educational change were reviewed, and the problems of effective evaluation were noted.

The underdeveloped nature of physical education curriculum theory was discussed, and the education-physical education debate was examined. Problems relevant to the RNPTB, such as the hidden curriculum, compulsory participation, and optional activities, were indicated. The paucity

of physical education innovation research in the armed services was demonstrated, and the study's data material and sources were identified.

Chapter Three sought to provide background and detail about the RNPTB which was presented as a formal organization. From the RNPTB's doctrine aspects of its mandate, institutional plan, and image were examined.

The mandate emphasized that the RNPTB's responsibility for naval physical training, sport, and recreation, entails a commitment to all personnel of the Royal Navy. A pervading element is the continuous drive for economy and efficiency through the increasing application of modern management techniques. The systematization of administrative procedures has found more success in formalized physical training than in voluntary sport and recreation. The influence of directives, particularly those aiming for economy and efficiency, has determined the RNPTB's degree of innovativeness.

Within the RNPTB's institutional plan the responsibilities of DNPTS, SCB, and HMS Temeraire Royal Naval School of Physical Training, were presented. Aspects of formalization and rank differential as they affect the inherence of authority were examined, and the existence of a generalized elite within the RNPTB was established. The advancement sequence within the RNPTB career structure was outlined, and the changing role of naval physical trainers defined. The major characteristics of the RNPTB's curriculum were noted, and the comprehensive nature of naval physical training, sport, and recreation was indicated. Visibility and public image as salient features of the RNPTB's image were scrutinized. It was concluded that the RNPTB exists as a small elite organization with a high prestige status within the Royal Navy.

The study's conceptual framework was explained in Chapter Four. The meanings of the terms adoption, diffusion, dissemination, and

implementation were clarified. Adoption was seen as the total acceptance of an innovation. Dissemination implied a deliberate and systematic application of strategies to achieve change, as opposed to the haphazard processes that characterize diffusion. Implementation was viewed as the attempt to adopt an innovation with minimal distortion.

The following hypotheses were raised:-

Hypothesis One. that organizational changes within the RNPTB are implemented with less resistance than content and method innovations underpinned by physical education curriculum theory.

Hypothesis Two. that effective change results from decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces.

Hypothesis Three. that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted.

Chapter Four also proposed an examination of the authority-innovation decisions to determine whether or not a participative or an authoritative approach is used to secure innovations in naval physical training, sport, and recreation. Tushman's<sup>1</sup> model of innovation phases and key communication domains was adapted to aid the analysis of selected innovations, and the intra and extra communication and documentation of the RNPTB. The writer's adoption process model was presented to illustrate the flow of actions and relationships within innovations in naval physical training, sport, and recreation. Within this model the central role of DNPTS as the decision unit was emphasized. Finally, the study's overall strategy of illuminative evaluation using privileged-access inquiry, interviews, and documentary analysis was explained.

In Chapter Five the adaptation of Tushman's<sup>2</sup> model of innovation phases and key communication domains was used to examine the dimensions of idea generation, problem solving, and dissemination and implementation of previous innovative activities of the RNPTB. The selected previous innovations were:

- Innovation A. The Formation of the RNPTB.
- Innovation B. The Adoption of the Swedish System.
- Innovation C. The Introduction of Ju-jitsu.
- Innovation D. The 90% System.
- Innovation E. An Attempt to Form a WRNS Physical Training Branch.

The common features within these previous innovations, consisting of the proposals, external consultations, pilot studies, and evaluation procedures, were identified and examined. It was established that the formalized and lengthy proposals did not originate within the RNPTB. Organizational innovations arose from committee proposals, whereas innovations of content and method were proposed by individuals. Most previous innovation proposals were characterized by various alternative options, and the limited input to idea generation activities was noted. It was suggested that information seeking was facilitated where innovation parameters were well defined, and it was concluded that evaluation procedures were not strongly operative or effective.

The adaptation of Tushman's<sup>3</sup> model of innovation phases and key communication domains was again used in Chapter Six to examine the recent innovative activities of the RNPTB. The selected recent innovations were:

- Innovation F. The Replacement of the Swedish System.
- Innovation G. The Attempts to Amalgamate the Armed Services Physical Training Branches.
- Innovation H. The Integration of WRNS Instructors into the RNPTB.

Innovation I. The Introduction of Physical Fitness Testing.

Innovation J. The Recreation Manager Concept.

Within these recent innovative activities it was necessary to distinguish between General List (GL) officers in transient positions of command, and physical training officers of the Special Duties (SD) category who permanently serve in the RNPTB.

The change processes of innovation proposals, external consultations, pilot studies, and evaluation procedures of these recent innovative activities F, G, H, I and J, were compared with the previous innovations A, B, C, D and E. It was suggested that the majority of the recent innovation proposals were less formal, and except for G all the recent proposals originated within the RNPTB. Information seeking activity was innovation specific. Within recent innovations the input of opinion and ideas has widened, but only method and content innovations F and I were characterized by pilot studies. It was noted that traditional evaluative methods were supplemented by a variety of contemporary techniques.

In Chapter Seven, certain issues arising from the study's discourse, and selected outcomes which emanated from the innovations were considered. The progress and present status of the previous and recent innovations were briefly indicated. The importance of advocacy and sponsorship in the facilitation of innovation was emphasized, and the central role of DNPTS in these activities was again highlighted. The processes of legitimation, regulation, and habituation within the institutionalization of innovation were scrutinized. The limited applicability of recognized models of change was suggested. It was concluded that the power-coercive basis of RNPTB work routines and discipline, together with the notions of credibility, evaluation relevance, critical resources, and adaptability, largely account for the

persistence of innovations in naval physical training, sport, and recreation.

This concluding chapter contains a summary, discussion and conclusions based on the assessment of the data; and recommendations for future research and RNPTB policy.

## 2. Discussion and Conclusions

### a. Hypothesis One

A concern of the study was to identify the events and influences that led to the initiation of innovation in naval physical training, sport, and recreation. The impact of cultural and material circumstances and the forces leading to implementation or rejection were demonstrated whenever possible. The RNPTB's insularity, its guarded relationships with other societal institutions, and the essentially pragmatic and efficiency-seeking approach to the provision of physical training, sport, and recreation, raised the intriguing issue regarding the type of innovation more likely to be implemented.

A basis for such an examination was the assumption that physical education, sport, and recreation in Britain are guided by the broad principles and practices of educational theory. In particular, it was reasoned that organizations involved in physical activities are, to a greater or lesser extent, influenced by contemporary curriculum theory which suggests the methods and content of physical education.

To investigate the manner of implementation it was hypothesized:

that organizational changes within the RNPTB are implemented with less resistance than content and method innovations underpinned by physical education curriculum theory.

With their major change emphases concentrated on curricula content and teaching methodologies, innovations B, C, D, F and I were supported by the physical education curriculum theories of their time. With

prominent orientations to structural and administrative changes, innovations A, E, G and H fall into the organizational category. J is an organizational innovation but its rationale lies in physical education curriculum theory. This ambivalence of J underlines the problem that in any classification, real life situations are not clear cut and can only be understood as combinations and blends of many elements<sup>4</sup>. Furthermore, these assumptions and assertions do not imply that method and content innovations are bereft of organizational considerations, but for the purposes of this discussion it is necessary to focus on the main change emphasis of the selected innovations. What follows is an examination of resistance to organizational and method and content innovations in naval physical training, sport, and recreation.

The heavy broken lines in Figure 5 page 98, indicate the relative status and various levels in the naval hierarchy where resistance to innovation can occur. Elsewhere, Dalin<sup>5</sup> has categorized resistance or barriers to change as:-

1. Value barriers - where individuals or groups have different ideologies and basic beliefs that make changes appear quite different depending on the perspective of the observer.
2. Power barriers - resulting from the redistribution of power in the system.
3. Practical barriers - where innovations are badly conceived and resistance to adopting them is a natural reaction, or where inadequate management of the innovation process results in unwanted practical problems for individuals and groups.
4. Psychological barriers - where individuals resist change in spite of the fact that the innovation does not seriously challenge their values, or upset their power, or present major practical problems.

Resistance to the formation of the RNPTB in innovation A was widespread. At the lower levels of the naval hierarchy, small numbers of gunnery ratings who had previously conducted casual and unsupervised physical training, declined to re-qualify<sup>6</sup> as instructors because under the new system they would suffer reductions in their daily rates of pay. Initially this resistance appeared to have a negligible effect, but as indicated later, a subsequent Treasury cutback severely reduced the innovation and an acute shortage of suitable personnel was experienced.

Various arguments against the formation of the RNPTB were advanced by some Commanding Officers of ships and establishments. Many argued that extra and unnecessary demands would be placed on daily routines and training programmes. Some thought that in relation to the importance of physical training the ranks of Petty Officer and Chief Petty Officer for seamen instructors were too high. Doubts were expressed about the autonomy of physical training implied by the special pay allowances and instructors being listed as extra to normal complements.

A pocket of stubborn resistance persisted at Devonport where the Commanding Officer insisted that different naval commands should train their own physical training instructors. This resistance was worn away and eventually overcome by the gradual acquisition of compromises, such as securing the Superintendent of Gymnasia's right to conduct inspections and by the RNPTB assuming the responsibility to supervise the qualifying examinations for instructors trained at Devonport.

The resistance to the extra-to-complement issue expressed by the powerful Complements Committee was only overcome by the persuasive arguments of the Director of Naval Ordnance<sup>7</sup>. Further questions of complements, manpower, and work available were raised by the Admiralty Board, who noted that the Royal Marines had a well established physical training system. It was felt that Royal Marine officers were never



sufficiently worked and could supervise physical training at sea<sup>8</sup>.

As its position in the hierarchy suggests, see Figure 5 page 98, the most effective resistance came from the Treasury which was opposed to the cost of the RNPTB's proposed establishment of 18 naval officers as Superintendent and Inspectors of Gymnasia together with instructor ratings at a total estimated cost of £4600. By simply reducing the money available to £1000 the officer complement was reduced to 4, and extremely tight budgeting was necessary to secure sufficient instructors to launch the new branch.

Considerable resistance to innovation E and the formation of a WRNS physical training branch came from the Admiralty Board, DGNMT, and DNPTS<sup>9</sup>. The Admiralty Board and DGNMT agreed that the WRNS should have organized sport and recreation but doubted if there was sufficient full time employment for a special category of female physical training rating. DGNMT saw no reason why male instructors should not organize WRNS sport and recreation. He indicated support for the direct entry of 3 qualified physical education officers into the WRNS, but argued that a new physical training branch and trade categories would be an unjustifiable overload on naval finances<sup>10</sup>.

At this stage of the innovation a 'sensitive influence point', described by Dalin<sup>11</sup> as critical to the success of innovation but equally attributable to innovation failure, were the gatekeeping strategies of DNPTS who argued that it would require at least 5 qualified female officers to establish a satisfactory and efficient physical training branch in the WRNS<sup>12</sup>. The power of DNPTS as a gatekeeper is exemplified in the fact that for the sake of 2 additional women specialists the innovation was rejected. Further proof of this effective or ruthless gatekeeping is supplied by the success of innovation H when it was expedient and advantageous to DNPTS to use WRNS instructors.

For reasons to be discussed when the third hypothesis is examined, considerable resistance was exerted in innovation G in the attempts to amalgamate the physical training branches of the armed services. In stark contrast there is no evidence of any resistance to the concept of the naval recreation manager in innovation H. Reasons for this lack of resistance can not be positively established. The over-riding reasons must be that the innovation filled a widely felt need within the navy, and that such appointments made no apparent demands on finance or manning levels.

In the Royal Navy, content and method innovations B, C, D, F and I have enjoyed the advantages of prestige bestowed on them by contemporary curriculum theories of physical education. Nevertheless, in varying degrees these innovations have also experienced forms of resistance to their acceptance and implementation.

Initially the Swedish system of innovation B was resisted because of the extra demands it made on time and training programmes<sup>13</sup>. Other resistance originated from those opposed to the system's mystique and complex terminology.

A major barrier obstructing the implementation of innovation D and the 90% System was the acute shortage of appropriately qualified personnel. Treasury opposition to the SCB aspect of this innovation was vigorous<sup>14</sup>, and based on the grounds that the pay of the officer appointed to oversee naval sport and recreation should not be drawn on public funds.

Characterized by badly written, poorly constructed, and vague and erroneous proposals, the chronic problem of gross unclarity in conceptualization<sup>15</sup> was a formidable barrier to innovation F as the replacement of the Swedish system of physical training. Difficulties in the preparation for an innovation can often be used as a powerful argument

against it<sup>16</sup>.

Conflicts in values, goals, and interest were evident in the resistance to the introduction of compulsory physical fitness testing in innovation I. The CGRM argued that no system of tests could provide a guide to battle fitness, and he requested that the Royal Marines be excluded from such a scheme<sup>17</sup>. The MDG considered physical fitness testing should be on a voluntary basis, and DGNMT was of the opinion<sup>18</sup> that compulsory testing would place an additional burden on ships and establishments. Medical opinion at the Royal Naval Hospital Portsmouth considered that the current joint service PULHEEMS<sup>19</sup> system of medical classification was a valid indicator of physical fitness. Hostile resistance and vehement criticism in the form of scorn and derision with remarks such as, "foolish gymnastics, ... whimsical regimentation, ... a Gilbertian proposition,"<sup>20</sup> came from the captains of seagoing ships who were opposed to additional administrative burdens.

To summarize, it has been demonstrated that both organizational innovations and those of content and method encountered resistance of varying intensities and from diverse sources. The reasons underlying the opposition to these innovations were extensive, but the precise motives behind specific pockets of resistance can not be exactly ascertained. The levels of resistance to both organizational innovations and content and method innovations are finely balanced. It can not be established that organizational innovations were implemented with less resistance than innovations of content and method. Therefore on the basis of this conclusion, Hypothesis One can not be upheld.

b. Hypothesis Two

The second hypothesis was designed to test aspects of decision-making within the RNPTB. In Chapter Three of the study the existence of a generalized elite within the RNPTB was identified in the form of GL

category officers serving without specialist knowledge of physical training, sport, and recreation, in the executive but transient appointments of DNPTS, Deputy DNPTS, and Commanding Officer HMS Temeraire Royal Naval School of Physical Training. Serving below this generalized elite are the permanent specialist physical training SD category officers and instructor ratings of the RNPTB, see Figures 1 and 2 on pages 65 and 69 respectively.

To explore the activity and relative influence of specialist and non-specialist personnel it was hypothesized:

that effective change results from the decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces.

In recent years in industry and commerce there has been an increasing emphasis on subordinate participation in management decision-making. Within the field of education in Britain the Plowden Report<sup>21</sup> urged more consultation between headteachers and assistant teachers in primary schools. In the non-maintained sector the Donnison Report<sup>22</sup> contained similar recommendations at the secondary level. Of headteachers in England, Easthope has concluded that:

the power exercised by the head in an English school is formidable, and the head can be compared to the sovereign of a state whose powers are limited only by the willingness of his subjects to obey his commands but whose right to give commands is not disputed by his subjects<sup>23</sup>.

More recently, Conway<sup>24</sup> attempted to clarify the relationship between headteachers' power and teacher participation in decision-making. He found that headteachers controlled those areas of power where tangible rewards and punishments are evident, and they only supported participatory management in areas where teachers did not desire involvement, or those areas which carried minimal expenditure of organizational resources. A few headteachers have developed various forms of leadership indicating that participatory decision-making is emerging in

English schools<sup>25</sup>. Within the naval framework, the RNPTB operates as a formal organization using its own hierarchical structure and that of the Royal Navy, see Figure 5 page 98, to issue authority-innovation decisions<sup>26</sup> to achieve change. The central construct of the authority-innovation concept is the subordination of adoption units to a decision unit occupying a position of higher authority.

For the purposes of this study DNPTS was regarded as the decision unit, and the remaining RNPTB personnel together with the ships and establishments of the Royal Navy, are regarded as the adoption units. Zaltman's<sup>27</sup> finer classification of authority-innovation decisions with its sub-categories of authoritative approach and participative, is applied to examine the data surrounding the second hypothesis.

The examination is focussed on the initiation of the innovations and the activities leading to the authority-decision to innovate. Tannenbaum and Schmidt's<sup>28</sup> hierarchy of participatory behaviours provides a useful perspective:

- Level One. Leader makes decision and announces it.
- Level Two. Leader 'sells' decision.
- Level Three. Leader presents the idea for the decision and then invites questions to clarify.
- Level Four. Leader proposes tentative decision which is subject to group modification.
- Level Five. Leader indicates precipitating problem and gets alternatives from group, then selects and alters for a decision.
- Level Six. Leader defines the limits for the decision and requests a decision within these limits from the group.
- Level Seven. Leader permits subordinates to function in a decision-making capacity within the limits mutually defined by superior and group.

Essentially then, the task is to establish whether authoritative 'top-down' processes dominate the adoption of innovation in naval physical training, sport, and recreation, or whether participative 'tail wagging the dog' activities significantly feature to produce predominantly 'bottom-up' strategies of change.

Prior to the adoption of innovation B and the Swedish system in 1903, limited information seeking activities and external consultations were carried out. Visits were made to the British Army School of Physical Training at Aldershot, and excursions made to European centres of physical education, including the Swedish Royal Gymnastics Central Institute in Stockholm. At best these activities and appraisals were brief, cursory, and individually carried out by Commander C, the first Superintendent of Gymnasia in the Royal Navy.

Until the formation of the RNPTB in 1902, MacLaren's<sup>29</sup> system of physical training had been in casual and unorganized use in the navy since 1888. Among some officers there was agreement that this system was inadequate for naval purposes, but there is no evidence of personnel, ships, or establishments exerting any pressure to bring about change<sup>30</sup>. At that time the Swedish system was gaining ground in Britain and internationally<sup>31</sup>, and to the Department of Education and many school boards in England its inherent disciplinary value was a significant recommendation<sup>32</sup>. The qualities of sharp obedience, smartness, and order appeared eminently suitable for the Royal Navy, and the Swedish system was adopted by an authority-innovation decision taken by Commander C. In Tannenbaum and Schmidt's<sup>33</sup> formulation of participatory behaviour, this decision ranks as a Level One action, thus classifying innovation B as belonging to the authoritative 'top-bottom' approach to change.

In the context of the second hypothesis there is a difficulty in classifying innovation A because prior to the formation of the RNPTB,

DNPTS the decision unit did not exist. The decision to establish the RNPTB was taken and announced by the Admiralty Board<sup>34</sup> following proposals by the DNO, Rear Admiral A, and Captain B, Commanding Officer HMS Excellent Royal Naval School of Gunnery. In these circumstances, A is classified as an authoritative 'top-bottom' innovation.

The input from below into innovation C and the introduction of ju-jitsu was extremely sparse. Within the navy there was medical<sup>35</sup> and high ranked scepticism<sup>36</sup> of the Swedish system of physical training but little thrust or pressure for alternatives. Support for ju-jitsu from below was confined to a single proposal from Commander H. The cool response<sup>37</sup> to this proposal by Commander I, Superintendent of Gymnasia, and the lack of any other evidence, would seem to indicate that the limited input had little or no effect on the decision to innovate. For these reasons, innovation C is classified as authoritative 'top-down'.

The convening of the naval conference in 1919 that spawned innovation D and the 90% System was significant in that until then RNPTB curricula and policies, and issues arising from them, had been resolved by successive Superintendents of Gymnasia. The pressures to innovate were considerable. Within the army the value of physical training and recreation in basic and battle training, and in the recuperative treatment of wounded and battle fatigued personnel, had been impressively established<sup>38</sup>. The RNPTB had been disbanded for four years during the hostilities (1914-18), and it had become apparent that ratings with little or no preliminary training required something more than naval drill to secure acceptable standards of fitness and discipline<sup>39</sup>. Furthermore, in view of the disturbances within certain sections of the army in connection with demobilization delays, and the events of the Scapa Flow Mutiny only recently uppermost in naval minds, a system that would secure discipline and have a steadying effect was urgently sought<sup>40</sup>.

The conference delegates, consisting of 6 Captains, 1 Commander, 1 Surgeon Commander, 3 Lieutenant Commanders, 2 Majors Royal Marines, 2 Captains Royal Marines, and 1 Lieutenant Royal Marines, were Commanding Officers of naval training establishments or officers with responsibilities for physical training, and included a newly appointed Superintendent of Gymnasia and Commander J, 'The Father of the 90% System'. Innovation D was adopted unanimously, which for its day and age was a remarkably democratic and participative decision in the context of contemporary naval procedures. This innovation is therefore classified in the 'bottom-up' category, the conference's mandate and terms of reference indicating that perhaps Levels Six and Seven of Tannenbaum and Schmidt's<sup>41</sup> hierarchy of participatory behaviours are appropriate.

The internal pressures can be readily identified that initiated innovation E and the attempt to form a WRNS physical training branch. There was a requirement for more recreation and to raise the standard of competitive sport because a large proportion of WRNS personnel had no exercise. There was a lack of coaching and little provision for the promotion of recreational activities. It was a struggle to produce teams to represent the WRNS in the women's inter-service competitions. There was a dearth of qualified coaches, and the task of promoting sport and recreation fell on unqualified WRNS officers.

Innovation E was rejected, but the appointment of a small committee to investigate the advancement of sport and recreation in the WRNS in response to grass roots pressure, and the extent to which the committee members were influenced by the views of serving WRNS personnel places this innovation in the participative 'bottom-up' category<sup>42</sup>.

The thrust from below to bring about changes is no more marked than in innovation F which replaced the Swedish system of physical training in the navy in 1967. In the principles and practices of British physical



education, significant changes were taking place. There was increased emphasis on recreational activities and scientifically based fitness training regimes. These external changes highlighted the formality and rigidity of the Swedish system and created within the RNPTB an awareness of a performance gap. Internally, the growing demands of specialist and technological training in the navy left less and less time for time-tabled physical activities. A new system was needed that would promote enjoyable participation and have a 'carry over' effect and encourage further activity in sport and recreation in off duty hours.

The general dissatisfaction with the Swedish system was communicated upwards in two ways. Firstly, many instructors discarded the dull and mechanical Swedish exercises whenever possible and replaced them with more informal and enjoyable activities. This practice which was contrary to official policy and directives could not go unnoticed. Secondly, many RNPTB members expressed their feelings and misgivings about the Swedish system to their supervising officer who in turn forwarded them to DNPTS. The voluminous correspondence in TEM/860/2/3 bears testimony to the extent and depth of feeling on the subject. Significantly this thrust for change that originated at the grass roots level of the RNPTB was acknowledged by DNPTS as an instance when 'the tail had wagged the dog'<sup>43</sup>.

Further participatory behaviour is evident in innovation F. Although a tentative format for the PFRT system had been decided by DNPTS, considerable input of opinion and suggestions was allowed that was democratically wider than hitherto had ever been the case<sup>44</sup>. Further evidence of this widening participation is also apparent in the subsequent discussions, trials and pilot studies from which the PFRT system was produced.

Innovation G stands alone as a special case because of its origin.

In this innovation the thrust to amalgamate the physical training branches of the armed services came from above from the Ministry of Defence. The only service personnel involved were GL category officers of DNPTS and equivalent category officers from the army and RAF Directorates of Physical Training. Based on the recommendations of these officers the Ministry of Defence suspended the amalgamation attempts. For these reasons, innovation G may be regarded as belonging to the authoritative 'top-down' category which does not support the second hypothesis.

Also in the authoritative 'top-down' category is innovation I concerned with physical fitness testing. Although a working party was a significant and persistent feature of this innovation, the party's main concern was concentrated in the problem solving phase to establish physical fitness criteria. The decision to introduce physical fitness testing was taken solely by DNPTS. In an era when testing and measurement figured prominently in physical education curriculum theory, there is no evidence of grass roots pressure within the RNPTB for this innovation<sup>45</sup>.

Level Two of Tannenbaum and Schmidt's<sup>46</sup> hierarchy of participatory behaviours where the leader 'sells' the decision, appears to be appropriate for innovation H concerned with the integration of WRNS physical training instructors into the RNPTB. The innovation was initiated by DNPTS for reasons that were expedient and advantageous<sup>47</sup> to the RNPTB. In calling for opinion and support, great care was taken to emphasize the advantages and minimize the disadvantages such as possible detrimental effects on promotion and career advancement. Although this innovation secured substantial support within the RNPTB, the thrust for it did not originate from below. It was essentially an authoritative 'top-down' innovation.

Considerable external and internal pressures brought about the

introduction of the naval recreation manager of innovation J. Externally there was a focussing on the leisure phenomenon. Internally, extensive grass roots pressure identified in successive naval reports<sup>48</sup> on sport and recreation, and backed by high level support<sup>49</sup>, indicated that existing organizational structures and facilities required management styles appropriate to the wider societal developments that were taking place in recreation and leisure. These grass root and participatory characteristics categorize J as a 'bottom-up' innovation.

In summary, the previous and recent innovations considered here can not be precisely matched with Tannenbaum and Schmidt's<sup>50</sup> levels of participatory behaviours, partly because of the continuum's broad and generalized categories, but also because some innovations suffer from information gaps. However, the innovations can be placed into authoritative 'top-down' and participative 'bottom-up' categories, as indicated in Table 15 below:

Table 15

Previous and Recent Innovations Categorized as Authoritative 'Top-Down' and Participative 'Bottom-Up'

<u>Authoritative 'Top-Down' Innovations</u>	<u>Participative 'Bottom-Up' Innovations</u>
A. The Formation of the RNPTB.	D. The 90% System.
B. The Adoption of the Swedish System.	*E. An Attempt to Form a WRNS Physical Training Branch.
C. The Introduction of Ju-Jitsu.	F. The Replacement of the Swedish System.
*G. The Attempts to Amalgamate the Armed Services Physical Training Branches.	J. The Recreation Manager Concept.
H. The Integration of WRNS Instructors into the RNPTB.	
I. The Introduction of Physical Fitness Testing.	

\*Innovation rejected.

Taking into account that both E and G were rejected, from Table 15 it can be seen that authoritative 'top-down' innovations are more prevalent than participative 'bottom up' innovations. Therefore the second hypothesis that effective change results from the decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces, can not be upheld.

c. Hypothesis Three

Since its formation in 1902 the RNPTB has experienced varying fortunes, and numerous drives for economy and efficiency have posed serious threats to its existence. Here the data surrounding previous and recent innovations are examined to assess these threats to the RNPTB. To identify those factors which may explain this survival it was hypothesized:

that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted.

The most obvious and recent threats were contained in innovation G and the various attempts to amalgamate the physical training branches of the armed services. The amalgamation attempt in 1964 followed reorganization of the Ministry of Defence when it was thought that the integration of certain aspects of training could be economically advantageous. Another significant influence was the holistic approach to national defence planning to meet commitments and obligations under defence agreements.

A pronounced defensive strategy adopted by all the physical training branches concerned in the 1964 amalgamation attempt was the emphasis placed on the differences that existed in objectives and curricula content and methods<sup>51</sup>. The RNPTB made much of the fact that it was conveniently situated in the area of greatest naval activity and any relocation would hinder the organization and administration of

naval sport and recreation. In a frequent counter-strategy, DNPTS regularly circulated the RNPTB's objections to members of the working party exploring the possibilities of amalgamation<sup>52</sup>. A similar lobbying strategy was adopted with a senior naval officer of admiral rank who served on the high level Ministry of Defence rationalization study group. The strategy was subsequently extended to selected personal interviews to present the RNPTB's case<sup>53</sup>. The relatively small numbers of RNPTB and RAFPEB instructors trained at their respective schools of physical training was a strong argument for moving all instructor training to the army and the RAPTC at Aldershot. This possibility was blocked by the RNPTB and RAFPEB pricing such a move at £750,000.

The 1971 amalgamation attempt was confined to a possible merger of HMS Temeraire Royal Naval School of Physical Training and the RMPTW. The idea for this innovation arose from plans to move HMS Temeraire into a new purpose-built complex elsewhere at Portsmouth. In opposing the plan, DNPTS expressed fears that both the RNPTB and the RMPTW would suffer decrements in identity, status, and morale<sup>54</sup>. Great significance was also attached to the unknown administrative consequences of HMS Temeraire moving to a new site in the near future.

The Admiralty Board were not convinced and thought the arguments for and against amalgamation were finely balanced, but the strategy of suggesting possible difficulties in such sacrosanct areas as morale and efficiency appear to have been effective since the matter was deferred.

The 1973 amalgamation attempt represented the most determined effort to accomplish a merger of the armed services physical training branches. Previous amalgamation studies were reviewed by a working party, and it was reaffirmed that a significant barrier to innovation lay in the very individual nature of the physical training branches

whose vigorous and demanding traditions bred elite formations of men fiercely protective of identity and prestige<sup>55</sup>.

Perhaps due to a change in leadership the RAFPEB were now favourably disposed to amalgamation, arguing that the different approaches of the individual physical training branches were nevertheless underpinned by the same fundamental principles of physical education theory. The RNPTB, together with the RAPTC and RMPTW, maintained their strong opposition using the old and hard-to-dispute arguments of differences in training objectives and career structures.

Prompted by this lack of unanimity the Ministry of Defence initiated a further investigation by Wing Commander R who firmly supported the concept of joint service training. He recommended that the amalgamation principle be approved, but he concluded that at all levels in the RNPTB, RAPTC, and RMPTW there existed a strong consensus of opinion opposed to joint service training on the grounds of reduced identity, prestige and status<sup>56</sup>.

Evidence of typical RNPTB reaction to threats is available in other innovations. A suggestion in 1961 that HMS Temeraire should vacate its own site and move into accommodation within the Royal Naval Barracks in Portsmouth was strenuously resisted. The important point that soon became apparent in this issue was that DNPTS support for such a move would not be forthcoming if there was the slightest danger of the RNPTB losing its identity<sup>57</sup>.

Early in its life the RNPTB came under threat in 1905 from the powerful Naval Ratings Committee. It was concluded that the pay and substantive advancement of physical training instructors to Petty Officer 1st Class was out of proportion to the importance of their duties, and recommended that the number of instructors should be substantially reduced<sup>58</sup>. The Committee also pointed out that a certain incongruity

existed in the operation of separate physical training branches for the Royal Navy and the Royal Marines.

The joint action by Commander C the first Superintendent of Gymnasia and his successor Commander I, in directly petitioning<sup>59</sup> W. Graham Green, The Secretary of the Admiralty, and one of the two non-service members of the Naval Ratings Committee, was partially successful. Although the automatic promotion to petty officer rank was removed, the numbers of instructors were not reduced.

Elsewhere in innovation C, Commander I's defence of the Swedish system, his cool response to Commander H's proposal, and his categorization of ju-jitsu as 'a popular form of recreative amusement'<sup>60</sup> illustrates again typically pointed RNPTB reaction to threats.

In 1947 having narrowly escaped amalgamation with DWS, innovation E posed another threat in the form of power sharing or accountability to the Director WRNS. Defensive manoeuvring and gatekeeping functions are evident<sup>61</sup> in DNPTS's reaction to the idea of a WRNS physical training branch. The opposition arguments that HMS Temeraire had insufficient facilities, and 5 rather than 3 women physical education specialists were required to oversee a WRNS physical training branch were shrewdly indisputable and contributed to innovation E's rejection.

The following factors appear to have been significant in the RNPTB's survival. All threats to identity, status, and prestige were vigorously opposed with a variety of strategies. Persistent written and verbal lobbying practices to highly placed and influential persons were a common feature. Position papers at great length emphasized the differences and difficulties of innovation. Emphasis on the inconvenience, cost, and unforeseen consequences were reliable deterrents to change. Old, well-tried, and indisputable arguments fired at selected 'Achilles Heels', such as the Admiralty's sacrosanct concern

for naval morale and efficiency, proved to be effective defence strategies.

On the basis of this evidence it can be concluded that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted. The third hypothesis can therefore be said to be upheld.

In summary, the following conclusions were made regarding the three hypotheses:

#### Hypothesis One

that organizational changes within the RNPTB are implemented with less resistance than content and method innovations underpinned by physical education curriculum theory.

Both organizational innovations and those of content and method encountered resistance of varying intensities from diverse sources. The data did not establish that organizational innovations were implemented with less resistance. Hypothesis One is therefore not upheld.

#### Hypothesis Two

that effective change results from the decisions of the generalized elite, but the thrust for change comes from below in response to internal and external forces.

It was demonstrated that authoritative 'top-down' innovations were more prevalent than participative 'bottom-up' innovations. Hypothesis Two is therefore not upheld.

#### Hypothesis Three

that innovations which potentially threaten the status and identity of the RNPTB are rejected or resisted.

The data demonstrated that vigorous and successful strategies are implemented to reject or resist threatening innovations. On the basis



of this evidence, Hypothesis Three is upheld.

Certain issues directly arise from these conclusions. By far the most critical and controversial is the question of whether or not GL category non-specialist officers, as opposed to SD category specialist physical training officers, should be appointed to the executive positions within the RNPTB. This present practice effectively blocks the specialist SD officers from ever holding the highest positions of DNPTS, Deputy DNPTS, and Commanding Officer HMS Temeraire Royal Naval School of Physical Training.

In the Schools Council Project History, Geography and Social Science S-13, both Derricott<sup>62</sup> and Cooper<sup>63</sup> concluded that detailed knowledge and the position held within the system were less important than belief in the innovation's value. While this conclusion might be valid in less formal organizations, and where the sponsor has a long term commitment to the innovation, the situation in the RNPTB is that GL officers with awesome power and no specialist knowledge serve a short two year period and then depart to other naval duties. It is suggested that this lack of continuity and knowledge acts to the detriment of naval physical training, sport and recreation, and that planning, development and implementation would be better served with the appointment of SD specialist officers to the executive positions within the RNPTB.

Although authoritative 'top-bottom' innovations have been shown to be more prevalent, there is a discernible trend towards participative 'bottom-up' innovations, see Table 15. To foster this widening participation, procedures are required to facilitate a downward-looking accountability.

There are further specific issues concerning the maintenance and development of naval physical training, sport, and recreation. For

example, there is the question of the possible effects and consequences of RNPTB's insularity. There is the vexed problem of fitness testing, and questions surrounding compulsory physical training and the formality of naval teaching methods. Concern remains on naval leisure habits and individual levels of physical fitness.

It is in the light of these issues, findings, and conclusions, that the following recommendations are made:

### 3. Recommendations

1. To promote continuity and facilitate the efficient planning, development, and implementation of naval physical training, sport and recreation, SD specialist officers should replace GL category officers in the executive appointments of the RNPTB.
2. To aid the assessment, implementation or rejection of innovation, efforts should be made to secure agreement on concepts, definitions, and objectives.
3. Additional and effective procedures for innovation evaluation should be introduced to overcome the excessive reliance on reported use.
4. The processes of innovation should be democratically widened to include increased input from lower level participants.
5. To promote the 'customer' rather than the 'captive' approach to participation in naval sport and recreation, procedures should be adopted to project some accountability downwards.
6. To preserve the identity and integrity of the RNPTB, potentially threatening innovations should be carefully examined and if necessary rejected.
7. To minimize dissonance and maximize the administration of naval physical training, sport, and recreation, HMS Temeraire,

- DNPTS, and the SCB, should be relocated from their existing separate sites and integrated in a modern purpose-built complex.
8. To reduce insularity, increased opportunities should be afforded to RNPTB personnel to attend more academic, administrative and coaching courses, conferences, and seminars promoted by external agencies concerned with physical education, sport, and recreation.
  9. The RNPTB instructor training curriculum should be reviewed and modified to encourage the adoption of more informal teaching methods.
  10. To promote physical fitness and naval discipline, compulsory physical training should be maintained in Part One training establishments.
  11. In Part Two training establishments, efforts should be renewed to secure games afternoons or recreational periods within time-tabled work routines.
  12. To encourage wider participation the naval recreation manager concept of innovation J should be extended to more ships and establishments.
  13. Within the Royal Navy, attention should be drawn to the benefits of personal fitness by the staging of periodic promotional programmes and the establishment of permanent incentive schemes.
  14. The concept of physical fitness testing should be further extended to career advancement and re-engagement.
  15. In the interests of individual health and personal physical fitness, the cheap alcohol and duty-free tobacco and cigarette allowances available to all Royal Navy personnel should be abolished.
  16. To secure high levels of cooperation within the navy, more

acquaintance courses should be mounted for officers acting as Sports Officers in ships and establishments.

17. Innovation H should be extended to provide female specialist officers to supervise physical training, sport, and recreation in the WRNS.
18. All these recommendations could be accommodated with advantage if the adapted model<sup>64</sup> was adopted for RNPTB self-evaluation and accountability, see Figure 8, page 289.

#### 4. Suggestions for Further Research

Little research has been done on the processes of innovation in the context of the military/naval framework, and it is hoped that the present study will serve to stimulate further work in this area.

The study's approach was largely qualitative, and there is a need for empirical and quantitative studies to be undertaken. A longitudinal study commencing with idea generation and terminating with innovation institutionalization is required to determine those variables which contribute to persistence, and to account for the variations that occur over time in innovation interpretation. As indicated in Chapter Seven, a profitable line of inquiry would be the examination of possible facilitation links that may exist between two or more innovations.

Some of the innovations considered within this study, such as I concerned with physical fitness testing, have extensive documentation that would provide further research orientations. The recreation manager concept of innovation J is relatively new and still developing. Documentation also exists for other innovations not mentioned in this study, for example, the implementation of adventure training was regrettably omitted. The physical training branches of the other armed services are unexplored territories, and mono-service and comparative inter-service studies are attractive research propositions.

Figure 8.

A Proposed Model for RNPTB Self-Evaluation and Accountability

	Answerability to Ships and Establishments	Responsibility to RNPTB Personnel	Strict Accountability to Admiralty Board, DGNPS, and DGNMT
Maintenance of physical training, sport and recreation	1. Provision of adequate resources. Promotion of attractive programmes. Support of clubs and associations. Justification of RNPTB's own policies on accountability.	3. Development of effective rating/officer teamwork. Systematic evaluation of current policies. Promotion of good relation- ships with general public and external agencies of physical education, sport and recreation.	5. Validation of standards via monitoring and evaluation procedures. Specification of agreed goals, and specific curriculum policies.
Development of physical training, sport and recreation	2. Assistance in identifying potential difficulties, and in solving problems. Unbiased assessment of new suggestions and proposals.	4. Continuing improvement of strategies for identifying and responding to problems. Awareness of incipient points of weakness in the system. Democratic consultations on future policies.	6. Effective handling and rectificat- ion of problems generated within the system. Effective formulation of short and long term policies

Of course, all these research possibilities are dependent on securing the trust and cooperation of the armed services, and obtaining the necessary permission from the Ministry of Defence.

5. Conclusion

Official policy strictly controls research within the British armed services. Permission to conduct research is difficult but not impossible to obtain. Tedious and extended negotiations may be necessary before privileged-access is granted, but if the status is used discreetly within the ethics of service etiquette, significant contributions to mutual trust and confidence are secured. The acquisition of privileged-access not only makes possible participatory and observational visits to selected service establishments, but it also facilitates the analysis of information not normally available for examination. Interested researchers are therefore urged to take advantage of the potential opportunities within the military and naval frameworks.

Notes and References for Chapter Eight

1. Tushman, M.L. 'Special Boundary Roles in the Innovation Process'. Administrative Science Quarterly. 22. 1977. pp.587-605.
2. Tushman, M.L. 1977. *op cit.* pp.587-605.
3. Tushman, M.L. 1977. *ibid.*
4. Dalin, P. Limits to Educational Change. Macmillan. 1978. p.21.
5. Dalin, P. 1978. *op cit.* p.25.
6. PRO/ADM/1/7579.
7. See Director of Naval Ordnance minute July 3rd 1902. in PRO/ADM/1/7579.
8. Admiralty minute November 5th 1901. PRO/ADM/1/7614.
9. See PRO/ADM/1/20822.
10. PRO/ADM/1/20822.
11. Dalin, P. 1978. *op cit.* p.93.
12. DNPTS minute September 8th 1947. PRO/ADM/1/20822.
13. For example see Vice-Admiral F letter April 10th 1903. in PRO/ADM/1/7614.
14. See PRO/ADM/1/8566/237.
15. Charters, W.W. & Pellegrin, R.J. 'Barriers to the Innovation Process: Four Case Studies of Differentiated Staffing'. Educational Administration Quarterly. 9. 1. 1972. pp.3-14.
16. I am indebted to Professor Blyth for this insight.
17. Commandant-General Royal Marines letter November 23rd 1965. TEM/150/1.
18. DGNMT letter December 12th 1965. TEM/150/1.
19. The Joint Service System of Medical Classification where:
  - P = Physical Capacity
  - U = Upper Limbs
  - L = Locomotion
  - H = Hearing Acuity
  - EE = Eyesight (Visual Acuity)
  - M = Mental Capacity
  - S = Stability (Emotional).
20. Captain 27th Escort Squadron letter May 17th 1966. TEM/150/1.
21. A Report of the Central Advisory Council for Education. 'Children and Their Primary Schools' (The Plowden Report). Vol.1. HMSO. 1967.

22. Public Schools Commission. Report on Independent Day Schools and Direct Grant Grammar Schools. Second Report (The Donnison Report). Vol.1. HMSO. 1970.
23. Easthope, G. Community, Hierarchy and Open Education. Routledge & Kegan Paul. 1975. p.37.
24. Conway, J.A, 'Power and Participatory Decision-Making in Selected English Schools'. in Bush, T. *et al.* (Eds.). Approaches to School Management. Harper & Row. 1980. pp.210-230.
25. Conway, J.A. 1980. *op cit.* p.211.
26. Rogers, E.M. & Shoemaker, F.F. Communication of Innovation: A Cross Cultural Approach. Free Press. New York. 1971. p.306.
27. Zaltman, G. *et al.* Innovations and Organizations. John Wiley. New York. 1973. p.80.
28. Conway, J.A. 1980. *op cit.* pp.210-230. citing Tannenbaum, R. & Schmidt, W.H. 'How to Choose a Leadership Pattern'. Harvard Business Review. March-April 1958. pp.95-102.
29. MacLaren, A. A System of Physical Education: Theoretical and Practical. Clarendon Press. Oxford. 1869.
30. PRO/ADM/1/7605. and PRO/ADM/1/7614.
31. See for example the works of:-
  - May, J. The Influence of the Local Education Authority in London on the Development of Physical Education. Ph.D. Thesis. University of Leicester. 1971.
  - Surridge, T.J. Swedish Gymnastics in England: The Work and Influence of Mathias Roth. M.Ed. Thesis. University of Manchester. 1974.
  - Gerber, E.W. Innovators and Institutions in Physical Education. Lea & Febiger. Philadelphia. 1971.
32. McIntosh, P.C. Physical Education in England Since 1800. Bell & Sons. 1952. p.114.
33. Tannenbaum, R. & Schmidt, W.H. 1958. *op cit.* pp.95-102.
34. PRO/ADM/1/7614.
35. Gaskell, A. Staff-Surgeon. 'Physical Culture and its Pitfalls, with a Critical Analysis of Swedish Drill'. Statistical Report of the Health of Navy 1905. HMSO. 1905. pp.124-129.



36. Commander in Chief Portsmouth minute. April 16th 1906 to Secretary of the Admiralty. PRO/ADM/1/7796.
37. Commander I. March 31st 1906. PRO/ADM/1/7796.
38. See for example: Tait McKenzie, R. 'The Treatment of Convalescent Soldiers by Physical Means'. Proceedings Royal Society Medicine. 11. 1916. pp.31-70.  
Bredin, A.E.C. 'Modern Developments in Physical Training'. J. Royal United Services Institute. November 1922. pp.678-681.  
Digby Bell, K. 'The Position of the Medical Profession in Relation to National Physical Education'. The Lancet. January 31st 1920. pp.231-235.
39. See introductory remarks in PRO/ADM/1/8549/16.
40. PRO/ADM/1/8549/16.
41. Tannenbaum, R. & Schmidt, W.H. 1958. *op cit*. pp.95-102.
42. PRO/ADM/1/20822.
43. Enclosure PT/SCH/G/19/17. July 11th 1967. TEM/860/2/3.
44. A comparison of TEM/860/2/3 with administrative files dealing with the other previous and recent innovations confirms this trend.
45. TEM/150/1.
46. Tannenbaum, R. & Schmidt, W.H. 1958. *op cit*. pp.95-102.
47. DNPTS/1/18.
48. See DNPTS/20/1 for:-  
Sport and Recreation in the Royal Navy. October 15th 1969.  
Sport and Recreation in the Royal Navy and Royal Marines. March 9th 1970.  
Opportunities for Recreation in the Royal Navy, Royal Marines and Womens' Royal Naval Service. June 26th 1970.
49. Enclosure 1 to CINCNAVHOME. A/5064/167. February 7th 1973. in TEM/502/1.
50. Tannenbaum, R. & Schmidt, W.H. 1958. *op cit*. pp.95-102.
51. See TEM/765/4 and TEM/860/2.
52. See DNPTS letter April 9th 1965. TEM/765/4.
53. See arguments and interviews arranged in DNPTS letters dated July 1st and August 20th 1964. TEM/765/4.

54. Report of the Working Party on Royal Naval and Royal Marines Physical Training Schools Amalgamation. April 7th 1971. TEM/130/1.
55. Report on the Joint Training of Servicemen: Physical Training Instructors. February 12th 1974. TEM/765/2.
56. Physical Training Instructor Training: An Inter-Service Report. November 15th 1974. TEM/765/2.
57. DNPTS letter. March 29th 1962. TEM/504/1.
58. Report of the Committee on Petty Officer Ratings, Substantive and Non-Substantive Pay and Instructional Allowances in the Royal Navy. Vol.1. HMSO. 1905. p.13.
59. See letters and notes by Commanders C and I in PRO/ADM/116/977.
60. Commander I. December 12th 1906. PRO/ADM/1/7796.
61. DNPTS minute September 8th 1947. PRO/ADM/1/20822.
62. Derricott, R. 'Working with Teachers'. Occasional Paper 1. Schools Council Project: History, Geography and Social Science 8-13. School of Education. University of Liverpool. 1975. p.11..
63. Cooper, K.R. The Diffusion of Curriculum Innovation: The Examples of the Schools Council Project History, Geography and Social Science 8-13. Ph.D. Thesis. University of Liverpool. 1978. p.181.
64. Adapted from Figure 2. Elements of L.E.A.'s Accountability. p.117. Barton, J. *et al.* 'Accountability and Education'. in Bush, T. *et al.* (Eds.). 1980. *op cit.* pp.98-120.

BIBLIOGRAPHY

	<u>Page</u>
1. Admiralty Administrative Files Researched at the Public Record Office.	296.
2. Army Administrative Files Researched at the Public Record Office.	296.
3. Air Ministry Administrative Files Researched at the Public Record Office.	297.
4. Royal Naval Physical Training Branch Administrative Files Researched at the Directorate of Naval Physical Training and Sport at HMS Nelson Portsmouth.	297.
5. Royal Naval Physical Training Branch Administrative Files Researched at HMS Temeraire Royal Naval School of Physical Training Portsmouth.	298.
6. Official Reports and White Papers.	298.
7. Theses and Dissertations.	299.
8. Admiralty Handbooks on Physical and Recreational Training.	300.
9. Armed Services Sport Control Boards Publications.	301.
10. Books and Journals.	301.

1. Admiralty Administrative Files Researched at the Public Record Office

PRO/ADM/1/6108	PRO/ADM/1/7916	PRO/ADM/1/14736
PRO/ADM/1/6494	PRO/ADM/1/7919	PRO/ADM/1/16708
PRO/ADM/1/6556	PRO/ADM/1/7920	PRO/ADM/1/17115
PRO/ADM/1/6854	PRO/ADM/1/7936	PRO/ADM/1/17144
PRO/ADM/1/6931	PRO/ADM/1/7938	PRO/ADM/1/18968
PRO/ADM/1/6942	PRO/ADM/1/7962	PRO/ADM/116/481
PRO/ADM/1/6959	PRO/ADM/1/7971	PRO/ADM/116/497
PRO/ADM/1/6988	PRO/ADM/1/7975	PRO/ADM/116/749
PRO/ADM/1/7005	PRO/ADM/1/7976	PRO/ADM/116/762
PRO/ADM/1/7044	PRO/ADM/1/8007	PRO/ADM/116/798
PRO/ADM/1/7325	PRO/ADM/1/8319	PRO/ADM/116/849
PRO/ADM/1/7363	PRO/ADM/1/8354	PRO/ADM/116/977
PRO/ADM/1/7494	PRO/ADM/1/8376/114	PRO/ADM/116/978
PRO/ADM/1/7549	PRO/ADM/8549/16	PRO/ADM/116/2476
PRO/ADM/1/7578	PRO/ADM/1/8566/237	PRO/ADM/116/2505
PRO/ADM/1/7579	PRO/ADM/1/8584/58C	PRO/ADM/116/5722
PRO/ADM/1/7605	PRO/ADM/1/8612/168	PRO/ADM/1/20822
PRO/ADM/1/7614	PRO/ADM/1/8619/24	PRO/ADM/1/20825
PRO/ADM/1/7653	PRO/ADM/1/8699/100	PRO/ADM/1/21033
PRO/ADM/1/7679	PRO/ADM/1/8734/61	PRO/ADM/1/21034
PRO/ADM/1/7723	PRO/ADM/1/8773/103	PRO/ADM/1/21249
PRO/ADM/1/7796	PRO/ADM/1/8975	
PRO/ADM/1/7861	PRO/ADM/1/12615	

2. Army Administrative Files Researched at the Public Record Office

PRO/WO/32/2855	PRO/WO/43/893	PRO/WO/43/945
PRO/WO/32/6209	PRO/WO/43/894	PRO/WO/43/948
PRO/WO/32/7047	PRO/WO/43/920	PRO/WO/43/956
PRO/WO/32/12957	PRO/WO/43/926	PRO/WO/43/957
PRO/WO/32/13513	PRO/WO/43/932	PRO/WO/43/960
PRO/WO/33/56	PRO/WO/43/933	PRO/WO/43/966
PRO/WO/43/872	PRO/WO/43/943	
PRO/WO/43/887	PRO/WO/43/944	

3. Air Ministry Administrative Files Researched at the Public Record Office

PRO/AIR/2/403	PRO/AIR/2/138/71713/19
PRO/AIR/2/409	PRO/AIR/2/144/199787/20
PRO/AIR/2/422	PRO/AIR/2/144/229291/20
PRO/AIR/2/452	PRO/AIR/2/156/369703/20
PRO/AIR/2/521	PRO/AIR/2/207/105145/21
PRO/AIR/2/5/87/1679	PRO/AIR/2/223/350081/22
PRO/AIR/2/71/A6485	PRO/AIR/2/223/363651/22
PRO/AIR/2/71/A6510	PRO/AIR/2/223/375021/22
PRO/AIR/2/92/C60428	PRO/AIR/2/223/547592/24
PRO/AIR/2/129/C79103	PRO/AIR/2/251/481669/24
PRO/AIR/2/130/C95753	PRO/AIR/2/251/300956/21
PRO/AIR/2/145/201203/20	PRO/AIR/2/281/621248/25
PRO/AIR/2/147/21711/20	PRO/AIR/2/332/834548/28
PRO/AIR/2/162/384511/20	PRO/AIR/2/332/546227/24
PRO/AIR/2/197/C223	PRO/AIR/2/332/499601/24
PRO/AIR/2/240/442363/23	PRO/AIR/2/332/302966/21
PRO/AIR/2/250/241909/20	PRO/AIR/2/360/965294/29
PRO/AIR/2/250/475451/24	PRO/AIR/2/360/759733/27
PRO/AIR/2/332/833437/28	PRO/AIR/2/10469/67/1
PRO/AIR/2/114/A32469	PRO/AIR/2/3850/68

4. Royal Naval Physical Training Branch Administrative Files Researched at the Directorate of Naval Physical Training and Sport at HMS Nelson Portsmouth

DNPTS/1/7/B	DNPTS/6/64/4	DNPTS/11/9
DNPTS/1/7/C	DNPTS/6/66	DNPTS/11/10
DNPTS/1/7/1	DNPTS/6/70	DNPTS/11/11
DNPTS/1/13	DNPTS/6/71	DNPTS/18/1/B
DNPTS/1/15/1	DNPTS/7/1	DNPTS/20/1
DNPTS/1/16	DNPTS/7/1/1	DNPTS/20/2
DNPTS/1/17	DNPTS/7/3	DNPTS/20/4/1
DNPTS/1/18	DNPTS/7/8	DNPTS/20/4/2
DNPTS/5/4/24	DNPTS/7/8/1	DNPTS/20/5
DNPTS/6/11	DNPTS/7/8/2	DNPTS/20/17/1B
DNPTS/6/53	DNPTS/7/32	
DNPTS/6/64/1B	DNPTS/7/34	

5. Royal Naval Physical Training Branch Administrative Files  
Researched at HMS Temeraire Royal Naval School of Physical  
Training Portsmouth

TEM/130/1	TEM/691/6	TEM/771
TEM/140/1	TEM/701/1	TEM/774/3
TEM/150/1	TEM/710/2	TEM/779/15/1
TEM/150/1/1	TEM/711/2	TEM/806/5
TEM/150/2	TEM/711/4	TEM/820
TEM/150/3	TEM/713	TEM/820/4
TEM/440/3/B	TEM/731/6	TEM/830/1
TEM/480	TEM/733/2	TEM/830/2
TEM/502/1	TEM/761/4	TEM/830/3
TEM/503/5	TEM/761/4/2	TEM/832
TEM/503/6	TEM/765/1	TEM/836
TEM/504/1	TEM/765/2	TEM/836/2
TEM/505/1	TEM/765/4	TEM/836/3
TEM/505/3	TEM/765/6	TEM/836/4
TEM/506/2	TEM/770/1	TEM/836/6
TEM/507	TEM/770/1A	TEM/836/7
TEM/511	TEM/770/1B	TEM/850/4
TEM/525/3	TEM/770/1C	TEM/850/6
TEM/530	TEM/770/1F	TEM/860/2
TEM/570/1	TEM/770/1/1	TEM/860/2/3
TEM/584/2	TEM/770/1/2	TEM/860/3
TEM/591	TEM/770/1/3	TEM/860/3/1
TEM/663/1	TEM/770/1/5	
TEM/664/6	TEM/770/1/6	

6. Official Reports and White Papers

- Admiralty. Entry, Training, and Employment of Officers and Men of the Royal Navy and Royal Marines. (The Selborne Memorandum). HMSO. 1902.
- Admiralty. Statistical Report of the Health of the Navy 1905. HMSO. 1905.
- Central Advisory Council for Education. Children and Their Primary Schools. (The Plowden Report). Vol.1. HMSO. 1967.
- Central Council of Physical Recreation. Sport and the Community. (The Wolfenden Report). September 1960.

Central Organization for Defence. (White Paper). Cmnd. 476. HMSO. 1958.

Central Organization for Defence. (White Paper). Cmnd. 2097. HMSO. 1963.

Department of Environment. Sport and Recreation. (White Paper).  
Cmnd. 6200. HMSO. 1975.

Directorate of Naval Intelligence. Russia-Japanese War Reports. Vol.1.  
HMSO. 1905.

Public Schools Commission. Report on Independent Day Schools and Direct  
Grant Grammar Schools. Second Report (The Donnison Report). Vol.1.  
HMSO. 1970.

Report of the Committee on Petty Officer Ratings, Substantive and  
Non-Substantive Pay and Instructional Allowances in the Royal Navy.  
Vol.1. HMSO. 1905.

Report of the Interdepartmental Committee on Physical Deterioration.  
HMSO. 1904.

Sports Council. A Report on Planning for Sport. 1968.

#### 7. Theses and Dissertations

Bayman, D.M. A Cross Cultural Analysis of Curriculum Development Projects  
in Physical Education. M.Ed. Thesis. University of Liverpool. 1980.

Biddle, D.S. An Investigation into the Use of Curriculum Theory in the  
Formulation of a Systems Model for Constructing and Evaluating  
Secondary School Curricula in England and Wales. Ph.D. Thesis.  
Institute of Education. University of London. 1975.

Cooper, K. The Diffusion of Curriculum Innovation: The Examples of the  
School Council's Project History, Geography and Social Science.  
Ph.D. Thesis. University of Liverpool. 1978.

May, J. The Influence of the Local Education Authority in London on the  
Development of Physical Education. Ph.D. Thesis. University of  
Leicester. 1971.

Sockett, H.T. The Philosophical Basis of Curriculum Planning. Ph.D. Thesis.  
University of London. 1974.

Surridge, T. J. Swedish Gymnastics in England: The Work and Influence of  
Mathias Roth. M.Ed. Thesis. University of Manchester. 1974.

Waring, M. Aspects of the Dynamics of Curriculum Reform in Secondary School Science. Ph.D. Thesis. Chelsea College. University of London. 1975.

Woodward, A.C. The Development of Physical Education in Schools 1907-1933 with Special Reference to the Work of Sir George Newman and the Medical Department of the Board of Education. M.Ed. Thesis. University of Manchester. 1968.

8. Admiralty Handbooks on Physical and Recreational Training

Admiralty. Handbook of Gymnastic Exercises and Physical Drills for Use of Her Majesty's Fleet. HMSO. 1897.

Admiralty. Naval Gymnastic Handbook. Griffin. Portsmouth. 1902.

Admiralty. Handbook of Physical Training. HMSO. 1903.

Admiralty. The Principles and Practices of Educational Gymnastics for the Use of Officers and Gymnastic Instructors. HMSO. 1904.

Admiralty. Handbook of Physical Training. Vol.1. HMSO. 1905.

Admiralty. Handbook of Physical Training. Vol.2. HMSO. 1905.

Admiralty. The Principles and Practices of Educational Gymnastics for the Use of Officers and Gymnastic Instructors. HMSO. 1908.

Admiralty. Handbook of Physical Training. Vol.1. HMSO. 1910.

Admiralty. Handbook of Physical Training. Vol.2. HMSO. 1910.

Admiralty. The Principles and Practices of Educational Gymnastics for the Use of Officers and Gymnastic Instructors. HMSO. 1916.

Admiralty. Physical Activity Exercises for Use Afloat. HMSO. 1920.

Admiralty. Handbook of Physical and Recreational Training. Vol.2. HMSO. 1922.

Admiralty. Handbook of Physical and Recreational Training. Vol.1. HMSO. 1923.

Admiralty. Daily Exercises for Use Ashore and Afloat. HMSO. 1937.

Admiralty. Handbook of Physical and Recreational Training. Vol.2. HMSO. 1940.

Ministry of Defence. Daily Exercises for Use Ashore and Afloat. HMSO. 1965.



Ministry of Defence. Physical and Recreational Training. Vol.2. BR51/2.  
HMSO. 1967

Ministry of Defence. Physical and Recreational Training. Vol.1. BR51/1.  
HMSO. 1972.

9. Armed Services Sports Control Boards Publications

Army Sports Control Board. Year Books. 1935-1966.

Royal Navy and Royal Marines Sports Control Board. Year Books. 1920-1947.

Royal Navy and Royal Marines Sports Control Board. Sport and Recreation  
in the Royal Navy. 1948-1980.

Royal Air Force Sports Board. Official Handbook. Air Publication 3415.  
1972.

10. Books and Journals

Adams, R.S. & Chen, D. The Process of Educational Innovation: An Inter-  
national Perspective. Kogan Page. 1981.

Agutter, G.F. 'The Lower Deck of the Future'. J. United Services  
Institute. May 1946. pp.253-256.

Air Ministry. Handbook of Physical Training for Use in the Royal Air  
Force. Air Publication 890. 2nd Edition. HMSO. 1934.

Aiken, M. & Hage, J. 'The Organic Organization and Innovation'.  
Sociology. 5. 1971. pp.63-82.

Alexander, T.G. 'Integration'. J. Royal United Services Institute.  
November 1960. pp.535-547.

Amor, A.F. & Taylor, S. 'A Step-Test of Fitness for British Army Women'.  
in Defence and Civil Institute of Environmental Medicine. 1978.  
*op cit*. pp.189-201.

Andrews, J. Essays on Physical Education and Sport. Stanley Thornes.  
Cheltenham. 1979.

Andrzejewski, S. Military Organizations and Society. University of  
California. Berkeley. 2nd Edition. 1968.

Aspin, D. 'Games, Winning and Education: Some Further Comments'.  
Cambridge J. Education. 5. 1. 1975. pp.51-61.

- Bailey, C. 'Games, Winning and Education'. Cambridge J. Education. 5. 1. 1975. pp.40-50.
- Baldrige, J.V. & Burnham, R.A. 'Organizational Innovation: Individual, Organizational and Environmental Aspects'. Administrative Science Quarterly. 20. 1972. pp.165-176.
- Ball, D.W. & Loy, J.W. Sport and Social Order: Contributions to the Sociology of Sport. Addison-Wesley. Reading. Massachusetts. 1975.
- Bankier, W. Ju-Jitsu: What It Really Is. Apollo Magazine. 1905.
- Banks, L.F. 'Curriculum Developments in Britain 1963-8'. J. Curriculum Studies. 1. 3. 1969. pp.249-259.
- Bar-Khama, A. *et al.* Israeli Fitness Strategy: A Complete Program of Diet and Exercise based on the Training System of the Israel Defense Force. Morrow. New York. 1980.
- Barnard, H.C. A Short History of English Education. University of London Press. 1952.
- Barton, J. *et al.* 'Accountability and Education'. in Bush, T. *et al.* (Eds.). 1980. *op cit.* pp.98-120.
- Basini, A. 'Education for Leisure: A Sociological Critique'. Paper to Symposium on Work and Leisure. University of Salford. September 22nd 1973.
- Becker, T. & Maclure, S. The Politics of Curriculum Change. Hutchinson. 1978.
- Becker, S.W. & Whisler, T.L. 'The Innovative Organization: A Selective View of Current Theory and Research'. J. of Business. 40. 1967. pp.462-469.
- Beldam, G.W. The Fine Art of Ju-Jitsu. Heinemann. 1906.
- Bennis, W.G. *et al.* The Planning of Change. Holt, Rinehart & Winston. New York. 1976.
- Berger, P.L. & Luckmann, T. The Social Construction of Reality. Anchor Doubleday. New York. 1966.
- Berman, P. & McLaughlin, M.W. 'Implementation of Educational Innovation'. Educational Forum. 40. 3. 1976. pp.345-370.
- Bhola, H.S. 'The Configurational Theory of Innovation Diffusion'. Indian Educational Review. 2. 1967. pp.42-72.

- Bilborough, A. & Jones, P. Developing Patterns in Physical Education. University of London Press. 1973.
- Blau, P.M. & Scott, W.R. Formal Organizations. Routledge & Kegan Paul. 1970.
- Blyth, W.A.L. *et al.* Curriculum Planning in History, Geography and Social Science. Collins/ESL. 1976.
- Board of Education. Memorandum on Physical Training in Secondary Schools. Circular 779. HMSO. 1911.
- Board of Education. Syllabus of Physical Training for Schools 1919. HMSO. 1919.
- Bobbitt, F. The Curriculum. Houghton Mifflin. Boston. 1918. Reprint Edition. Arno Press & New York Times. New York. 1971.
- Bolam, R. 'The Management of Educational Change Towards a Conceptual Framework'. in Harris, A. *et al.* 1975. *op cit.* pp.273-290.
- Brady, D.K. 'Apathletics'. J. Royal Navy Physical Training Branch Association. 1974. pp.19-21.
- Bredin, A.E.C. 'Modern Developments in Physical Training'. J. Royal United Services Institute. November 1922. pp.678-681.
- Brewer, G.D. 'On the Theory and Practice of Innovation'. Technology in Society. 3. 3. 1980. pp.337-363.
- Burnett, R.L. 'Physical and Recreational Training'. Brassey's Annual. 1934. pp.73-81.
- Burns, T. & Stalker, G.M. The Management of Innovation. Tavistock. 1968.
- Bush, T. *et al.* (Eds.). Approaches To School Management. Harper & Row. 1980.
- Cameron, W. McD. & Pleasance, P. Education in Movement: Schools Gymnastics. Blackwell. Oxford. 1965.
- Campbell, A.B. Customs and Traditions of the Royal Navy. Gale & Polden. Aldershot. 1956.
- Casson, B.S. 'Curriculum Development and Role Expansion in Further Education Physical Education'. in Glaister, I.K. (Ed.). 1980. *op cit.* pp.23-26.
- Central Office of Information. The Sports Council. HMSO. 1966.

- Charters, W.W. & Pellegrin, R.J. 'Barriers to the Innovation Process: Four Case Studies of Differentiated Staffing'. Educational Administration Quarterly. 9. 1. 1972. pp.3-14.
- Chin, R. 'The Utility of System Models and Developmental Models for Practitioners'. in Bennis, W.G. *et al.* The Planning of Change. Holt, Rhinehart & Winston. New York. 1976. pp.90-102.
- Chin, R. & Benne, K.D. 'General Strategies for Effecting Changes in Human Systems'. in Bennis, W.G. *et al.* 1976. *op cit.* pp.22-45.
- Clark, B.R. 'Interorganizational Patterns in Education'. Administrative Science Quarterly. 10. 1965. pp.224-237.
- Clark, B.R. 'The Organizational Saga in Higher Education'. Administrative Science Quarterly. 17. 2. 1972. pp.178-184.
- Clarke, T.N. 'Institutionalization of Innovations in Higher Education'. Administrative Science Quarterly. 13. 1968. pp.1-25.
- Collins, L. 'Sport and Physical Education: A Discussion'. Bulletin Physical Education. 15. 3. 1979. pp.39-44.
- Conway, J.A. 'Power and Participatory Decision-Making in Selected English Schools'. in Bush, T. *et al.* (Eds.). 1980. *op cit.* pp.210-230.
- Cooper, K. 'Curriculum Diffusion: Some Concepts and their Consequences'. Research Intelligence. 3. 1. 1977. pp.6-7.
- Cooper, K.J. The New Aerobics. Evans. New York. 1970.
- Copeland, I.C. 'The Function of Sport in Secondary Education'. Educational Review. 25. 1. 1972. pp.34-45.
- Corwin, R.G. 'Innovations in Organizations: The Case of Schools'. Sociology of Education. 48. 1. 1975. pp.1-37.
- Corwin, R.G. 'Power'. in Sagarin, E. (Ed.). 1978. *op cit.* pp.65-85.
- Cruden, C. 'Care of the Body in the Late Nineteenth Century and Early Twentieth Century in England'. Bulletin Physical Education. 11. 1. 1975. pp.17-21.
- Czepiel, J.A. 'Patterns of Interorganizational Communications and the Diffusion of a Major Technological Innovation in a Competitive Industrial Community'. Academy of Management J. 18. 1. 1975. pp.6-24.
- Daft, R.L. 'A Dual Core Model of Organizational Innovation'. Academy of Management J. 21. 2. 1978. pp.193-210.

- Dalin, P. Limits to Educational Change. Macmillan. 1978.
- Daines, P.F. 'Physical Education at Brockenhurst 6th Form College'. in Glaister, I.K. (Ed.). 1978. *op cit.* pp.8-18.
- Defence and Civil Institute of Environmental Medicine. Proceedings of the Research Study Group Seminar on Symposium on Physical Fitness with Special Reference to Military Forces. Toronto. 1978.
- Department of Education and Science. Curriculum 11-16: Supplementary Working Papers by Her Majesty's Inspectorate. June 1979.
- Derricott, R. 'Working with Teachers'. Occasional Paper 1. Schools Council Project: History, Geography and Social Science 8-13. School of Education. University of Liverpool. 1975.
- Digby Bell, K. 'The Position of the Medical Profession in Relation to National Physical Education'. The Lancet. January 31st 1920. pp.231-235.
- DNPTS. Physical Fitness and Recreational Training. 1968.
- Downs, A. Inside Bureaucracy. Little & Brown. Boston. 1966.
- Downs, G.W. & Mohr, L.B. 'Conceptual Issues in the Study of Innovation'. Administrative Science Quarterly. 21. 1976. pp.700-714.
- Dunlop, F. 'Bailey on Games, Winning and Education'. Cambridge J. Education. 5. 3. 1975. pp.153-160.
- Dwyer, D.J. A History of the Royal Naval Barracks Portsmouth. Gale & Polden. Aldershot. 1961.
- Dyer, G.N. 'A Retrospect and a Forecast'. Mind, Body and Spirit. J. of the Army Physical Training Staff. 16. 1936. pp.16-18.
- Easthope, G. Community, Hierarchy and Open Education. Routledge & Kegan Paul. 1975.
- Eisner, E.W. 'Humanistic Trends and the Curriculum Field'. J. Curriculum Studies. 10. 3. 1978. pp.197-204.
- Elliott, J. 'Collecting Information To Test Hypotheses About Curriculum Dissemination and Implementation'. Progress in Learning Science Dissemination Study. Working Paper 2. Schools Council. 1976.
- Elliott, J. 'Dissemination and Related Concepts'. Progress in Learning Science Dissemination Study. Working Paper No.1. Schools Council. 1977.
- Elliott, J. 'Evaluating the "Progress in Learning Science" Dissemination'. Interim Working Papers. No.3. Cambridge Institute of Education. 1977.

- Elliott, J. & Adelman, C. 'Innovation at the Classroom Level'. in Innovation, the School and the Teacher. E203. Unit 28. Open University Press. 1976. pp.74-80.
- Elvin, K. & Harris, P. Report on Social Accommodation for Junior Servicemen Royal Navy and Royal Marines Off Duty. User Requirement Studies 2. Directorate of Building Development. Department of Environment. 1973.
- Etzioni, A. Modern Organizations. Prentice-Hall. Englewood Cliffs. New Jersey. 1964.
- Etzioni, A. & Etzioni, E. Social Change. Basic Books. New York. 1964.
- Evan, W.M. 'Organizational Lag'. Human Organizations. 25. 1966. pp.51-53.
- Evan, W.M. & Black, G. 'Innovations in Business Organizations'. Some Factors Associated With Success or Failure of Staff Proposals'. J. of Business. 40. 1967. pp.519-530.
- Fletcher, T.L. & Lambert, L. Army Physical Training Corps 1860-1960. Army Physical Training Corps. Aldershot. 1960.
- Fox, N. 'A Model of Cautionary Innovation. The Introduction of Ju-Jitsu in the Royal Navy 1905'. J. Royal Navy Physical Training Branch Association. 1979. pp.11-14.
- Friedmann, G. 'Leisure and Technological Civilization'. International Social Sciences J. 4. 1960. pp.509-521.
- Fullan, M. 'Overview of the Innovative Process and the User'. Interchange. 3. 1972. pp.1-45.
- Fullan, M. & Pomfret, A. 'Research on Curriculum and Instruction Implementation'. Review of Educational Research. 47. 1. Winter 1977. pp.335-397.
- Fullan, M. & Pomfret, A. Review of Research on Curriculum Implementation. Ontario Institute for Studies in Education. 1975. (mimeo).
- Gardiner, L. The British Admiralty. Blackwood. 1968.
- Gaskell, A. 'Physical Culture and its Pitfalls, with a Critical Analysis of Swedish Drill'. in Admiralty. Statistical Report of the Health of the Navy 1905. HMSO. 1905. pp.124-129.
- Gerber, E.W. Innovators and Institutions in Physical Education. Lea & Febiger. Philadelphia. 1971.
- Gerth, H.H. & Mills, C.W. (Eds.). From Max Weber: Essays in Sociology. Oxford University Press. New York. 1946.

- Gibbon, A. 'The Case for Physical Education: An Overview'. Bulletin Physical Education. 14. 3. 1978. pp.5-11.
- Gibby, B. 'Curriculum Evaluation. With Reference to Some Projects'. in Lawton, D. *et al.* Theory and Practice of Curriculum Studies. Routledge & Kegan Paul. 1978. pp.166-175.
- Glaister, I.K. (Ed.). Studies in Physical Education. A.T.C.D.E. Conference Report. Lady Mabel College of Education 1973.
- Glaister, I.K. (Ed.). Assessment of Physical Education in Schools and Colleges. Report of the Inaugural Conference of the British College of Physical Education. Coventry College of Education. 1978.
- Glaister, I.K. (Ed.). Physical Education for 16-18 Year Old. Conference Report. Warwick University. 1978.
- Glaister, I.K. (Ed.). Physical Education in Further Education. N.A.T.F.H.E. Conference Report. Sheffield Polytechnic. 1980.
- Goffman, E. Asylums. Doubleday. New York. 1962.
- Gross, N. *et al.* Implementing Organizational Innovations. Harper & Row. New York. 1971.
- Groves, R. 'Stressing the Education in Physical Education'. Physical Education Review. 4. 1. 1981. pp.38-43.
- Gruneau, R. & Albinson, J. Canadian Sport: Sociological Perspectives. Addison-Wesley. Toronto. 1975.
- Guba, E.G. 'Diffusion of Innovations'. Educational Leadership. 25. 4. 1968. pp.292-295.
- Gymnasticus. 'Physical Training in the Navy'. The Fleet. 1906. pp.5-15.
- Hage, J. & Dewar, R. 'Elite Values Versus Organizational Structure in Predicting Innovation'. Administrative Science Quarterly. 18. 1973. pp.279-290.
- Hall, G.E. & Loucks, S.F. *et al.* 'Levels of Use of the Innovation: A Framework for Analyzing Innovation Adoption'. J. Teacher Education. 26. 1. 1975. pp.52-56.
- Hampshire, A.C. The Royal Navy Since 1945. Wm. Kimber. 1975.
- Harding, J.M. *et al.* 'The Study of Curriculum Change'. Studies in Science Education. 3. 1976. pp.1-30.

- Harlen, W. 'Some Practical Points in Favour of Curriculum Evaluation'.  
J. Curriculum Studies. 3. 2. 1971. pp.128-134.
- Hardman, K. 'The Concept of Assessment'. in Glaister, I.K. (Ed.). 1978.  
*op cit.* pp.2-4.
- Harris, A. *et al.* Curriculum Innovation. Croom Helm. 1975.
- Hatch, G.S. 'Adventure Training and Recruiting. Some Suggestions'.  
J. Royal United Services Institute. November 1961. pp.486-490.
- Havelock, R.G. Planning for Innovation through the Dissemination and Utilization of Knowledge. Centre for Research and Utilization of Knowledge. Ann Arbor. 1971.
- Hemphill, D. 'A General Theory of Innovativeness'. Alberta J. Educational Research. 14. 2. 1968. pp.101-114.
- Higham, R. Armed Forces in Peacetime. Foulis. 1962.
- Higham, R. (Ed.). A Guide to the Sources of British Military History. University of California Press. Berkeley. 1971.
- Higham, R. & Cox-Wing (Eds.). Consolidated Author and Subject Index to Journal Royal United Services Institute. University Micro-films. Ann Arbor. 1964.
- HMS Collingwood. Physical Fitness and Recreational Training Syllabus. June 1975.
- House, E.R. The Politics of Educational Innovation. McCutchan. Berkeley. 1974.
- Hoyle, E. 'The Creativity of the School in Britain'. in Harris, A. *et al.* (Eds.). 1978. *op cit.* pp.329-346.
- Hoyle, E. 'Planned Organizational Change in Education'. Research in Education. 3. 1970. pp.1-22.
- Humble, S. 'Curriculum Dissemination: The Art of the Impossible'.  
Cambridge J. of Education. 2. 3. 1971. pp.139-149.
- Ingham, A. 'Occupational Subcultures in the Work World of Sport'. in Ball, D.W. & Loy, J.W. 1975. *op cit.* pp.333-389.
- James, J.M. Education and Physical Education. Bell & Sons. 1967.
- Jewett, A.E. 'The Status of Physical Education Curriculum Theory'.  
Quest. 32. 2. 1980. pp.163-173.



- Johnson, B.L. & Nelson, J.K. Practical Measurement for Evaluation in Physical Education. 2nd Edition. Burgess. Minneapolis. 1974.
- Journal Royal Navy Physical Training Branch Association. 1974.
- Journal Royal Navy Physical Training Branch Association. 1975.
- Journal Royal Navy Physical Training Branch Association. 1976.
- Journal Royal Navy Physical Training Branch Association. 1977.
- Journal Royal Navy Physical Training Branch Association. 1978.
- Journal Royal Navy Physical Training Branch Association. 1979.
- Kane, J.E. Physical Education in Secondary Schools. Schools Council Research Studies. Macmillan. 1974.
- Kane, J.E. (Ed.). Curriculum Development in Physical Education. Crosby Lockwood Staples. 1976.
- Katz, E. *et al.* 'Traditions of Research on the Diffusion of Innovations'. American Sociological Review. 28. 1973. pp.237-252.
- Keegan, J. 'The Inter War Years'. in Higham, R. (Ed.). A Guide to the Sources of British Military History. University of California Press. Berkeley. 1971.
- Kelly, P. & Kransberg, M. (Eds.). Technological Innovation: A Critical View of Current Knowledge. San Francisco Press. San Francisco. 1978.
- Kemmis, S. & Robottom, I. 'Principles of Procedure in Curriculum Evaluation'. J. Curriculum Studies. 13. 2. 1981. pp.151-155.
- Kemp, P.K. Victory at Sea. Muller. 1957.
- Kemp, P.K. The British Sailor: A Social History of the Lower Deck. Dent. 1970.
- Kemp, P.K. 'Royal Navy 1939-45'. in Higham, R. (Ed.). 1971. *op cit.* pp.470-486.
- Kenyon, G.S. 'The Contribution of Physical Activity to Social Development'. Paper presented at the Symposium on the Role of Physical Activity in the Integrated Development of Children. Purdue University. U.S.A. June 29-30th. 1964.
- Kerr, J.F. 'General Review of Recent Attempts to Reform the Curriculum'. in Glaister, I.K. (Ed.). Studies in Physical Education. A.T.C.D.E. Conference Report. Lady Mabel College of Education. 1973. pp.5-17.

- Kimberly, J.R. & Evanishko, M.J. 'Organizational Innovation: The Influence of Individual, Organizational, and Contextual Factors on Hospital Adoption of Technological and Administrative Innovations'. Academy of Management J. 24. 4. 1981. pp.689-713.
- Kinsman, F. United Kingdom Leisure Markets: Survey and Forecasts to 1985. Staniland Hall Associates. 1979.
- Klein, D. 'Some Notes on the Dynamics of Resistance to Change: The Defender Role'. in Bennis, W.G. *et al.* 1976. *op cit.* pp.117-124.
- Knock, S. Clear Lower Deck. Allan. 1932.
- Kowal, D.M. & Daniels, W.L. 'Recommendations for the Screening of Military Personnel over 35 Years of Age for Physical Training Programmes'. American J. Sports Medicine. 7. 3. 1979. pp.186-190.
- Lang, K. 'Military Organizations'. in Marsh, J.G. (Ed.). A Handbook of Organizations. Rand McNally. New York. 1965. pp.838-878.
- Lawton, D. Class, Culture and the Curriculum. Routledge & Kegan Paul. 1978.
- Lawton, D. 'Curriculum Evaluation: New Approaches'. in Lawton, D. *et al.* Theory and Practice of Curriculum Studies. Routledge & Kegan Paul. 1978. pp.176-201.
- Lawton, D. Social Change, Education Theory and Curriculum Planning. Hodder & Stoughton. 1979.
- Lawton, D. *et al.* Theory and Practice of Curriculum Studies. Routledge & Kegan Paul. 1978.
- Leinhardt, G. 'Observation As A Tool for Evaluation of Implementation'. Instructional Science. 5. 1976. pp.343-364.
- Leithwood, K.A. 'The Dimensions of Curriculum Innovation'. J. Curriculum Studies. 13. 1. 1981. pp.25-36.
- Leithwood, K.A. & Montgomery, D.J. 'Evaluating Program Implementation'. Evaluation Review. 4. 2. 1980. pp.193-214.
- Leithwood, K.A. & Russell, H.H. 'Focus on Implementation'. Interchange. 4. 1. 1973. pp.10-25.
- Lewis, M.A. The Navy of Britain: A Historical Portrait. Allen & Unwin. 1948.
- Lewis, M.A. A Social History of the Navy 1793-1815. Allen & Unwin. 1960.

- Lewis, M.A. The Navy in Transition 1814-1864: A Social History. Hodder & Stoughton. 1965.
- Lloyd, C. The Nation and the Navy: History of Naval Life and Policy. Cresset. 1961.
- Lloyd, C. The Health of Seamen. Navy Records Society. 1965.
- Lloyd, C. & Coulter, J.L.S. Medicine and the Navy 1815-1900. Livingstone. 1963.
- Lockwood, A.M. 'Movement Education: An Innovation in the Physical Education Curriculum'. Physical Education Review. 1. 2. 1978. pp.129-150.
- Loy, J. 'The Cultural System of Sport'. Quest. 29. Winter 1978. pp.73-102.
- Luff, I.V. 'Curriculum Evaluation: A Neglected Process'. Physical Education Review. 3. 1. 1980. pp.18-33.
- Lutterodt, S.A. 'A Systematic Approach to Curriculum Evaluation'. J. Curriculum Studies. 7. 2. 1975. pp.135-150.
- Lyle, J. 'The Hidden Dimensions in the Physical Education Curriculum'. Scottish J. Physical Education. 8. 2. 1980. pp.8-11.
- MacDonald, B. & Walker, R. Changing the Curriculum. Open Books. 1976.
- MacLaren, A. A System of Physical Education: Theoretical and Practical. Clarendon Press. Oxford. 1869.
- McBride, V. Never At Sea: Life in the Women's Royal Naval Service. Educational Explorers. Reading. 1966.
- McIntosh, P.C. Physical Education in England Since 1800. Bell & Sons. 1952.
- McIntosh, P.C. 'The Curriculum of Physical Education'. in Kane, J.E. (Ed.). Curriculum Development in Physical Education. Crosby Lockwood Staples. 1976. pp.13-45.
- McIntosh, P.C. Fairplay: Ethics in Sport and Education. Heinemann. 1979.
- March, J.G. 'Footnotes to Organizational Change'. Administrative Science Quarterly. 26. 1981. pp.563-577.
- Marsh, J.G. (Ed.). A Handbook of Organizations. Rand McNally. New York. 1965.
- Marwick, A. Britain in the Century of Total War, Peace and Social Change 1900-1967. Bodley Head. 1967.

- Mason, U.S. The Wrens 1917-1977. A History of the Women's Royal Naval Service. Educational Explorers. Reading. 1977.
- Matejko, A. 'Culture, Work and Leisure'. Society and Leisure. 2. 1971. pp.21-42.
- Mathews, V.L. 'The Work of the Women's Royal Naval Service in the War'. J. Royal United Services Institute. February 1942. pp.51-61.
- Mathews, V.L. 'Women's Royal Naval Service in the War'. J. Royal United Services Institute. February 1946. pp.83-96.
- Mathews, V.L. Blue Tapestry. Hollis. 1948.
- Mayer, H.D. & Brightbill, C.K. Recreation Administration. Prentice Hall. Englewood Cliffs. New Jersey. 1956.
- Miles, M.B. (Ed.). Innovation in Education. Columbia University Press. New York. 1964.
- 'Mind, Body and Spirit'. Journal of The Army Physical Training Staff. 3-29. 1922-1948.
- Ministry of Defence. Physical Efficiency Programme Exercises. Army Code 70173. HMSO. 1966.
- Ministry of Education. Moving and Growing. HMSO. 1952.
- Ministry of Education. Planning the Programme. HMSO. 1953.
- Mohr, L.B. 'Determinants of Innovations in Organizations'. American Political Science Review. 63. 1969. pp.111-126.
- Morgan, R.E. & Adamson, G.T. Circuit Training. Bell & Sons. 1965.
- Morison, R. A Movement Approach to Educational Gymnastics. Dent. 1969.
- Murray, A. Modern Weight Training. Nicholas Kaye. 1963.
- Musgrave, P.W. Knowledge, Curriculum and Change. Angus & Robertson. 1973.
- Naval Manpower Utilization Unit. HMS Temeraire Objective Training Documentation. 535/3/12. January 1973.
- Nicodemus, R.B. & Marshall, D. 'Familiarity of Headteachers with Twenty-Five New Curriculum Projects'. Educational Studies 1. 3. 1975. pp.191-200.
- Oliver, R.D. HMS Excellent 1830-1930. Charpentier. Portsmouth. 1930.
- Owen, J.G. The Management of Curriculum Development. Cambridge University Press. Cambridge. 1973.

- Page, C. 'Pervasive Sociological Themes in the Study of Sport'. in Talamini, J. & Page, C. (Eds.). 1973. *op cit.* pp.14-37.
- Pallett, G.D. Modern Educational Gymnastics. Pergamon. 1967.
- Palmer, R. 'Physical Education in Schools: Current Issues and Solutions'. Physical Education Review. 1. 2. 1978. pp.101-110.
- Parlett, M. & Hamilton, D. 'Evaluation as Illumination'. in Tawney, D. (Ed.). Curriculum Evaluation Today: Trends and Implications. Macmillan. 1976. pp.84-101.
- Pearson, K. 'Models Characterizing Play and Sporting Activities'. Conference Proceedings on Sport, Society and Personality. Department of Youth, Sport, Recreation. Victoria. 1976.
- Pearson, K. 'The Institutionalization of Sport Forms'. International Review of Sport Sociology. 14. 1. 1979. pp.51-60.
- Pimlott, J.A.R. Recreations. Studio Vista. 1968.
- Pitman, A. 'The Necessary Distortion of Disseminated Innovations'. J. Curriculum Studies. 13. 3. 1981. pp.253-256.
- Randall, M. Basic Movement: A New Approach to Gymnastics. Bell & Sons. 1963.
- Randall, M.W. Modern Ideas on Physical Education. Bell & Sons. 1960.
- Randall, M.W. *et al.* Objectives in Physical Education. Bell & Sons. 1966.
- Randall, M.W. & Waine, W.K. Objectives of the Physical Education Lesson. Bell & Sons. 1963.
- Redlich, F. 'Leisure Time Activities: A Historical, Sociological and Economic Analysis'. Explorations in Entrepreneurial History. 3. 1. 1965. pp.3-23.
- Reid, W.A. & Walker, D.F. Case Studies in Curriculum Change. Routledge & Kegan Paul. 1975.
- Renshaw, P. 'Human Movement Studies and the Curriculum'. in Kane, J.E. (Ed.). 1976. *op cit.* pp.46-69.
- Riley, P. Memories of a Blue-Jacket 1872-1918. Sampson Low Marston. 1921.
- RNPTB. 'Organization of Sport and Recreation in the Royal Navy'. Handout No.11. December 1979.
- RNPTB. 'The Queen's Regulations for the Royal Navy'. Handout No.3. September 1971.

- Roberts, K. Leisure. Longmans. 1970.
- Robinson, C.F. 'British Organization for Defence'. Public Administration Review. 8. 1948. pp.181-187.
- Rogers, E.M. & Shoemaker, F.F. Communication of Innovations. A Cross-Cultural Approach. 2nd Edition. Free Press. Macmillan. New York. 1971.
- Ross, R.D. 'The Institutionalization of Academic Innovations: Two Models'. Sociology of Education. 49. 1976. pp.146-155.
- Royal Canadian Air Force. 5BX Plan for Fitness. Queen's Printer and Controller of Stationery. Ottawa. 1958.
- Rudduck, J. 'Dissemination in Practice'. Cambridge J. of Education. 3. 3. 1973. pp.143-158.
- Rudduck, J. Dissemination of Innovation: The Humanities Curriculum Project. Schools Council Working Paper 56. Evans Methuen. 1976.
- Rudduck, J. & Kelly, P. The Dissemination of Curriculum Development. NFER. 1976.
- Russell, H.H. *et al.* The Peterborough Project. A Case Study of Educational Change and Innovation. Ontario Institute for Studies in Education. Toronto. 1973.
- Sagarin, E. (Ed.). Sociology: The Basic Concepts. Holt, Rhinehart & Winston. New York. 1978.
- Sandy, J.A. 'Visit to Royal Naval School of Physical Training'. H.M. Prison Service Physical Education Review Team. Unpublished Paper. 1980.
- Schon, D.A. Beyond the Stable State. Temple Smith. 1971.
- Science Policy Research Unit. Success and Failure in Industrial Innovation. Centre for Industry Innovation. University of Sussex. 1971.
- Scottish Education Department. The Structure of the Curriculum in the Third and Fourth Years of the Scottish Secondary School. HMSO. 1977.
- Sharpe, P.J. 'A Consideration of the Evaluation of Core Elements of the Primary School Physical Education Programme'. Bulletin Physical Education. 14. 3. 1978. pp.26-34.
- Shaw, K.E. 'Negotiating Curriculum Change in a College of Education'. in Reid, W.A. & Walker, D.F. Case Studies in Curriculum Change. Routledge & Kegan Paul. 1975. pp.54-90.

- Shaw, K.E. 'Understanding the Curriculum: The Approach Through Case Studies'. J. Curriculum Studies. 10. 1. 1978. pp.1-17.
- Shepard, H.A. 'Innovation-Resisting and Innovation Producing Organizations'. J. of Business. 40. 1967. pp.470-477.
- Shipman, M.D. Inside a Curriculum Project. Methuen. 1974.
- Skinsley, M. 'Options'. Bulletin Physical Education. 16. 3. 1980. pp.25-29.
- Smith, D.L. & Frazer, B.J. 'Towards a Confluence of Quantitative and Qualitative Approaches to Curriculum Evaluation'. J. Curriculum Studies. 12. 4. 1980. pp.367-380.
- Smith, L.M. & Keith, P.M. Anatomy of Educational Innovation. John Wiley. New York. 1971.
- Smith, M. *et al.* (Eds.). Leisure and Society in Britain. Allan Lane. 1973.
- Stake, R.E. 'The Countenance of Educational Evaluation'. Teachers College Record. 68. 7. 1967. pp.523-554.
- Stake, R.E. 'The Case Study Method in Social Inquiry'. Educational Research. 7. 2. 1978. pp.5-8.
- Stanton, J.W. 'Option or Compulsion in Further Education Physical Education'. in Glaister, I.K. (Ed.). 1980. *op cit.* pp.13-17.
- Statham, E.P. The Story of Britannia. Cassell. 1904.
- Steadman, S.D. *et al.* 'Impact and Take Up Project'. A First Interim Report to the Programme Committee of the Schools Council. Schools Council. 1978.
- Steadman, S.D. 'Techniques of Evaluation'. in Tawney, D. (Ed.). Curriculum Evaluation Today: Trends and Implications. Macmillan. 1976. pp.55-83.
- Steel, G. Story of the Worcester. Harrop. 1962.
- Stenhouse, L. 'Some Limitations on the Use of Objectives in Curriculum Research and Planning'. Pedagogica Europaea. 1971. pp.73-83.
- Stenhouse, L. 'Case Study and Case Records: Towards a Contemporary History of Education'. British Educational Research Journal. 4. 2. 1978. pp.21-39.
- Stevenson, C.L. 'An Alternative Theoretical Approach to Sport Socialization: A Concept of Institutional Socialization'. International Review of Sport Sociology. 11. 1. 1976. pp.65-75.

- Susskind, C. & Zybkw, M. 'The Ecology of Innovation'. in Kelly, P. & Kransberg, M. (Eds.). Technological Innovation: A Critical View of Current Knowledge. San Francisco Press. San Francisco. 1978. pp.1-19.
- Tait Mckenzie, R. 'The Treatment of Convalescent Soldiers by Physical Means'. Proceedings Royal Society Medicine. 11. 1916. pp.31-70.
- Talamini, J. & Page, C. (Eds.). Sport and Society: An Anthology. Little Brown. Boston. 1973.
- Tannenbaum, R. & Schmidt, W.H. 'How to Choose a Leadership Pattern'. Harvard Business Review. March-April. 1958. pp.95-102.
- Tawney, D. (Ed.). Curriculum Evaluation Today: Trends and Implications. Macmillan. 1976.
- Taylor, E. Training With Weights. John Murray. 1962.
- Taylor, P.H. 'Curricula in Transition: The Case of Physical Education'. in Glaister, I.K. (Ed.). 1973. *op cit*. pp.18-28.
- Taylor, P.H. 'Curriculum Planning'. Paper presented to Teacher Involvement in Curriculum Planning Conference. North West Counties Physical Education Association. Manchester. 1972.
- Thompson, K.B. 'The Point of the Activity'. Cambridge J. Education. 5. 3. 1975. pp.150-152.
- Thompson, L.W. 'Physical Activity and Recreation Program for a Training Vessel at Sea'. J. Physical Education and Recreation. 47. 2. 1976. pp.43-46.
- Thompson, V.A. 'Bureaucracy and Innovation'. Administrative Science Quarterly. 10. 1965. pp.1-20.
- Torrance, E.P. 'Some Consequences of Power Differences on Decision Making in Permanent and Temporary Three Man Groups'. in Hare, A.P. *et al*. (Eds.). Small Groups. Knopf. New York. 1955. pp.482-492.
- Travers, P.R. Fitness Training. Royal Naval School of Physical Training. 1969.
- Travers, R.M.W. An Introduction to Educational Research. Macmillan. New York. 1969.
- Treves, F. Physical Education. J. & A. Churchill. 1892.
- Tushman, M.L. 'Special Boundary Roles in the Innovation Process'. Administrative Science Quarterly. 22. December 1977. pp.587-605.



- Tyler, R.W. Basic Principles of Curriculum and Instruction. University of Chicago Press. Chicago. 1949.
- Utterback, J.M. 'The Process of Technological Innovation within the Firm'. Academy of Management J. 14. 1971. pp.75-88.
- Utterback, J.M. 'Innovation in Industry and Diffusion of Technology'. Science. 183. 1974. pp.620-626.
- Uyenishi, S.K. The Textbook of Ju-Jitsu as Practised in Japan. Athletic Publications. 1921.
- Veal, A.J. 'Sport and Recreation in England and Wales'. Research Memorandum 74. Leisure and Tourism Unit. University of Birmingham. July 1979.
- Walker, D.F. 'What Curriculum Research?'. J. Curriculum Studies. 5. 1. 1973. pp.58-72.
- Waring, M. Social Pressures and Curriculum Innovation. Methuen. 1979.
- Wheeler, D.K. Curriculum Process. University of London Press. 1967.
- Whitehead, D.J. The Dissemination of Educational Innovations in Britain. Hodder & Stoughton. 1980.
- Whitehead, N.J. & Hendry, L.B. Teaching Physical Education in England: Description and Analysis. Lepus Books. 1976.
- Wilcox, R. 'Physical Education or Sport? Finding the Balance'. British J. Physical Education. 11. 6. 1980. p.149.
- Williams, E.A. 'Physical Education in the Primary School: A Study of Teachers Involved'. Bulletin Physical Education. 15. 3. 1979. pp.5-13.
- Willower, D.J. 'Barriers to Change in Educational Organizations'. Theory into Practice. 2. 5. 1963. pp.257-263.
- Willson, F.M.G. 'Defence Organization - 1958 Style'. Public Administration. Winter 1958. pp.385-390.
- Wise, A.E. 'Why Educational Policies Often Fail: The Hyperrationalization Hypothesis'. J. Curriculum Studies. 9. 1. 1977. pp.43-57.
- Yexley, L. The Inner Life of the Navy. Pitman. 1908.
- Zaltman, G. *et al.* Innovations and Organizations. John Wiley. New York. 1973.