

**CALCULATING THE RETURN ON INVESTMENT OF A RETENTION BONUS
SCHEME**

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for the degree of Master of Business Studies (Honours) at Massey University.**

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Abstract

The return on investment (ROI) of a retention bonus scheme (RBS) was found to be positive using the ROI process developed by Jack J. Phillips from Donald L. Kirkpatrick's four-level model of evaluation. Impact estimation and forecasting were used to isolate the effects of the RBS. Questionnaires were sent to 185 naval personnel who were either recipients of the bonus payments or managers of recipients when the payments were introduced. Forecasting methods using projections based on wastage rates before the RBS were compared with wastage rates after its implementation. Finally, the costs associated with RBS implementation and the savings associated with reducing separation and replacement costs through better retention were calculated to determine the ROI.

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the Royal New Zealand Navy.

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1. MEASURING THE RETURN ON INVESTMENT OF HUMAN RESOURCES INITIATIVES

1.1 The Need for Evaluation and Measurement

The impact of human resources management (HRM) policies and practices on organisational performance is an important topic in the fields of HRM, industrial relations, and industrial and organisational psychology (Huselid, 1995), and the human resources (HR) function now has become a strategic issue at the top of many CEOs' agendas. However, although the acquisition, management and optimisation of human capital assets have become critical to an organisation's survival and growth, justifying new HR initiatives remains difficult because of the many variables of cause and effect, and the subsequent challenge of demonstrating the anticipated savings (Jones, 1996). The importance of being able to explain the overall business value of an HR initiative and how it will impact on an organisation's bottom line can be critical when attempting to obtain project funding (PeopleSoft, 2000). Because it measures profit generated by the capital invested in an organisation or project, return on investment (ROI) is a very important indicator of the efficiency of capital invested, both to creditors and to the owners of the invested capital (Sveiby, 1997). Monitoring, measuring and evaluating the effects of HR activities and the value-added of human capital are complex matters that can make the creation of value proposition for HR programmes a daunting task (Fitz-enz, 2000a).

To show a credible ROI for training, results must be described in the context of the financial and performance models that the company's decision makers already use to measure business results (Davidove and Schroeder, 1992). The best way for HR managers to gain credibility so that they can make meaningful changes is for them to be able to measure the cost and effectiveness of what they do (Craven and McNulty, 1994; Davidson, 1998, 1999; Grossman, 2000; Kelly, 1993; Sorensen, 1995a). HR can add value to business decisions by replacing concepts with evidence, ideas with results and perceptions with assessments (Ulrich, 1997).

Unfortunately HR managers often have difficulty quantifying the benefits of their programmes to top management. For example, when proposing a new training programme it may not be too difficult to arrive at the costs of the programme but it can be extremely difficult trying to quantify the programme's benefits (Appelbaum and Hood, 1993; Phillips, 1996a).

Many managers will not be satisfied with the results achieved until the benefits derived from an HR programme are compared with the programme's costs.

This approach should be an integral part of any HR department's effort to show its bottom-line contribution and two of the most common measures used are the benefit/cost ratio (BCR) and the ROI formula (Phillips, 1996a).

The BCR is one of the earliest methods used for evaluating training investments and compares the benefits of the programme to the costs in a ratio. In formula form, the ratio is:

$$\text{BCR} = \frac{\text{Programme Benefits}}{\text{Programme Costs}}$$

In simple terms, the BCR compares the economic benefits of the programme to the cost of the programme. For example, a BCR of one means that the benefits equal the costs whereas a BCR of two, which would be written as 2:1, would indicate that for each dollar spent on the programme, two dollars were returned as benefits (Fitz-enz and Phillips, 1998; Phillips, 1997).

There are no standard benchmarks for what constitutes an acceptable BCR and organisations need to establish their own standards. A 1:1 ratio is unacceptable for most programmes and in some organisations where the BCR is used, a 1.25:1 ratio is required before a programme can be considered successful in terms of its contribution to financial results (Phillips, 1997).

As ROI is the most common measure of performance for an investment (Hansen, 1990), perhaps the most appropriate formula for evaluating HR investments is by using the ROI formula to divide net programme benefits by programme costs (Fitz-enz and Phillips, 1998; Phillips, 1997). The resulting ROI ratio is usually expressed as a percentage so that in formula form, the ROI is:

$$\text{ROI}(\%) = \frac{\text{Net Programme Benefits}}{\text{Programme Costs}} \times 100$$

Net programme benefits are programme benefits minus programme costs and the ROI value is related to the BCR by a factor of one. For example, a BCR of 1.25 is the same as an ROI value of 25% (Fitz-enz and Phillips, 1998; Phillips, 1997).

ROI has been used to evaluate business ventures for many years to capture the payoff of an investment. Today, more organisations are developing the same evaluation to measure major HR initiatives (Phillips, 1999), and the interest in ROI has become one of the most challenging issues facing HR practitioners in the 1990s (Phillips, 1997). There has been a world-wide trend towards systematic evaluation, and as a consequence organisations are taking a more systematic and methodical approach to the overall evaluation of programmes and services (Phillips, 1999). Pressure from shareholders, clients and senior managers to show the ROI in human

resources initiatives is driving increased interest in the application of the ROI process (Pepitone, 1997; Phillips, 1997; Soloman, 1997).

The adoption and use of Kirkpatrick's four-level evaluation model world-wide is proof that interest in systematic evaluation is on the increase. The Kirkpatrick model has become the standard framework for evaluating training and development and performance improvement initiatives (Phillips, 1999, 2000; Robinson and Robinson, 1989). The needs of multiple clients, combined with the need for a systematic approach, built-in evaluation and accountability have created this important and significant trend (Phillips, 1999).

Multiple clients must be satisfied with the training and development process and their different requirements drive different types of evaluation. Whereas participant feedback and learning measures are primarily designed to check the satisfaction of participants, on-the-job application, business impact and ROI measures are undertaken to satisfy other clients. These other clients are the stakeholders who support, request and fund training and development initiatives.

A systematic approach is required to ensure that training and development processes are efficient and effective and that the strategy used is appropriate for the programme. Evaluation must be used to determine whether the processes are appropriate and efficient, and whether the outcomes meet organisational objectives and requirements. To meet these varied requirements a multi-level, systematic approach must be used.

Evaluation built into the programme in its design phase has a much better chance of success using a systematic approach. Once a needs assessment has been completed, objectives must be established at different levels and these must guide the design and delivery process. Built-in evaluation ensures that the evaluation process is conducted in a timely and effective manner and also ensures that the personnel involved understand their responsibilities regarding early data collection. When evaluation is not built in during the programme design phase, data collection opportunities may be missed, resulting in estimates having to be substituted in place of real data in the ROI calculations. The overall effect of using estimates when real data could have been used is to lessen the accuracy and credibility of the ROI obtained (Phillips, 1997).

Accountability for processes and functions in an organisation encourages evaluation to be more complete and thorough. The reactive approach to evaluation is no longer appropriate, and the most appropriate way to provide the necessary evaluation information to all stakeholders is by using a systematic and logical approach. Unless everyone involved in the implementation of a programme shares

the responsibility for evaluation, everyone will perceive it as somebody else's responsibility and as a result it will not occur (Phillips, 1999).

1.2 Kirkpatrick's Four Levels of Evaluation

Kirkpatrick's four-level evaluation model (1975, 1998a, 1998b) was developed in 1959. In recent years it has been updated to include the concept of ROI and is now used to measure other HR initiatives in addition to training and development (Fitz-enz & Phillips, 1998; Phillips, 1996b, 1999, 2000). The revised framework is presented at Table 1.

Table 1

Characteristics of Evaluation Levels in Revised Kirkpatrick Framework

Kirkpatrick's Levels of Evaluation	Phillips' Levels of Evaluation	Brief Description	Example - Positive Discipline Programme
1. Reaction	1. Reaction	Measures participants' reaction to the HR programme or initiative	Employee satisfaction with programme
2. Learning	2. Learning	Measures skills, knowledge or attitude changes	Knowledge of policy; skills of supervisor; changes in behaviour
3. Behaviour	3. Implementation	Measure changes in behaviour on the job and specific applications of an HR programme or initiative	Applied skills, application of policy, change in employee habits on the job
4. Results	4. Business Impact	Measures the business impact of the HR programme or initiative	Reduction in turnover, absenteeism and grievances
	5. ROI	Compares the monetary value of the results with the costs for the HR programme or initiative and is usually expressed as a percentage	ROI from programme expressed as a percentage

Level One of Kirkpatrick's four-level evaluation model measures reaction. Kirkpatrick (1998a) defined reaction as a measure of how participants felt about the various aspects of a training programme; he described it as a measure of customer satisfaction but emphasised that reaction did not measure whether or not learning had taken place. Phillips (1999) stated that measuring reaction from HR programme participants was absolutely essential because today's focus on customer service made it important to measure satisfaction from different parts of the programme. Almost all organisations do some evaluation at Level One (Fitz-enz and Phillips, 1998).

Level Two evaluation measurements focus on what participants learn as part of an HR programme. The measures can be taken from tests, skill practices, role plays, simulations, group evaluations, and other assessment tools (Fitz-enz and Phillips, 1998). Kirkpatrick (1998a) defined learning as the extent to which programme participants change attitudes, improve knowledge, and / or increase skill(s) as a result of the programme.

Kirkpatrick (1998a, 1998b) stated that behaviour was measured at Level Three evaluation. He defined behaviour as the extent to which participants changed their on-the-job behaviour because of training. He warned against bypassing evaluation at Level One and Level Two because if no change occurred on the job the programme might be considered ineffective. Reaction may have been favourable and learning objectives may have been accomplished, but without evaluation at the lower levels this would never be known. Kirkpatrick (1998a) stated that behavioural change would not take place unless four conditions were met: (a) the person must have a desire to change, (b) the person must know what to do and how to do it, (c) the person must work in the right climate, and (d) the person must be rewarded for changing. Quite often one or both of the last two conditions are missing in the workplace and that prevents the effective transfer of training to the on-the-job application (Kirkpatrick, 1998a). Level Three evaluation is referred to as implementation or job application in the Phillips model (Fitz-enz and Phillips, 1998; Phillips, 1997, 1999, 2000), although their definition of on-the-job behavioural change is virtually the same as Kirkpatrick's.

Level Four evaluation measures the results (Kirkpatrick 1975, 1998a, 1998b) or the business impact (Fitz-enz and Phillips, 1998; Phillips, 1997, 1999, 2000) that has occurred because of the programme. Results that impact on the business can include increased production, improved quality, decreased costs, reduced frequency and / or severity of accidents, reduced absenteeism, reduced turnover, customer satisfaction and higher profits. It is important to realise that results like these are the reason for implementing some programmes, and that the final objective of the programme needs to be stated in these terms (Kirkpatrick, 1998a). Organisations often find it difficult to determine programme benefits, but the business impact of any programme must be measured before its ROI can be calculated (Phillips, 1996a).

1.3 Towards the Fifth Level of Evaluation - ROI

At Level Five, ROI measures the programme's monetary benefits to the programme costs. Although ROI can be expressed in several ways, it is usually presented either as the ROI percentage or as a BCR. No comprehensive evaluation is complete until a Level Five evaluation is conducted.

It is important to realise that for some HR programmes a reaction evaluation may be sufficient, and Level One feedback is often collected from 100% of participants in all programmes (Phillips, 1999). But with increased emphasis on building learning organisations, the issue of measuring the results of training and

development is particularly important. However, many organisations find it difficult to capture the extent of learning, particularly because formal, objective testing is not considered acceptable or desirable in many situations. Although objective testing is important, informal, subjective methods include self-assessments, team assessments, facilitator assessments, performance testing, simulations, case studies, skill practices, role-plays and exercises. Specific criteria should be developed to select programmes in which learning will be measured. Measuring learning is necessary when participants must gain prescribed knowledge and skills essential for job success, and in situations where competency building, major change, and transformation are taking place, high levels of learning assessment may be required. Measuring learning becomes especially critical when safety and compliance issues are linked to the learning of tasks and skills (Clarke, 1998). Fifty percent to 90% of programmes are usually targeted for learning, or Level Two evaluation (Phillips, 1999).

Although an important part of evaluation, the measuring of learning at Level Two evaluation provides no assurance that participants will apply their newly learned skills and knowledge on the job. As some studies show that 60% to 90% of learning is not transferred to the job (Phillips, 1999), the next level of evaluation is needed to determine the application of knowledge, skill and attitude changes in the workplace.

Level Three evaluates whether not a programme has brought about any change in workplace behaviours. Although this is one of the most critical issues for any programme implementation, Level Three follow-up evaluations often do not occur because they take time, add to programme costs, and are often disruptive. The challenge is to select a method that fits the organisation's culture, budget, and time constraints. Despite Level Three evaluation's cost and inconvenience, the increasing emphasis on building competencies has generated more interest in measuring improvements in competencies on the job. World-wide, most organisations now conduct Level Three evaluations on 30% of their programmes (Phillips, 1999).

For many programmes, a check of on-the-job application may be sufficient for the evaluation process; however, when a connection with actual business performance is desired, the programme's impact on the business must be evaluated. One difficulty often experienced when trying to make the connection between programme and business results stems from the origin of most HR initiatives, because often needs assessment processes do not link programme objectives to actual business results. Another difficulty often experienced with Level Four evaluation is the inability to isolate programme effects from other influences;

therefore, an evaluation at this level must always include at least one or more strategies to isolate the effects of the HR programme. Because of the increased effort, cost and complexity involved in measuring business impact, it is recommended that most organisations set a target to evaluate 10% of their HR programme offerings at Level Four (Phillips, 1999).

Because the development of ROI requires the two additional steps of converting Level Four business impact measures to monetary benefits and capturing the actual programme cost, it is recommended that Level Five ROI be used to measure only a very small number of programmes. A common target for organisations is 5% of all programmes offered annually. With such a low number of programmes being chosen for ROI, the criteria needed to select the programmes becomes extremely important and should be developed only with input from senior managers. Programmes should only be selected for Level 5 ROI when they represent major investments, involve large audiences, or have high visibility. Often, the criteria used to select programmes for Level Three and Level Four evaluation also apply to Level Five ROI, and is usually reserved for programmes closely linked to the organisation's operational and strategic objectives (Phillips, 1999).

In reality, few organisations actually conduct evaluations at the ROI level (Fitz-enz and Phillips, 1998). This may be because ROI evaluation is seen as a difficult and expensive process. One method of easing the process is to build ROI evaluation into the programme at all design and development stages, right from the beginning needs assessment to the follow-up data collection. Although business results and ROI are desired, it is very important to evaluate the other levels. In some HR programmes, a chain of impact might occur when skills and knowledge learned (Level Two) are applied on the job as the HR programme is implemented (Level Three) to produce business results (Level Four). Failure to take measurements at each level will make it difficult to determine whether the results achieved were caused by the HR programme or by some other influence. Because of this possibility, it is recommended that evaluation be conducted at all levels when an ROI evaluation is planned (Fitz-enz and Phillips, 1998).

Typical cost categories for an ROI include needs assessment, design and development costs, acquisition costs, delivery and implementation costs, operations / maintenance costs, evaluation costs and the HR overhead (Fitz-enz & Phillips, 1998). The resulting benefits will be the business results attributable to the programme converted to monetary benefits. Organisations today are employing a variety of initiatives aimed at improving performance. All programmes are entered into for the purpose of adding value, as can be shown in the linked components of

the value chain: process -> outcome -> impact -> value added. The objective is to develop ways to measure and evaluate changes in process, outcomes and their resulting value, and the focus should always be on value-added (Fitz-enz, 1994, 1995). Unless important initiatives are analysed using ROI, their effectiveness will never be known (Fitz-enz, 2000b). The issue of being able to analyse the value added through HR initiatives is an important area for future research (Toulson, 1999).

2. AIM AND METHODOLOGY

2.1 Purpose of Research

The aim of this research was to determine the ROI of a retention bonus scheme implemented in the Royal New Zealand Navy (RNZN) to retain personnel in the marine engineering (ME) branch. Although the targeted three-year period of the scheme was 01 July 1996 – 30 June 1999, no formal evaluation of its effectiveness had been undertaken.

2.2. Background of the Marine Engineering Retention Bonus Scheme

High attrition rates amongst marine engineers meant that by late 1995 the ME branch of the RNZN was thinly stretched to meet operational requirements safely and this was creating additional pressure on remaining ME personnel. It was predicted that should this trend continue, it would soon result in the RNZN being unable to deliver its expected outputs to the New Zealand Government. As a result an ME retention action committee (MERAC) was formed in early 1996, which came to the conclusion that ME personnel were dissatisfied and leaving because they believed they were not compensated adequately for the work they did and the time they put into doing the work (Naval Staff, 1996a).

On 29 March 1996 a paper on the retention of ME personnel was published with 32 measures to address the problem of high attrition (Naval Staff, 1996a). These measures included some remuneration measures, and the more contentious recommendation of a retention bonus. Many of the 32 measures were related and were able to be condensed into the six initiatives explored in the questionnaires shown at Appendix A and Appendix B, and detailed at Appendix C. It was feared that introducing the initiatives without a retention bonus would fail to provide the short-term incentives needed to keep ME personnel in the RNZN while measures to address the problem were being implemented. The paper proposed that a retention bonus directed at key personnel be phased over three years to give the RNZN time to: (a) manage the hump of initial training for the new ANZAC class ship while running the current fleet, (b) introduce the ANZACs into service and realise the expected positive morale and retention benefits, (c) review and amend the ME branch structure, and (d) establish an amended regime of pay and allowances and allow time for this to have a cumulative financial impact on the individual.

The stated aim or objective of the ME retention bonus scheme (MERBS) was to reduce attrition "in the short term while longer term practices were developed to enhance morale and commitment" (Naval Staff, 1996b, p.6). The target retention

period for the MERBS participants was three years, although it was scheduled to run for six years with phased start times for some personnel¹. Although no specific attrition target was mentioned in the MERBS proposal, another section of the document describes a possible attrition rate of 15% over six years as "optimistic" (Naval Staff, 1996b, p.5). Although turnover for the entire ME branch did not drop as low as 15% during the three year target retention period, it did drop to 16.7% overall; and the turnover rate for targeted participants of the MERBS was much lower – it averaged 8% over the three-year period.

The targeted participants of the MERBS at the time were the Marine Engineering Artificers, Marine Fitters and apprentices, now designated Marine Technicians (MT), the Marine Mechanics (MM) and the Electricians, now designated Marine Electricians (MEL). The targeted personnel were Leading Rank level and above, although Able Ranks with 5.5 years service were eligible to join.

Under the MERBS, WOs were not eligible to receive retention bonus payments, but instead received extra pay steps, which boosted their pay for each year of the three-year period. With the exception of the CPOMMs and CPOMELs, who only received one initial payment, all other participants received an advance payment at commencement on 30 June 1996, an interim payment on 30 June 1998, and a final payment, the largest of the three, on 30 June 1999. The payments, allocated by rank and branch, are shown at Table 2. 185 ME personnel signed up for the payments.

Table 2
MERBS Payment Table

	1stpayment	2ndpayment	3rdpayment
	30-Jun-96	30-Jun-98	30-Jun-00
WOMT	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00
CPOMT	\$ 12,500.00	\$ 5,000.00	\$ 22,500.00
POMT	\$ 10,000.00	\$ 5,000.00	\$ 22,500.00
LMT	\$ 7,500.00	\$ 5,000.00	\$ 22,500.00
AMT	\$ 7,500.00	\$ 5,000.00	\$ 22,500.00
WOMEL	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
CPOMEL	\$ 8,000.00	N/A	N/A
POMEL	\$ 6,500.00	\$ 5,000.00	\$ 15,000.00
LMEL	\$ 5,000.00	\$ 5,000.00	\$ 12,800.00
AMEL	\$ 4,000.00	\$ 5,000.00	\$ 12,800.00
CPOMM	\$ 8,000.00	N/A	N/A
POMM	\$ 6,500.00	\$ 5,000.00	\$ 15,000.00
LMM	\$ 5,000.00	\$ 5,000.00	\$ 12,800.00
AMM	\$ 4,000.00	\$ 5,000.00	\$ 12,800.00

¹ This research report does not include individuals who joined the scheme from 1998 onwards and only tracks the original 185 participants.

2.3 Data Collection and Assumptions

An important ingredient to the success of the ROI process is to properly plan for the ROI study in its initial stages. Phillips (1997) stated that two planning documents were the key to the up-front analysis and should be completed before the programme is designed or developed. Although the planning documents were completed prior to commencing the ROI study, the ROI study itself was not started until late 1999. The Data Collection Plan and ROI Analysis Plan are shown at Table 3 and Table 4. The data collection plan provides clear direction of what type of data will be collected, how it will be collected, when it will be collected, and who will collect it. The ROI analysis plan is a continuation of the data collection plan and captures information on several key items that are necessary before the actual ROI calculation can be developed.

Table 3
Data Collection Plan

Evaluation Plan: Data Collection				
Level	Broad Programme Objectives	Data Collection Method	Timing of Data Collection	Responsibilities for Data Collection
I. Reaction, Satisfaction and Planned Actions	<ul style="list-style-type: none"> Satisfaction with retention bonus. 	<ul style="list-style-type: none"> Questionnaire to participants & other stakeholders. Exit questionnaires. 	<ul style="list-style-type: none"> After last bonus payments. 	<ul style="list-style-type: none"> SOSPP/Psychologists
II. Learning	<ul style="list-style-type: none"> Intention to remain in RNZN. Intention to run similar schemes in future. 	<ul style="list-style-type: none"> Climate survey. Questionnaire to stakeholders. 	<ul style="list-style-type: none"> Mid 1998 & 1999. 	<ul style="list-style-type: none"> Psychologists
III. Job Application	<ul style="list-style-type: none"> Turnover rates reduced. 	<ul style="list-style-type: none"> Personnel statistics. Exit surveys. 	<ul style="list-style-type: none"> Throughout programme (1996 – 1999). 	<ul style="list-style-type: none"> Strategic Personnel Planning Cell
IV. Business Impact	<ul style="list-style-type: none"> Ships kept operational. Reduced HR replacement costs. 	<ul style="list-style-type: none"> No of days spent at sea. Collect recruiting and training data. 	<ul style="list-style-type: none"> Ships' operations data throughout programme (1996 – 1999). During / after for replacement cost data. 	<ul style="list-style-type: none"> Fleet Operations SOSPP / SOREC / Heads of Schools / HODS

Table 4
ROI Analysis Plan

Evaluation Plan: ROI Analysis (Level V)						
Data Items (Usually Level 4)	Methods for Isolating the Effects of the Programme	Methods of Converting Data to Monetary Values	Programme Cost Categories	Intangible Benefits from Programmes	Other Influences / Issues During Programme Application	Communication Targets for Final Report
<ul style="list-style-type: none"> ME separation rates ME personnel replacement costs. No of days spent at sea versus predicted. 	<ul style="list-style-type: none"> Survey of end-user estimate of impact. Turnover rates during period. Trend analysis. NZDF Annual Reports / Operational data. 	<ul style="list-style-type: none"> Cost of turnover. Programme costs Cost per day of ships' operations against ships' budgets. 	<ul style="list-style-type: none"> Retention payments Recruiting Training Uniform Sea days Salaries during training Programme development Programme evaluation 	<ul style="list-style-type: none"> Satisfaction with pay. Job satisfaction. Higher morale within ME branch. Achieving service level agreements with govt. 	<ul style="list-style-type: none"> Perceived inequity by non-ME personnel. No other personnel initiatives or initiatives to reduce turnover evident at programme implementation 	<ul style="list-style-type: none"> CNS MC FMEO TBPO DME CFPT

Two questionnaires were developed and administered in July 2000 to collect Level One and Level Two data. One was sent to all MERBS participants still serving in the RNZN, and one was sent to those ME officers (managers) serving who had held the rank of Sub Lieutenant or higher when the MERBS was introduced. Since the MERBS included initiatives other than the retention payments, the questionnaires included questions to isolate the effects of the retention payments from other retention initiatives introduced at the same time, and to gauge participants' reaction and attitudinal change with respect to the initiatives. Questionnaires were sent to 155 participants and 30 managers. Copies of the questionnaires are at Appendix A and Appendix B. The response rates for the questionnaires are at Table 5.

Table 5

Response Rate for Questionnaires		
Payments recipients	130/155	84%
Managers	29/30	97%
Total respondents	159/185	86%

Data for the training component of replacement costs were collected from schools at the RNZN training establishment to determine training course information, including course lengths, maximum numbers of trainees per course, and the costs associated with each course. School heads, budget advisors and the RNZN Finance Department were approached to obtain school budget data. Because training schemes had altered since the mid-1990s, training programme schedules from 1994 onwards were used to collect historical training course data. School budget data were taken from the financial year ending 30 June 1999. (Finance departmental staff members were able to confirm that school budgets have not varied greatly in the last few years.)

It was difficult to work out training costs for individual courses held at the Marine Engineering and Academic schools, and for the Trade Workshop, as that data, going back five years for some specialist courses, was not readily available. To solve this problem, the overall budget from each school was divided by the total number of training weeks for all courses run in one financial year and then multiplied by the length of each relevant ME training course length in weeks. As a conservative approach was taken throughout this study, all workings were calculated assuming the maximum trainee numbers per course, which minimised unit cost savings per trainee.

Most common training course data were readily available. There were two exceptions, the CPO DC course and the WO Command and Management Course². A rough estimate for the one-week CPO damage control (DC) course was obtained by simply halving the cost of the two-week PO DC course, and although the WO command and management training includes Command and Management School costs and trainee salaries while under training for the entire length of the course, it does not include any Officer Training School costs for its Divisional Officer component. A common trainee salary component used for the training courses common to all three trades and was devised by averaging the average salary for each of the three trades at each rank level. Trainee salaries for separate trade training courses were averaged for each specific trade by rank.

Administrative set-up and separation costs are estimates based on conversations and correspondence via emails with relevant personnel. Monthly data captures from the New Zealand Defence Force (NZDF) HR information database (ATLAS) were used to track recipients and non-recipients of the retention payments during the MERBS three-year period, and was the main source to obtain exit reasons from ME personnel who left the RNZN during that period. ATLAS also supplied the source data used by the RNZN strategic personnel planning (workforce planning) cell to produce turnover statistics and trend analysis graphs, as well as the salary information for ME personnel as at 30 June 1996 when the MERBS commenced.

NZDF annual reports were used to obtain forecasting and performance data pertaining to ships' operations and days spent at sea. Calculating ship's performance data in the year following MERBS implementation was difficult due to changes in the reporting of performance measures that occurred in NZDF annual reports after June 1997.

ME career managers assisted with personnel information and ME departmental heads supplied MERBS documentation. Files containing letters and payment data for individuals were also used to crosscheck participant data.

² This was an omission by the researcher during data collection.

3. RESULTS

3.1 Reaction and Learning Data

The questionnaire results are shown at Table 6. The respondents' reaction to the MERBS was positive overall. Participants and their managers felt that the retention initiatives (including the retention payments) had a positive influence on morale and retention, but managers thought the retention initiatives had a bigger influence on both morale and retention than did the participants. Participants that agreed the initiatives were effective on improving morale and retention chose the retention payments as the initiative that influenced them most in both morale and retention. Managers that agreed the initiatives were effective on improving morale and retention chose the retention payments as the initiative that most influenced participants to stay, but ranked retention payments second to better career management as the initiative that most influenced participants' morale. From these results, it would appear that the MERBS did influence a change in attitude of participants regarding their retention and that it was the most influential of the retention initiatives. The ranked order of ME retention initiatives by participants and managers is at Appendix C.

Table 6
Questionnaire Results

	Participants	Managers
1a. Did ME retention initiatives have a positive effect on participants' morale?	85%	97%
1b. Of those who replied "yes" to last question, percentage that chose retention payments as most influential retention initiative on participants' morale.	55%	32%
2a. Did ME retention initiatives influence participants to stay?	53%	90%
2b. Of those who replied "yes" to last question, percentage that chose retention payments as most influential retention initiative on participants' retention.	67%	77%
3. The implementation of the MERBS was successful.	67%	83%
4. Participants understood the MERBS when it was introduced.	79%	90%
5. How much of participants' decision to stay influenced by the retention payments?	41% ³	N/A
6. How confident were participants of the accuracy of their answer regarding their retention being influenced by retention payments (41%)?	93%	N/A
7. Retention payments schemes are an effective way of retaining people.	68%	45%
8. The ME retention payments were good value for money.	62%	79%
9. Overall, the ME retention payments were successful.	68%	86%

³ See Section 3.7 to read about participant estimations of MERBS impact.

Equity issues were raised in optional comments by some of the participants. Two percent commented that MERBS had soured relations between the ME branch and other branches in the RNZN, and 17% commented that the MERBS had created bad feelings between the three trades within the ME branch. The comments stated that other branches in the RNZN felt disadvantaged because they did not receive bonuses as well, and there was some disharmony within branch because the payments were not the same for personnel across the three trades.

3.2 On-the-Job Application

Turnover before and after the MERBS implementation was studied to determine the effect of the MERBS on turnover. Turnover among recipients was lower than that of non recipients and, during the second and third years of the targeted period, below that of the rest of the RNZN. Comparison turnover figures are shown in Table 7 and examination of the exit reasons from the MERBS period shows differences in stated reasons for leaving between the participants and non participants, which seems further evidence that the MERBS had a positive effect on its recipients. The exit reason differences are shown at Appendix D.

Table 7
Turnover Comparisons

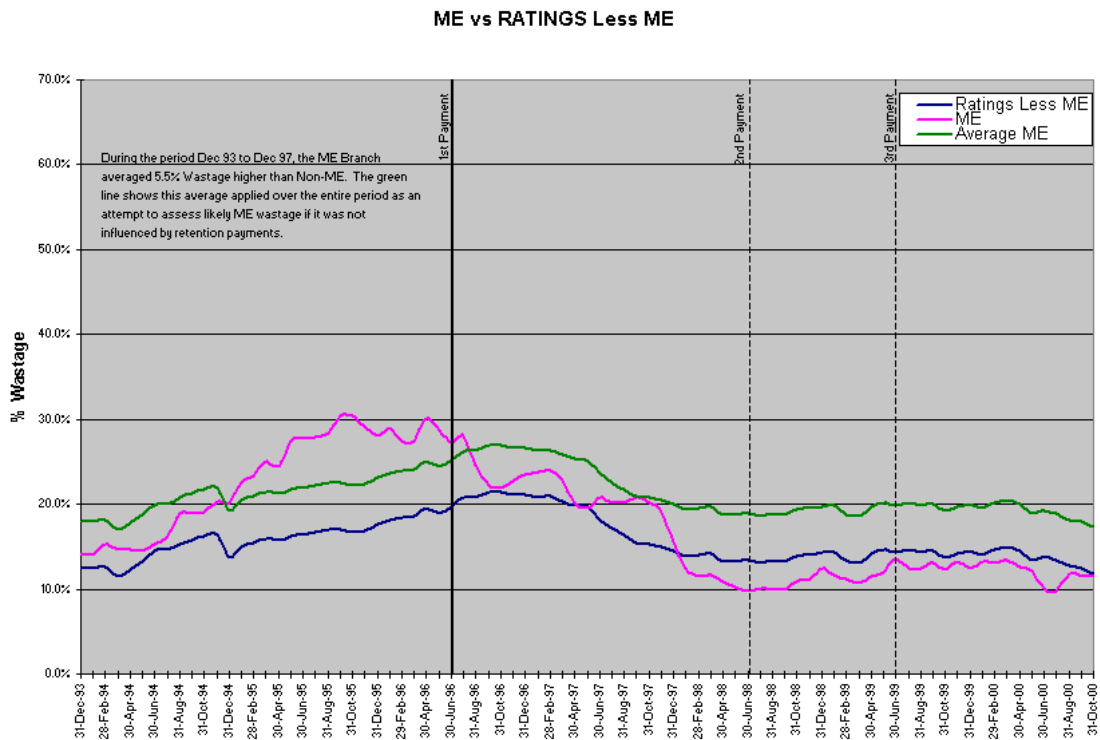
	Jun 96	Jun 97	Jun 98	Jun99	Jun 00
Turnover for ME non recipients	N/A	43.5%	14.9%	17.3%	N/A
Turnover for all personnel except ME	19.5%	17.9%	12.9%	14.3%	15%
Turnover for all ME personnel	27.5%	20.9%	9.9%	13.5%	10%
Turnover for payment recipients	N/A	0.0%	2.2%	6.5%	N/A

During the MERBS period, turnover for ME personnel spread over the three years was 20.9%, 9.9% and 13.5%, which can be represented in actual personnel numbers by 74, 33 and 48. Without the retention payments, historically ME turnover averaged 5.5% higher than non-ME turnover⁴ so the expected turnover can be expressed as (17.9% + 5.5% = 23.4%), (12.9% + 5.5% = 18.4%) and (14.3% + 5.5% = 19.8%), which can be represented in personnel numbers by 83, 69 and 76.

⁴ 5.5% average ME forecast turnover rate was based on four year period from 31 Dec 93 until 31 Dec 97 when ME turnover dropped below that of non-ME personnel.

Therefore, the difference or improvement related to retention payments in actual personnel numbers for the three year period can be represented as $(83-74)+(69-33)+(76-48) = 73$ ME personnel. Graphical representation of turnover⁵ rates for the period before, during and after the MERBS is shown at Figure 1.

Figure 1



3.3 Business Impact

The business impact of the MERBS can be shown in terms of tangible results as the savings in turnover costs of personnel. The monetary value of these benefits is explained more fully in the section on monetary benefits⁶. Turnover cost breakdowns are shown at Appendix E. Table 20 and Table 21 show total replacement and separation cost savings, Table 22, Table 23 and Table 24 show replacement cost savings per rank and trade, and Tables 25 through 31 show cost components for each rank level.

⁵ Turnover is referred to as “wastage” in Figure 1.

⁶ See Section 3.4 of this chapter.

The business impact of the MERBS can also be shown through the continued operational deployment of ships. Prior to the MERBS, it was reported that the outflow of ME personnel was proceeding at a higher rate that replacement training could occur (Naval Staff, 1996b), and that all key ME personnel were at sea with overall branch numbers so short that there was little opportunity for shore postings. This was increasing work and family pressure on a dwindling personnel resource. To proceed in this manner would have resulted in the inability of the ME branch to support any operations in the medium term (Naval Staff, 1996a; Naval Staff, 1996b).

Although ships' budgets are known and operations forecasted, the ability to keep ships operational is considered an intangible because of the wide range of operations, the uncertainty surrounding exactly which operations would have ceased and in what order. In addition, the difficulty involved in working out such complex calculations so long after the period concerned was too daunting and inaccuracies would almost certainly have been the result. Because the planning for this ROI evaluation was not built in during MERBS initial planning stages, timely data collection could not occur.

In accordance with the New Zealand Defence Force's (NZDF) Service Level Agreement with the Government of New Zealand, the RNZN contributes to a range of services on behalf of the Minister of Defence to other government departments and the community. Each of the frigates is to be held at the level of capability and response-time to deploy for the associated operational tasks as agreed between the Minister and the Chief of Defence Force. For example, for the financial year ending 30 June 1999, performance targets for HMNZS CANTERBURY (CY) included spending 112 days at sea participating in surveillance operations and providing emergency services (NZDF, 1999) and the personnel and operating budget for CY was in the range of \$16.5M in FY 98/99. As the personnel, maintenance, preparation and running costs of a frigate are high, it could be argued that large amounts of committed funds would be wasted should CY be unable to fulfil her operational requirements due to ME personnel shortages. However, the costs associated with being unable to put to sea in an emergency are potentially even greater but almost impossible to quantify; for example, what value does one place on a human life? Had the RNZN not been able to dramatically reduce attrition in ME personnel during the MERBS period, the cost to the NZDF, both fiscally and in terms of operations, would have been high and would have continued for at least another decade (Naval Staff, 1996b).

The RNZN must maintain operational readiness. To do this it invests a lot in its people, who are expensive to recruit, train and retain. The training and

experience of RNZN personnel make them highly marketable in the private and wider public sector because their skills and attributes are attractive to external employers. As the converse is seldom the case, there is little scope for lateral recruitment into the RNZN from the private or public sector. Reducing turnover results in major savings when replacement costs include training (Sorensen, 1995b).

3.4 Monetary Benefits of the MERBS

Turnover generally results in expenses for recruitment, selection, training, and development (Mowday, Porter and Steers, 1982). The monetary benefits of the MERBS were based on savings in turnover costs. According to Cascio (1991), the three main components to turnover costs are separation costs, replacement costs and training costs, whereas Fitz-enz (1995) splits turnover costs into two main categories, hiring and replacement costs.

For the purposes of this study turnover costs were split into two categories, replacement and separation costs. Separation costs included separation pay, exit interviews and administrative functions per leaver, and replacement costs included recruiting, training and uniform costs. Two methods were used to calculate the monetary benefits. One method was based on forecasting methods using projections based on historical turnover rates and other was based on the participant impact estimation.

Using the forecasting method, the monetary value saved in not having to replace the remaining 170 MERBS participants⁷ at the end of the three year period on 30 June 1999 was \$17,872,586⁸. Dividing this amount by the number of participants gives a unit cost of \$105,133, that when multiplied by the 73 ME personnel retained by the MERBS, shows a saving in replacement costs of \$7,674,709. The separation costs worked out to a unit cost of \$4,260, and when multiplied by 73, showed a saving in separation costs of \$310,980. Therefore, total replacement and separation savings resulting from the MERBS using the forecasting method were $(\$7,674,709 + \$310,980) = \$7,985,689$.

Another method to isolate the impact of an HR programme is to secure information directly from programme participants (Phillips, 1996, 1997, 2000) and this method was used as an alternative to calculate the MERBS monetary benefits. Using the participant impact estimation⁹, the total replacement and separation

⁷ 185 out of 206 eligible ME personnel joined MERBS and 170 were left at the end of the three year period – see Table 14 at Appendix D.

⁸ See Appendix E.

⁹ See questions 5 & 6 in Table 6 and Section 3.7.

savings resulting from the MERBS were \$7,066,779. The calculations using the participant impact estimation are shown at Table 8.

Table 8

Monetary Benefits from Turnover Reduction using Participant Impact Estimation	
Number of retention payment recipients at end of 3 year period =	170
Estimated separation cost per leaver =	\$4,260
Average replacement cost per leaver =	\$105,133
Recipients' impact estimation of retention payments =	$.41 \times .93 = .38^{10}$
Monetary Benefits =	$(\$4,260 + \$105,133) \times 170 \times .38 = \$7,066,779$

3.5 Monetary Costs of the MERBS

The monetary costs of the MERBS are shown at Table 9. A detailed breakdown of these costs is at Appendix F.

Table 9

ME Retention Payment Scheme Costs	
Estimated administrative and set-up costs	\$54,756
Cost of first and second retention payments (181 participants)	2,192,500
Cost of third retention payments (170 participants)	2,673,300
Estimated ROI evaluation costs	5,949
	\$4,926,506

3.6 BCR and ROI Calculations

Two sets of BCR and ROI estimates were calculated. The estimates varied according to the monetary benefits method used in the calculations. One estimate was calculated using forecasting methods with projections based on historical turnover rates and the other estimate was calculated using participant impact estimation. The results from the BCR and ROI calculations are shown at Table 10 and Table 11.

¹⁰ See questions 5 & 6 in Table 6 and Section 3.7.

Table 10

BCR and ROI Calculations Using Forecasting Based on Historical Turnover

$$\text{BCR} = \frac{\text{Benefits}}{\text{Costs}} = \frac{\$7,985,689}{\$4,926,506} = 1.62 : 1$$

$$\text{ROI} = \frac{\text{Net Benefits}}{\text{Costs}} = \frac{\$7,985,689 - \$4,926,506}{\$4,926,506} \times 100 = 62\%$$

Table 11

BCR and ROI Calculations Using Participant Impact Estimation

$$\text{BCR} = \frac{\text{Benefits}}{\text{Costs}} = \frac{\$7,066,779}{\$4,926,506} = 1.43 : 1$$

$$\text{ROI} = \frac{\text{Net Benefits}}{\text{Costs}} = \frac{\$7,066,779 - \$4,926,506}{\$4,926,506} \times 100 = 43\%$$

3.7 Isolating the Effects of the MERBS from Other Factors

The ROI analysis included several strategies for isolating the effects of the MERBS from the influence of other factors because it is important to be able to say how much of the reduction in turnover was actually attributable to the MERBS. Failure to include strategies to isolate the MERBS effects from other factors would have seriously diminished the study's credibility (Phillips, 1997).

Because other retention initiatives were introduced with the MERBS, recipients and their managers were asked to rank the initiatives in order of their influence on retention¹¹. Both recipients and their managers chose the retention payments as the most influential retention initiative.

Turnover was studied before, during and after the study¹². Exit reasons given by those who left despite the MERBS were scrutinised¹³. Turnover amongst MERBS participants was much lower than amongst non participants, and of the initial MERBS participants only two of the four who left before June 1998 and three of the 11 who

¹¹ See Appendix C.

¹² See Table 7 and Appendix D.

¹³ See Appendix D.

left before June 1999 were targeted with lump sum retention payments to take them beyond those dates.

Another method of isolating the impact of the MERBS was by obtaining an impact estimate from the MERBS participants themselves. Impact estimates usually have credibility with management groups because programme participants are at the centre of any improvement resulting from the HR programme (Phillips, 1996a). Questions 5 and 6¹⁴ of the participants' questionnaire were included for this purpose as it was assumed that the MERBS participants would be capable of estimating how much their decision to stay was related to the retention payments.

The percentage obtained in Question 5 representing how much the retention payments influenced the participants' decision to stay averaged 41%, and when multiplied by the 93% confidence level obtained in Question 6, an impact estimate of .38 was obtained. This impact estimate appears reasonable as only 53% of the participants believed the retention initiatives influenced them to stay. Apart from some negative comments regarding equity issues mentioned in Section 3.1, most participant comments regarding the retention payments were positive. Obviously the MERBS should not be credited for retaining the 170 participants remaining at the end of the targeted period, and multiplying the monetary benefits of retaining 170 personnel by the impact estimate of .38¹⁵ is one method that attempts to isolate the effects of the MERBS from other factors.

The forecasting methodology described in Section 3.2 was another way of isolating the MERBS effects and credited the MERBS with retaining 73 personnel. Without such an isolating strategy, the MERBS might have been credited with saving more personnel than is plausible. For example, if solely based on the difference between the 27.5% turnover rate in the year prior to MERBS implementation and the lower turnover rates that occurred over the subsequent three years, the calculations would have indicated a much higher saving of $(96-74)+(96-33)+(96-48)=133$ ME personnel. However, it is unlikely that the turnover rate without the MERBS would have remained at the 27.5% rate for the entire three-year period, particularly when non-ME turnover rates varied that period; furthermore, this calculation makes the unlikely assumption that all participants stayed because of the retention payments.

¹⁴ See Table 6 and Appendix A.

¹⁵ See Table 8.

It is not unusual to generate what appears to be a very high ROI for an HR programme and care should always be taken that such programmes are not credited with improbable results (Phillips, 1996a). According to Phillips (2000), the result of an impact study should be perceived as an understatement by senior management. Taking a conservative approach is always the best way to gain and retain credibility.

3.8 Conclusions and Recommendations

Participant and management reaction to the MERBS was positive overall. Intangible benefits due to the MERBS included higher morale and the continued operational deployment of ships. More than half (55%) of the 85% of participants who stated the ME retention initiatives had a positive effect on their morale, ranked the retention payments as the strongest influence on morale. Two thirds (67%) of the 53% of participants who stated the ME retention initiatives influenced them to stay ranked the retention payments as the strongest influence on their retention. However, 17% of the participants commented that the MERBS had created bad feeling between the three ME trades in receipt of retention payments because the payments differed between the trades and were considered by some to be inequitable.

The stated aim of the MERBS to reduce attrition in the short term was achieved. Turnover in the ME branch was reduced. Historically ME turnover averaged 5.5% higher than non-ME turnover; by the end of the MERBS targeted three year period ME turnover was lower than non-ME turnover and remained lower as at 30 June 2000, one year after the MERBS targeted period. Using a forecasting method that compared the difference between forecasted turnover based on average historical turnover and actual turnover of ME personnel after MERBS implementation, the retention of 73 ME personnel can be attributed to the MERBS and the resulting ROI was 62%.

Surveyed MERBS recipients stated that they were 93% confident that 41% of their decision to remain in the RNZN was due to the MERBS and these percentages were multiplied together to obtain a .38 impact estimate. Multiplying the monetary benefits of the 170 participants remaining in the RNZN at the end of the MERBS targeted period by the impact estimate of .38 resulted in an ROI of 43% attributable to the MERBS.

Had an evaluation study been built into the design of the MERBS, more could have been done to work out the ROI concerning the cost savings of not tying up a frigate but this was considered too difficult a task nearly four years after MERBS

implementation. As it was, it was difficult to obtain some of the data required for this study so long after implementation, and as a result more estimates had to be used than should have been necessary.

Although the 62% ROI was obtained by more quantitative means than the 43% ROI based on participant impact estimation, there is no guarantee that the forecast would have yielded the expected results. Therefore, despite having confidence in the higher ROI percentage, it is recommended that the more conservative 43% ROI be used as the measure of effectiveness for the MERBS. This is in keeping with the conservative approach that was taken throughout this study in the interests of maintaining credibility.

It is further recommended that ROI evaluation and data collection methods always be considered during programme design and development for major HR initiatives whenever possible to enhance data accuracy and results credibility.

3.9 Research Limitations and Contribution

This study was hampered throughout because data collection was not done until after the targeted programme period. Because programme evaluation had not been built into the MERBS during its design phases, data collection opportunities were lost because it was almost impossible to obtain some of the data so long after implementation, and as a result more estimates had to be used than should have been necessary. The assumptions made during data collection are detailed in Section 2.3.

Despite the limitations stated above, it is hoped that this study has shown that it is possible to isolate the effects and quantify the benefits of an HR programme in terms of bottom-line results by calculating a credible ROI. It is also hoped that others will see the benefit of building systematic evaluation early in the design of major HR initiatives to aid with the timely collection of real data to further enhance accuracy and credibility of the ROI obtained.

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ME Branch Retention Initiatives Study (Participants Questionnaire)

Version 10

INFORMATION SHEET

Sponsor: Captain J.O. Ladd, RNZN
Researcher: Lieutenant Commander B.A. Oldham, RNZN

In 1996 Marine Engineering (ME) Branch retention initiatives were introduced in an attempt to reduce the high turnover rate in the ME Branch. However, the success of these initiatives has never been measured.

It is known that many factors can influence turnover rates and trends. The aim of this study is to determine the effect of the ME retention initiatives on the ME Branch and to measure its return on investment for the RNZN.

The information collected using these questionnaires will be included in a research study being undertaken by LT CDR Oldham through Massey University, as part of her requirements for the fulfilment of her Master of Business Studies degree. A report of the study's findings will be submitted to Massey University and made available to CAPT Ladd (CFPT) for distribution amongst senior naval marine engineering and personnel managers so that the effectiveness of the ME retention initiatives may be evaluated.

LT CDR Oldham's research supervisor at Massey University is Dr Paul Toulson. Should you have any concerns regarding this research or the way in which it is conducted, Dr Toulson can be reached on (06) 350 5799 ext. 2389.

This questionnaire has been sent only to serving members of the ME Branch who participated in the retention payments scheme.

Submissions are welcome and should be forwarded to LT CDR Oldham, Staff Officer Strategic Personnel Planning, by 30 September 2000. Inquiries can be directed to LT CDR Oldham on Extn 7380 (tandem 397 7380).

The information you provide will remain confidential, and your completed questionnaires will not be viewed in isolation. The data from your questionnaires will be stored in a database and individual questionnaires will be destroyed once the data from them has been entered into the database. Only LT CDR Oldham will have access to the raw data.

It is assumed that filling in the questionnaire implies your consent to use this information as part of the data collection for the study. The completed report and feedback on the results from this study will be made available to all ME personnel.

Please do not discuss your answers with anyone until after everyone has had a chance to complete the questionnaire. Your answers are very important for the study's success. Please help make your opinions count.

QUESTIONNAIRE INSTRUCTIONS

Unless directed otherwise, please answer the following questions by ticking the box or circling the number that best represents how you feel.

Where applicable, please circle only one number per question.

Should you require it, there is additional space for comments at the end of the questionnaire.

1. A number of initiatives have been introduced in an effort to persuade ME personnel to stay in the Navy. Did any of the following initiatives have a positive effect on your morale?

Yes

No

If "yes", please number in order the initiatives that were important to you, with number 1 indicating the most important.

- a) Later sailing times to allow for 0800 start on day of sailing
- b) Improved career management for ME ratings
- c) ME retention payments
- d) Improved management of leave & maintenance periods
- e) Improved pay scales
- f) Time off in-lieu

Comments:
.....
.....

2. Did any of the following initiatives influence you to stay?

Yes

No

If "yes", please number them in order of influence, with number 1 indicating the most influential.

If "no", please state in the *comments* section below what influenced you to stay.

- a) Later sailing times to allow for 0800 start on day of sailing
- b) Improved career management for ME ratings
- c) ME retention payments
- d) Improved management of leave & maintenance periods
- e) Improved pay scales
- f) Time off in-lieu

Comments:
.....
.....

3. The implementation of the ME retention payments scheme was successful.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

4. When it was introduced, I understood the ME retention payments scheme.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

5. As a percentage, how much of your decision to stay in the RNZN was due to the ME retention payments? (For example, if the payments were the only reason you stayed, write 100% in the space provided.)

_____ %

6. How confident are you in the accuracy of the percentage you gave in the last question?

(For example, 100% confident, only 60% confident, not at all confident 0%, etc.)

_____ %

7. I believe that retention payment schemes are an effective way of retaining personnel.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

8. In my view, the ME retention payments were good value for money.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

9. Overall, the ME retention payments were successful.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

10. What other initiatives could be taken to improve things for the ME branch?

.....
.....
.....
.....
.....

11. What was your rank when you joined the ME retention payments scheme?

- Able Rating..... 1
- Leading Rating 2
- Petty Officer..... 3
- Chief Petty Officer 4
- Warrant Officer 5

12. What was your specialisation when you joined the ME retention payments scheme?

- EL 1
- MEA..... 2
- MF 3
- MM 4

13. What was your marital status when you decided to accept the retention payments?

- married or defacto 1
- single 2

14. Did you have dependent children living at home when you decided to accept the retention payments?

- Yes 1
- No..... 2

15. Did you rejoin the RNZN because of the ME retention payments?

- Yes 1
- No..... 2

Additional Comments (Optional)

This space is provided for comments that would not fit into the space already allocated. If your comments relate specifically to questions, please write the number of the question next to each comment.

.....
.....
.....
.....
.....
.....

THANK YOU FOR TAKING PART IN THIS STUDY



ME Branch Retention Initiatives Study (Managers Questionnaire)

Version 10b (Revised Scale)

INFORMATION SHEET

Sponsor: Captain J.O. Ladd, RNZN
Researcher: Lieutenant Commander B.A. Oldham, RNZN

In 1996 Marine Engineering (ME) Branch retention initiatives were introduced in an attempt to reduce the high turnover rate in the ME Branch. However, the success of these initiatives has never been measured.

It is known that many factors can influence turnover rates and trends. The aim of this study is to determine the effect of the ME retention initiatives on the ME Branch and to measure its return on investment for the RNZN.

The information collected using these questionnaires will be included in a research study being undertaken by LT CDR Oldham through Massey University, as part of her requirements for the fulfilment of her Master of Business Studies degree. A report of the study's findings will be submitted to Massey University and made available to CAPT Ladd (CFPT) for distribution amongst senior naval marine engineering and personnel managers so that the effectiveness of the ME retention initiatives may be evaluated.

LT CDR Oldham's research supervisor at Massey University is Dr Paul Toulson. Should you have any concerns regarding this research or the way in which it is conducted, Dr Toulson can be reached on (06) 350 5799 ext. 2389.

This questionnaire has been sent to all currently serving ME officers who were serving in the RNZN at the rank of Sub Lieutenant or higher when the retention initiatives were introduced in July, 1996.

Submissions are welcome and should be forwarded to LT CDR Oldham, Staff Officer Strategic Personnel Planning, by 30 September 2000. Inquiries can be directed to LT CDR Oldham on Extn 7380 (tandem 397 7380).

The information you provide will remain confidential, and your completed questionnaires will not be viewed in isolation. The data from your questionnaires will be stored in a database and individual questionnaires will be destroyed once the data from them has been entered into the database. Only LT CDR Oldham will have access to the raw data.

It is assumed that filling in the questionnaire implies your consent to use this information as part of the data collection for the study. The completed report and feedback on the results from this study will be made available to all ME personnel.

Please do not discuss your answers with anyone until after everyone has had a chance to complete the questionnaire. Your answers are very important for the study's success. Please help make your opinions count.

QUESTIONNAIRE INSTRUCTIONS

Unless directed otherwise, please answer the following questions by ticking the box or circling the number that best represents how you feel.

Where applicable, please circle only one number per question.

Should you require it, there is additional space for comments at the end of the questionnaire.

1. A number of initiatives have been introduced in an effort to persuade ME personnel to stay in the Navy. Do you believe that any of the following initiatives had a positive effect on the morale of ME personnel?

Yes

No

If "yes", please rank the following in order of perceived importance, with number 1 indicating the most important.

- a) Later sailing times to allow for 0800 start on day of sailing
- b) Improved career management for ME ratings
- c) ME retention payments
- d) Improved management of leave & maintenance periods
- e) Improved pay scales
- f) Time off in-lieu

Comments:
.....
.....

2. Do you believe that any of the following initiatives influenced ME personnel to stay?

Yes

No

If "yes", please rank the following in order of influence, with number 1 indicating the most influential.

If "no", please state in the *comments* section below what influenced ME personnel to stay.

- a) Later sailing times to allow for 0800 start on day of sailing
- b) Improved career management for ME ratings
- c) ME retention payments
- d) Improved management of leave & maintenance periods
- e) Improved pay scales
- f) Time off in-lieu

Comments:
.....
.....

3. The implementation of the ME retention payments scheme was successful.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

4. When it was introduced, ME personnel understood the ME retention payments scheme.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

5. I believe that retention payment schemes are an effective way of retaining personnel.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

6. In my view, the ME retention payments were good value for money.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

7. Overall, the ME retention payments were successful.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Comments:

.....

8. What other initiatives could be taken to improve things for the ME branch?

.....
.....
.....
.....
.....

9. What was your rank in 1996 when the ME retention initiatives were introduced?

- Sub Lieutenant 1
- Lieutenant..... 2
- Lieutenant Commander 3
- Commander or above..... 4

10. Where were you posted when the ME retention initiatives were introduced?

- To a shore establishment 1
- To a ship..... 2

11. When the ME retention initiatives were introduced, did you have personnel who received retention payments working directly for you?

Yes

No

Additional Comments (Optional)

This space is provided for comments that would not fit into the space already allocated. If your comments relate specifically to questions, please write the number of the question next to each comment.

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THANK YOU FOR TAKING PART IN THIS STUDY

Appendix C

Table 12

		Yes
Did ME retention initiatives have a positive effect on morale?	Recipients	85%
	Managers	97%
<p>85% of recipients who said the initiatives had a positive effect on morale ranked the initiatives in the following order (managers' rankings are shown for comparison):</p>		
Retention payments	Recipients	55%
	Managers	32%
Improved pay	Recipients	27%
	Managers	12%
Career management	Recipients	16%
	Managers	50%
Later sailing times	Recipients	5%
	Managers	4%
Time off in lieu (for duties on weekends & public holidays)	Recipients	5%
	Managers	4%
Management of leave and maintenance periods	Recipients	4%
	Managers	7%

Table 13

		Yes
Did ME retention initiatives influence ME personnel to stay?	Recipients	53%
	Managers	90%

53% of recipients who said the initiatives influenced them to stay ranked the initiatives in the following order (managers' rankings are shown for comparison):

Retention payments	Recipients	67%
	Managers	77%
Career management	Recipients	25%
	Managers	17%
Improved pay	Recipients	13%
	Managers	5%
Management of leave and maintenance periods	Recipients	5%
	Managers	0%
Later sailing times	Recipients	0%
	Managers	4%
Time off in lieu (for duties on weekends & public holidays)	Recipients	0%
	Managers	0%

Appendix D

Table 14

Retention Payments Participation							
(Out of total ME Branch Numbers 206/343 eligible)							
	Eligible		Participated		Dropped Out		
	1996	1996/97	1997/98	1998/99	1996/97	1997/98	1998/99
MT	99	84	82	103	0	2	4
MM	55	54	53	33	0	1	4
MEL	52	47	46	34	0	1	3
	206	185	181	170	0	4	11

Table 15

	Non Participants' Exit Reason Comments							Participants' Exit Reason Comments			
	94/95	95/96	96/97	97/98	98/99	99/00	96/97	97/98	98/99	99/00	
Dislike of service life	16%	18%	20%	31%	22%	13%	18%				
Compassionate				3%	4%						
Dissatisfied with pay & allowances	13%		7%	3%		4%					
Employment opportunity as a civilian	33%	13%	5%	17%	27%	35%	27%		19%		
Lack of job satisfaction	8%	17%	11%	14%	3%	9%	50%		6%		
No reason given	7%	6%	5%				6%				
Retirement after 20 yrs	16%	12%	9%			4%	50%	45%	25%		
"Personal"	5%	27%		17%	3%	9%					
Stability for family	3%	6%	3%	3%		13%					
Pursue educational studies	2%	4%				4%					
Travel overseas	3%	1%	3%	3%							
Service transfer				3%							
Dislike of political direction				3%							
Lack of promotion prospects	3%	2%				4%	13%				
Unable to complete initial training	1%	4%	4%	3%	16%	4%					
Below acceptable medical standard	1%		4%	3%	3%	9%					
Undesirable conduct	2%	3%	1%	3%	19%	17%					
Total actual numbers leaving	88	96	74	29	37	23	0	4 ¹⁶	11 ¹⁷	16	

¹⁶ Only 2 of the 4 were targeted for further service with lump sum payments. The other 2 were retiring WOs who received extra pay steps instead of lump sum payments.

¹⁷ Only 3 of the 11 were targeted for further service. 4 were WOs retiring, and 4 were CPOMMs & CPOMELs targeted for only 2 of the 3 years and in receipt of only one payment.

Table 16

% of leavers who indicated " dissatisfied with pay and allowances " as main exit reason by financial year (3 year period of MERBS highlighted)						
	94/95	95/96	96/97	97/98	98/99	99/00
ME non participants	0%	13%	7%	0%	3%	4%
Non participants as a fraction of total participants leaving	0	12/96	5/74	0	1/37	1/23
Participants	N/A	N/A	0%	0%	0%	0%

Table 17

% of leavers who indicated " employment opportunities as a civilian " as main exit reason by financial year (3 year period of MERBS highlighted)						
	94/95	95/96	96/97	97/98	98/99	99/00
ME non participants	33%	13%	5%	17%	27%	35%
Non participants as a fraction of total participants leaving	29/88	12/96	4/74	5/29	10/37	8/23
Participants by percentages	N/A	N/A	0%	0%	27%	19%
Participants as a fraction of total participants leaving	N/A	N/A	0	0	3/11	3/16

Table 18

% of leavers who indicated " lack of job satisfaction " as main exit reason by financial year (3 year period of MERBS highlighted)						
	94/95	95/96	96/97	97/98	98/99	99/00
ME non participants	8%	17%	11%	14%	3%	9%
Non participants as a fraction of total participants leaving	7/88	16/96	8/74	4/29	1/37	2/23
Participants	N/A	N/A	0%	50%	0%	6%
Participants as a fraction of total participants leaving	N/A	N/A	0	2/4	0	1/16

Table 19

% of leavers who indicated " dislike of service life " as main exit reason by financial year (3 year period of MERBS highlighted)						
	94/95	95/96	96/97	97/98	98/99	99/00
ME non participants	16%	18%	20%	31%	22%	13%
Non participants as a fraction of total participants leaving	14/88	17/96	15/74	6/29	8/37	3/23
Participants	N/A	N/A	0%	0%	18%	0%
Participants as a fraction of total participants leaving	N/A	N/A	0	0	2/11	0

Appendix E

Table 20

Total Replacement Cost Savings

AMEL	34,243	9	\$308,187
LMEL	59,565	16	953,040
POMEL	90,217	7	631,519
CPOMEL	97,057	8	776,456
WOMEL	107,055	3	321,165
AMM	43,098	17	732,666
LMM	69,484	14	972,776
POMM	92,409	13	1,201,317
CPOMM	99,249	5	496,245
AMT	48,546	7	339,822
LMT	108,596	22	2,389,112
POMT	126,052	14	1,764,728
CPOMT	196,445	24	4,714,680
WOMT	206,443	11	2,270,873
Total		170	\$17,872,586

Table 21

Estimated Separation Cost Savings per leaver

Divisional exit interview	1 DO & leaver x 1 hour	\$41
Career Manager interview	1 CM & leaver x 1 hour	34
Captain's Table	1 CDR & DO & leaver x 10 mins	12
Records & testimonial	1 x DO x 1 hour	24
Exit processing	1 x clerk x 30 mins	7
Terminal benefit payout	60 days – tax & superannuation	3,300
Medical examination	\$200 & \$3000 x 10% per leaver	500
Dental examination	Per leaver	250
Discharge routine	Leaver x 1 day	92
Total		\$4,260.00

Table 22**Replacement Cost Savings per Marine Technician (MT)**

		Component	Cumulative
Recruitment costs	RNZN costs & professional fees	\$9,420	
Uniform		1,850	\$9,420
New Entry training	Includes wages under training	13,273	11,270
Basic professional training	Includes wages under training	24,003	24,543
Leading Hand training	Includes wages under training	60,050	48,546
PO training & S/R uniform	Includes wages under training	17,456	108,596
CPO training	Includes wages under training	70,393	126,052
WO training	Includes wages under training	9,998	196,445
Total		\$206,443	\$206,443

Table 23**Replacement Cost Savings per Marine Mechanic (MM)**

		Component	Cumulative
Recruitment costs	RNZN costs & professional fees	\$9,420	
Uniform		1,850	\$9,420
New Entry training	Includes wages under training	13,273	11,270
Basic professional training	Includes wages under training	18,555	24,543
Leading Hand training	Includes wages under training	26,386	43,098
PO training & S/R uniform	Includes wages under training	22,925	69,484
CPO training	Includes wages under training	6,840	92,409
WO training	Includes wages under training	9,998	99,249
Total		\$109,247	\$109,247

Table 24**Replacement Cost Savings per Marine Electrician (MEL)**

		Component	Cumulative
Recruitment costs	RNZN costs & professional fees	\$9,420	
Uniform		1,850	\$9,420
New Entry training	Includes wages under training	13,273	11,270
Basic professional training	Includes wages under training	9,700	24,543
Leading Hand training	Includes wages under training	25,322	34,243
PO training & S/R uniform	Includes wages under training	30,652	59,565
CPO training	Includes wages under training	6,840	90,217
WO training	Includes wages under training	9,998	97,057
Total		\$107,055	\$107,055

Table 25**Recruitment Cost Savings per Recruit**

RNZN recruiting cost	\$7,459
Recruiting professional fees	1,961
Uniform	1,850
Total	\$11,270

Table 26**New Entry Training Cost Savings per Recruit**

New Entry training	\$7,190
Damage Control training	1,351
Seamanship training	1,152
Wages while under training	3,580
Total	\$13,273

Table 27**Basic Professional Training Cost Savings per Trainee**

	AMT	AMEL	AMM
Basic branch training	\$13,261	\$6,120	\$10,200
Wages while under training	10,742	3,580	8,355
Total	\$24,003	\$9,700	\$18,555

Table 28**Leading Hand Training Cost Savings per Trainee**

	LMT	LMEL	LMM
Professional Training	\$28,290	\$9,792	\$9,792
Command & Management training	3,339	3,339	3,339
Damage Control training	2,211	2,211	2,211
Wages while under training	26,210	9,980	11,044
Total	\$60,050	\$25,322	\$26,386

Table 29**Petty Officer Training and Uniform Cost Savings per Trainee**

	POMT	POMEL	POMM
Professional Training	N/A	\$16,208	\$9,067
Command & Management training	\$7,467	7,467	7,467
Damage Control training	1,983	1,983	1,983
Senior Rating Uniform	1,200	1,200	1,200
Wages while under training	6,806	20,002	12,275
Total	\$17,456	\$30,652	\$22,925

Table 30**Chief Petty Officer Training Cost Savings per Trainee**

	CPOMT	CPOMEL	CPOMM
Professional Training	\$35,363	N/A	N/A
Command & Management training	3,113	\$3,113	\$3,113
Damage Control training	991	991	991
Wages while under training	30,926	2,736	2,736
Total	\$70,393	\$6,840	\$6,840

Table 31**Warrant Officer Training Cost Savings per Trainee**

	WOMT	WOMEL	WOMM
Command & Management training	\$4,744	\$4,744	\$4,744
Wages while under training	5,254	5,254	5,254
Total	\$9,998	\$9,998	\$9,998

Appendix F

Table 32

Estimated ME Retention Scheme Administrative Set-up Costs

Set-up costs	1 CDR & LTCDR x 4.5 months	\$48,750
Briefings	206 ME personnel x 1 hour	3,564
Payments processing	1 clerk x 170 x 1 hour	2,442
Total		\$54,756

Table 33

First and Second Retention Payments (30 June 1996 & 30 June 1998)

	First Payment	Second Payment		
AMEL	4,000	5,000	9	\$81,000
LMEL	5,000	5,000	16	160,000
POMEL	6,500	5,000	7	80,500
CPOMEL	8,000	N/A	10	80,000
WOMEL ^{*18}	5,000	5,000	4	40,000
AMM	4,000	5,000	17	153,000
LMM	5,000	5,000	16	160,000
POMM	6,500	5,000	14	161,000
CPOMM	8,000	N/A	6	48,000
AMT	7,500	5,000	7	87,500
LMT	7,500	5,000	23	287,500
POMT	10,000	5,000	14	210,000
CPOMT	12,500	5,000	24	420,000
WOMT*	8,000	8,000	14	224,000
Total			181	\$2,192,500

¹⁸ All those marked with * were WOs who received extra pay steps during the 3 year period instead of lump sum retention payments, which effectively increased their pay annually by the amounts shown.

Table 34**Final Retention Payments (30 June 1999)¹⁹**

	Final Payment		
AMEL	12,800	1	\$12,800
LMEL	12,800	12	153,600
POMEL	15,000	5	75,000
CPOMEL	N/A	12	0
WOMEL*	5,000	4	20,000
AMM	12,800	4	51,200
LMM	12,800	14	179,200
POMM	15,000	8	120,000
CPOMM	N/A	6	0
WOMM*	5,000	1	5,000
AMT	22,500	2	45,000
LMT	22,500	13	292,500
POMT	22,500	39	877,500
CPOMT	22,500	31	697,500
WOMT*	8,000	18	144,000
Total		170	\$2,673,300

Table 35**Estimated ROI Evaluation Study Measurement Costs**

Analysis and design	1 x LT CDR x 1 month	\$4,833
Data assistance	1 WO & 1 civilian x 4 hours	166
Questionnaire pilot	4 personnel x 30 mins	48
Questionnaire completion	159 respondents x 20 mins	901
Total		\$5,948

¹⁹ The rank and branch mix for the participants shown in Table 34 varies from that shown in Table 33 because of promotions and trade changes that occurred during the MERBS period. Participants promoted during the period received final payments at the rate of their new rank level.

