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# Pay to Stay: The Impact of the Navy Retention Incentive Payment in the Royal Australian Navy

December 2024

**LT Adrian Peach, Royal Australian Navy**

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Department of Defense Management

**Naval Postgraduate School**



Prepared for the Naval Postgraduate School, Monterey, CA 93943.




ACQUISITION RESEARCH PROGRAM
DEPARTMENT OF DEFENSE MANAGEMENT
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# ABSTRACT

The Australian Defence Force is currently facing serious workforce issues, necessitating deliberate action to address its retention problems. The Navy Retention Incentive Payment (NRIP), an AUD$20,000 payment for completion of seven, eight, and twelve years of effective service, is one retention policy currently being implemented. This study investigates the impact of the NRIP on retention in the RAN. Using linear probability models and cox proportional hazards models to analyze data of permanent RAN personnel, this study reveals a NRIP that is positively correlated with decreased likelihoods of separation and increased periods of service. The NRIP appears to be most effective at seven years of service however its effectiveness appears to be diminishing over time. A further focus on the NRIP's effect size when controlling for individual-level characteristics such as age, rank, gender and workgroup reveal mixed results, making any claims regarding the bonus's uneven effects across these cohorts inconclusive. A defendable claim can be made that the NRIP is correlated with a net positive effect on retention based on the findings of this study, however further work is needed prior to making any causal claims. The RAN should look to continue its use of both financial and non-financial incentives to retain its personnel. The RAN should also seek to implement a more rigorous and objective framework to support the continued analysis of its manpower policy decisions.

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ABS | Australian Bureau of Statistics |
| ADF | Australian Defence Force |
| CDF | Chief of Defence Force |
| CPI | Consumer Price Index |
| DFRT | Defence Force Remuneration Tribunal |
| DoD | Department of Defence |
| FY | Financial Year |
| GDP | Gross Domestic Product |
| HRDW | Human Resources Data Warehouse |
| LEUT | Lieutenant |
| LPM | Linear Probability Model |
| NCRP | Navy Capability Retention Payment |
| NRIP | Navy Retention Incentive Payment |
| PACMAN | Pay and Conditions Manual |
| RAN | Royal Australian Navy |
| RI | Recruit Instructor |
| SBLT | Sub Lieutenant |
| SERCAT | Service Category |
| SERVOP | Service Option |
| SM-CAP | Submarine Capability Assurance Payment |
| SRB | Selective Reenlistment Bonus |
| SRBM | Selective Reenlistment Bonus Multiple |
| YOS | Years of Service |

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# I. INTRODUCTION

## A. PREFACE

The Australian Defence Force (ADF) faces continued pressure to modernize and grow its workforce in the face of continued geopolitical instability and military buildup in its region. As an active participant in the labor market, the ADF must contend with other public and private sector employers within Australia to recruit and retain the highly skilled workforce it requires to achieve its mission. The Australian government has outlined in the *Defence Workforce Plan 2024* the need to grow the permanent ADF and Australian Public Service (APS) workforce to 100,000 by 2040—a more than 30.0% increase on current levels—while currently only achieving 66.0% of its full-time ADF member recruiting target in 2023–24 (Defence, 2024b, 2024c). The current tight labor market, systemic recruiting challenges, and a decreasing propensity to serve amongst young Australians all act to exacerbate the workforce issues the ADF is facing. As a counter to these issues, the organization looks to financial incentives as a tool to retain its workforce. This comes at considerable economical cost to the ADF, the Australian Government, and more broadly the Australian people. Any use of taxpayer funds—whether within the Department of Defence (DoD) or elsewhere—must be critically assessed to ensure it advances the interests, security, and prosperity of the Australian people and that it does so in a cost-effective manner. This study investigates the effectiveness of the Navy Retention Incentive Payment (NRIP) in the Royal Australian Navy (RAN) and seeks to provide robust analysis to inform future manpower policy both in the RAN and the wider ADF.

## B. OVERVIEW

The ADF is in the midst of a well-documented workforce crisis (Defence Media, 2023; Dougherty, 2024; Hellyer, 2022). The demand for an increasingly skilled, larger workforce continues to grow whilst labor supply remains stagnant and struggles to meet even current demands. Combating the high separation rates and retaining its highly trained, difficult to replace personnel is a key driver shaping current manpower policy. In a closed labor market system, the ADF has no choice but to recruit, train, and retain its own

personnel to the level needed to ensure that it remains a credible fighting force that can defend Australia and its interests. Due to the increasingly complex and strategically ambiguous environment within the Indo-Pacific, the Australian Government is demanding that the ADF grow in both workforce size and capability. To put this into perspective, the Australian government has outlined in the *Defence Workforce Plan 2024* the need to grow the permanent ADF and APS workforce to 100,000 by 2040—a more than 30.0% increase on current levels—while currently achieving only 66.0% of its 2023–24 full-time ADF member recruiting target (Defence, 2024b, 2024c). Clearly, this will require bold and innovative changes to workforce policy.

The RAN currently has arguably the most challenging outlook among the three services—the Royal Australian Airforce (RAAF) and the Australian Army being the other two. As of 30 June 2024, the *Defence Annual Report* (2024b) shows the RAN to have a 0.1% shortfall in actual full time averaged funded strength relative to the most recent budgeted estimate; a twelve month rolling separation rate of 7.7%; and zero increase in permanent force headcount from June 2023 levels. The RAN has a uniquely difficult workforce challenge to address noting the recent announcements regarding its future fleet composition and the AUKUS alliance with the U.S. and U.K. The independent *Surface Combatant Fleet* review commissioned by the Australian government in early 2024 announced a doubling in size of the previously planned surface combatant fleet, from twelve to twenty six, necessitating more sailors and officers to man this larger fleet (Australian Government, 2024). Beyond just the required size of the future workforce, the requisite new skillsets of the future workforce must be acquired or developed to ensure the future fleet can be effectively operated. Primary amongst these crucial skills is the need to develop personnel with nuclear propulsion maintenance and operation skillsets to work on the nuclear-powered submarines Australia is soon to acquire from the United States and the AUKUS submarines it intends to build for Australian use in the 2040s (White House, 2023). This is a pertinent example of how important it is that the current workforce challenges are addressed through policy action, ensuring a future workforce of sufficient size and skill to achieve the strategic aims of the Australian government.

To address these workforce challenges, the ADF is investing heavily in financial bonuses to attract and retain personnel. The RAN currently has five main active retention bonus schemes that are being used to attempt to combat the retention crisis. One of these programs is the NRIP. The NRIP is an AUD$20,000 completion payment awarded to eligible personnel at seven, eight, and twelve years of service (YOS). For context, this bonus is approximately 26.0% of the annual base salary of the lowest paid RAN members. It is intended to incentivize personnel to extend their service for at least twelve to twenty-four months and either delay or, ideally, remove entirely the decision to attrite at these crucial service milestones. It is also intended to act as a stopgap measure while broader organizational reforms are implemented. These reforms differ in their scope, purpose, and complexity, however all of them are aimed at improving the service life of ADF members and their families. Whilst the intent of the NRIP is clear, there is uncertainty as to whether it has a measurable and positive effect on the RAN's ability to better meet its workforce targets.

## C. MOTIVATION AND PURPOSE

This thesis investigates the use of the NRIP and evaluates its impact on the retention behaviors of select RAN personnel. It is hoped that this insight will influence the future use of retention incentives, thereby improving the RAN and the ADF's ability to shape its workforce in an impactful, beneficial, and cost-effective manner.

## D. RESEARCH OBJECTIVES AND QUESTIONS

The objective of this thesis is to analyze the impact of the Navy Retention Incentive Payment in the RAN. In pursuit of this goal, the following research questions will be addressed:

1. Does the Navy Retention Incentive Payment extend the average length of service profiles of the cohort in receipt of the bonus? Does this vary across cohorts?

2. Does the Navy Retention Incentive Payment delay separation by at least twelve to twenty-four months for those members approaching known separation points?

3. Does the effectiveness of the Navy Retention Incentive Payment diminish over time?

## E. THESIS STRUCTURE

This thesis is presented as six chapters. Chapter I introduces the thesis and establishes its framework. Chapter II expands on the first chapter and provides relevant background material on the organizations, concepts, and issues discussed. Chapter III presents a literature review on the current academic environment relevant to this thesis's narrow scope of investigation. Chapter IV outlines the data used and methodology followed while Chapter V provides an extensive analysis of the results and their implications. Chapter VI concludes the thesis and provides recommendations relevant to the ADF and future researchers.

# II. BACKGROUND

## A. AUSTRALIAN DEFENCE FORCE

### 1. Overview

The ADF serves as the military component of Australia's Defence portfolio. The ADF is led by the Chief of the Defence Force (CDF) who, along with the Secretary of the Department of Defence, reports directly to the Minister for Defence. The Chief of the Defence Force holds the primary responsibility of commanding the ADF, leading the three military branches—Army, RAN, and RAAF— whilst also leading ADF Headquarters, Joint Capabilities Group, and Joint Operations Command. The Secretary for Defence, in turn, has stewardship of the APS—the civilian arm of Defence's non-contracted workforce.

The ADF has a permanent headcount of 57,226 personnel as at 30 June 2024 as reported in the *Defence Annual Report 2024* (Defence, 2024b). This is supported by a 32,560 permanent reserve workforce and a 19,465 strong APS contingent. The report lists the RAN as having 19,586 permanent and reserve employees. This is roughly comparable in size to the RAAF (21,602) and is less than half the size of the Army (45,598).

For FY2022-23, Defence received funding of AUD$50.4 billion—and spent slightly less at approximately AUD$49.3 billion (Blenkin, 2023). This accounted for close to 1.9% of Australia's gross domestic product (GDP) (Defence, 2023). The *National Defence Strategy* (2024e) outlines a significant increase in the Defence portfolio with the budget projected to rise to AUD$74.8 billion by FY2028-29 and AUD$100.4 billion by FY2033-34, raising spending well above 2% of GDP. A significant portion of this budget increase is to be allocated to funding the necessary growth in the workforce through investments in recruiting, defence housing, salaries and bonuses, and other employee value proposition improvements.

### 2. Workforce Structure

The ADF workforce structure is managed under the "ADF Total Workforce System." The ADF Total Workforce System provides service members the flexibility to

serve in a manner that best suits them while simultaneously giving commanders and workforce managers wider access to the human capital distributed across the entire service spectrum (Defence, n.d.-b). The service spectrum, as illustrated in Figure 1, describes service in terms of Service Categories (SERCATs) and Service Options (SERVOPs). A SERCAT, "groups members into like service and duty arrangements that share mutual obligations and conditions of service" (Defence, n.d.-b). SERCAT 6 and 7 describe the full time, permanent workforce. Defence describes SERVOPS as, "provid [ing] the means to group members who provide needed capabilities where differentiated arrangements are required." For example, SERVOP D personnel have a formal dual civilian and Defence employer sharing arrangement and SERVOP C personnel are Reserve members (SERCAT 2–5) rendering full time service to meet a specific service need for a finite period. The ability for personnel to serve as they please and transition fluidly between service categories and options distinguishes the ADF from peers like the United States military.

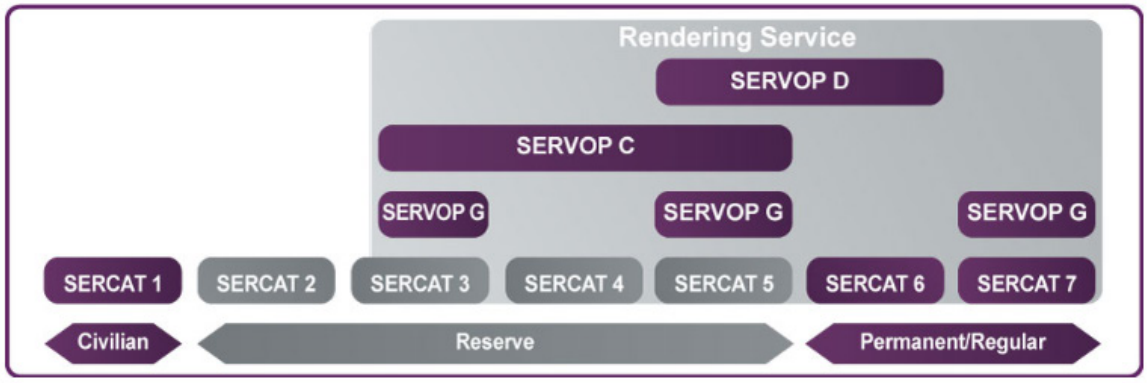


Figure 1. The Service Spectrum within the ADF Total Workforce System. Source: Defence (n.d.b).

### 3. Financial Compensation Structure

The compensation structure for ADF personnel is complex and multifaceted. Broadly, permanent personnel are paid a base salary amount depending on their rank, experience, and occupation and receive additional payments based on their individual circumstances and role demands. Additional payments include mandatory employer contributions to retirement funds, allowances, and bonuses. The *Defence Act 1903*

authorizes the pay and conditions of service for all ADF members while the Defence Force Remuneration Tribunal (DFRT) act as an independent statutory authority who deliberates on any salary or bonus related changes to the compensation members receive. The *ADF Pay and Conditions Manual* (PACMAN) is the authoritative and publicly accessible source for compensation policy (Defence, n.d.-a).

Base salary for most permanent ADF members (not including specialist positions such as pilots, legal officers, and medical officers) is paid in accordance with Schedule B.3 and Schedule B.12 as illustrated in Figure 2 and Figure 3, respectively. A member will receive an increment advancement (moving vertically up on the scale) typically after every twelve months of full-time service at their rank to reflect their increased experience in their position. This stops once the highest increment for that rank is reached and resumes at increment zero of the next rank upon promotion. This has the effect of incentivizing promotion to continue receiving annual increment advancements.

| Officers (Schedule B.3) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy | Army | Air Force | Incr | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | | | | PGA | PGB | PGD | PGF | PGI | PGJ | PGK | PGL | PGM | PGN |
| CAPT | COL | GPCAPT | 1 | 185,994 | 191,209 | 197,226 | 202,440 | 208,257 | 214,773 | 221,319 | 228,393 | 235,474 | 240,209 |
| | | | 0 | 180,787 | 186,000 | 192,023 | 197,232 | 203,049 | 209,568 | 216,104 | 223,189 | 230,271 | 235,000 |
| CMDR | LTCOL | WGCDR | 1 | 159,302 | 164,519 | 170,542 | 175,754 | 181,568 | 188,084 | 194,627 | 201,709 | 208,787 | 213,520 |
| | | | 0 | 154,197 | 159,412 | 165,433 | 170,648 | 176,462 | 182,981 | 189,519 | 196,602 | 203,683 | 208,416 |
| LCDR | MAJ | SQNLDR | 2 | 132,901 | 138,115 | 144,136 | 149,350 | 155,164 | 161,681 | 168,223 | 175,305 | 182,382 | 187,114 |
| | | | 1 | 129,321 | 134,539 | 140,557 | 145,770 | 151,584 | 158,105 | 164,645 | 171,726 | 178,808 | 183,535 |
| | | | 0 | 125,732 | 130,950 | 136,967 | 142,180 | 147,996 | 154,515 | 161,056 | 168,138 | 175,218 | 179,949 |
| LEUT | CAPT | FLTLT | 5 | 119,778 | 124,997 | 131,017 | 136,229 | 142,045 | 148,563 | 155,104 | 162,188 | 169,269 | 173,996 |
| | | | 4 | 116,373 | 121,590 | 127,611 | 132,828 | 138,640 | 145,158 | 151,697 | 158,778 | 165,862 | 170,589 |
| | | | 3 | 112,961 | 118,175 | 124,195 | 129,407 | 135,225 | 141,744 | 148,285 | 155,365 | 162,447 | 167,172 |
| | | | 2 | 109,565 | 114,785 | 120,802 | 126,014 | 131,832 | 138,348 | 144,887 | 151,973 | 159,055 | 163,782 |
| | | | 1 | 106,171 | 111,385 | 117,403 | 122,618 | 128,435 | 134,951 | 141,491 | 148,571 | 155,652 | 160,386 |
| | | | 0 | 102,763 | 107,975 | 113,993 | 119,207 | 125,024 | 131,540 | 138,083 | 145,164 | 152,241 | 156,975 |
| SBLT | LT | FLGOFF | 3 | 96,962 | 102,173 | 108,193 | 113,408 | 119,217 | 125,735 | 132,280 | 139,363 | 146,442 | 151,176 |
| | | | 2 | 94,156 | 99,371 | 105,390 | 110,602 | 116,419 | 122,937 | 129,479 | 136,560 | 143,642 | 148,370 |
| | | | 1 | 91,400 | 96,614 | 102,636 | 107,850 | 113,662 | 120,179 | 126,721 | 133,807 | 140,885 | 145,616 |
| | | | 0 | 88,760 | 93,973 | 99,995 | 105,209 | 111,023 | 117,542 | 124,081 | 131,161 | 138,244 | 142,974 |
| ASLT | 2LT | PLTOFF | 1 | 86,494 | 91,710 | 97,732 | 102,943 | 108,757 | 115,277 | 121,816 | 128,897 | 135,980 | 140,709 |
| | | | 0 | 84,227 | 89,445 | 95,462 | 100,676 | 106,492 | 113,008 | 119,553 | 126,630 | 133,714 | 138,443 |

Figure 2. Base Salary for Australian Defence Force Officer Ranks (O1-O6) as of 29 August 2024. Source: Defence (2024a).

Base salary is further calculated based on pay grades. There are ten pay grades (as represented by the columns in the pay scales) with higher pay grades earning higher base salaries. A member's pay grade is determined by their workgroup (i.e., the job they

perform) and their skill grade (experience within their workgroup). The pay grade that each workgroup/skill grade combination commands is set by the DFRT. As an example, a typical "first tour" marine engineer officer will be the rank of Sub Lieutenant (SBLT), paygrade 3, and will earn a base salary of AUD$102,636 (assuming increment 2). A typical "second tour" marine engineer officer will be the rank of Lieutenant (LEUT), paygrade 5, and will earn a base salary of AUD$135,225 (assuming increment 3) to compensate them for the additional experience, skills, and knowledge obtained between their first and second tour. Likewise, a surface warfare officer and a maritime logistics officer may be of the same rank and the same increment (i.e., time in rank) however the surface warfare officer will be of a higher pay grade to compensate them for the differing training requirements, cognitive load, and responsibilities placed upon them.

| Other Ranks (Schedule B.12) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Navy | Army | Air Force | Incr | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | | | | PAA | PAB | PAC | PAD | PAE | PAF | PAG | PAH | PAI | PAJ |
| CPO | WO2 | FSGT | 1 | 107,953 | 111,068 | 115,067 | 119,387 | 124,049 | 129,084 | 134,523 | 140,398 | 146,741 | 153,593 |
| | | | 0 | 106,125 | 109,242 | 113,244 | 117,560 | 122,223 | 127,259 | 132,699 | 138,574 | 144,915 | 151,769 |
| | SSGT | | 0 | 103,224 | 106,340 | 110,336 | 114,655 | 119,319 | 124,356 | 129,793 | 135,665 | 142,010 | 148,864 |
| PO | SGT | SGT | 2 | 97,580 | 100,696 | 104,697 | 109,012 | 113,678 | 118,711 | 124,150 | 130,024 | 136,369 | 143,221 |
| | | | 1 | 95,957 | 99,074 | 103,071 | 107,390 | 112,054 | 117,092 | 122,524 | 128,401 | 134,745 | 141,599 |
| | | | 0 | 94,367 | 97,483 | 101,480 | 105,800 | 110,463 | 115,500 | 120,935 | 126,810 | 133,154 | 140,008 |
| LS | CPL | CPL | 2 | 86,902 | 90,020 | 94,015 | 98,334 | 103,001 | 108,033 | 113,469 | 119,346 | 125,686 | 132,541 |
| | | | 1 | 85,491 | 88,607 | 92,605 | 96,924 | 101,588 | 106,621 | 112,061 | 117,935 | 124,277 | 131,128 |
| | | | 0 | 84,106 | 87,223 | 91,222 | 95,539 | 100,200 | 105,239 | 110,679 | 116,551 | 122,896 | 129,752 |
| | LCPL | | 0 | 78,928 | 82,044 | 86,038 | 90,361 | 95,024 | 100,057 | 105,494 | 111,371 | 117,711 | 124,567 |
| AB | PTE(P) | LAC | 0 | 77,699 | 80,817 | 84,816 | 89,133 | 93,796 | 98,834 | 104,269 | 110,142 | 116,487 | 123,337 |
| SMN | PTE | AC | 0 | 76,495 | 79,615 | 83,610 | 87,929 | 92,593 | 97,628 | 103,068 | 108,940 | 115,283 | 122,139 |

Figure 3. Base Salary for Australian Defence Force Enlisted Ranks (E2-E8) as of 29 August 2024. Source: (Defence, 2024a).

In addition to base salary, allowances are paid in accordance with a member's unique service and service related conditions. These are designed to compensate for particular conditions of service associated with a locality, a job description, or military life in general. Allowances are paid in the manner laid out in PACMAN. A non-exhaustive list of job-related allowances is given in Figure 4. Further allowances or reimbursements available to members include housing allowances, separation allowances, study allowances, flying/sea-going/field allowances, and location-based allowances. Many

allowances or reimbursements are received automatically by all eligible members whereas others a member must apply for.

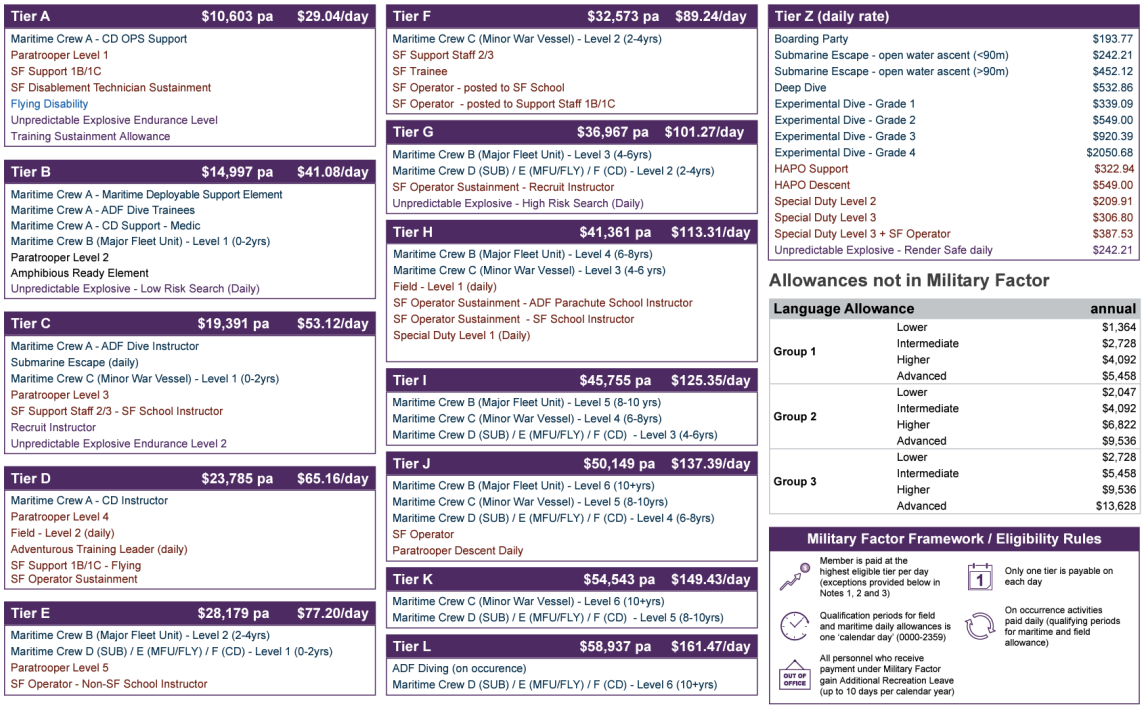


Figure 4. Common Allowances Under the Military Factor Framework. Source: Defence (2024a).

The final type of financial compensation ADF members may receive is bonuses. As described in PACMAN, bonuses must be either a "Category A Bonus" or a "Category B Bonus" and are designed to, "attract and retain members who are capability critical to the ADF" (Defence, 2024d). A "Category A Bonus" is paid to members deemed to be individually critical to capability, who meet the eligibility criteria, and who make a valid acceptance of the offer. Category A Bonuses have a maximum payable amount of AUD$200,000 and cannot have terms that extend beyond five years of effective service. A "Category B Bonus" differs from a "Category A Bonus" in that it is offered to members of workgroups that are critical or soon-to-be critical to capability. They have a maximum payable amount of AUD$100,000, and cannot have terms that extend beyond three years of effective service. The approver for both bonuses is the CDF who may delegate the

decision to qualified officers of appropriate rank who are filling specific workforce related roles. It is typical for bonuses to be paired with a contractual period of extended service that the member must agree to. A member must also meet all eligibility requirements associated with the bonus and can be directed to repay the bonus at a pro-rata amount if they fail to maintain eligibility or separate from the ADF.

#### 4. Defence Force Remuneration Tribunal

The DFRT is an independent statutory authority established in 1984 under Section 58G of the *Defence Act 1903*. The Tribunal's key functions are to investigate, inquire into, determine, and set the salaries and allowances of ADF members (DFRT, 2024). The Tribunal is comprised of three members appointed by the Governor-General based on their experience and knowledge of industrial relations and the ADF. The Tribunal makes determinations based largely on submissions from two major parties: the ADF and the Commonwealth. Through submissions and formal hearings, the Tribunal will issue a determination which the Assistant Minister for the Public Service tables in Parliament for follow on legislative approval.

## B. ROYAL AUSTRALIAN NAVY

### 1. Overview of Retention Bonuses

The RAN currently has a suite of five retention bonuses that are designed to retain critical members. These bonuses have all been approved through DFRT or Defence Determinations and, subject to ongoing approval, remain active in the short to medium term. It is important to understand these bonuses noting their overlapping effects with other retention incentives. Many of these bonuses cannot be taken concurrently however they may not all be mutually exclusive. A properly motivated individual may enact a series of career decisions to deliberately gain eligibility for one of or a set of these bonuses over a period of time. This sets into motion potential reverse causality issues and confounding variable bias for any isolated bonus analysis. The five bonuses are briefly summarized below based on the information published internally by Defence unless otherwise referenced:

### *a. Navy Retention Incentive Payment*

The NRIP is an AUD$20,000 payment for completing seven, eight, and twelve years of accrued service. The bonus was first announced in May 2019 with an initial implementation term spanning from 1 July 2019 to 30 June 2024 subject to bi-annual review. At the time of implementation, the RAN was experiencing workforce hollowness at its key sea-going ranks: namely Leading Seaman (E5) to Petty Officer (E6) and Lieutenant (O3) to Lieutenant Commander (O4). The bonus was announced as a short-term solution to address this workforce shortage problem and incentivize a further 12–24 months of service by which time broader non-financial retention incentives could be implemented.

To receive the bonus, members are required to meet all eligibility requirements. In accordance with Hammond (2019), in the twelve months preceding the seven, eight, and twelve years of accrued service a member has to:

- Be in SERCAT 6 or 7
- Have completed their initial minimum period of service
- Not be subject to an existing return of service obligation
- Hold one of the following ranks: Able Seaman (E4), Leading Seaman (E5), Petty Officer (E6), Sub Lieutenant (O2), Lieutenant (O3), or Lieutenant Commander (O4)
- Have no outstanding requests to transfer out of SERCAT 6 or 7 (not including a 7 to 6 transfer), to the RAAF, or to the Army
- Not have been, "reduced in rank, imposed with a censure or formal warning, or convicted of a *Defence Force Discipline Act 1982* or civilian offence in the preceding 12 months" (Hammond, 2019, p. 1)
- Not be, "in receipt of another payment for the purpose of capability or retention, or subject to an undertaking for further service associated with such a payment. This includes individual retention benefits or the Submarine Capability Assurance Payment" (Hammond, 2019, p. 1)

- Be current in their "individual readiness" status in all aspects for ten or more months in the previous twelve months (with exemptions for pregnant women)
- Be current in all mandatory awareness training requirements.

The eligibility requirements were set as such to target those members who best provided capability to the RAN and who were maintaining their eligibility for sea service. This meant that some workgroups may have been impacted by the bonus in different ways based on their specific sea/shore service requirements and initial minimum periods of service. A waiver process was available for members with extenuating circumstances who were still meeting the intent of the eligibility requirements.

In May 2023, the DFRT approved an extension of the NRIP until 1 July 2025, quoting its success over the preceding four years and a continued workforce hollowness at the key mid ranks. They also amended several of the eligibility criteria, in accordance with Earley (2023) and *DFRT Determination No. 7 of 2023* (DFRT, 2023), as follows:

- Expanded the criteria to include members of the Chaplain and Maritime Spiritual Welfare Officer (Div 1) workgroups
- Mandated that members must now have a medical classification of J1, J2, or J3 (in other words, be generally fit for sea service). This repealed the requirement to be current in "individual readiness'
- Mandated that members must have met all of their mandatory annual awareness training requirements.

Once deemed eligible, members can receive their AUD$20,000 NRIP in one of four payment options. The payment options are:

- Option 1: A single lump sum payment upon completion of seven, eight, or twelve years of accrued service
- Option 2: A salary sacrifice arrangement of the full amount into a retirement fund

- Option 3: A combination of lump sum and salary sacrifice
- Option 4: Two AUD$10,000 lump sum payments, offset by twelve months (and spread across two financial years).

Since inception through to April 2024, the NRIP has distributed AUD$95,420,000 to over 4,700 members (Royal Australian Navy, 2024). This is well within the estimated maximum cost of AUD$40 million per year.

### *b. Recruit Instructor Individual Retention Benefit*

The Recruit Instructor (RI) Individual Retention Benefit is a Category B Bonus offered to specified instructors at both officer and enlisted training establishments. RAN RIs have been paid a bonus since 2007 (except for two years between 2012 and 2014) with the bonus being for much of that time a AUD$10,000 annual payment for an agreed maximum period of service of three years. As of August 2024, the DFRT agreed to increase the RI bonus to AUD$18,680 to reflect the continued increased burden of instructors and the persistent difficulties in filling these crucial positions.

### *c. Submarine Capability Assurance Payment*

The Submarine Capability Assurance Payment (SM-CAP) has been the key financial element incentivizing submarine service since its inception in 2016. The bonus operates under a four tier system based on number of days served at sea. Annual payments range from AUD$25,000 to AUD$55,000 dollars to be received lump sum or split between lump sum and retirement account. The bonus can be taken concurrently with many other bonuses, however not the NRIP. There has been no indication that the bonus is likely to be removed noting its assessed effectiveness at increasing submarine workforce strength.

### *d. Navy Capability Retention Payment*

The Navy Capability Retention Payment (NCRP) is an AUD$40,000 payment for an agreed period of service of two years. It is a short-term initiative designed to decrease attrition out of critical science, technology, engineering, and mathematics related workgroups. As such, the bonus was targeted at only twelve workgroups and only specific,

mid rank positions within those workgroups. The bonus was a one-time offer launched in April 2022. Unique to this bonus, members under contract or receiving another bonus who were eligible could still accept the payments in 2022 and agree to serve their two-year period of service at a later date. This allowed members to maintain eligibility for bonuses such as the NRIP. The bonus received criticism from some RAN members who felt the targeted workgroups and ranks were too narrow and unfairly chosen.

#### *e. ADF Continuation Bonus*

The ADF Continuation Bonus is an AUD$40,000 payment for an agreed period of continued service. The bonus began as a pilot program in 2023, initially offering AUD$50,000 for a further three years of service to those eligible permanent members who were approaching their first decision point to remain in the ADF (the end of their initial contract period). It has since been updated and, as of July 2025, will be an AUD$40,000 payment to eligible permanent personnel for a further three years of service. This payment, unlike the pilot program, can be received twice: once at the completion of their initial service obligations (initial minimum period of service) and again after serving for a further three years beyond their initial contract period (Defence, 2024c). The bonus can be paid in four different ways, ranging from cash payments (lump sum or installment) to retirement account payments. The only publicly released analysis of the ADF Continuation bonus quotes an uptake rate of almost 80.0% during the pilot program period (Defence, 2024c). No further meaningful analysis of its effectiveness has been carried out.

### 2. RAN Workgroups

RAN personnel are categorized based on their functional employment categorization (the type of job they do). The most general categorization is the "grouping" or "community" a member exists within. These communities are Warfare, Engineering, Aviation, Health, Logistics/Administration, Senior Officer, and Chaplain. Within each community exists "families"—such as marine engineering or maritime logistics—which further classify personnel. Finally, within a family is a "workgroup" which groups all members by job type. For example, one workgroup may be marine technicians and another pilots. A member's workgroup is more commonly referred to as their "primary

qualification" for officers or their category (or rate) for enlisted members. Within a workgroup, members can be further divided by specialization or sub function to describe their specific qualifications. For example, the marine technician workgroup can be further divided into "electrical" or "hull" specialization. It is worth noting that delineations below the workgroup level are inconsistent both in policy and in everyday usage.

Most manpower policy will refer to RAN members by their workgroup. Workgroups appear to be the preferred level of granularity, likely because all members of a workgroup follow a similar career progression model and share similar skillsets and qualifications. Members are also mostly recruited into a workgroup and specialize later in their career, as opposed to being directly recruited into a family or specialization. For the sake of consistency, I will use "community" and "workgroup" exclusively when referring to RAN personnel.

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# III. LITERATURE REVIEW

This chapter critically analyzes the literature on topics relevant to retention bonuses in the RAN. I first explore the key economic and psychological factors that undergird the decision to work, and an economic actor's response to incentives. From there, I review studies on financial bonuses in both the American civilian and military domains. Next, I review the relevant studies on RAN manpower policies, providing specific insight into the state of the organization. Finally, I articulate the purpose of my study, highlighting its complementary and necessary role among the current literature.

The employer-employee relationship has been extensively studied by social scientists to understand different facets of the labor market such as labor demand, labor supply, and compensation. Understanding individual responses to forces that affect labor demand, labor supply, pay, and productivity is key to organizations like the ADF as they choose to offer financial bonuses to their employees.

Firms commonly use financial incentives to influence employee behavior. As a result, there exists an extensive literature on the topic (Aschenbrucker & Kretschmer, 2022; Garbers, 2013; Saleem, 2011). Many studies find financial incentives positively influence employees to increase their levels of individual effort (Bonner & Sprinkle, 2002) and foster greater collective effort and team output (DeMatteo et al., 1998). At its core, financial incentives are a manifestation of motivation theory applied to the decision to work. Employers motivate employees by offering an extrinsic reward that the employee desires, convincing them to alter their behavior (their work output) in order to obtain rewards (Bandhu et al., 2024). Bandhu et al. claims that extrinsic rewards are effective at increasing motivation and performance, particularly in the short term, however they must be tailored to the context and individual to be maximally effective. While critics argue that motivation (or incentive) theory is reductionist in nature (Bosha et al., 2017; Ellingsen & Johannesson, 2008; Killen, 1982), most economists agree with Bandhu et al.'s position that rational actors respond to the right incentives. Ehrenberg and Smith (2016) view the decision to work as a choice between leisure and compensation and that this framework sufficiently explains an employee's response to financial incentives. Individuals seek leisure and view

working as a necessary means in which to secure the resources needed to participate in leisure in the future. They posit that the demand for leisure is a function of three factors: the opportunity cost of leisure, one's level of wealth, and one's set of preferences. If financial compensation increases, pursuing leisure now incurs an opportunity cost, potentially incentivizing more work. Depending on an individual's level of wealth, the financial returns from work may be enough to incentivize work or they may not be enough to incentivize work. Finally, an individual's current preferences will dictate their desire for either work or leisure, altering their responsiveness to financial incentives. Ehrenberg's and Smith's third factor, one's preference to pursue either leisure or work at any given moment, speaks to individual utility maximization which is another oft-used framework in labor economic theory. Suffice to say, financial incentives as a tool to influence employee behavior are grounded in sound psychological and economic theory however they must be applied correctly in order to be successful.

Financial incentives are commonly used to influence retention and attrition behaviors. Organizations must recruit and retain highly skilled workers; both for the skills they offer the organization and for the skills they would otherwise offer a competitor. To secure their hard-won human capital, organizations can entice workers with financial bonuses and incentive payments. The teaching industry has historically done exactly this by using retention bonuses to address workforce shortage concerns.

For example, Springer et al. (2016) evaluate the effect of a USD$5000 retention bonus program for high-performing teachers in priority schools in Tennessee. Teachers were deemed "high performing" based on a common statewide evaluation process, using quantitative and qualitative measures of performance, with a top rating of Level 5. A school was given priority status if it was in the bottom 5.0% of a state-wide composite proficiency rating measuring student proficiency and graduation rates, resulting in the identification of 83 priority schools. Using data on 2,005 teachers from 56 priority schools during the 2012–2013 school year, Springer et al. (2016) found no significant overall effect of the retention bonus on retaining Level 5 teachers in priority schools. However, when focusing on teachers of tested subjects and grades, they found that Level 5 teachers were 11.0 percentage points (pp) more likely to remain in priority schools than their peers. This is a

significant finding. These results were obtained using a fuzzy regression discontinuity design, with teacher effectiveness as the running variable. The discontinuity exploited was the sharp cutoff in proficiency scores of the Level 4 and Level 5 teachers. Regression discontinuity analysis requires several fundamental assumptions to ensure validity of the findings—homogeneity in the unobserved characteristics of control and treatment groups around the cutoff (Level 5 teachers resemble Level 4 teachers), a continuous distribution around the cut off (no manipulation of teacher test scores), and a cut off that is sharp (Level 4 and Level 5 teachers are clearly distinct based on test scores). This study effectively defends these assumptions and addresses most of its limitations, enhancing the validity of its conclusions. The small sample size and the acknowledged risk of confounding variable bias (particularly in measuring school specific teacher quality) limit the generalizability of the findings. Nevertheless, the study presents a compelling argument for a causal link between retention bonuses and teacher retention.

In another study on teachers, Clotfelter et al. (2008) found a link between bonuses and teacher turnover rates. They examined the impact of an annual teacher bonus in North Carolina designed to curb high turnover rates. The bonus was directly aimed at middle school and high school teachers who taught math, science, and special education programs. The bonus was only available to teachers at high poverty rate or low-test score schools. Using longitudinal data on individual teachers from 1999 to 2004, Clotfelter et al. (2008) found that the bonus reduced average turnover rates by 17.2% to 18.5% independent of year fixed effects or teacher ethnicity, gender, or qualifications. Interestingly, teachers with one to three years of experience had increased turnover rates (average hazard ratio 1.27), while those with 20 to 29 years of experience had decreased turnover rates (hazard ratio 0.726). The study's main finding—a 17.0% reduction in mean turnover rates among teachers who received the bonus—was obtained using a difference-in-differences approach comparing the hazard rates prior to the bonus program and following the bonus program, between eligible and ineligible teachers at the same school, and among schools that were narrowly eligible and narrowly ineligible for the bonus. Although this is a valid framework for analysis, there are imperfections in the study. The accuracy of the data is questionable, with the authors citing coding errors and ambiguities in the merged datasets. There are also

concerns regarding the program's implementation across schools, with insufficient oversight to ensure statewide homogeneity in its implementation. The variation, whether deliberate or inadvertent, in applying eligibility criteria to schools and teachers over the years likely introduced bias into the data which may have affected the results. These issues are partially offset by the authors' findings that the eligibility requirements of the bonus were not fully understood, causing marginally eligible schools to effectively self-select themselves out of contention. This resulted in the bonus being less effective at marginally eligible schools—a result the authors attributed to this self-selection issue. Consequently, the main findings—a reduction in mean turnover rates—may in fact be understated. Overall, the study supports the claim that financial bonuses can positively influence employee retention.

Beyond the civilian sector, volunteer militaries globally are plagued with high rates of attrition, negatively impacting capability (Tresch, 2018). Low rates of recruitment exacerbate the manpower issues (Black, 2023) and appear poised to be an enduring problem. Many factors contribute to low recruitment and retention in the world's volunteer militaries such as competition for technically skilled workers, rising obesity rates, and a lower propensity to serve among the younger generations of potential recruits. Strategies to address these issues include military cultural reforms, government incentive programs, and mandatory service however financial incentives remain the strategic tool most consistently and readily wielded by policymakers.

Asch et al. (2010) conducted a RAND study analyzing U.S. Army reenlistment during the period 2002 to 2006. Their paper specifically focused on the Army's Selective Reenlistment Bonus (SRB) program and its effects on the lengths of reenlistment and likelihood of reenlistment. The Office of the Chief of Naval Operations (2019) describes the Selective Reenlistment Bonus as "the [Army's] primary monetary force-shaping tool to achieve enlisted retention requirements in specific categories…" (p. 1). The bonus payment ranges from USD$2,500 to USD$100,000 for additional months of contracted service. The payment amount depends on an individual's job type, length of service, length of contract, and other factors and is set according to Bureau of Naval Personnel and Chief of Naval Operations N130 guidelines. The set rate is controlled by varying the Selective

Reenlistment Bonus Multiple (SRBM), an integer multiplier of the bonus base pay amount, across cohorts to reflect the criticality of the attrition problem within each cohort. Using longitudinal data from 2002 to 2006, the study found significant positive relationships between SRBs and increased rates of retention within the sample dataset. For members reenlisting after two to six years of service (so-called "Zone A"), a one-unit increase in the SRBM (and thus the monetary bonus received by the member) was associated with a 3.9 to 5.9 percentage point increase in reenlistment rates on a baseline reenlistment rate of 46.7% (the average total reenlistment rate between 2002 and 2006). For members reenlisting after seven to ten years of service ("Zone B"), a 4.4 to 7.0 percentage point increase (base 63.1%) was observed. Noting that the SRBM increased by a multiple of one between 2002 and 2006, the average reenlistment rate across both zones can be conservatively estimated to have increased by 3.5 percentage points (Asch et al., 2010). These findings align with Hogan et al.'s (2005) results which indicate that a one-unit increase in the SRBM increased both Zone A and Zone B reenlistment by 6.4pp and 4.4pp, respectively. The direction of these effects—and to a lesser extent, the magnitude—are supported by further findings from Asch et al., where they estimate the marginal effects of key variables on monthly reenlistment hazard rates. When taken cumulatively, the SRBM is shown to lead to a 2.9 to 5.0 percentage point increase in reenlistment probability. Noting that all other statistically significant key variables (deployed status, stop loss status) lead to a decrease in reenlistment probability, these findings strongly support Asch et al.'s conclusion that the SRB increased both reenlistment probability and reenlistment length. Given the military focus of this study, it has a stronger claim to being generalizable to the ADF manpower environment than other civilian studies may provide.

Research on financial bonuses and retention incentives specific to the RAN is limited. Dodds (2018) conducted research investigating length of service (survival) profiles for large cohorts of RAN personnel based on characteristics such as rank, gender, age, and length of service. Using data on 21,495 personnel between 2002 and 2018, Dodd's main findings of relevance were the local maxima of separation rates found at four years (4.9%) and six years (6.6%) of service; the observation that officers are more likely to serve longer periods than sailors (sailors had an average separation rate 13.7pp lower than officers over

the full sixteen years of analysis); and that females were more likely to separate than males during two to nine years of service (14.0% – 82.0%) but became statistically no different from males beyond ten years.

In another study of the RAN, Ung (2023) investigated the relationship between retention, initial contract length, and gender. Ung sought to ascertain if length of initial contract (referred to as an "initial minimum period of service" contract) was correlated with likelihood of separation and whether this differed by gender. The analysis was carried out using Cox Proportional Hazard and Kaplan-Meier Survival models which were applied to a dataset containing cross sectional data on 26,389 unique RAN individuals who served between 2003 to 2023. The results suggest that shorter initial contracts lead to higher separation rates, with enlisted sailors under short two-year contracts 120.8% more likely to separate than the reference. This separation rate decreases to 58.1% for three-year contracts and 39.6% for four-year contracts. When the focus turns to gender, Ung's results conclude that enlisted females generally show no significant difference in separation rates compared to their male counterparts however female separation rates appear to be more sensitive to contract length. Enlisted females under short term initial contracts (two years) show comparatively higher separation rates than males, potentially indicating unique challenges for enlisted females who sign shorter contracts. Interestingly, female officers have a hazard ratio of 0.831 suggesting they are 16.9% less likely to separate than male officers across all contract lengths. This study is open to the critique of not effectively handling the within-person differences based on workgroup. To illustrate this point, technical professions typically have longer mandatory initial minimum periods of service to reflect their increased training burden. Noting that women are underrepresented in technical job roles (relative to non-technical roles), and the assumption that members equipped with technical skills attract higher civilian wages than members without technical skills, it is reasonable to suggest that the length of contract and gender-based findings may be omitting these confounding factors. Further research into how initial contract length and gender each affect retention is warranted and, as Ung eloquently argues, of considerable import to the RAN.

While no direct academic studies on the NRIP exist, there is periodic reporting on it by DFRT. In a recent report by O'Neill et al. (2023) covering the period 01 January 2023 to 30 June 2023, the Tribunal states that, "the trend in separation rates can't be directly attributed to the NRIP [but] an inference can be drawn as to its positive impact on continuing retention efforts" (p. 2). The authors state further that, "the NRIP is assessed as having a lessening impact [on targeted personnel] as the NRIP gets closer to its expiration date" (p. 2). An internal RAN report (2024) on the bonus presents length of service (survival) profiles for officers and enlisted members serving either four or six year initial minimum periods of service. The survival curves visually indicate minimal change in retention behavior due to the bonus across most cohorts regardless of initial contract length or rank. The notable exception is officers who were signed to a six-year initial contract as they exhibit approximately 20.0pp higher survival rates at ten and sixteen years of service compared to those not in receipt of the bonus. Due to access restrictions, it is not possible to readily determine whether the report controls for time fixed effects which would be important given the broad changes in economic factors and ADF manpower policy settings pre–NRIP implementation (<2019) and post–implementation (>2019). For this reason, the findings carry less weight than those of Dodds (2018) and Ung (2023).

A clear gap exists in the literature surrounding the effects of bonuses on retention in the RAN. My study aims to fill this gap by building upon previous work. I will analyze a representative sample of the RAN population—using observable characteristics such as age, rank, gender, and marital status—to compare whether the receipt of the NRIP affects retention. I will pay particular attention to the changing effect of the bonus over time and whether these effects, if present, differ across key cohorts. The findings from this research will provide valuable insights that RAN decision makers can use to inform future manpower policy.

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# IV. DATA AND METHODOLOGY

## A. DATA SOURCE

The dataset contains observations of approximately 19,200 RAN personnel who served between 1972 and 2024, sourced from the Human Resources Data Warehouse (HRDW) and Military Personnel Branch databases. All individuals have been deidentified and randomly assigned a unique identification number. The dataset includes individuals who received a NRIP and includes relevant demographic and administrative data on all individuals as it was recorded in May 2024.

## B. DATA DESCRIPTION

### 1. Summary Statistics

The main summary statistics of the dataset are provided in Table 1. Across the full sample, approximately 25.8% of individuals are officers, 48.5% married, and 24.0% female. The average age is 32.8 years old and the average length of service in years is 9.7. A small portion of the full sample identify as Indigenous Australians at approximately 4.5% with a much larger proportion being natural born citizens of Australia (85.6%). The proportion of the full sample who have separated is 35.3%.

The two largest communities are Warfare and Engineering, comprising 39.5% and 27.1% of the data, respectively. Logistics makes up 13.7% and the remaining communities – Health, Aviation, and Other – make up less than 10.0% each. The community "Other" consists of all workgroups that do not exist within any other community as well as Warrant Officers and Senior Officers.

Table 1. Summary Statistics

| | Full Sample | | Received NRIP | | Did Not Receive NRIP | |
|---|---|---|---|---|---|---|
| **Variable** | **N** | **%** | **N** | **%** | **N** | **%** |
| **Individual Characteristics** | | | | | | |
| Officer | 4959 | 25.8% | 382 | 16.7% | 4577 | 27.4% |
| Married | 9306 | 48.5% | 1414 | 62.0% | 7892 | 46.6% |
| Female | 4603 | 24.0% | 562 | 24.6% | 4041 | 23.9% |
| Age | 32.8 | (10.1) | 33.6 | (6.30) | 32.7 | (10.5) |
| Indigenous | 867 | 4.51% | 100 | 4.38% | 767 | 4.50% |
| Birth Country: Australia | 16436 | 85.6% | 1982 | 86.9% | 14454 | 85.4% |
| Birth Country: Other | 2770 | 14.4% | 300 | 13.1% | 2470 | 14.6% |
| Years of Service | 9.72 | (8.76) | 9.95 | (3.11) | 9.69 | (9.26) |
| Separated | 6785 | 35.3% | 561 | 24.6% | 6224 | 36.8% |
| **Category Characteristics** | | | | | | |
| Engineering | 5206 | 27.1% | 738 | 32.3% | 4468 | 26.4% |
| Warfare | 7580 | 39.5% | 893 | 39.1% | 6687 | 39.5% |
| Aviation | 1806 | 9.40% | 194 | 8.50% | 1612 | 9.50% |
| Health | 727 | 3.79% | 85 | 3.72% | 642 | 3.80% |
| Logistics | 2623 | 13.7% | 325 | 14.2% | 2298 | 13.6% |
| Other | 1264 | 6.58% | 47 | 2.06% | 1217 | 7.20% |
| N | 19206 | | 2282 | | 16924 | |

Note: Age and Years of Service are continuous variables with mean and standard deviation (in parentheses) reported.

The summary statistics in Table 1 show some differences between those who received the NRIP and those who did not. The individual characteristics in which the "Received NRIP" cohort are more represented than the "Did Not Receive NRIP" cohort are: married (15.4pp), female (0.7pp), age (0.9 years), Australian born (1.5pp) and years of service (0.26 years). The individual characteristics in which they were less represented are: officer (10.7pp), indigenous (0.1pp), foreign born (1.5pp), and separated (12.2pp).

I compared the summary statistics of this dataset to other studies or reports of RAN cohorts as a check to ensure accuracy. The studies I used in my comparison were Ung (2023) and Dodds (2018) and the report used was the *Defence Annual Report* (2024b). The annual report and Dodds quote the percentage of officers at 34.0% and 24.5% respectively.

Ung reports marriage rates at approximately 31.5%. The annual report and Dodds report female representation at 20.7% and 21.4%, respectively. Dodds reports that the "average RAN individual" is between 25–29 years old, with Ung reporting that this age cohort comprises approximately 24.0% of the workforce. The annual report claims that the permanent Navy indigenous workforce was 3.9% as at 30 June 2024. Finally the *Defence Annual Report* quotes a median ADF wide length of service of approximately 7 years.

Clearly, each source does not perfectly align with the other. This is to be expected noting the slightly different samples used to construct the statistics. However, they all serve to validate the general accuracy of the summary statistics presented in this thesis.

### 2. Data Preparation

The initial raw data that was provided by the RAN comprised two sets of independently merged datasets consisting of over 22,880 observations of RAN personnel. I first removed any clearly erroneous data entries (noting a portion of the data was manually entered) to include duplicate entries, blank entries, and any Army or RAAF personnel falsely registered in the data. The Army and RAAF personnel who were likely to be correctly recorded in the data (i.e., military transfers to or from the RAN) were dropped from the dataset due to an inability to easily determine when they transferred. This comprised less than 2.0% of the data. I then merged the two datasets into one, deleting all duplicate entries (approximately 1,019 entries) and all entries with no unique identification number (less than 1.0% of the data). This left me with approximately 20,500 observations.

With the dataset now merged, I proceeded to clean the data. Many variables contained data that used similar words to describe the same thing (i.e., it was common to see "true," yes," "accepted," and "received" used interchangeably). Likewise, descriptors such as rank and job function would be given both in full form and abbreviated form. The merged dataset also contained blank values across multiple variables. Majority of the omissions could be discerned from other variables or were not of relevance to the study. This removed the need for any data imputation. No more than 5% of the data was deleted or altered, meaning the data remains free of any deliberate author bias. The final dataset contains observations of 19,206 unique RAN individuals.

## 3. Variables

The main explanatory variable I use in my linear probability models (LPMs) is an indicator variable that shows whether an individual received a NRIP at the seven-, eight-, or twelve-year mark. 2,282 individuals have received a bonus payment in my dataset compared to the 4,771 individuals who were reported as having received a NRIP payment as of April 2024 (Royal Australian Navy, 2024). It is important to note that I drop only a small fraction of individuals who received a bonus payment meaning a majority of the 2,489 non-recorded bonus receivers are missing from my dataset. I deem an individual to have received a bonus payment if they are recorded as "approved" in the Military Personnel Branch's records as of May 2024.

I create variables to indicate if an individual is female, married, an indigenous Australian, an officer, or born in Australia. The small fraction of individuals (less than 10) recorded as "intersex" I deleted from the data. Individuals with a marital status of "Common-Law" are recorded as married. An officer is considered anyone who holds the rank of "Midshipman" (O0) or higher. The rank distribution is given in Table 2.

Table 2. Rank Frequency in Full Sample

| Rank | Rank Code | Frequency | Percent |
|---|---|---|---|
| Recruit | E0 | 597 | 3.11% |
| Seaman (*) | E1 | 1039 | 5.41% |
| Seaman | E2 | 829 | 4.32% |
| Able Seaman | E3 | 4952 | 25.78% |
| Leading Seaman | E5 | 3474 | 18.09% |
| Petty Officer | E6 | 1843 | 9.60% |
| Chief Petty Officer | E8 | 1171 | 6.10% |
| Warrant Officer | E9 | 341 | 1.78% |
| Warrant Officer of the Navy | E10 | 1 | 0.01% |
| Midshipman | O0 | 682 | 3.55% |
| Acting Sub Lieutenant | O1 | 126 | 0.66% |

| Rank | Rank Code | Frequency | Percent |
|---|---|---|---|
| Sub Lieutenant | O2 | 670 | 3.49% |
| Lieutenant | O3 | 1728 | 9.00% |
| Lieutenant Commander | O4 | 933 | 4.86% |
| Commander | O5 | 516 | 2.69% |
| Captain | O6 | 227 | 1.18% |
| Commodore | O7 | 58 | 0.30% |
| Rear Admiral | O8 | 15 | 0.08% |
| Vice Admiral | O9 | 3 | 0.02% |
| Admiral | O10 | 1 | 0.01% |

Note: the RAN does not have an E4 or E7 equivalent rank.

I include indicator variables to signify an individual's community. The communities are Engineering, Warfare, Aviation, Health, Logistics, and Other. To avoid confusion, Remote Pilot Warfare Officers and Aviation Warfare Officers are placed in the Aviation community. Senior officers (O7 and above) are included in the Other community. Trainees are not separated into their own grouping and are treated as belonging to their chosen community.

To facilitate regression analysis the dataset must be split. I split the dataset into two cohorts, named "NRIP 7" and "NRIP 12." NRIP 7 is a restricted sample that includes only those individuals who joined between 2012 and 2024 and did not receive the eight- or twelve-year bonus. The NRIP 12 cohort is created in a similar manner, with the sample restricted to include only individuals who joined between 2001 and 2013 and did not receive the seven- or eight-year bonus. NRIP 8 is not explored in this work as its own cohort due to the difficulties in isolating a suitable control and treatment group that could begin to capture the effect of the Year 8 bonus payment. Both cohorts have had enlisted individuals of rank Chief Petty Officer (E8) or higher and commissioned individuals of rank Commander (O5) and higher removed from analysis. The main reason for this is to focus the study on those ranks that the NRIP is intended to target. The secondary reason is to better align the cohorts with the works of Ung (2023) and Dodds (2018) to allow for

more useful comparison across studies. The summary statistics for both cohorts can be seen in Table 3.

Table 3. Summary Statistics for NRIP 7 and NRIP 12 Cohorts

| Variable | NRIP 7 Cohort N | % | NRIP 12 Cohort N | % |
|---|---|---|---|---|
| **Individual Characteristics** | | | | |
| Officer | 2563 | 22.0% | 1169 | 27.4% |
| Married | 3808 | 32.6% | 2857 | 66.9% |
| Female | 3202 | 27.4% | 903 | 21.1% |
| Age | 27.2 | (6.33) | 36.6 | (6.55) |
| Indigenous | 682 | 5.84% | 120 | 2.81% |
| Birth Country: Australia | 9888 | 84.7% | 3778 | 88.5% |
| Birth Country: Other | 1782 | 15.3% | 493 | 11.5% |
| Years of Service | 4.40 | (3.04) | 13.4 | (4.84) |
| Separated | 3625 | 31.1% | 2059 | 48.2% |
| **Category Characteristics** | | | | |
| Engineering | 3173 | 27.2% | 1130 | 26.5% |
| Warfare | 4626 | 39.6% | 1742 | 40.8% |
| Aviation | 1022 | 8.76% | 457 | 10.7% |
| Health | 409 | 3.50% | 177 | 4.14% |
| Logistics | 1566 | 13.4% | 626 | 14.7% |
| Other | 874 | 7.49% | 139 | 3.25% |
| N | 11670 | | 4271 | |

Note: Age and Years of Service are continuous variables with mean and standard deviation (in parentheses) reported.

I also create several dependent variables to facilitate my regression analysis. The first dependent variable I create is a categorical variable that captures whether an individual remained in the RAN for at least one year beyond the qualifying period of service for either the Year 7 or Year 12 payment. This variable is named $YOS_{+1}$. $YOS_{+2}$ and $YOS_{+3}$ are created in a similar manner to capture at least two or three years of service beyond the qualifying period, respectively. I then repeat the process, this time creating the variables $YOS_{-1}$, $YOS_{-2}$, and $YOS_{-3}$ to capture whether an individual served no more than one, two, or three years less than the qualifying period of service for either the Year 7 or Year 12 payment. Overall, I have six dependent variables for both the NRIP 7 and NRIP 12 cohorts which are used in my LPMs.

To facilitate survival analysis, both a duration variable and a failure indicator variable must be present within the dataset. I use a "separated" indicator variable to signify an individual "failing" out of the system. An individual is deemed to have separated from full-time service if they discharge from the ADF, transfer out of the RAN, or transfer to a part-time role. For the duration variable I use YOS. A survival profile for the Full Sample is given in Figure 5. Clearly, the general shape of the survival curve shows a system where individuals attrite over time with inflection points at approximately six and forty years of service. These are likely attributable to the cessation of initial contracts and compulsory retirement age, respectively. The survival profile suggests that 50.0% of all individuals in the data reach twenty years of service. This appears to be higher than the anticipated survival rate of the RAN population, indicating a general trend in my data of relatively higher average survival rates. This is likely explainable by the sample dataset itself rather than any atypical behavior in the RAN population.

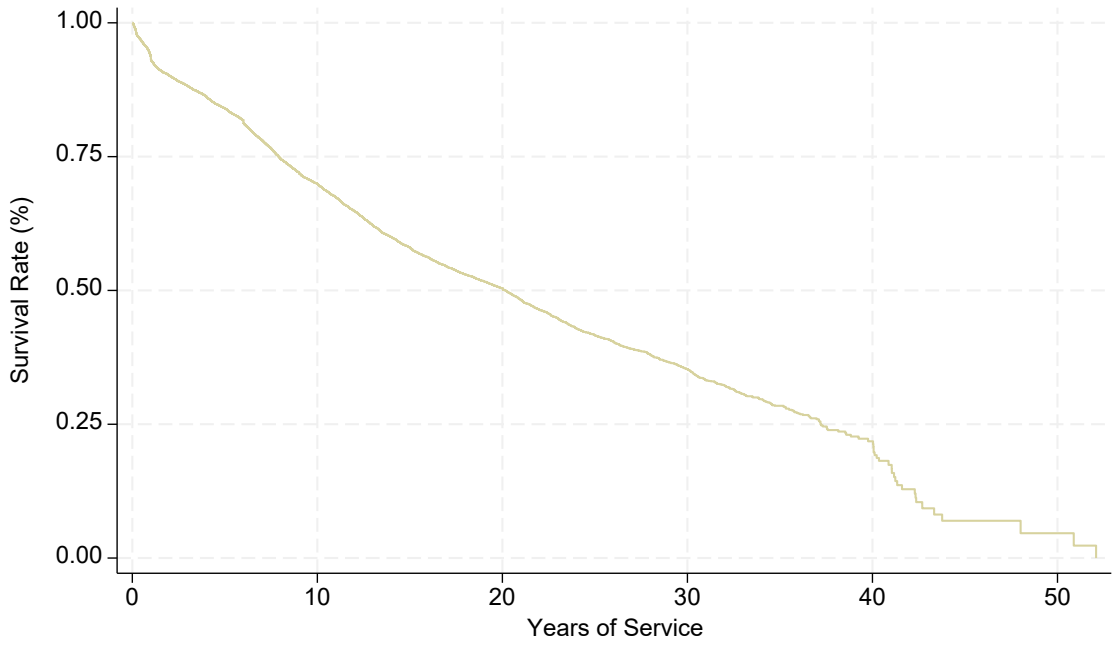



Figure 5. Survival Profile of Full Sample.

The histogram of YOS in Figure 6 provides further explanation of the dataset. First, it is clear to see that the histogram is right skewed, with a long tail extending out towards forty YOS. There is also a clear spike at one YOS, indicating a high proportion of either new joiners or early attrites in the dataset. This bias towards low YOS could explain why both Figure 5 and Figure 6 show atypical sample behavior that is not standard for the full RAN population. The local peaks centered around six years of service suggest high attrition rates post initial minimum periods of service, which supports the findings of Dodds (2018) and Ung (2023). Further local peaks around twenty years of service could be attributed to the former pension plan that ADF individuals could access upon completing twenty years of service, incentivizing people to reach this service threshold before choosing to separate. It may also be explained by historical data issues noting that the HRDW only transitioned to its current digital form in 2002.

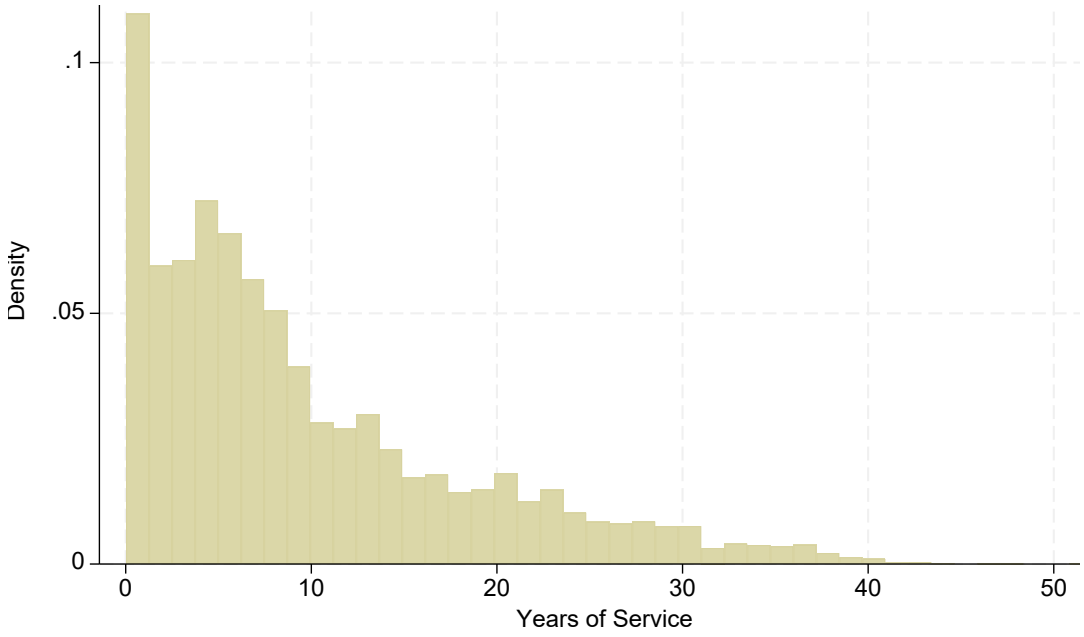



Figure 6. Histogram of Years of Service for Full Sample.

## 4. Data Restrictions and Limitations

The data acquired from the HRDW and Military Personnel Branch databases impose restrictions on econometric analysis. The data warehouse information is kept almost exclusively for ADF administrative purposes – not analytical purposes. As such it presents issues when utilizing it for the type of analysis this thesis aims to carry out. The data warehouse has also only been a digital system since 2002, making accurate historical records difficult to obtain. The data itself is oftentimes contradictory, with statistics such as length of service, start date, and separation date not aligning. A proportion of the data in the warehouse is sourced from another ADF system that relies on individuals accurately entering their own data. The business rules around how information is recorded and stored in the warehouse also change periodically. These two factors likely explain some of the inaccuracy and misalignment in the data. This forces the analyst to make assumptions and impose their own methods to combat these inaccuracies. For this thesis, based on advice from ADF subject matter experts, length of service was chosen as the most reliable statistic to use when there was ambiguity in the data. This is a defendable yet imperfect approach. The lack of complete confidence in an individual's start and end dates (assuming they have

separated) has undoubtedly tainted my analysis to an unknown degree. The clearest sign of this is the high rates of survival for RAN individuals as shown in Figure 5. The survival profile indicates a cohort that serves longer than the ADF wide median term of seven years and sees almost 25.0% of individuals reach forty years of service. This finding is not supported in any other literature. Complicating matters is the lack of consistency between two other recent RAN studies conducted by Dodds (2018) and Ung (2023). Each of these studies present differing survival profiles (in survival rates mostly but to a lesser degree in the general shape of the survival curves) albeit on slightly different datasets suggesting a possible issue in the historical data the RAN collects and stores.

Another complicating factor within the data warehouse information is the historic accuracy of demographic data. Information such as marital status and rank are accurate as of the date the data was pulled. This means that a member may be recorded as being married but was actually not married at the time they received the bonus in the past. This is typical of cross-sectional data and presents challenges for time series analysis. Determining an individual's prior demographic data can be challenging. This issue is of minor importance to my thesis however it is an important factor to be mindful of.

The data sourced from the Military Personnel Branch is data that has been manually entered into spreadsheets by members of the branch. The spreadsheets contain clear human errors (misplaced letters and numbers, irrational values), different words/terms to refer to the same thing, duplicated data, omitted data, and contradictory data. The most critical of these errors is the presumed omitted individuals who received a NRIP yet were not recorded in the dataset. 2,282 individuals are recorded in the data as having received a bonus payment compared to the 4,771 individuals who were reported as having received a NRIP payment as of April 2024 in other official reports (Royal Australian Navy, 2024). The number of NRIP payments authorized as per the dataset prior to 2020 is questionably low. This reflects an inaccuracy in the data and imposes limitations on the analysis of my results. Finally, there is no clear date for when an individual receives a payment. The dataset contains only a "date payment authorized" statistic which leaves room for lag caused by administrative processing time between the "actually eligible" date, the authorized date, and the payment date. For this reason, it proves difficult to confidently

isolate the cause and effect of the bonus in the treatment group. This is why the LPMs I construct in this thesis utilize categorical variables for years of service for the dependent variables instead of constructing a variable based on the date an individual received the NRIP. This is explained further in the Methodology section.

## C. METHODOLOGY

### 1. Linear Probability Models

I first employ LPMs to estimate the impact of the NRIP. I utilize ordinary least squares regression techniques to estimate how changes in independent, explanatory variables affect the probability of a binary dependent variable taking the value of one. The first set of LPMs I employ set "*one, two, or three or more years of further service beyond the NRIP qualifying period"* as the dependent variable. This is $YOS_{+1}$, $YOS_{+2}$, and $YOS_{+3}$. The second set of LPMs set "*no more than one, two, or three years less of effective NRIP qualifying service"* as the dependent variable. These variables are named $YOS_{-1}$, $YOS_{-2}$, and $YOS_{-3}$, respectively. These dependent variables aim to capture an individual's utility or preference for remaining in the RAN. This is impossible to capture directly, meaning an observable proxy must be used instead. This is what the *YOS* indicators provide. Crucially, using indicators for levels of YOS before and after the NRIP and regressing this on a member's eligibility for the NRIP allows for a deeper analysis of the bonus's ability to either pull members to longer periods of service (and reach NRIP thresholds) or to push members to longer periods of service beyond NRIP threshold years. By modelling several YOS indicator variables either side of the bonus payment window, the employment elasticity with respect to the NRIP can be investigated.

The main independent variable of interest is a categorical variable that captures whether an eligible individual received the NRIP or not. *"NRIP"* equals "1" if an individual is recorded as "approved" for a NRIP payment in the dataset and equals "0" otherwise. The LPMs include control variables for the individual traits of rank (officer or enlisted), marital status, sex, age, indigenous status, and community. These controls are selected based on prior econometric literature, model iteration and robustness checks, and personal subject matter knowledge. The common structure of the LPMs can be expressed as:

$$YOS_X = \beta_0 + \beta_1 * NRIP + \beta_k * controls + \epsilon_i$$

$$where\ x\ \in \{-3,3\}.$$

The controls are progressively added across three models to observe the coefficient stability – an important step in any causal analysis of multivariate regressions that utilize non-randomized data. Finally, each regression employs heteroskedasticity-robust standard errors noting the non-constant variance in the standard errors of the independent variable coefficients.

These models are applied to both the NRIP 7 sample and the NRIP 12 sample, creating thirty six LPMs in total.

### 2. Cox Proportional Hazards Models

To strengthen my analysis, I also employ a cox proportional hazards (Cox) model to the NRIP 7 and NRIP 12 datasets. This involves estimating a hazard rate (the risk of separating) for each individual given the influence of several simultaneous risk factors (the controls). Consider the Cox model for some observation $k$:

$$h(t|x_1, \dots, x_k) = h_0(t) * \exp\left(\sum_k b_k * x_k\right)$$

where $h(t)$ is the expected hazard at time $t$, conditional on making it to time $t$; $h_0(t)$ is the baseline hazard when $x_1, \dots, x_k = 0$; and $b_k$ is the coefficient that estimates the magnitude effect of the independent variables $x_1, \dots, x_k$. The independent variables used in the Cox model are the same as the LPM, meaning the hazard rate can be better expressed as:

$$h(t|x_1, \dots, x_k) = h_0(t) * \exp(\beta_0 + \beta_1 * NRIP + \beta_k * controls)$$

This Cox model is implemented using STATA's *stcox* functionality. The function outputs coefficients for each independent variable which are hazard ratios of the form $e^{b_k}$. The generated hazard ratios reveal whether a variable increases the chance of failure ($e^{b_k} > 1$) or decreases the chance of failure ($e^{b_k} < 1$). Again, failure in this context is separation from the permanent RAN workforce. This is an important statistic which I use to compare with the LPM findings as a robustness check.

# V. RESULTS AND ANALYSIS

## A. LINEAR PROBABILITY MODELS

### 1. Preceding the Navy Retention Incentive Payment

Table 4, Table 5, and Table 6 show the regression analysis results for all of the YOS thresholds preceding the payment of the NRIP for both the NRIP 7 and NRIP 12 samples. In each of the three tables, column (1) shows the LPM with no controls; column (2) adds controls of *officer*, *married*, *female*, *age*, and *indigenous*; and column (3) adds controls for an individual's community. When considering Table 4, the *NRIP* coefficient in the seven-year sample drops by 0.139pp from column (1) to column (2) before mostly stabilizing at 0.346 in column (3). For the twelve-year sample, the *NRIP* coefficient is much more stable and remains in the range 0.136 – 0.138. The relatively bigger change in *NRIP* coefficient magnitude for the seven-year sample is mostly attributable to the *married* coefficient which has a large (0.120) and statistically significant effect ($p<0.001$) on the results. This trend of the *NRIP* variable showing more stability in the twelve year sample compared to the seven year sample continues for the $YOS_{-2}$ and $YOS_{-1}$ models as shown in Table 5 and Table 6.

Table 4. Regression Analysis Results for $YOS_{-3}$ Dependent Variable

| | NRIP 7 | | | NRIP 12 | | |
|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(1)** | **(2)** | **(3)** |
| NRIP | 0.503*** | 0.364*** | 0.346*** | 0.138*** | 0.139*** | 0.136*** |
| | (0.007) | (0.009) | (0.009) | (0.01) | (0.01) | (0.01) |
| Officer | | -0.054*** | -0.005 | | 0 | 0.006 |
| | | (0.01) | (0.01) | | (0.012) | (0.012) |
| Married | | 0.129*** | 0.120*** | | 0.098*** | 0.096*** |
| | | (0.01) | (0.01) | | (0.012) | (0.012) |
| Female | | -0.005 | 0.014 | | -0.021 | -0.008 |
| | | (0.009) | (0.01) | | (0.014) | (0.015) |
| Age | | 0.023*** | 0.023*** | | 0.014*** | 0.014*** |
| | | (0.001) | (0.001) | | (0.001) | (0.001) |
| Indigenous | | 0.008 | 0.040** | | 0.051* | 0.05 |
| | | (0.018) | (0.017) | | (0.031) | (0.031) |
| Warfare | | | 0.094*** | | | 0.038 |
| | | | (0.023) | | | (0.03) |

| | NRIP 7 | | | NRIP 12 | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| Aviation | | | 0.015 | | | 0.069** |
| | | | (0.026) | | | (0.032) |
| Engineering | | | 0.144*** | | | 0.031 |
| | | | (0.024) | | | (0.031) |
| Logistics | | | 0.058** | | | 0.007 |
| | | | (0.025) | | | (0.032) |
| Health | | | 0 | | | 0 |
| | | | (.) | | | (.) |
| Other | | | -0.247*** | | | -0.071* |
| | | | (0.025) | | | (0.042) |
| N | 11670 | 11670 | 11670 | 4271 | 4271 | 4271 |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001.

The o*fficer* coefficient appears to explain very little of the variation in YOS, having either a statistically significant small effect (0.054 or less) or a statistically insignificant effect (five of the twelve coefficients at the p>0.1 level) on the results. This indicates that a commissioned member and an enlisted member respond to the bonus in a similar manner. *Married* has a statistically significant effect across all models (p<0.001), with its largest effect being on $YOS_{-3}$ in the NRIP 7 sample (0.129, column (2)). This could suggest that marriage is an indicator for lower rates of separation. The effect of being married is consistently higher for the NRIP 7 sample than it is for the NRIP 12 sample suggesting marriage is a stronger indicator of retention amongst the NRIP 7 cohort. It is unclear whether this is due to the lower average age (27.2 vs. 36.6) in the cohort, the different calendar years of service by the individuals from which the two samples draw from, or another factor. The *female* coefficient is statistically insignificant eleven of the twelve times it appears as a control in the LPMs (Table 6, column (3), NRIP 7 being the exception) indicating an individual's sex has an average effect indistinguishable from zero in the models. This is a strong sign that the NRIP policy as constructed is gender neutral. The continuous control variable *age* is statistically significant across all models but small (0.023 or less). The one observable trend for this variable is the increase from 0.014 in the $YOS_{-3}$ NRIP 12 sample to 0.020 in the $YOS_{-1}$ NRIP 12 sample. This may suggest that an increase in age is correlated with a greater probability to

remain serving for longer periods of service. Finally, the *indigenous* variable is a weak control variable, often being of statistical insignificance in the model (only meeting the condition p<0.001 once) and of small magnitude (0.051 or less). Much like the *female* coefficient, this lack of clear correlation suggests that an *indigenous* individual has the same likelihood of reaching a set number of years of service as a non-indigenous individual.

Table 5. Regression Analysis Results for $YOS_{-2}$ Dependent Variable

| | **NRIP 7** | | | **NRIP 12** | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| NRIP | 0.623*** | 0.494*** | 0.480*** | 0.174*** | 0.177*** | 0.175*** |
| | (0.007) | (0.009) | (0.009) | (0.01) | (0.011) | (0.011) |
| Officer | | -0.020** | 0.017* | | 0.018 | 0.024* |
| | | (0.01) | (0.01) | | (0.012) | (0.012) |
| Married | | 0.118*** | 0.112*** | | 0.091*** | 0.089*** |
| | | (0.01) | (0.01) | | (0.013) | (0.013) |
| Female | | -0.001 | 0.015 | | -0.013 | 0.001 |
| | | (0.009) | (0.009) | | (0.014) | (0.015) |
| Age | | 0.022*** | 0.022*** | | 0.016*** | 0.017*** |
| | | (0.001) | (0.001) | | (0.001) | (0.001) |
| Indigenous | | 0.023 | 0.046*** | | 0.016 | 0.016 |
| | | (0.017) | (0.016) | | (0.035) | (0.035) |
| Warfare | | | 0.055** | | | 0.018 |
| | | | (0.023) | | | (0.031) |
| Aviation | | | -0.02 | | | 0.05 |
| | | | (0.026) | | | (0.034) |
| Engineering | | | 0.092*** | | | 0.015 |
| | | | (0.024) | | | (0.032) |
| Logistics | | | 0.008 | | | -0.022 |
| | | | (0.025) | | | (0.033) |
| Health | | | 0 | | | 0 |
| | | | (.) | | | (.) |
| Other | | | -0.201*** | | | -0.094** |
| | | | (0.024) | | | (0.042) |
| N | 11670 | 11670 | 11670 | 4271 | 4271 | 4271 |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001.

An individual's community correlates with each dependent variable differently and varies between the two samples. For the NRIP 7 sample, being a member of the *warfare* community increases your probability of reaching the relevant YOS threshold by 5.5-9.4pp. *Aviation* and *health* never present as statistically significant controls. The *engineering* control behaves the same as the *warfare* control, albeit with a magnitude ranging from 6.6 to 14.4pp. Being a member of the o*ther* community is negatively correlated with reaching the relevant YOS threshold across all three models. The coefficient's magnitude trends downwards (i.e., gets smaller) as the dependent variable changes from $YOS_{-3}$ to $YOS_{-1}$.

For the NRIP 12 sample, an individual's community is overall a weaker control in every model. *Aviation* is a significant but small control for both $YOS_{-3}$ and $YOS_{-1}$, with coefficient values of 0.069 and 0.087, respectively. The variable o*ther* is significant across all three models and has a magnitude ranging between -0.094 and -0.071. All other community controls are statistically insignificant. The community controls may differ between the NRIP 7 and NRIP 12 cohorts due to the increased disparity in seagoing/ operational style work between communities and workgroups at early career stages. For example, a warfare sailor is going to spend a large proportion of their early to mid-career at sea before likely tapering off as they progress in rank. A logistics sailor, in comparison, has a lower and more predictable sea going burden. A member's taste for deployed service is an omitted variable here as there are definite benefits and costs of service at sea that each individual will extract a different level of utility from.

Table 6. Regression Analysis Results for $YOS_{-1}$ Dependent Variable

| | **NRIP 7** | | | **NRIP 12** | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| NRIP | 0.730*** | 0.619*** | 0.610*** | 0.222*** | 0.227*** | 0.224*** |
| | (0.007) | (0.009) | (0.009) | (0.011) | (0.012) | (0.012) |
| Officer | | -0.003 | 0.022** | | 0.046*** | 0.054*** |
| | | (0.009) | (0.009) | | (0.013) | (0.013) |
| Married | | 0.105*** | 0.101*** | | 0.095*** | 0.093*** |
| | | (0.009) | (0.009) | | (0.013) | (0.013) |
| Female | | 0.012 | 0.024*** | | -0.006 | 0.013 |

| | NRIP 7 | | | NRIP 12 | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| | | (0.008) | (0.008) | | (0.015) | (0.016) |
| Age | | 0.019*** | 0.019*** | | 0.019*** | 0.020*** |
| | | (0.001) | (0.001) | | (0.001) | (0.001) |
| Indigenous | | 0.015 | 0.029* | | 0.014 | 0.014 |
| | | (0.015) | (0.015) | | (0.038) | (0.038) |
| Warfare | | | 0.060*** | | | 0.043 |
| | | | (0.022) | | | (0.033) |
| Aviation | | | 0 | | | 0.087** |
| | | | (0.024) | | | (0.036) |
| Engineering | | | 0.066*** | | | 0.045 |
| | | | (0.022) | | | (0.034) |
| Logistics | | | -0.004 | | | 0.005 |
| | | | (0.023) | | | (0.036) |
| Health | | | 0 | | | 0 |
| | | | (.) | | | (.) |
| Other | | | -0.126*** | | | -0.079* |
| | | | (0.023) | | | (0.045) |
| N | 11670 | 11670 | 11670 | 4271 | 4271 | 4271 |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001.

### 2. Succeeding the Navy Retention Incentive Payment

Table 4, Table 5, and Table 6 give the regression analysis results for the YOS succeeding the NRIP. The o*fficer* and *married* coefficients are positive and statistically significant for all models suggesting both controls have a correlation with years of service and therefore utility for RAN service. Both coefficients also show a decrease in magnitude (for both NRIP samples) from $YOS_{+1}$ to $YOS_{+3}$. The *female* coefficient is largely insignificant suggesting it is an unnecessary control and that YOS do not tend to differ based on an individual's gender. *Age* is a significant control, having a consistent effect on YOS in the NRIP 7 sample in the range 0.006 to 0.011 and a consistent (and larger) effect in the NRIP 12 sample, ranging from 0.026 to 0.029. It stands to reason that *age* and *YOS* would be correlated noting the vast majority of RAN members join at roughly the same age meaning this observed correlation reveals little of significance. The *indigenous* control fluctuates both in magnitude and statistical significance across all models. When it is of

statistical significance, *indigenous* is negatively correlated with increasing YOS. This effect is the largest in the NRIP 12 sample, with *indigenous* individuals being 7.4pp less likely to serve 15 years or more ($YOS_{+3}$) than non-indigenous individuals. This contrasts with the models that captured YOS preceding the NRIP possibly suggesting that the interaction with age, years of service, or time (noting the different periods in which each NRIP cohort were sampled from) is different for *indigenous* individuals. This could be cause for further targeted study.

Table 7. Regression Analysis Results for $YOS_{+1}$ Dependent Variable

| | **NRIP 7** | | | **NRIP 12** | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| NRIP | 0.494*** | 0.439*** | 0.436*** | 0.087*** | 0.096*** | 0.092*** |
| | (0.015) | (0.016) | (0.016) | (0.02) | (0.02) | (0.02) |
| Officer | | 0.041*** | 0.049*** | | 0.073*** | 0.082*** |
| | | (0.007) | (0.008) | | (0.016) | (0.016) |
| Married | | 0.052*** | 0.050*** | | 0.100*** | 0.099*** |
| | | (0.007) | (0.007) | | (0.015) | (0.015) |
| Female | | -0.006 | -0.001 | | 0.026 | 0.038** |
| | | (0.006) | (0.006) | | (0.017) | (0.018) |
| Age | | 0.011*** | 0.011*** | | 0.028*** | 0.028*** |
| | | (0.001) | (0.001) | | (0.001) | (0.001) |
| Indigenous | | -0.014 | -0.01 | | -0.083** | -0.081** |
| | | (0.01) | (0.01) | | (0.039) | (0.039) |
| Warfare | | | 0.053*** | | | -0.012 |
| | | | (0.017) | | | (0.037) |
| Aviation | | | 0.057*** | | | 0.008 |
| | | | (0.019) | | | (0.042) |
| Engineering | | | 0.033* | | | 0.035 |
| | | | (0.017) | | | (0.038) |
| Logistics | | | 0.004 | | | -0.004 |
| | | | (0.018) | | | (0.04) |
| Health | | | 0 | | | 0 |
| | | | (.) | | | (.) |
| Other | | | -0.028 | | | -0.099* |
| | | | (0.017) | | | (0.051) |
| N | 11670 | 11670 | 11670 | 4271 | 4271 | 4271 |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001.

The *warfare* coefficient decreases from 0.053 to 0.025 from Table 4 to Table 6 for the NRIP 7 sample, suggesting that being a member of the warfare community matters less to how the seven year NRIP effects individuals as they serve further beyond seven years. There is no statistical effect of the *warfare* control for the NRIP 12 sample. The *aviation* control mirrors *warfare* very closely, decreasing in the same manner for the NRIP 7 cohort and having an insignificant effect on the NRIP 12 cohort. Being a member of the engineering, logistics, health, or other community reveals little about an individual's service profile with none of the results being significant below the p<0.01 threshold. The *other* coefficient is significant at the p<0.1 level for the NRIP 12 sample, indicating that members of this community have a 9.9pp lower probability of serving 13 years or more and an 8.9pp lower probability of serving 14 years or more, compared to any other community. This suggests that these workgroups are less inclined to serve for longer periods of time and likely respond to bonuses such as the NRIP differently compared to workgroups from other communities.

Table 8. Regression Analysis Results for $YOS_{+2}$ Dependent Variable

| | **NRIP 7** | | | **NRIP 12** | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| NRIP | 0.134*** | 0.091*** | 0.090*** | -0.236*** | -0.225*** | -0.229*** |
| | (0.012) | (0.013) | (0.013) | (0.018) | (0.018) | (0.018) |
| Officer | | 0.027*** | 0.031*** | | 0.073*** | 0.082*** |
| | | (0.006) | (0.006) | | (0.016) | (0.016) |
| Married | | 0.042*** | 0.040*** | | 0.089*** | 0.089*** |
| | | (0.006) | (0.006) | | (0.014) | (0.014) |
| Female | | -0.008 | -0.003 | | 0.023 | 0.030* |
| | | (0.005) | (0.005) | | (0.016) | (0.017) |
| Age | | 0.008*** | 0.008*** | | 0.029*** | 0.029*** |
| | | (0) | (0.001) | | (0.001) | (0.001) |
| Indigenous | | -0.025*** | -0.023*** | | -0.045 | -0.043 |
| | | (0.007) | (0.007) | | (0.039) | (0.039) |
| Warfare | | | 0.040*** | | | -0.006 |
| | | | (0.013) | | | (0.037) |
| Aviation | | | 0.054*** | | | 0.023 |
| | | | (0.015) | | | (0.042) |
| Engineering | | | 0.025* | | | 0.032 |
| | | | (0.014) | | | (0.038) |
| Logistics | | | 0.001 | | | 0.021 |

| | NRIP 7 | | | NRIP 12 | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| | | | (0.014) | | | (0.04) |
| Health | | | 0 | | | 0 |
| | | | (.) | | | (.) |
| Other | | | -0.009 | | | -0.089* |
| | | | (0.014) | | | (0.053) |
| N | 11670 | 11670 | 11670 | 4271 | 4271 | 4271 |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001.

Table 9. Regression Analysis Results for $YOS_{+3}$ Dependent Variable

| | NRIP 7 | | | NRIP 12 | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| NRIP | -0.036*** | -0.068*** | -0.069*** | -0.384*** | -0.374*** | -0.377*** |
| | (0.003) | (0.005) | (0.005) | (0.01) | (0.011) | (0.011) |
| Officer | | 0.015*** | 0.018*** | | 0.071*** | 0.079*** |
| | | (0.005) | (0.005) | | (0.015) | (0.015) |
| Married | | 0.025*** | 0.025*** | | 0.077*** | 0.077*** |
| | | (0.005) | (0.005) | | (0.013) | (0.013) |
| Female | | -0.004 | -0.002 | | 0.016 | 0.024 |
| | | (0.004) | (0.004) | | (0.015) | (0.016) |
| Age | | 0.006*** | 0.007*** | | 0.026*** | 0.027*** |
| | | (0) | (0) | | (0.001) | (0.001) |
| Indigenous | | -0.009* | -0.008 | | -0.075** | -0.074** |
| | | (0.005) | (0.005) | | (0.033) | (0.033) |
| Warfare | | | 0.025** | | | 0.011 |
| | | | (0.01) | | | (0.036) |
| Aviation | | | 0.026** | | | 0.037 |
| | | | (0.011) | | | (0.04) |
| Engineering | | | 0.015 | | | 0.034 |
| | | | (0.01) | | | (0.037) |
| Logistics | | | 0.002 | | | 0.025 |
| | | | (0.01) | | | (0.038) |
| Health | | | 0 | | | 0 |
| | | | (.) | | | (.) |
| Other | | | -0.005 | | | -0.073 |
| | | | (0.01) | | | (0.052) |
| N | 11670 | 11670 | 11670 | 4271 | 4271 | 4271 |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001.

### 3. Summary

Table 10 shows the effect of receiving the NRIP at year seven on an individual's length of service at four, five, and six YOS. Individuals who receive the seven-year NRIP have a 34.6pp higher probability of serving at least four years compared to those who did not receive the NRIP. This probability increases to 48.0pp higher and 61.0pp for serving at least five or six years, respectively. Each of these results are statistically significant at the $p<0.001$ level. The increase in the *NRIP 7* coefficient magnitude suggests the bonus has its greatest effect on the cohorts closest to receiving the bonus.

Table 10. NRIP Variable Coefficient at Each YOS-$_x$ Level for NRIP 7 and NRIP 12 Samples

| | $-3$ | $-2$ | $-1$ | 1 | 2 | 3 |
|---|---|---|---|---|---|---|
| NRIP 7 | 0.346*** | 0.480*** | 0.610*** | 0.436*** | 0.090*** | -0.069*** |
| | (0.009) | (0.009) | (0.009) | (0.016) | (0.013) | (0.005) |
| NRIP 12 | 0.136*** | 0.175*** | 0.224*** | 0.092*** | -0.229*** | -0.377*** |
| | (0.01) | (0.011) | (0.012) | (0.02) | (0.018) | (0.011) |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001. Coefficients presented are from linear probability model (3).

Table 10 reveals similar findings for the twelve-year NRIP and its impact on extending YOS. Individuals who receive the twelve-year NRIP payment have a 13.6pp higher probability of serving at least nine years compared to those who did not receive the NRIP. For those serving ten and eleven years or more, it is a 17.5pp and 22.4pp increase, respectively. The twelve-year NRIP shows a similar directional effect on the YOS preceding the bonus payment as the seven-year NRIP does on the YOS preceding the bonus payment. Where the bonuses differ is in their magnitudes. From YOS-$_3$ to YOS-$_1$, the seven-year NRIP is bigger than the twelve-year NRIP by 154.0%, 174.0%, and 172.0%. This suggests that the NRIP's effectiveness may be diminishing over time.

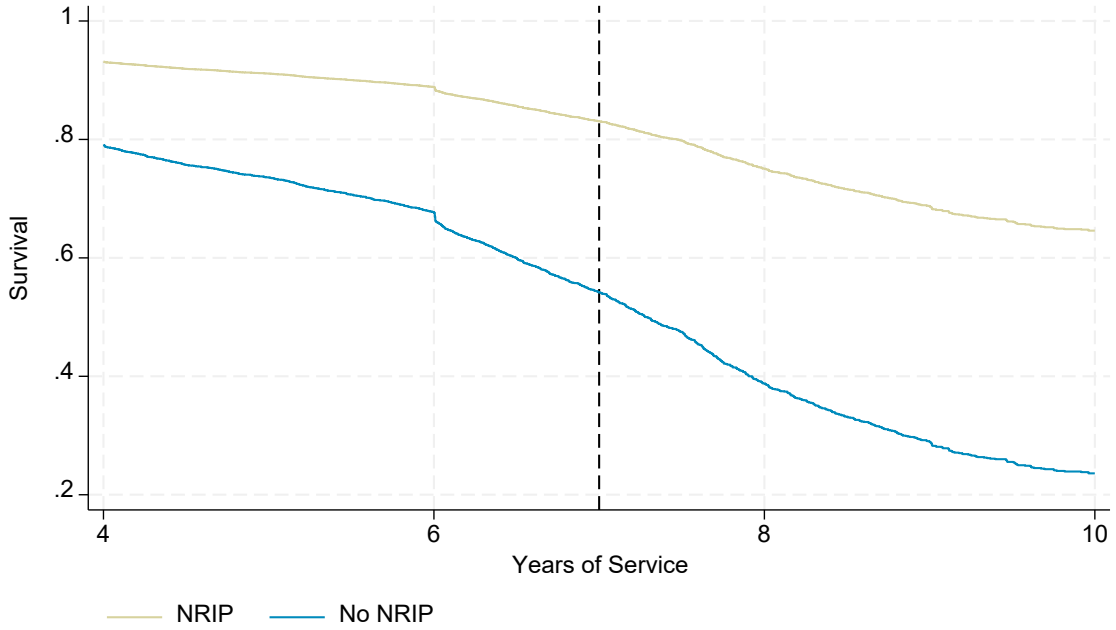
Table 10 also shows the effect of receiving the seven-year NRIP on an individual's length of service at eight, nine, and ten YOS. Individuals who receive the seven-year NRIP

payment have a 43.6pp higher probability of serving at least eight years compared to those who did not receive the NRIP. This probability decreases to 9.0pp higher for serving at least nine years. For ten or more years, the coefficient becomes negative meaning individuals who receive NRIP at year seven have a 6.9pp lower probability of serving at least ten years compared to the individuals who did not receive the NRIP. The decrease in magnitude of the *NRIP 7* coefficient suggests the bonus has its greatest effect on the cohorts closest to receiving the bonus, which is the same observation as the "preceding YOS" LPMs previously discussed.

Table 10 illustrates this same decrease in effect size for the twelve-year NRIP. The $YOS_{+1}$ model has a *NRIP* coefficient of 0.092, $YOS_{+2}$ a *NRIP* coefficient of -0.229, and $YOS_{+3}$ a *NRIP* coefficient of -0.377. This can be interpreted as the NRIP having a small positive effect on increasing YOS initially but an increasingly negative impact as individuals move further beyond the receipt window for the twelve year NRIP.

## B. COX PROPORTIONAL HAZARDS MODELS

Figure 7 presents the Cox survival curves of the NRIP 7 sample split into two cohorts: those who received the NRIP and those who did not receive the NRIP. The figure explicitly highlights the three years of service before and after the NRIP eligibility to align with the specification of the LPMs. Quite clearly, the cohort who received the NRIP have a service profile characterized by increased survival rates across four to ten years of service. The smallest increase in survival rate relative to the cohort who didn't receive the bonus is at four YOS (approximately 10.0pp higher) and this disparity increases to a maximum at ten YOS where the survival rate is approximately 40.0pp higher). Both cohorts follow the same general trend in their survival profiles: a steady linear decline from four to six YOS, a noticeable discrete drop in survival at six YOS, an increased steady linear decline from six YOS to seven YOS and then a shallow exponential decrease through to ten YOS.




Note: NRIP hazard ratio: 0.303. Vertical line indicates when a member would be eligible for the seven-year NRIP.

Figure 7. Cox Survival Curve – NRIP 7 Sample.

Table 11 provides the hazard ratios for the NRIP 7 sample. Individuals who receive the NRIP are 69.7% (hazard ratio 0.303) less likely to separate, holding the other covariates constant. Several other covariates are associated with a lower propensity to separate: *officer* (42.5%), *married* (24.4%), and *age*[1] (10.1%). Females and indigenous individuals are 11.0% and 28.0% more likely to separate than males and non-indigenous individuals, respectively. The five included communities are all associated with a decreased rate of separation with hazard ratios in the range 0.218 to 0.376. Every covariate is significant at the $p<0.001$ level except for *female* which is significant at $p<0.01$.

[1] Noting age is a continuous variable, this result can be interpreted as: "for every one year increase in age, an individual's hazard rate decreases by 10.1%."

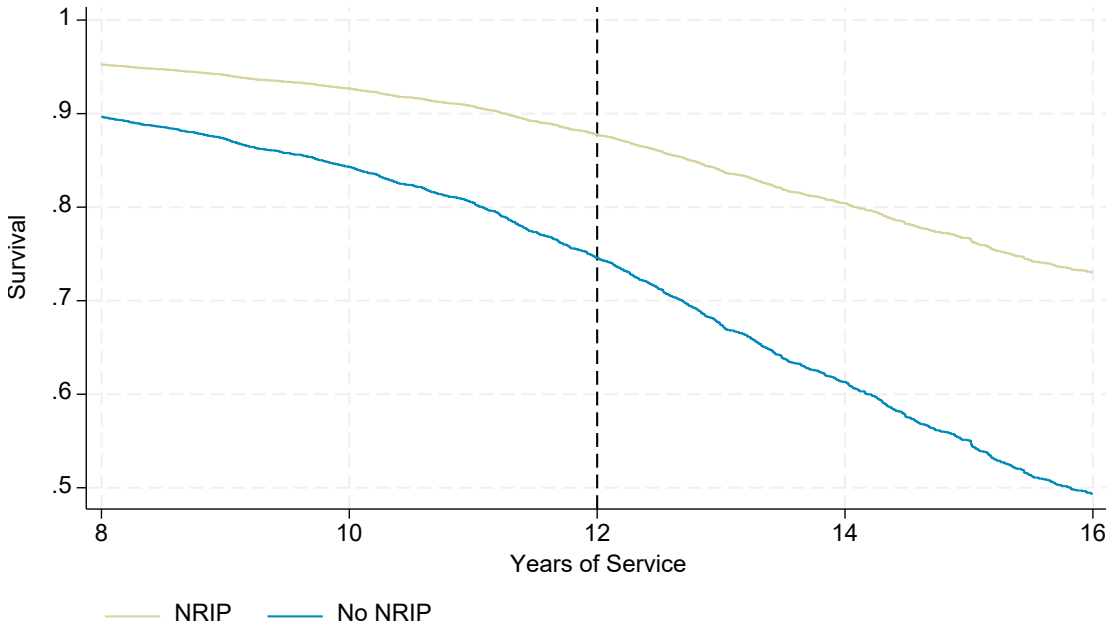
Table 11. Hazard Ratios for NRIP 7 and NRIP 12 Samples

| | NRIP 7 | NRIP 12 |
|---|---|---|
| NRIP | 0.303*** | 0.445*** |
| | (0.022) | (0.037) |
| Officer | 0.575*** | 0.587*** |
| | (0.027) | (0.034) |
| Married | 0.756*** | 0.706*** |
| | (0.029) | (0.033) |
| Female | 1.11** | 0.923 |
| | (0.042) | (0.053) |
| Age | 0.899*** | 0.871*** |
| | (0.004) | (0.005) |
| Indigenous | 1.28*** | 1.05 |
| | (0.079) | (0.134) |
| Warfare | 0.229*** | 0.517*** |
| | (0.014) | (0.068) |
| Aviation | 0.254*** | 0.433*** |
| | (0.020) | (0.064) |
| Engineering | 0.218*** | 0.469*** |
| | (0.014) | (0.064) |
| Logistics | 0.273*** | 0.556*** |
| | (0.020) | (0.077) |
| Health | 0.376*** | 0.644** |
| | (0.038) | (0.104) |

Note: Standard error in parentheses. *p<0.1 **p<0.01 ***p<0.001. NRIP 7 – 11670 observations, 3625 failures. NRIP 12 – 4271 observations, 2059 failures. "Other" was omitted due to collinearity.

Figure 8 compares the effects of receiving the NRIP on the survival rates of the individuals in the NRIP 12 sample to those who did not receive the NRIP. The cohort who received the bonus payment have a survival rate of approximately 95.0% at eight YOS, a survival rate of approximately 88.0% at twelve YOS, and a survival rate of approximately 73.0% at sixteen YOS. The cohort who did not receive the NRIP have a survival rate of

approximately 90.0%, 75.0%, and 50.0% at the same YOS thresholds. This is a difference of 5.0pp, 13.0pp, and 23.0pp respectively. The general trend in survival profiles is the same for both cohorts, with a steadily increasing rate of separation from eight YOS to sixteen YOS.




Note: NRIP hazard ratio: 0.445. Vertical line indicates when a member would be eligible for the twelve-year NRIP.

Figure 8. Cox Survival Curve – NRIP 12 Sample.

The hazard ratios for the NRIP 12 sample are given in Table 11. The hazard ratio for the covariate *NRIP* is 0.445 which can be interpreted as the bonus decreasing the separation rate by 55.5% when the other covariates are held constant. Similar directional effects are seen across other covariates with *officer* (0.587), *married* (0.706), *warfare* (0.517), *aviation* (0.433), *engineering* (0.469), *logistics* (0.556), and *health* (0.644) all decreasing the separation rate. The continuous variable *age* has a hazard ratio of 0.871 meaning for every one year older an individual may be, their separation hazard decreases by 12.9%. Being female or indigenous is of statistical insignificance in this model.

The Cox models support the general finding of the LPMs that the NRIP is statistically correlated with longer periods of service. It also supports the observation that

the seven-year NRIP is more effective than the twelve-year NRIP at delaying separation and extending the service of RAN members eligible for the bonus.

## C. SUMMARY OF FINDINGS

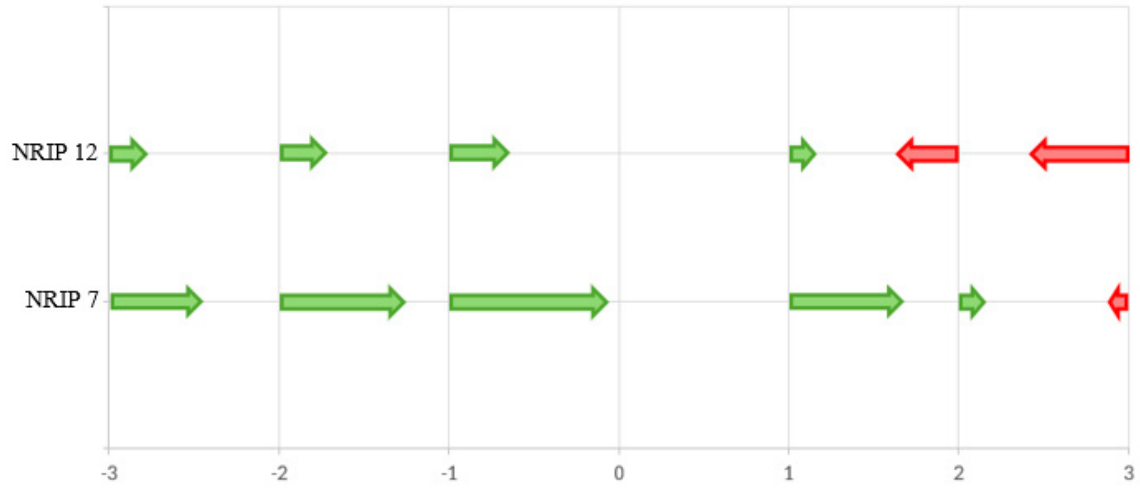
### *a. Does the Navy Retention Incentive Payment extend the average length of service profiles of the cohort in receipt of the bonus? Does this vary across cohorts?*

From the survival profiles in Figure 7 and Figure 8 it appears that the NRIP does extend the average length of service for those members who receive it. The hazard ratios given in Table 11 suggest that the bonus decreases separation rates by almost 70.0% and 56.0% for the NRIP 7 and NRIP 12 cohorts. This difference of approximately 14.0pp between the two cohorts indicates that the bonus does vary across cohorts and is more effective for the seven-year cohort. This cohort variation could be attributed to the fixed payment amount of AUD$20,000. The on-average younger, lower-earning seven-year cohort likely considers the payment a bigger incentive because to them this amount is a larger fraction of their salary. This could suggest that a future bonus that compensates proportional to income could be more effective. Another reason for the cohort-to-cohort difference could be ascribed to the simple fact that seven YOS is easier to reach than twelve YOS. With less time being employed under an open-ended contract (and therefore less time to be free to choose to separate in pursuit of alternate civilian employment offers) and with less competitive promotion boards (by nature of the hierarchical military rank structure) it could simply be that the seven-year cohort were already less inclined to separate in the crucial years leading up to the bonus compared to the twelve year cohort. The seven-year cohort also has the eight-year NRIP as a viable option in their immediate future, an obvious incentive that the twelve-year cohort does not have. This makes likely the claim that the results from the NRIP 7 cohort are confounded with the positive retention effects of the eight-year NRIP. This bias was partially combated through the formation of the NRIP 7 cohort (omitting individuals who had received the eight-year NRIP) however its effects were likely still masked within these results noting individuals in the sample are free to go on and receive the eight-year payment in the future. Finally, the bonus's hazard ratios (both in absolute magnitude and relative magnitude to the other cohort) are likely impacted by

omitted variables that are time varying. The sample datasets for each cohort are comprised of individuals who served in two different time periods (hire date between 2001 and 2013 for the NRIP 12 cohort and hire date between 2012 and 2024 for the NRIP 7 cohort). This leaves room for biased estimates due to factors such as the civilian employment rate, the civilian-military wage differentials, the strategic objectives of the ADF in each period, and other factors. This limits the generalizability of these results as the same bonus structure may have different effects if implemented at a different time.

#### *b. Does the Navy Retention Incentive Payment delay separation by at least twelve to twenty-four months for those members approaching known separation points?*

The coefficients given in Table 10 show how the NRIP affects YOS in the years preceding and succeeding payment of the bonus. Figure 9 visually depicts the same coefficients. The LPMs clearly indicate that the NRIP can "pull through" members of both cohorts to the bonus receiving threshold. This "pull through" effect increases in magnitude as the individual gets closer to being eligible for the NRIP. The effect is larger for each preceding year for the NRIP 7 cohort than the NRIP 12, supporting the Cox model findings. For the years succeeding payment of the bonus, the effect is not so clear. The NRIP 12 cohort experiences an increase in probability of serving thirteen or more years due to the bonus but experiences an increasingly large decrease in probability of serving at least fourteen and fifteen years. The NRIP 7 cohort experiences this same decrease but only in the final year of study (YOS equal to or greater than ten). This negative correlation between YOS and the NRIP is perhaps further evidence that individuals tend to extend their service by a few extra years just to obtain the bonus and once obtained, separate from service. This cohort of people who are separating several years later than they otherwise would have, join the cohort of people who did not receive the bonus and were always forecast to separate at either the ten, fourteen, or fifteen (the "red arrow" years in Figure 9) YOS mark. This would explain the large and negative coefficients because the cohort of attritors has been inflated due to the presence of the bonus. These results suggest that the bonus has a limited ability to delay separation beyond twelve to twenty-four months and that the NRIP's ability to "push through" members to extended career terms is significantly limited.




Note: All coefficients statistically significant at p <0.001. Coefficients presented are from linear probability model (3).

Figure 9. Magnitude and Direction of NRIP Variable Coefficient at each $YOS_x$ Level for NRIP 7 and NRIP 12 Samples.

### *c. Does the effectiveness of the Navy Retention Incentive Payment diminish over time?*

Both Table 10 and Figure 9 indicate that the effectiveness of the Navy Retention Incentive Payment diminishes over time for the years succeeding its payment. As minimum YOS increases to one, two, and three years beyond the NRIP threshold, the bonus's effectiveness decreases as seen by the decreasing magnitude of the NRIP coefficients. This indicates that the bonus is most effective at incentivizing further service for those individuals who are the closest to having received the payment. This trend is borne out in the preceding years to the bonus, where magnitudes are largest closest to the time the NRIP is received. The clear increased effectiveness for the NRIP 7 cohort compared to the NRIP 12 cohort – a finding which is supported by the survival curves in Figure 7 and Figure 8 and the hazard ratios in Table 11 – can be interpreted as further decreased effectiveness over time as it relates to time in service. Noting the bonus payment amount has remained fixed since 2019, the real value of the bonus has decreased due to inflationary effects in the Australian economy. Using consumer price index (CPI) rates quoted by the Australian Bureau of Statistics (ABS), the bonus payment would need to have increased to over

AUD$24,181 in 2024 to maintain an equivalent value to its 2019 amount.[2] Noting that this did not occur it is likely that the diminishing real value of the NRIP correlates with a diminished effectiveness over time. The bonus's effectiveness could also have diminished due to its effects already being "priced in" in the minds of RAN members. Individuals who knew from the day the NRIP was announced in May 2019 that they would be eligible to receive a payment in the future may have simply considered that their new "normal" compensation plan and as such perceived it to be less of an incentive over time. An argument could also be made that other competing employers may have raised their prices by an equivalent amount to attract highly employable RAN employees – mitigating any wage differential effect the bonus could have created. If we assume this correction in labor market salaries would have taken time to occur, it is feasible that this was another contributing factor to the diminishing effectiveness of the bonus over time.

[2] $Nominal\ equivalent\ value, 2024 = \$20{,}000 * \left(\frac{CPI_{end\ of\ June\ quarter,2024}}{CPI_{end\ of\ June\ quarter,2019}}\right) = 20{,}000 * \left(\frac{138.8}{114.8}\right) =$ $24,181.19. Source: ABS (2024).

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# VI. RECOMMENDATIONS AND CONCLUSION

Throughout this thesis I investigated the impact of the Navy Retention Incentive Payment on retention in the Royal Australian Navy. I employed linear probability models and cox proportional hazards models to ascertain whether the NRIP could extend average length of service profiles, delay separation by at least twelve to twenty-four months, and whether it could maintain its effectiveness at doing both over time. My results indicate that the NRIP can extend length of service profiles for those who receive it – especially the seven-year payment – however there is evidence to suggest that it has low efficacy in directly delaying separation for at least twelve to twenty-four months. This low efficacy is more pronounced for the twelve-year payment. The results also show that the NRIP's effectiveness diminishes over time for both payments but particularly for the twelve-year payment.

The findings from my investigation provide several potential avenues for improving RAN and ADF manpower policy. First, due consideration should be given to making any future retention bonus proportionate to an individual's current salary. This means that the bonus amount should increase for higher paid individuals (either due to workgroup or seniority) and should be inflation-adjusted if it is to be an enduring bonus. This will ensure that future financial-based retention incentives appeal to members of differing salaries and that the incentive maintains its real value and not just its nominal value. Second, future bonuses that are designed to "pull through" individuals to set service thresholds appear to be effective. Consideration needs to be given to the timing of the bonus, its total value, and the length of years an eligible cohort must remain in service to obtain the payment however there does appear to be scope for this type of policy to prove effective. Targeted use of such incentives should be explored further. Finally, the ADF must develop a plan to accommodate larger-than-normal separations immediately after a retention bonus or service obligation has been completed. The "separation decision points" at which ADF members have a higher probability of separation (i.e., at the end of a contracted period of service) appear to be unavoidable and can at best be only delayed via bonuses. A layered approach to incentive structure – whether financial, non-financial, or

both – would be the recommended approach as this would blur the sharp decision points due to the overlapping nature of concurrent and consecutive incentives. This would hopefully mitigate the "drop off" effect of a bonus and be a net positive for retention.

More broadly, the ADF needs to improve its ability to measure the effectiveness of its manpower policy decisions. Econometricians or analysts should be consulted as early as possible in the decision-making process when developing retention initiatives so that a method of data collection and subsequent analysis can be developed. This would provide the ADF with the best chance of garnering reliable and useful results that can then inform future manpower policy decisions. A big component of this improvement should be obtained via improving the quality of the human resources data that is collected and stored. The current HRDW does not appear to be fit for this purpose and should be improved or an alternate strategy developed. This is not limited to the data warehouse itself but extends to include the inputting of data by individual members and the ability of workforce analysts to access and extract the data. Further training and education for both groups of people should be prioritized.

The overall effectiveness of retention-based bonuses in the RAN and ADF still remains open for debate. As is common in econometric studies, the ability to accurately isolate the effects of any one policy or event is often incredibly difficult; necessitating a healthy degree of skepticism for any reports that claim to be able to do so. A holistic approach to the problem – combining qualitative and quantitative analysis that is enabled by thoughtful policy implementation strategies and is analyzed by expert teams empowered to do so – would serve the organization well. Future works on retention bonuses in the RAN or ADF should prioritize data accuracy above all else. From that strong starting point, future researchers should investigate further ways in which financial-based incentives can be interweaved with non-financial incentives, creating a layered defense against early and/ or high attrition. This should complement the ongoing work to address ADF retention and ideally result in members choosing to remain in service for longer, growing the ADF and ensuring the security of the nation into the future.

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