NPS-HR-22-236

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

Assessing The Impact of Recognition on the Retention of Royal Australian Air Force Personnel

March 2022

CPT Daniel Tyson, Royal Australian Air Force

Thesis Advisors: Dr. Sae Young Ahn, Assistant Professor
Dr. Simona L. Tick, Senior Lecturer

Department of Defense Management

Naval Postgraduate School

Prepared for the Naval Postgraduate School, Monterey, CA 93943

ACQUISITION RESEARCH PROGRAM
DEPARTMENT OF DEFENSE MANAGEMENT
NAVAL POSTGRADUATE SCHOOL

The research presented in this report was supported by the Acquisition Research Program of the Department of Defense Management at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact the Acquisition Research Program (ARP) via email, arp@nps.edu or at 831-656-3793.

Acquisition Research Program
Department of Defense Management
Naval Postgraduate School

ABSTRACT

With the introduction of technologically complex aircraft such as the F-35 in the Royal Australian Air Force (RAAF), it is increasingly important to retain RAAF members in the aviation technical workforce to capitalize on their experience, skills, and knowledge. Using quantitative regression analysis, this thesis examines whether awards predict the probability of separation and promotion of members in the RAAF aviation technical workforce. Using individual-level personnel data from 2016 to 2020, I estimate Linear Probability retention and promotion models. The results indicate that members with B or C promotion codes who receive awards perceived as less prestigious are 36% less likely to separate in the following year. By contrast, receiving an award shows no difference in the likelihood of separation for high-performing members (i.e., those with A promotion codes). Further, receiving any type of award increases a senior member's probability of promotion by 45.8%, and each additional award increases the promotion probability by 22.9%. Awards of any type had no discernable effect on the promotion likelihood of junior members of the aviation technical workforce. These findings indicate awards might work as a retention tool for members who are performing well (those with B or C promotion codes) but are not considered competitive for promotion, providing insights into the management of rewards for the RAAF aviation technical workforce to incentivize retention and performance.

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

Firstly, I would like to acknowledge and thank my wife, Janelle, for her continuous support of my endeavors. Janelle, I would not have been able to complete this program if it had not been for your looking after our daughter singlehandedly while I have been studying at the Naval Postgraduate School. I know it has not been easy and I am eternally grateful.

I would also like to acknowledge my advisors, Dr. Ahn and Dr. Tick. Thank you for the support and guidance that you have provided during the development of this thesis. Additionally, I would like to thank Wing Commander Mark Powell for giving me the initial idea for this research and his subsequent advice and support throughout.

THIS PAGE INTENTIONALLY LEFT BLANK

NPS-HR-22-236

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

Assessing The Impact of Recognition on the Retention of Royal Australian Air Force Personnel

March 2022

CPT Daniel Tyson, Royal Australian Air Force

Thesis Advisors: Dr. Sae Young Ahn, Assistant Professor
Dr. Simona L. Tick, Senior Lecturer

Department of Defense Management

Naval Postgraduate School

Prepared for the Naval Postgraduate School, Monterey, CA 93943

ACQUISITION RESEARCH PROGRAM
DEPARTMENT OF DEFENSE MANAGEMENT
NAVAL POSTGRADUATE SCHOOL

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I. INTRODUCTION....1

II. BACKGROUND....3
- A. PURPOSE OF AWARDS....3
- B. TYPES OF AWARDS....4
- C. VALUE OF AWARDS....5
- D. AWARDS IN THE RAAF....6
  - 1. Distinguished Service Decorations....6
  - 2. Unit Citations for Meritorious Service....8
  - 3. The Order of Australia....9
  - 4. Conspicuous Service Decorations....11
  - 5. Foreign Awards....12
  - 6. Defence Commendation Scheme....13
  - 7. Australia Day Medallion....15
  - 8. Other Awards....16
- E. AWARD QUOTAS....16
- F. AWARD PRECEDENCE....18

III. LITERATURE REVIEW....21
- A. RETENTION....21
- B. PROMOTION....22

IV. DATA....25
- A. DATA SOURCES....25
- B. CONSTRUCTED DATASET....25
- C. DESCRIPTIVE STATISTICS....35

V. METHODOLOGY AND ESTIMATING MODELS....37
- A. SEPARATION MODELS....37
- B. PROMOTION MODELS....43
- C. ANALYSIS LIMITATIONS....49
- D. KEY FINDINGS....50

VI. CONCLUSION....53
- A. FURTHER RESEARCH....53
- B. RECOMMENDATIONS....53
- C. SUMMARY....54

APPENDIX A. EFFECTS OF AWARDS ON SEPARATION 57

APPENDIX B. EFFECTS OF AWARDS ON PROMOTION 59

LIST OF REFERENCES.....63

LIST OF FIGURES

Figure 1. Distinguished Service Cross. Source: Australian Government (2021).....7

Figure 2. Distinguished Service Medal. Source: Australian Government (2021).....7

Figure 3. Commendation for Distinguished Service. Source: Australian Government (2021).....8

Figure 4. Meritorious Unit Citation. Source: Australian Government (2021).....8

Figure 5. Companion in the Order of Australia Decoration. Source: Australian Government (2021).....9

Figure 6. Officer in the Order of Australia Decoration. Source: Australian Government (2021).....10

Figure 7. Member in the Order of Australia Decoration. Source: Australian Government (2021).....10

Figure 8. Medal of the Order of Australia. Source: Australian Government (2021).....11

Figure 9. Conspicuous Service Cross. Source: Australian Government (2021).....12

Figure 10. Conspicuous Service Medal. Source: Australian Government (2021).....12

Figure 11. Australian Defence Force Commendation – Gold. Source: Air Force Headquarters (2021).....14

Figure 12. Air Force Commendation – Silver. Source: Air Force Headquarters (2021).....14

Figure 13. Department of Defence Commendation – Bronze. Source: Air Force Headquarters (2021).....15

Figure 14. Air Force Group Commendation. Source: Air Force Headquarters (2021).....15

Figure 15. Australia Day Medallion. Source: National Australia Day Council (2021).....16

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1. Non-operational Medals Given to RAAF Members, 2018–2021 18

Table 2. Gen 1 PPR Rating System 29

Table 3. Gen 2 PPR Rating System 30

Table 4. Prestige Classification of Awards 32

Table 5. Promotion Code Groupings 34

Table 6. Descriptive Statistics 36

Table 7. Impact of Awards on Separation 38

Table 8. Impact of Awards on Separation – A Promotion Codes 41

Table 9. Impact of Awards on Separation – B or C Promotion Codes 42

Table 10. Impact of Awards on Promotion 45

Table 11. Impact of Awards on Promotion – Junior Enlisted Ranks 47

Table 12. Impact of Awards on Promotion – Senior Enlisted Ranks 48

Table 13. Impact of Awards on Separation – B Promotion Codes 57

Table 14. Impact of Awards on Separation – C Promotion Codes 58

Table 15. Impact of Awards on Promotion – LAC 59

Table 16. Impact of Awards on Promotion – CPL 60

Table 17. Impact of Awards on Promotion – SGT 61

Table 18. Impact of Awards on Promotion – FSGT 62

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

ADF	Australian Defence Force
AM	Member of the Order of Australia
AO	Officer in the Order of Australia
CDF	Chief of the Defence Force
CDS	Commendation for Distinguished Service
CO	Commanding Officer
COSC	Chiefs of Service Committee
CPL	Corporal
CSC	Conspicuous Service Cross
CSM	Conspicuous Service Medal
DHD-AF	Directorate of Honours and Decorations – Air Force
DHRIS-AF	Directorate of Human Resource Information Systems – Air Force
DSC	Distinguished Service Cross
DSM	Distinguished Service Medal
FSGT	Flight Sergeant
IMPS	Initial Minimum Period of Service
LAC	Leading Aircraftman/woman
LPM	Linear Probability Model
MUC	Meritorious Unit Citation
OAM	Order of Australia Medal
PME	Professional Military Education
PPR	Personnel Performance Report
RAAF	Royal Australian Air Force
SGT	Sergeant
USMC	United States Marine Corps
WOFF	Warrant Officer

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

Retention has been and always will be an important area of focus for the Royal Australian Air Force (RAAF) and the wider Australian Defence Force (ADF). With the introduction of technologically complex aircraft such as the F-35, it is becoming increasingly important to retain RAAF members in the aviation technical workforce to be able to capitalize on their experience, skills, and knowledge to sustain the RAAF's aircraft fleet. This research aims to investigate whether awards (by number and type) predict retention and promotion outcomes for RAAF personnel who have received recognition of their performance through the awarding of a decoration (medal or commendation). My primary and secondary research questions are:

1. Primary: What is the relation between receiving an honor or award and the retention of members in the RAAF aviation technical workforce?
2. Secondary: Does having an honor or award increase the chances of promotion for members in the RAAF aviation technical workforce?

To address these questions, I conduct a quantitative multivariate analysis using individual-level personnel data of RAAF's technical workforce over the period 2016–2020. To study the effects of awards on retention and promotion, I incorporate variables for the different types of awards, prestige levels of awards, and total number of awards that individuals have into the regression model. The findings from linear probability regression model estimates indicate that not all awards have the same influence on retention rates or promotion. Awards that are considered to have a high value or are prestigious have no significant effect on the retention probability of the entirety of the RAAF aviation technical workforce. On the other hand, awards that are considered to have lower prestige reduce the probability of separation by 36% for members who have received a B or C promotion code.[1] However, these same awards have no effect on the separation likelihood of high performing members (those who have been given an A promotion code). When looking at

[1] Promotion codes are discussed further in Chapter IV.

the effects of awards on promotion, it is also the case that awards with low prestige positively affect promotion, whereas awards with a higher level of prestige do not.

A possible explanation for why awards that are considered less prestigious affect retention rather than prestigious awards is that enlisted members are less likely to receive prestigious awards compared to officers. As a result of the limited number of prestigious awards in the sample, it appears prestigious awards have no significant effect on retention. In terms of why awards have no effect on retention for members who are competitive for promotion (those who receive an A promotion code), a potential reason is that these members are aware of their own abilities and value to the organization, and thus, do not need awards to validate their performance. On the other hand, members who are still performing well in their roles, but are not competitive for promotion (those who receive a B or C promotion code), may feel valued by the organization if they receive an award, which will influence the member's decision to keep serving. Awards can act as a signal of high performance, and this is why having an award increases a member's probability of being promoted the following year.

The rest of the thesis consists of six chapters. Chapter II provides a broad overview of the context and purposes of using awards in the workplace in the RAAF. Chapter III is a review of the available literature and the main findings to outline what is the current state of knowledge on awards and their effects on promotion and retention. In Chapter IV, I detail my source data for this thesis and explain how I construct the dataset used for the regression analysis. Chapter V justifies the models that I estimate in my analysis and discusses the estimation results. This chapter also discusses the limitations of my study derived from the data used. Chapter VI includes a discussion of the results and the associated implications for the RAAF. Conclusions and recommendations are provided in Chapter VII.

II. BACKGROUND

A. PURPOSE OF AWARDS

Awards are used by various organizations, ranging from governments and militaries to private businesses, sporting teams, charities, volunteer organizations, religious entities, and professional guilds (Frey, 2007; Frey & Neckermann, 2008). Organizations utilize awards to achieve a variety of effects, including increasing the motivation of employees (Cacioppe, 1999; Ashraf et al., 2014; Gallus & Frey, 2016), providing recognition of superior performance (Ashraf et al., 2014; Frey & Gallus, 2017), incentivizing desired workplace behaviors (Frey, 2006; Frey & Neckermann, 2008; Gallus & Frey, 2016), and retention of key personnel within the organization (Gallus, 2017; Gallus & Frey, 2016).

Awards can be used as a tool to increase motivation because they may fuel a person's desire for recognition and to distinguish themselves from others (Frey, 2007; Ashraf et al., 2014). The inherent need for individuals to improve their social status is a strong motivator, and awards can be used as a way of increasing a person's social status and thus may increase a person's motivation to obtain the award (Brennan & Pettit, 2004; Frey, 2006; Frey & Gallus, 2017). When increased wages are not an option for enhancing a person's social distinction, awards may serve to increase the individual's social distinction and, consequently, his or her motivation (Frey, 2007). Another potential explanation for why awards increase motivation is that the ability to win awards creates a competitive atmosphere within an organization, and people typically enjoy competing and will be motivated to win (Frey et al., 2004; Kosfeld & Neckermann, 2011). After receiving an award, individuals may also increase their effort to achieve greater performance to justify their worthiness for the award (Frey & Gallus, 2017). An increase in an individual's motivation can also be linked to increased performance.

Organizations can use the motivational effect of awards to encourage workers to maintain a high level of performance or to increase their level of performance (Gallus, 2017; Frey & Gallus, 2017). Studies have shown that receiving an award has a positive

effect on a person's performance (Stajkovic & Luthans, 2003; Bradler et al., 2016), including in areas outside of that individual's immediate responsibilities (Kosfeld & Neckermann, 2011; Neckermann et al., 2012). Nonetheless, there is potential for awards to have a negative effect on motivation and performance. While individuals can have higher motivation and performance after being given an award, non-recipients of the award may experience a decrease in their motivation and performance (Frey & Neckermann, 2008).

Awards can be used by organizations to signal desired behaviors of employees and thus also indicate the values of the organization (Frey, 2007; Frey & Gallus, 2014). By giving an award to a person for the type of performance or behavior that the organization values, the organization creates a visible role model (Gallus & Frey, 2016). The creation of a role model and the possibility of winning an award incentivizes other employees to emulate the performance and behavior of the original award recipient (Frey & Neckermann, 2008; Gallus & Frey, 2016).

Further, retention of key personnel within an organization can be influenced by the giving of awards (Gallus & Frey, 2016). Organizations can use awards to signal how much an employee is valued within the organization and thereby minimize an employee's desire to seek employment elsewhere (Frey & Gallus, 2014). The act of an employee accepting an award provides a signal that the employee is willing to establish a loyalty bond with the organization and thus maintain employment with that organization (Frey, 2006; Frey & Gallus, 2014). Another reason that awards can contribute to the retention of employees is that receiving an award increases an employee's self-identification with the organization (Gallus, 2017).

B. TYPES OF AWARDS

Awards come in all shapes and sizes and can either provide a direct/indirect material benefit or a benefit that is not material in nature (Kosfeld & Neckermann, 2011). Examples of direct material benefits, as identified by Kosfeld and Neckermann (2011), include monetary prizes or awards that have a monetary value, such as holidays, paid training, and other gifts. An indirect material benefit could materialize if the receiving of an award will result in an advantage in terms of promotion or career progression within the

organization, which will result in an increased pay level. Alternatively, these awards can be used to signal superior performance which could attract job offers with better compensation from external organizations (Kosfeld & Neckermann, 2011). Kosfeld and Neckermann (2011) identified that awards may also provide non-material benefits in the form of improved self-confidence, increased status within an organization, and/or increased recognition from superiors and peers in the workplace.

Awards can be categorized as being either confirmatory or discretionary (Frey & Gallus, 2017). Frey and Gallus (2017) note that confirmatory awards are given when a person meets well defined and pre-determined criteria. Discretionary awards allow organizations to provide recognition based on less clearly defined criteria and give organizations greater discretion as to whom to give awards (Frey & Gallus, 2017). This category of award is more appropriate when observed high performance is difficult to measure in a quantifiable way.

C. VALUE OF AWARDS

The quality and value of an award is dependent on how scarce the award is and how prestigious the award is perceived to be (Frey, 2007; Ashraf et al., 2014). The easier an award is to obtain, the less value that it has (Frey, 2006; Frey & Gallus, 2014). Awards are also valuable to recipients as they can increase an individual's self-esteem through the recognition and social status associated with the award as well as remind the individuals of their past achievements (Auriol & Renault, 2008). The higher the prestige of the award, the greater the increase in social status and recognition and, therefore, the greater the value. The value of awards also increases if they are public in nature (Gallus & Frey, 2016).

Individuals can use awards as signals of their quality, ability, dedication, and overall distinction from other people (Frey, 2006; Frey & Gallus, 2014; Frey & Gallus, 2016). The greater the strength of the signal and the more non-material benefits that the award can obtain for the recipient, the higher the value of the award. Not only does giving out too many awards decrease the value of the awards, giving awards to undeserving individuals will also cause awards to have a diminished value (Frey & Gallus, 2014).

Award quality and value, therefore, is dependent on the perception that awards are given to worthy recipients (Frey, 2006).

D. AWARDS IN THE RAAF

Various types of awards are used in the RAAF. Awards include the traditional presentation of certificates and plaques, a more modern approach of presenting coins/ medallions, and the more formal recognition through awarding commendations and medals that form part of the ADF's formal honors system. There are no monetary awards given in terms of performance bonuses, etc., due to pay for members of the military being legislated. Nonetheless, there are some minor exceptions to this, an example being awards given for essay competitions in the form of prizes such as books, audiobook subscriptions, paid attendance at Professional Military Education or Professional Development conferences, gift vouchers, etc.

The medallic awards that the RAAF (and wider ADF) use to recognize achievement are part of the Australian Honours and Awards System. The Australian Honours and Awards System comprises 58 awards that can be used to recognize a civilian or military member's achievements and contribution to Australian society, with the honors and awards categorized as the Order of Australia, meritorious awards, military awards, and bravery decorations (Australian Government, 2021; Governor-General of the Commonwealth of Australia, 2020). For the purposes of this thesis, only the following honors and awards from the Australian Honours and Awards System are included as part of the research analysis: The Order of Australia (Military Division); Distinguished Service decorations; Conspicuous Service decorations; Gallantry decorations; and Meritorious Unit Citations. Operational campaign medals and medals denoting length of service will not be considered as part of this thesis. Given the very high unlikelihood that members of the RAAF aviation technical workforce would receive gallantry decorations, these awards also are not discussed or used for analysis in this thesis.

1. Distinguished Service Decorations

Distinguished Service Decorations are used to recognize the distinguished service of ADF members in warlike operations (Australian Government, 2012). The awards that

form the Distinguished Service Decorations include the Distinguished Service Cross (DSC); the Distinguished Service Medal; and the Commendation for Distinguished Service (CDS). Eligibility for these awards is as follows:

Distinguished Service Cross. "The DSC is only awarded for distinguished command and leadership in warlike operations" (Australian Government, 2012). Figure 1 depicts the DSC.

Figure 1. Distinguished Service Cross. Source: Australian Government (2021).

Distinguished Service Medal. "The DSM is only awarded for distinguished leadership in warlike operations" (Australian Government, 2012). Figure 2 depicts the DSM.

Figure 2. Distinguished Service Medal. Source: Australian Government (2021).

Commendation for Distinguished Service. "The CDS is only awarded for distinguished performance of duties in warlike operations" (Australian Government, 2012). Figure 3 depicts the CDS.

Figure 3. Commendation for Distinguished Service. Source: Australian Government (2021).

2. Unit Citations for Meritorious Service

Unit citations can be used to recognize outstanding service of an ADF unit in warlike operations (Australian Government, 2012). The eligibility criterion for the award is as follows:

Meritorious Unit Citation (MUC). "The MUC is awarded to a unit, only for sustained outstanding service in warlike operations" (Australian Government, 2012). Figure 4 depicts the MUC.

Figure 4. Meritorious Unit Citation. Source: Australian Government (2021).

3. The Order of Australia

The Military Division of the Order of Australia can be used to recognize an individual's sustained service (over several postings) that has resulted in enduring benefits for the ADF (Australian Government, 2012). Decorations within the Order of Australia include the Companion in the Order of Australia (AC); Officer in the Order of Australia (AO); Member in the Order of Australia (AM); and Medal of the Order of Australia (OAM). The eligibility for each of these awards is as follows:

Companion in the Order of Australia. "Appointments as Companions or honorary Companions in the Order of Australia (AC) may be made for eminent service in duties of great responsibility" (Australian Government, 2012). Figure 5 depicts the AC.

Figure 5. Companion in the Order of Australia Decoration. Source: Australian Government (2021).

***Officer in the Order of Australia*.** **"**Appointments as Officers or honorary Officers in the Order of Australia (AO) may be made for distinguished service in responsible positions" (Australian Government, 2012). Figure 6 depicts the AO.

Figure 6. Officer in the Order of Australia Decoration. Source: Australian Government (2021).

Member in the Order of Australia. **"**Appointments as Members or honorary Members in the Order of Australia (AM) may be made for exceptional service or exceptional performance of duty" (Australian Government, 2012). Figure 7 depicts the AM.

Figure 7. Member in the Order of Australia Decoration. Source: Australian Government (2021).

Medal of the Order of Australia. "The Medal of the Order of Australia (OAM) may be awarded for meritorious service or meritorious performance of duty" (Australian Government, 2012). Figure 8 depicts the OAM.

Figure 8. Medal of the Order of Australia. Source: Australian Government (2021).

4. Conspicuous Service Decorations

Conspicuous Service Decorations are used to recognize non-warlike outstanding performance or meritorious achievement by members of the ADF (Australian Government, 2012). The Conspicuous Service Cross (CSC) and the Conspicuous Service Medal (CSM) are the two decorations that fall under the Conspicuous Service Decorations category. Eligibility for each of these awards is as follows:

Conspicuous Service Cross. "The CSC is awarded for outstanding devotion to duty or outstanding achievement in the application of exceptional skills, judgement and or dedication in non-warlike situations" (Australian Government, 2012). Figure 9 depicts the CSC.

Figure 9. Conspicuous Service Cross. Source: Australian Government (2021).

Conspicuous Service Medal. "The CSM is awarded for meritorious achievement or meritorious devotion to duty in non-warlike situations" (Australian Government, 2012). Figure 10 depicts the CSM.

Figure 10. Conspicuous Service Medal. Source: Australian Government (2021).

5. Foreign Awards

Members of the ADF can also be recognized for their meritorious achievements or outstanding service by foreign governments, foreign militaries, or multinational organizations (Australian Government, 2012). Such an award is tested for equivalence against honors and awards that form the Australian Honours and Awards System before

the medal or award is approved for wear by the Governor-General (Australian Government, 2012). Foreign awards are worn after all Australian awards in the order that they were approved for wear.

6. Defence Commendation Scheme

Another type of formal recognition that the ADF can use to provide recognition of high achievement is the awarding of a Defence Commendation. This type of recognition is used when other formal awards in the Australian Honours and Awards System are not a suitable form of recognition (Australian Government, 2012). Members who were nominated for an award in the Australian Honours and Awards System but were unsuccessful may be recognized through the Defence Commendation Scheme (Australian Government, 2012). The following is a list of available individual commendations:

- Joint Secretary and Chief of the Defence Force Individual Commendation
- Secretary of Defence Commendation
- Chief of the Defence Force Commendation
- Australian Defence Force Commendation
- Individual Service Commendations (Army, Navy, Air Force)
- Department of Defence Commendation

The Australian Defence Force Commendation, individual Service Commendations, and the Department of Defence Commendations can be awarded at three different levels: Bronze, Silver, and Gold (Australian Government, 2012). The criteria for each of these commendations are as follows:

Secretary and CDF Commendations. "The Secretary and the CDF may award commendations, either separately or jointly, to recognise service considered to be worthy of recognition above Gold Level" (Australian Government, 2012).

Gold Level Commendation. "This commendation should only be awarded for superior achievement of devotion in the application of skills, judgement or dedication to duty" (Australian Government, 2012).

Silver Level Commendation. "This commendation should only be awarded for excellent achievement in the application of skills, judgement or dedication to duty" (Australian Government, 2012).

Bronze Level Commendation. "This commendation should only be awarded for high or noteworthy achievement" (Australian Government, 2012).

The commendations available to recognize individual performance can also be awarded to groups, units, or teams. Group commendations are awarded at the Gold level only (Australian Government, 2012).

Figure 11 depicts the Gold level ADF Commendation, and Figure 12 depicts the Silver level Air Force Commendation. Figure 13 depicts the Bronze level Department of Defence Commendation, while Figure 14 depicts the Air Force Group Commendation.

Figure 11. Australian Defence Force Commendation – Gold. Source: Air Force Headquarters (2021).

Figure 12. Air Force Commendation – Silver. Source: Air Force Headquarters (2021).

Figure 13. Department of Defence Commendation – Bronze. Source: Air Force Headquarters (2021).

Figure 14. Air Force Group Commendation. Source: Air Force Headquarters (2021).

7. Australia Day Medallion

The ADF can also recognize individual achievement of its members through the awarding of an Australia Day Medallion. The Australia Day Medallion is awarded to recognize exceptional performance of a Defence member in the previous 12 months who has not been recognized through another formal award (Australian Government, 2012). A member must be serving on the Australia Day (26 January) when the award is announced to be eligible for the Australia Day Medallion (Australian Government, 2012). Figure 15 depicts the Australia Day Medallion.

Figure 15. Australia Day Medallion. Source: National Australia Day Council (2021).

8. Other Awards

The ADF also utilizes numerous other awards that are outside of the Australian Honours and Awards System, Defence Commendation Scheme, or the Australia Day Medallion. Examples of these types of awards include Commanding Officer (CO) commendations, Student of Merit awards for various courses, Airman/woman of the Year, Instructor of the Year, etc.

E. AWARD QUOTAS

Order of Australia. The Constitution of the Order of Australia (2018) states that "[i]n any calendar year, the number of appointments, other than honorary appointments, to the Military Division, shall not exceed one-tenth of one percent of the average number of persons who were members of the Defence Force on each day of the immediately preceding year." The Chief of the Defence Force (CDF) has imposed a further restriction by directing that the number of nominations or appointments in the Order of Australia for a given year should not exceed 75 percent of the allowed quota in accordance with the Constitution of the Order of Australia, without approval from the CDF (Australian Government, 2012). The Constitution of the Order of Australia (2019) also states that nominations for appointment at the Officer level in the Military Division of the Order of Australia should not exceed more than 20 percent of the total appointments into the Military Division of the Order of Australia for a particular year. This requirement has been further restricted by the Chiefs of Service Committee (COSC), who have stipulated the number of nominations for

appointment at the Officer level should not exceed 10 percent of the total number of appointees each year (Australian Government, 2012).

Distinguished Service Decorations. The *Defence Honours and Awards Manual* states that "[q]uotas do not apply to Distinguished Service Decorations" (Australian Government, 2012).

Conspicuous Service Decorations. There is no official quota for Conspicuous Service Decorations; however, the COSC has provided guidance that the number of Conspicuous Service Decorations awarded in a year is to be 125 percent of the annual quota for appointments within the Military Division of the Order of Australia (Australian Government, 2012). The self-imposed limit on Conspicuous Service Decorations applies to non-operational nominations only; there is no limit on the number of Conspicuous Service Decorations awarded for operational duty (Australian Government, 2012).

Commendations. No quotas are applied to the awarding of commendations (Air Force Headquarters, 2021)

Australia Day Medallions. One Australia Day Medallion is to be awarded per 350 Defence personnel (Australian Government, 2012).

Current guidance from the Directorate of Honours and Decorations – Air Force (DHD-AF) is that the following quotas are in place for recognition of RAAF members per year:

- Order of Australia: 12 awards
- Conspicuous Service Decorations: 20 awards

Using the published Honours lists on the Governor-General of the Commonwealth of Australia website (2021), Table 1 shows the number of awards given to RAAF members over the period 2018–2021.

Table 1. Non-operational Medals Given to RAAF Members, 2018–2021

	Australia Day		Queen's Birthday	
	Enlisted	Officer	Enlisted	Officer
AO	0	1	0	2
AM	1	19	2	16
OAM	6	3	4	5
DSC	0	1	0	2
DSM	0	2	0	3
CDS	0	9	0	5
CSC	6	27	4	28
CSM	12	16	7	18
Total	25	78	17	79

Note: 2018 RAAF strength = 13,204; 2019 RAAF strength = 14,265; 2020 RAAF strength = 14,292; 2021 RAAF strength = 14,611. Table only includes medals that are part of the Australian Honours and Awards System. Clasps to medals included.

F. AWARD PRECEDENCE

The order of precedence of awards in the Australian Honours and Awards System is defined in the 'Schedule on the Order of Wearing Australian Honours and Awards' (Office of the Official Secretary to the Governor-General, 2007). The precedence of other awards used within the RAAF has been clarified by the DHD-AF (Air Force Headquarters, 2021). The precedence of awards used in the RAAF is as follows:

- AO
- DSC
- AM
- CSC
- DSM
- OAM
- CSM

- CDS
- Joint Secretary and Chief of the Defence Force Individual Commendation
- Chief of the Defence Force Commendation
- Group Level Commendations (ADF/Individual Services/Department of Defence)
    - Gold
    - Silver
    - Bronze
- Australia Day Medallion

The prestige of the award can be inferred from the order of precedence just described. One interesting observation is that even though the CSC is higher in the order of precedence than the OAM, which could be interpreted as the CSC being more prestigious than the OAM, it is awarded more often than the OAM is (as seen in Table 1).

THIS PAGE INTENTIONALLY LEFT BLANK

III. LITERATURE REVIEW

The literature on the economic effects of awards has been steadily increasing; however, there is minimal research conducted on the effect that awards have on retention and promotion within the military context. This literature review examines the available literature on the effect that awards have on retention and promotion and details how this study supplements the body of academic research on awards.

A. RETENTION

Awards can increase the amount of loyalty present between the organization and the recipient (Frey & Gallus, 2014). Through the effect on employee loyalty, awards assist organizations retain critical employees (Gallus & Frey, 2016). The greater the visibility and exclusivity of an award, the greater the enhancement of employee loyalty (Jeffrey & Adomdza, 2010). My research aims to show quantitatively whether the honors and awards used in the ADF create a loyalty bond between the recipient and the RAAF, by examining whether the recipients remain within the organization longer than non-recipients.

The thesis undertaken by Fifield (2006) examined the question of what factors are important for retention of United States (U.S.) Naval Reserve members. Fifield used statistical analysis in the form of a multivariate logistic regression model to determine the significance of identified factors. The basis of Fifield's analysis was the results of the 2000–2001 Navy Reserve Career Decision Survey. One of the findings of Fifield's study was that a member's level of regard for recognition was statistically significant, increasing the likelihood of U.S. Naval Reserve members to stay to retirement by 1.5 percentage points compared with those who did not believe recognition is important.

Like Fifield's research, my study uses statistical analysis. Whereas Fifield used survey data, I use workforce data sourced from the ADF Data Warehouse. Fifield's research also differs from mine in that her research examined the importance of recognition in the eyes of individual members and how it related to their intention to stay. My research looks at the quantitative effect of awards on retention.

As part of her natural field experiment, Gallus (2017) used quantitative multivariate analysis to investigate what effect symbolic awards, those that have no career-related implications, have on the retention of volunteers at the German language edition of Wikipedia. Gallus' analysis showed that "the purely symbolic awards increase the share of editors remaining active in the following month by 20%" and that this effect on retention also persisted over the following four quarters (Gallus, 2017).

Gallus' study is like my study in that it measures the effect an award has on retention and uses statistical analysis to do so. However, Gallus' study differs in that it examines results sourced through the conduct of a randomized field experiment (with treatment and control distinctions) on a volunteer organization. Further, Gallus' study researched awards that would not impact an individual's career progression. Recognition of performance in the Air Force is hypothesized to have a positive effect on promotion prospects.

B. PROMOTION

Conlan (2021), as part of his master's thesis at the Naval Postgraduate School, conducted an analysis to determine what characteristics were valued by the United States Marine Corps (USMC) when selecting officers for promotion to Major and Lieutenant Colonel. Logit multivariate regressions were used to analyze Conlan's data, and results indicated that for every additional award that a Marine officer has, his or her odds of being promoted to Major increase by 1.57 times and the individual's odds of being promoted to Lieutenant Colonel increase by 1.37 times (Conlan, 2021). My thesis also uses multivariate regression analysis; however, I use Linear Probability Models (LPM) rather than logit models. Furthermore, Conlan's (2021) research only included the total number of awards as an independent variable, whereas I researched whether different types and categories of awards influence promotion in addition to the total number of awards. Another aspect of my research that differs from Conlan's is that I determined the effect of awards on promotion for an enlisted workforce rather than an officer workforce.

Previous research by Hoffman (2008) and Grillo (1996) also confirmed that awards are an important factor when it comes to probability of promotion for USMC Officers.

Hoffman used Probit models in his analysis and found that for every additional award increased a Captain's probability of being promoted to Major by 3.6%. Using Logit models, Grillo's research found that the number of personal decorations is a statistically significant factor for promotion to Major; however, the model that he used makes it difficult to measure the exact effect that personal awards have on promotion.

Steinpfad (2017) researched promotion factors for enlisted members of the USMC infantry and found that awards contribute to promotion chances. Using Classification and Regression Trees to create models that predict promotion using Marine attributes, Steinpfad found that there was a 13–16% probabilistic difference in promotion for Corporals who had an award. Another finding from Steinpfad's (2017) research was that Sergeants who enlisted from 2001 or 2002 had the greatest probability of promotion if they had at least one award and a median Physical Fitness Test score above 239. Staff Sergeants that had a Combat Fitness Test score above 290, no adverse fitness reports, four deployments, and two or more awards had an 80% probability to be promoted (Steinpfad, 2017). In addition to using the total number of awards as a dependent variable, Steinpfad also categorized the types of awards that infantry Marines had been awarded.

From this previous literature, it is reasonable to expect that awards would increase the retention of members of the RAAF aviation technical workforce and that having an award, as well as the total number of awards, would increase the promotion likelihood of members of the RAAF aviation technical workforce. My results validate these previous findings. By using indicator variables for different types of awards, such as those included in the models used by Steinpfad, I was able to measure the effect of the different types of awards, in addition to the effects of having an award in general.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. DATA

In this chapter, I describe the data used in the analysis for this thesis. An explanation of the different data sources is contained in Section A. The variables used in the final dataset used for this thesis are detailed in Section B. Descriptive statistics of the sample are included in Section C.

A. DATA SOURCES

The dataset I use for this thesis contains information regarding career and personal characteristics of all members in the RAAF aviation technical workforce over the period 2016–2020 and it is obtained from the ADF HR Data Warehouse. The dataset includes individual-level data that allow me to track promotions, separations, honors and awards, rank, length of service, time in rank, marital status, gender, age, and employment category for each anonymized individual identifier included.

In addition, I use Personnel Performance Report (PPR) data obtained from the Directorate of Human Resource Information Systems – Air Force (DHRIS-AF). The PPR dataset contains the PPR ratings for all members of the RAAF aviation technical workforce over the period 2016–2020. The variables in the PPR dataset include individual anonymized identifier, PPR year, rank, employment category, appraisal group/type/rating, deployments, and awards.

The DHRIS-AF is also the source for a dataset containing data on promotion board results for members of the RAAF aviation technical workforce over the period 2016–2020. Variables in this dataset include anonymized identifier, year, and promotion board code.

B. CONSTRUCTED DATASET

The three datasets just detailed are merged based on the unique, individual anonymized identifier code and the year in which the member's PPR was given. The main variables included in the constructed dataset I use in this thesis are as defined below:

Unique Identifier

Unique Identifier is a randomized string variable assigned to everyone in the dataset to identify the individual instead of using his or her actual employee identification number. The variable consists of two letters, followed by eight numbers.

Year

Year is a numerical variable indicating the year that an observation occurred.

Age

Age is a numerical variable indicating the age of an individual.

Length of Service

Length of Service is a numerical variable that indicates how many years an individual has served.

Time in Rank

Time in Rank is a numerical variable that indicates how many years a member has spent in their current rank.

Separated

Separated is a binary variable that represents if a member separated within the following year, before his or her next PPR. A value of "1" indicates that a member did separate the next year, and a value of "0" indicates that the member did not separate.

Rank

To control for any differences between ranks during the analysis, dummy variables for each rank were created. A value of "1" indicates that a member has that rank in a given year. The following are the different indicator variables for each rank used in the dataset:

- AC
- LAC

- CPL
- SGT
- FSGT
- WOFF

Single

Single is a binary variable that was created using the marital status data contained within the dataset provided by the ADF HR Data Warehouse. A value of "1" indicates if a member has a recorded marital status of *Single* or *Widowed,* and a value of "0" indicates otherwise.

Married

Married is a binary variable that was created using the marital status data contained within the dataset provided by the ADF HR Data Warehouse. A value of "1" indicates if a member has a recorded marital status of *Married*, *MS SVC Rqt* (Married Separated Service Requirement), or *Common-Law,* and a value of "0" indicates otherwise.

Divorced

Divorced is a binary variable that was created using the marital status data contained within the dataset provided by the ADF HR Data Warehouse. A value of "1" indicates if a member has a recorded marital status of *Divorced* or *Separated,* and a value of "0" indicates otherwise.

Female

Female is a binary variable that has a value of "1" to indicate if the member is a female and "0" if the member is a male.

Promoted

Promoted is a binary variable that indicates if a member was promoted in the following year after his or her PPR was given. A value of "1" indicates that the member was promoted the next year, and a value of "0" indicates that the member was not promoted.

Mean Appraisal Score

Mean Appraisal Score is a continuous variable that indicates the average appraisal score derived from a member's PPR. A PPR includes appraisal ratings that take the form of a statement of observed performance, such as "Exceeds expectations," "At rank," "Suitable," and "Developing." In 2017, an updated PPR was introduced in the RAAF. To ensure that the two different versions of the PPR, referred to as Gen 1 and Gen 2 respectively, could be appropriately compared, score values were assigned in accordance with Tables 2 and 3, and a mean score calculated for each PPR.

Table 2. Gen 1 PPR Rating System

		Assigned Score Values			
		1	2	3	4
Appraisal Group	**Appraisal Type**	**Possible Ratings**			
Agility	Adaptability (AO)	Below rank	Developing	At rank	Above rank
	Resilience (AO)	Below expectations	-	Meets expectations	Exceeds expectations
Dedication	Military Ethos (AO)	Below expectations	-	Meets expectations	Exceeds expectations
	Work Ethic (AO)	Below rank	Developing	At rank	Above rank
Excellence	Commitment to Professional Development (AO)	Below expectations	-	Meets expectations	Exceeds expectations
	Job Competence (AO)	Below rank	Developing	At rank	Above rank
Integrity	Judgement (AO)	Below rank	Developing	At rank	Above rank
	Responsibility (AO)	Below rank	Developing	At rank	Above rank
Respect	Interpersonal Style (AO)	Below expectations	-	Meets expectations	Exceeds expectations
	Leadership/Followership (AO)	Below rank	Developing	At rank	Above Rank
Suitability	Future Employment (AO)	Unsuitable	Developing	Suitable	Highly suitable
	Promotion (AO)	Unsuitable	Developing	Suitable	Highly suitable
	Promotion (SAO)	Unsuitable	Developing	Suitable	Highly suitable
	Promotion Beyond (SAO)	No	-	Developing	Yes
	Representational Duties (AO)	Unsuitable	Developing	Suitable	Highly suitable
Teamwork	Communication Skills (AO)	Below rank	Developing	At rank	Above rank
	Organisational Understanding (AO)	Below rank	Developing	At rank	Above rank

Note: AO represents ratings given by the Assessing Officer; SAO represents ratings given by the Senior Assessing Officer.

Table 3. Gen 2 PPR Rating System

		Assigned Score Values			
		1	2	3	4
Appraisal Group	**Appraisal Type**	**Possible Ratings**			
Excellence and Agility	Adaptability (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Commitment to Professional Development (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Job Competence (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Resilience (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
Integrity and Teamwork	Communication Skills (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Judgement (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Organisational Understanding (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Responsibility (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
Potential	Education and Training Delivery (AO)	Not Suitable	Developing	Suitable	Highly suitable
	Out of Mustering/ Specialisation (AO)	Not Suitable	Developing	Suitable	Highly suitable
	Promotion (AO)	Not Suitable	Developing	Suitable	Highly suitable
	Promotion (SAO)	Not Suitable	Developing	Suitable	Highly suitable
	Promotion Beyond (SAO)	No	-	Developing	Yes
	Representational Duties (AO)	Not Suitable	Developing	Suitable	Highly suitable
Reporting Period Achievement	Overall Performance (AO)	Below expectations	-	Meeting expectations	Exceeding expectations
Respect and Dedication	Interpersonal Style (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Leadership/Followership (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Military Ethos (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations
	Work Ethic (AO)	Below rank or below expectations	Developing	Meets expectations	Exceeds expectations

Note: AO represents ratings given by the Assessing Officer; SAO represents ratings given by the Senior Assessing Officer.

Any award

Any award is a binary variable that indicates if a member has any type of award at that point in time. A value of "1" indicates if the member has an award, with a value of "0" denoting that the member does not have an award.

Total number of awards

Total number of awards is a numerical variable that represents the total number of awards a member has at that point in time.

To analyze the effects that different types of awards may have on retention and promotion, I created different types of categories for the awards that were present within the dataset. One such category indicated whether the awards were considered to have prestige or low prestige. The criteria used to classify an award as having prestige was that it must be difficult to obtain (low award rate), and it must be considered a high value award. Awards that were given out more frequently and did not have as much value were allocated as having low prestige. The differentiation between high and low value for the purposes of categorizing an award as having prestige or low prestige is somewhat arbitrary, as there is no formal definition of which awards have low and high prestige. Hence, grouping was based on my own opinion for the purposes of this research. Awards that are visible, because they are worn on the uniform, were assigned as having prestige. This includes awards from the Australian Honours and Awards System, Defence Commendation Scheme, and Foreign Awards. Additionally, awards that are given out infrequently, such as Airman/woman of the Year and Instructor of the Year, were also assigned as having prestige. Table 4 details the awards (present in the study sample) categorized as having prestige or low prestige.

Table 4. Prestige Classification of Awards

Prestige	Low Prestige
Member of the Order of Australia	Commanding Officer Commendation
Order of Australia Medal	CO/OC Commendation
Conspicuous Service Cross	Commander Task Group 633.2 Commendation
Conspicuous Service Medal	Commander Air Task Group Commendation - Task Group 630
Commendation for Brave Conduct	Commander Air Lift Group Commendation
United States Bronze Star Medal	Commander Air Combat Group Commendation
United States Air Force Commendation Medal with C Device	Commander Surveillance and Response Group Commendation
United States Army Commendation Medal	Commander Task Group 633.17 Commendation
United States Defense Meritorious Service Medal	Force Commander's Commendation
United States Joint Service Commendation Medal	Foreign Unit Commendation/Letters of Commendation
United States Navy and Marine Corps Achievement Medal	Commander Air Force Training Group Commendation
Secretary of Defence Commendation	Army Soldiers Medallion / Commendation
Department of Defence Commendation	Capability Acquisition and Sustainment Commendation
Australian Defence Force Commendation	Commanding Officer's Award
Air Force Commendation	Commander's Award
Army Commendation	Certificate of Merit
Chief of Air Force Commendation	CASG Divisional Achievement Award
Deputy Chief of Air Force Commendation	CASG Branch/Unit Achievement Award
Commander Joint Task Force 633 Commendation	Queensland Police Service Commonwealth Games Citation
Air Commander Australia Commendation	Officer Commanding Award
Commander Training Air Force Commendation	RAAF Good Show Award
Deputy Chief of Joint Operations Commendation	Best Individual Contribution to Health and Safety
Australia Day Medallion	Catalina Association Trophy
The AVM B.A. Eaton Award	Commander Task Element 630.1.5 Award
467 - 463 Squadrons Association Trophy	Queensland Police G20 Citation
Airman/Airwoman of the Year	CO's Award
The J.R. Bartram and R.A. Kee Sword of Honour	Commander Air Mobility Group Award
RAAF Association Award for Most Outstanding SNCO	Top Troop Award
Warrant Officer of the Air Force - Instructor of the Year Award	Student of Merit - Program Wirraway (RAAF)
Pathfinder Association Award-AMG Ground Support Officer of The Year	1RTU Personal Qualities Award
Airman/Airwoman of the Quarter	NSW Premier's Bushfire Emergency Citation
	Paul Arthur Award
	Air Lift Group Headquarters Award for Excellence
	Rehabilitation and Return to Work Award
	Sir James Rowland Prize for Excellence in Engineering Design
	CPL Andrew Ireland BEM Award
	Mariner Award - Airman

Award with prestige

Award with prestige is a dummy variable indicating whether a member has an award that is considered prestigious. A value of "1" indicates that the member has a prestigious award, and a value of "0" indicates that the member does not.

Award with low prestige

Award with low prestige is a dummy variable indicating whether a member has an award that is considered to have low prestige. A value of "1" indicates that the member has a low prestige award, and a value of "0" indicates that the member does not.

AM or OAM

AM or OAM is an indicator variable with a value of "1" representing a member who has been made a Member of the Order of Australia or who has been awarded an Order of Australia Medal.

CSC or CSM

CSC or CSM is an indicator variable with a value of "1" representing a member who has been awarded a Conspicuous Service Cross or a Conspicuous Service Medal.

Foreign award

Foreign award is an indicator variable with a value of "1" representing a member who has been given an award that recognizes achievement/merit from a foreign military (in the case of this study, the only foreign awards present in the sample were from the U.S. military).

Worn commendation

Worn commendation is a binary variable with a value of "1" indicating if a member has a commendation that can be worn on his or her uniform.

Other commendation

Other commendation is a binary variable with a value of "1" indicating if a member has a commendation that cannot be worn on his or her uniform.

Other award

Other award is a binary variable with a value of "1" indicating if a member has an award that is not an Order of Australia award, Conspicuous Service award, foreign award, worn commendation, or other commendation.

Promotion board codes given to individuals after their presentation at a promotion board were used to try to determine the effects of awards for members that have different levels of assessed performance. Similar to how the PPR content changed, the promotion board codes that were given to members changed between 2017 and 2018. Table 5 shows the old promotion board codes and how they were converted to the current promotion board codes to ensure that consistency for the analysis. For the purposes of this thesis, only three broad categories of promotion code were used: A, B, and C codes, respectively.

Table 5. Promotion Code Groupings

Previous	Current	Grouping
Code 1 - Identified	A1. Outstanding candidate for Promotion/Selection	A
Code 2 - Highly Competitive	A2. Highly Competitive for Promotion/Selection	
Code 3 - Competitive	A3. Competitive candidate for Promotion/Selection	
Code 4.a - Performance/Potential	B1. Further observation and/or development	B
Code 4.b - Not Suitable/Likely Become Suitable	B2. Inadequate performance/potential/experience	
Code 4.c - Limited Reporting History	B3. Not Suitable /Likely Become Suitable	
Code 4.d - Limited Skills Profile	B4. Limited or non-existent reporting history	
Code 4.e - Further Development	B5. Reported performance is uncompetitive	
Code 4.f - DFDA/Admin	B6. DFDA and/orAdmin (at this time)	
Code 4.g - Uncompetitive Performance	B7. Other - narrative required	
Code 4.h - Other - Narrative Required	B8. PME Obligations (3)	
Code 5.a - Performance/Potential	C1. Unlikely be competitive for advancement	C
Code 5.b - Not Suitable/Likely Become Suitable	C2. Limited experience/skills profile	
Code 5.d - DFDA/Admin	C3. Not Suitable /Likely Become Suitable	
Code 5.e - Uncompetitive/Unsatisfactory Performance	C4. Limited or non-existent reporting history	
Code 5.f - Other - Narrative Required	C5. Uncompetitive reported performance	
	C6. Unsatisfactory reported performance	
	C7. DFDA and/or Admin (long term)	
	C8. Other - narrative required	
	C9. PME Obligations (4+)	

Note: Current promotion codes are only valid up to 2020. Codes have been updated for 2021 promotion boards.

Promotion code

Promotion code is an indicator variable with a value of "1" to represent if a member had received an A, B, or C promotion code.

For this thesis, I only wanted to look at members who were eligible to separate as they were not under any current service obligations. To achieve this, I excluded any member who had a length of service equal to five years or less. This ensured that all members would not be obligated under their Initial Minimum Period of Service (IMPS) in accordance with Command Power Instrument - Initial Minimum Periods of Service, Return of Service Obligation Periods and Service Obligations Debts (2018).

C. DESCRIPTIVE STATISTICS

The final selected sample that I use for this thesis consists of 2,438 unique individuals and a total of 9,860 observations, with observations representing person-years in a longitudinal dataset where individuals are observed annually from 2016 to 2020 or until separation. Table 6 contains the mean values and standard deviations for characteristics of individuals within the sample. The mean appraisal score for members in the sample who have an award is 3.52, while the mean appraisal score for those without awards is 3.37. The average age of members of the RAAF aviation technical workforce with an award is 39 years and 37 years for members without an award. There are no significant differences between members who have awards and those who do not, with all mean values being within one standard deviation.

Table 6. Descriptive Statistics

	Has Award	No Award	All
Appraisal Score	3.523 (0.364)	3.372 (0.434)	3.408 (0.423)
Female	0.024 (0.153)	0.022 (0.148)	0.023 (0.149)
Single	0.141 (0.348)	0.153 (0.360)	0.150 (0.357)
Married	0.814 (0.389)	0.791 (0.407)	0.796 (0.403)
Divorced	0.045 (0.207)	0.056 (0.231)	0.054 (0.225)
Age	39.319 (8.354)	36.953 (8.832)	37.514 (8.778)
Length of Service (years)	18.179 (8.341)	15.654 (8.401)	16.253 (8.455)
Time in Rank (years)	5.586 (4.048)	6.088 (4.166)	5.969 (4.144)
Separated	0.036 (0.185)	0.065 (0.246)	0.058 (0.233)
Promoted	0.051 (0.220)	0.040 (0.197)	0.043 (0.203)
A Promotion Code	0.180 (0.384)	0.107 (0.310)	0.125 (0.330)
B Promotion Code	0.264 (0.441)	0.302 (0.459)	0.293 (0.455)
C Promotion Code	0.017 (0.128)	0.018 (0.131)	0.017 (0.131)
Observations	2338	7522	9860

Note: Standard deviations shown in parentheses.

V. METHODOLOGY AND ESTIMATING MODELS

A. SEPARATION MODELS

The explanatory variables of interest in examining the retention of members of the RAAF aviation technical workforce are appraisal rating, the type of an award a member has, and the total number of awards that a member has. I have used four LPM models to examine the effects that having an award could have on retention: the first model examines any potential effect of having any type of award; the second model looks at whether the number of awards a member has affects retention; the third model examines if there is any difference in effect on separation between awards that are considered prestigious compared to non-prestigious awards; and the fourth model seeks to determine whether there are any differences in effect on retention between different types of awards. I have used LPMs as they are a suitable model for a binary outcome and the parameter estimates are easily interpretable.

Model 1

$$Separated_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 HIasAward_{it} + X_{it}\alpha + \mathbf{PromCode}_{it}\gamma + \tau_t + u_{it}$$

Model 2

$$Separated_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 TotalAwards_{it} + X_{it}\alpha + PromCode_{it}\gamma + \tau_t + u_{it}$$

Model 3

$$Separated_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 PrestigeAward_{it} + \beta_3 LowPrestigeAward_{it} + X_{it}\alpha + \mathbf{PromCode}_{it}\gamma + \tau_t + u_{it}$$

Model 4

$$\begin{aligned} Separated_{it} = {} & \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 OrderOfAustralia_{it} + \beta_3 ConspicuousService_{it} + \beta_4 ForeignAward_{it} \\ & + \beta_5 OtherCommendation_{it} + \beta_6 WornCommendation_{it} + \beta_7 OtherAward_{it} + X_{it}\alpha + \mathbf{PromCode}_{it}\gamma \\ & + \tau_t + u_{it} \end{aligned}$$

$\mathbf{X}_{it}$ is a vector of time varying characteristics for individuals, such as age, length of service, time in rank, marital status, rank, etc. $\boldsymbol{\tau}_t$ represents year fixed effects. $\mathbf{PromCode}_{it}$

is a vector of individual variables that represent the promotion board outcome for a particular individual in a particular year. Table 7 shows the results of the regressions.

Table 7. Impact of Awards on Separation

VARIABLES	(1)	(2)	(3)	(4)
Mean Appraisal Score	-0.039***	-0.040***	-0.039***	-0.040***
	(0.006)	(0.006)	(0.006)	(0.006)
AM or OAM				-0.045
				(0.064)
CSC or CSM				-0.032
				(0.030)
Foreign award				-0.012
				(0.035)
Non-worn commendation				-0.010
				(0.008)
Worn commendation				-0.008
				(0.009)
Other award				-0.013
				(0.009)
Any award	-0.017***			
	(0.006)			
Total number of awards		-0.009**		
		(0.004)		
Award with prestige			-0.013	
			(0.008)	
Award with low prestige			-0.017***	
			(0.006)	
observations	9860	9860	9860	9860
r-squared	0.0276	0.0274	0.0278	0.0274

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, promotion board code, year, age, and rank.

As seen in Table 7, a member's Mean Appraisal Score is statistically significant at the p<0.01 level when it comes to the chances that the member will separate in the following year. The regression results show that for a one-point increase in the Mean

Appraisal Score, the member's probability of separating in the next year reduces by 3.9 percentage points. The average probability of anyone from the sample separating in the next year is 0.058 (5.8%). This means that a one-point increase in the Mean Appraisal Score of a member will reduce that member's probability of separating in the following year from 5.8% to 1.9%. This may seem like a rather large result; however, it would be highly unlikely that a member would experience a one-point increase in his or her Mean Appraisal Score from year to year. It would be more realistic to experience increases of Mean Appraisal Score of 0.1 points rather than 1 point. Therefore, the result in Table 7 would be better understood as a 0.1-point increase in a member's Mean Appraisal Score will result in a 0.39 percentage point reduction in the probability that the member will separate in the following year. A 0.1-point increase in a member's Mean Appraisal Score will reduce a member's probability of separation from 5.8% to 5.41%.

Out of the varying award types, categorizations, or number of awards, only the variables of *Award with low prestige*, *Total number of awards*, and *Any award* showed any statistically significant effect on the promotion of a member separating within the following year. The regression results indicate that people with awards that have been categorized as low prestige are 1.7 percentage points less likely to separate in the following year than people without awards. This equates to a 29% reduction in the probability of a member separating in the next year. Members that have any type of award are also 1.7 percentage points less likely to separate in the following year compared to members without an award. The results also suggest that for every additional award that a member has, his/her probability of separating within the following year decreases by 0.9 percentage points.

To determine whether the above observed effects that awards had on a member's probability of separating in the following year were also present within the cohorts of members that had the same promotion board codes, the following regressions were run:

Model 5

$$Separated_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 HasAward_{it} + X_{it}\alpha + \tau_t + u_{it}$$

Model 6

$$Separated_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 TotalAwards_{it} + X_{it}\alpha + \tau_t + u_{it}$$

Model 7

$$Separated_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 PrestigeAward_{it} + \beta_3 LowPrestigeAward_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it}$$

Model 8

$$Separated_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 OrderOfAustralia_{it} + \beta_3 ConspicuousService_{it} + \beta_4 ForeignAward_{it} + \beta_5 OtherCommendation_{it} + \beta_6 WornCommendation_{it} + \beta_7 OtherAward_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it}$$

Models 5–8 are the same as models 1–4, with the exception that controls for promotion board results were removed, as I was only looking at the effects that awards have on separation for members who had received an A promotion board code or for member who had received a B promotion board code, etc. Tables 8 and 9 show the results of these regressions for the following categories of promotion board code: members who received either an A1, A2, or A3; and members who received any B or C code.

Table 8. Impact of Awards on Separation – A Promotion Codes

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	-0.046*	-0.046*	-0.045*	-0.046*
	(0.024)	(0.024)	(0.024)	(0.024)
AM or OAM				-0.035
				(0.088)
CSC or CSM				0.004
				(0.040)
Foreign award				-0.005
				(0.080)
Non-worn commendation				0.006
				(0.016)
Worn commendation				-0.004
				(0.017)
Other award				-0.003
				(0.019)
Any award	-0.002			
	(0.012)			
Total number of awards		0.000		
		(0.007)		
Award with prestige			-0.004	
			(0.016)	
Award with low prestige			-0.006	
			(0.014)	
observations	1228	1228	1228	1228
r-squared	0.0354	0.0353	0.0356	0.0356

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1.

Model also controls for time in rank, length of service, marital status, year, age, and rank.

Table 9. Impact of Awards on Separation – B or C Promotion Codes

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	-0.032***	-0.033***	-0.033***	-0.033***
	(0.011)	(0.011)	(0.011)	(0.011)
CSC or CSM				-0.058
				(0.065)
Foreign award				0.022
				(0.062)
Non-worn commendation				-0.010
				(0.015)
Worn commendation				-0.006
				(0.017)
Other award				-0.015
				(0.016)
Any award	-0.021**			
	(0.011)			
Total number of awards		-0.010		
		(0.007)		
Award with prestige			-0.003	
			(0.016)	
Award with low prestige			-0.021*	
			(0.012)	
observations	3063	3063	3063	3063
r-squared	0.0427	0.0422	0.0426	0.0423

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, age, and rank.

The results show that for members who have received an A promotion code, there is a larger reduction in the probability of separating in the following year associated with a one-point increase in appraisal score. However, this result is only significant at the $p<0.1$ level, and this is likely due to the smaller number of observations. What is interesting is that awards in general do not have any statistically significant effects on separation amongst this cohort of members.

For members who are part of the cohort who received B or C promotion codes, the effects of a one-point increase in appraisal score is consistent with that of the entire sample. The regression results indicate that having any type of award will reduce a member's probability of separating the following year by 2.1 percentage points, compared to members who have no awards. A 2.1 percentage point reduction equates to a 36% reduction in the probability of separation. This is significant at the $p<0.05$ level. Having an award of low prestige also reduces a member's probability of separating in the next year by 2.1 percentages points; however, this result is only significant at the $p<0.1$ level. Regressions 5–8 were also run separately for members who had received a B promotion code as well as for members who had received a C promotion code—the results of which can be found in Appendix A. The regression results show that within the cohort of members who had received a B promotion code, having any type of award is associated with a 1.9 percentage point reduction in the probability of separating in the next year. This result is significant at the $p<0.1$ level. Awards have no significant effects on the probability of separation for members who had received a C promotion code.

B. PROMOTION MODELS

To answer my secondary research question, LPM regressions were also used. Like the models used for examining the effects of awards on separation, the explanatory variables of interest when looking into the effects of awards on promotion are also appraisal rating, the type of an award a member has, and the total number of awards that a member has. Individuals that did not meet the eligibility criteria for merit-based promotion were not included in the dataset used for the promotion model regressions.

Model 1

$$PromotedNext_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 HasAward_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it}$$

Model 2

$$PromotedNext_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 TotalAwards_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it}$$

Model 3

$$PromotedNext_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 PrestigeAward_{it} + \beta_3 LowPrestigeAward_{it} + \mathbf{X}_{it}\alpha + \boldsymbol{\tau}_t + u_{it}$$

Model 4

$$PromotedNext_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 OrderOfAustralia_{it} + \beta_3 ConspicuousService_{it} + \beta_4 ForeignAward_{it} + \beta_5 OtherCommendation_{it} + \beta_6 WornCommendation_{it} + \beta_7 OtherAward_{it} + \mathbf{X}_{it}\alpha + \boldsymbol{\tau}_t + u_{it}$$

$\mathbf{X}_{it}$ is a vector of time varying characteristics for individuals, such as age, length of service, time in rank, marital status, rank, etc. $\boldsymbol{\tau}_t$ represents year fixed effects.

Unlike the regression models used for separation (models 1–4), these promotion regression models do not include controls for promotion board codes. These controls were excluded from the regression models as the promotion board codes are given as feedback of promotion deliberations. Since the promotion board codes are given as feedback, the codes are directly related to being promoted the following year. A member awarded an A1 promotion code will be promoted the following year, and members awarded any type of B or C promotion code will not be promoted, etc. Additionally, promotion board codes from the previous year are not seen by promotion boards, so have no effect on the probability of being selected for promotion the following year. Table 10 shows the results of the regressions.

Table 10. Impact of Awards on Promotion

VARIABLES	(1)	(2)	(3)	(4)
Mean Appraisal Score	0.085***	0.086***	0.086***	0.085***
	(0.007)	(0.007)	(0.007)	(0.007)
AM or OAM				0.091
				(0.091)
CSC or CSM				-0.063
				(0.043)
Foreign award				0.108***
				(0.041)
Non-worn commendation				0.005
				(0.009)
Worn commendation				0.019*
				(0.010)
Other award				0.018*
				(0.010)
Any award	0.018***			
	(0.007)			
Total number of awards		0.010**		
		(0.004)		
Award with prestige			0.015	
			(0.010)	
Award with low prestige			0.013*	
			(0.007)	
observations	7491	7491	7491	7491
r-squared	0.0785	0.0783	0.0783	0.0798

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, age, and rank. Applies only to members eligible for promotion.

The regression results shown in Table 10 indicate that a one-point increase in appraisal score will result in an 8.5 percentage point increase in the probability of being promoted in the next year. A one-point increase in appraisal score from one year to the next is highly unlikely, and these results would be better interpreted as a 0.1-point increase in appraisal score will result in a 0.85 percentage point increase in the probability that a member is promoted in the next year.

Having any type of award appears to increase the probability of being promoted in the following year by 1.8 percentage points, which equates to an increase of 32% in the probability of promotion. This result is significant at the $p<0.01$ level. Every additional award that a member has increases the probability of being promoted the next year by 1.0 percentage points, which equates to an increase of 17.8%. This result is also significant at the $p<0.05$ level. Having an award that is not an Order of Australia award, nor a Conspicuous Service award, nor a foreign award, nor any type of commendation is associated with a 1.8 percentage point increase in the probability of being promoted in the following year. Additionally, the results indicate that worn commendations and awards with low prestige increase the probability of promotion by 1.9 and 1.3 percentage points respectively. However, these results are only significant at the $p<0.1$ level. The most interesting result from these regressions is that awards given by foreign militaries as recognition of achievement are associated with a 10.8 percentage point increase in the probability of promotion, and this result is significant at the $p<0.01$ level.

To determine whether these results were consistent within each rank group, the following regressions were conducted:

Model 5

$$PromotedNext_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 HasAward_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it}$$

Model 6

$$PromotedNext_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 TotalAwards_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it}$$

Model 7

$$PromotedNext_{it} = \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 PrestigeAward_{it} + \beta_3 LowPrestigeAward_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it}$$

Model 8

$$\begin{aligned} PromotedNext_{it} = {} & \beta_0 + \beta_1 AppraisalRating_{it} + \beta_2 OrderOfAustralia_{it} + \beta_3 ConspicuousService_{it} + \beta_4 ForeignAward_{it} \\ & + \beta_5 OtherCommendation_{it} + \beta_6 WornCommendation_{it} + \beta_7 OtherAward_{it} + \boldsymbol{X}_{it}\alpha + \tau_t + u_{it} \end{aligned}$$

These models are the same as models 1–4, except controls for rank are not included in $\mathbf{X}_{it}$.

Tables 11 and 12 show the results of regression models 5–8 for junior enlisted ranks (LAC-CPL) and senior enlisted ranks (SGT-FSGT). Results for each individual rank can be found in Appendix B.

Table 11. Impact of Awards on Promotion – Junior Enlisted Ranks

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	0.086***	0.086***	0.086***	0.086***
	(0.008)	(0.008)	(0.008)	(0.008)
CSC or CSM				-0.046
				(0.162)
Foreign award				0.050
				(0.082)
Non-worn commendation				-0.008
				(0.013)
Worn commendation				0.015
				(0.016)
Other award				0.029**
				(0.013)
Any award	0.014			
	(0.009)			
Total number of awards		0.009		
		(0.007)		
Award with prestige			0.021	
			(0.016)	
Award with low prestige			0.008	
			(0.010)	
observations	4933	4933	4933	4933
r-squared	0.0776	0.0775	0.0776	0.0785

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, and age. Applies only to members eligible for promotion.

Table 12. Impact of Awards on Promotion – Senior Enlisted Ranks

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	0.082***	0.083***	0.083***	0.080***
	(0.012)	(0.012)	(0.012)	(0.012)
AM or OAM				0.099
				(0.084)
CSC or CSM				-0.056
				(0.042)
Foreign award				0.127***
				(0.044)
Non-worn commendation				0.020*
				(0.012)
Worn commendation				0.026**
				(0.013)
Other award				-0.007
				(0.015)
Any award	0.022**			
	(0.009)			
Total number of awards		0.011**		
		(0.005)		
Award with prestige			0.011	
			(0.011)	
Award with low prestige			0.018*	
			(0.011)	
observations	2558	2558	2558	2558
r-squared	0.0756	0.0752	0.0753	0.0804

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, and age. Applies only to members eligible for promotion.

For the junior enlisted ranks, the results show that only awards other than an Order of Australia award, or a Conspicuous Service award, or a foreign award, or any type of commendation has any significant effect on the probability of promotion in the following year. This result make sense, as junior enlisted members are less likely to receive awards that have a higher level of prestige. In the unrestricted sample used in this thesis, there are 1,588 members with the rank of AC, LAC, or CPL. Within this group of junior aviation

technicians, there are 176 members who have any type of award, and only 49 of these members have an award that is considered prestigious. None of the junior technicians has an Order of Australia Award or a Conspicuous Service award, and only one member has a Foreign Award.

The results are similar for the senior enlisted ranks when compared to the overall sample; however, there are a few notable differences. Worn commendations now improve the chances of promotion by 2.6 percentage points, with this result being significant at the $p<0.05$ level. Awards with low prestige improve promotion probability by 1.8 percentage points and this result is significant at the $p<0.1$ level. Other awards are now no longer statistically significant and slightly reduce the chances of promotion. The mean promotion rate for senior enlisted technicians (SGTs and FSGTs) who are eligible for promotion is 0.048. This means that the 2.2 percentage point increase that any type of award has on the promotion equates to a 45.8% increase in the likelihood of promotion. Likewise, the 1.1 percentage point increase for every additional award equates to a 22.9% increase in the likelihood of promotion.

C. ANALYSIS LIMITATIONS

The main limitation of this study is the small number of independent variables available to use in the models for separation and promotion, and as a result, omitted variable bias is a concern. An example of the presence of omitted variable bias can be seen in the coefficient value for foreign awards and their effect on promotion. Foreign awards are typically given to RAAF members for their achievements whilst on deployment. Since there is no variable that controls for deployment in the models that I have used, the size of the effect that foreign awards have on the probability of promotion is most likely overstated. To further separate the effects of awards and general high performance, it would be beneficial to include further independent variables such as education, conduct record, and aptitude, as these variables can be used as controls for individual aspects that can be considered related to performance.

To be able to develop a more complete picture of retention behaviors, variables that control for wages, turnover intention, member's views on importance of awards, family

composition, economy strength, member's perception of working environment/conditions, etc., would also need to be included in the model. Likewise, variables that control for previous postings, qualifications, courses, PME completion, etc., should be included in the models for promotion. Ideally, rather than using observational data, the best method to ascertain if awards have any effect on separation would be to create a randomized control trial where awards are given to members who have identified that they intend to leave within the next 12 months and compare separation behaviors with a control group who have also identified that they intend to leave within the next year but have not been given an award.

Another limitation of this study is the period that the data covers. The data includes observations of members over the period 2016–2020. Increasing the year range will provide more accurate observations for the separation behavior of members of the RAAF aviation technical workforce.

During the conduct of the analysis, an issue emerged relating to the promotion board results. Some members had multiple board codes given to them in a single year, as the same code system is used for selection boards in addition to promotion boards. Yet, there was no way to identify which result was given for the promotion board. For the purposes of the analysis, the first observation was used in the instances where there were multiple observations for a single member. It is doubtful that by doing this the results were impacted significantly.

D. KEY FINDINGS

The results of this thesis indicate that awards do have an influence on the separation behavior of members in the RAAF aviation technical workforce. Nonetheless, it is not the awards that are highly visible, have higher prestige, or are more valuable due to scarcity that are having the effect. Rather, it is the awards considered less prestigious and that are less visible (i.e., not worn on the uniform) that influence separation behavior. A potential reason for this result is the small number of awards with perceived high value and prestige observed within the sample, as enlisted members of the workforce are less likely to receive prestigious awards than officers. Another reason for awards with less prestige or value

having a greater impact on separation behaviors could be due to the different effects of awards on higher performers (those awarded A promotion codes) as compared to members who were not as competitive at promotion boards (members awarded B or C promotion codes).

Having an award has no effect on retention of high performing members of the RAAF aviation technical workforce. A potential reason for this is that high performing members are cognizant of their own abilities and high performance, and these members do not need validation through awards. Similarly, high performing members may be more intrinsically motivated and awards, being an extrinsic motivator, have no effect on their intention to separate. High performing members may also be more attracted to job opportunities external to the military, as they possess the skills and knowledge that make them valuable to external organizations. The ability of corporate entities to offer better compensation packages than the military for the skillsets that high performers have could be enough to negate any positive effect that awards have on retention of high performing members.

This research has shown that having an award does influence the separation behavior of members of the RAAF aviation technical workforce who are not deemed to be the most competitive for promotion. Although members, eligible to be presented to a promotion board, were awarded B or C promotion codes, those codes do not mean that the members were performing poorly in their jobs (with some exceptions). The results of this research indicate that the effect of awards for this subset of the sample is like the findings of the effects of awards for the overall sample, with awards that could be considered of lower value or prestige having a greater effect on retention. This effect could be due to members receiving B or C promotion codes being arguably less likely to be awarded the higher value and prestige awards. Additionally, members in this subset of the sample could value any form of recognition, and thus, awards with lower prestige or value have a greater effect, as these members are aware that they are not as competitive as those members who receive A promotion codes.

The results of this thesis also confirm the findings of previous research (Grillo, 1996; Hoffman, 2008; Steinpfad, 2017; Conlan, 2021) in that the total number of awards a

member has increases the probability of the member being promoted in the next year. When the sample is separated into junior and senior enlisted members, this effect disappears in the junior enlisted subset of the sample. An explanation for this is that in comparison to senior enlisted members, the junior enlisted members have not had the time to receive multiple awards.

Like the results for separation behavior, this research indicates that awards deemed to have lower prestige are correlated with an increased chance of promotion. Again, this could be due to the small number of high value awards in the sample. Foreign awards appear to have a significant impact on promotion; however, given that deployment was not controlled for in the regressions, the effect of the foreign award itself would most likely be smaller than the results indicate, and it would be the deployment experience that would increase the chances of a member being promoted. Awards can act as a signal of high performance, and this is why having an award increases a member's probability of being promoted the following year. Recognition through a higher PPR score is another significant factor that is correlated with an increased promotion probability for members of the RAAF aviation technical workforce.

VI. CONCLUSION

A. FURTHER RESEARCH

Further research into the potential effect of awards on retention should include the entirety of the RAAF enlisted workforce to determine whether the effects of awards found in this research are consistent across different musterings. Additionally, as officers are more likely to receive higher value and more prestigious awards, research into the effects of awards on the entire RAAF officer workforce should be conducted to see if there are any significant effects of these types of awards on retention. Additionally, research into the perceived value of awards for members and how such awards affect individual separation intent should be conducted to further understand how awards can affect retention.

B. RECOMMENDATIONS

The results of this thesis do not warrant any changes to current RAAF policy regarding the recognition of achievement through awards. Even though awards considered to have lower prestige appear to impact the separation behavior of members, it is not recommended to increase the frequency with which these types of awards are given, as this may decrease the value of the award and thus decrease the retention effect. What this research does show, however, is the importance of recognizing achievement when it deserves to be recognized, especially for members who are high performers, but who are not as competitive as some of their peers in terms of promotability. One recommendation is that an information campaign be initiated to educate Commanding Officers (CO) of the importance of CO-level commendations and the impact they have on retention of deserving members. It is also recommended that supervisors take the time to conduct the necessary administration to nominate a member for an award if that member's achievements are worthy of one, as providing recognition through an award can help retain the member within the workforce.

C. SUMMARY

The retention of skilled members of the aviation technical workforce is critical, as the RAAF can use their knowledge and experience to maintain an aircraft fleet that includes increasingly complex aircraft. It is preferrable to retain current members of this workforce than to incur the costs of recruiting and training new members. My research aimed to determine awards (by number and type) were able to predict retention and promotion outcomes for RAAF personnel. My research questions were:

1. Primary - What is the relation between receiving an honor or award and the retention of members in the RAAF aviation technical workforce?
2. Secondary - Does having an honor or award increase the chances of promotion for members in the RAAF aviation technical workforce?

Using data obtained from the ADF HR Data Warehouse and from the DHRIS-AF, I used LPMs to see if various categorizations of awards had a significant effect on retention or promotion. The results of my research indicate that awards—although not the ones expected to do so—do influence separation behaviors. Awards that are of low prestige appear to reduce the likelihood of a member separating in the next year by 36%. When investigating if this effect was consistent for members who had received A promotion codes compared to those members who had received either B or C promotion codes, I found that awards of any type or prestige level appeared to have no effect on retention for members who had received A promotion codes. Awards with low prestige had a similar effect on separation for members with B or C promotion codes when compared with the entire sample.

In terms of effects on promotion, having any type of award increases the member's likelihood of being promoted the following year by 45.8% and each additional award a member has increases the probability of promotion by 22.9%. However, these results apply only to senior members of the RAAF aviation technical workforce (SGTs and FSGTs). Awards did not appear to have any effect on promotion for junior members of the workforce. A reason for this could be due to the limited number of junior members who have received an award.

The main limitation of this study is the number of independent variables used in the regression models. The small number of independent variables used means that there is a higher likelihood of omitted variable bias being present within the results. To obtain a more comprehensive result of the effect of awards on retention, it would be beneficial to include variables that control for wages, turnover intention, member's views on importance of awards, family composition, economy strength, member's perception of working environment/conditions, aptitude, education levels, conduct record, etc. Likewise, it would be beneficial to include variables that control for previous postings, qualifications, courses, PME completion, etc., in the models for promotion.

My findings highlight the importance of recognizing the performance of deserving members of the workforce in terms of retention, especially for members who are performing well, but who are not considered competitive for promotion. While I would not recommend any changes to current policy for awards in the RAAF, I do recommend that an information campaign be initiated to inform COs of the importance of awards, such as CO commendations, in retaining deserving members. Further research could be conducted in this area to explore whether these results are replicated in other enlisted workforces within the RAAF. Additionally, it is suggested that research examining the effects of awards for officers be conducted, as this may show whether prestigious awards have any effect on retention, given that officers are more likely to be given these types of awards.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A. EFFECTS OF AWARDS ON SEPARATION

Table 13. Impact of Awards on Separation – B Promotion Codes

VARIABLES	(1)	(2)	(3)	(4)
Mean Appraisal Score	-0.024**	-0.025**	-0.025**	-0.025**
	(0.011)	(0.011)	(0.011)	(0.011)
CSC or CSM				-0.067
				(0.066)
Foreign award				0.019
				(0.061)
Non-worn commendation				-0.010
				(0.015)
Worn commendation				-0.007
				(0.017)
Other award				-0.009
				(0.016)
Any award	-0.019*			
	(0.011)			
Total number of awards		-0.009		
		(0.007)		
Award with prestige			-0.004	
			(0.016)	
Award with low prestige			-0.018	
			(0.012)	
observations	2892	2892	2892	2892
r-squared	0.0372	0.0367	0.0369	0.0369

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, age, and rank.

Table 14. Impact of Awards on Separation – C Promotion Codes

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	-0.059	-0.058	-0.058	-0.063
	(0.040)	(0.039)	(0.040)	(0.041)
Any award	-0.074			
	(0.051)			
Total number of awards		-0.074		
		(0.048)		
Award with prestige			0.010	
			(0.102)	
Award with low prestige			-0.082	
			(0.054)	
CSC or CSM				0.050
				(0.282)
Non-worn commendation				-0.030
				(0.089)
Worn commendation				-0.056
				(0.107)
Other award				-0.112
				(0.068)
observations	171	171	171	171
r-squared	0.187	0.188	0.189	0.191

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, age, and rank.

APPENDIX B. EFFECTS OF AWARDS ON PROMOTION

Table 15. Impact of Awards on Promotion – LAC

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	0.106***	0.106***	0.105***	0.106***
	(0.012)	(0.012)	(0.012)	(0.012)
Any award	0.026*			
	(0.014)			
Total number of awards		0.029**		
		(0.012)		
Award with prestige			0.080**	
			(0.032)	
Award with low prestige			0.016	
			(0.015)	
CSC or CSM				-0.167
				(0.248)
Non-worn commendation				-0.007
				(0.023)
Worn commendation				0.094***
				(0.034)
Other award				0.045**
				(0.018)
observations	2816	2816	2816	2816
r-squared	0.0998	0.100	0.101	0.103

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, and age. Applies only to members eligible for promotion.

Table 16. Impact of Awards on Promotion – CPL

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	0.054***	0.054***	0.054***	0.054***
	(0.011)	(0.011)	(0.011)	(0.011)
CSC or CSM				0.023
				(0.199)
Foreign award				0.063
				(0.071)
Non-worn commendation				0.002
				(0.015)
Worn commendation				-0.006
				(0.017)
Other award				0.018
				(0.017)
Any award	0.010			
	(0.011)			
Total number of awards		0.004		
		(0.007)		
Award with prestige			0.008	
			(0.017)	
Award with low prestige			0.006	
			(0.012)	
observations	2117	2117	2117	2117
r-squared	0.0547	0.0545	0.0545	0.0552

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, and age. Applies only to members eligible for promotion.

Table 17. Impact of Awards on Promotion – SGT

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	0.072***	0.072***	0.073***	0.070***
	(0.015)	(0.015)	(0.015)	(0.015)
AM or OAM				0.875***
				(0.208)
CSC or CSM				-0.063
				(0.093)
Foreign award				0.021
				(0.058)
Non-worn commendation				0.023
				(0.015)
Worn commendation				0.033**
				(0.016)
Other award				-0.013
				(0.018)
Any award	0.020*			
	(0.011)			
Total number of awards		0.012*		
		(0.007)		
Award with prestige			0.009	
			(0.015)	
Award with low prestige			0.016	
			(0.013)	
observations	1759	1759	1759	1759
r-squared	0.0767	0.0768	0.0761	0.0887

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, and age. Applies only to members eligible for promotion.

Table 18. Impact of Awards on Promotion – FSGT

VARIABLES	(5)	(6)	(7)	(8)
Mean Appraisal Score	0.087***	0.089***	0.089***	0.089***
	(0.021)	(0.021)	(0.021)	(0.020)
AM or OAM				-0.072
				(0.090)
CSC or CSM				-0.059
				(0.046)
Foreign award				0.280***
				(0.068)
Non-worn commendation				0.018
				(0.019)
Worn commendation				0.004
				(0.021)
Other award				0.008
				(0.031)
Any award	0.024			
	(0.016)			
Total number of awards		0.009		
		(0.009)		
Award with prestige			0.010	
			(0.019)	
Award with low prestige			0.021	
			(0.018)	
observations	799	799	799	799
r-squared	0.0896	0.0883	0.0895	0.110

Note: Data from 2016 to 2020. Standard error in parentheses. *** p<0.01, **p<0.05, *p<0.1. Model also controls for time in rank, length of service, marital status, year, and age. Applies only to members eligible for promotion.

LIST OF REFERENCES

Air Force Headquarters, RAAF. Directorate of Honours and Decorations – Air Force. (2021). *Defence Commendations*. Defence Protected Network.

Ashraf, N., Bandiera, O., & Lee, S. S. (2014). Awards unbundled: Evidence from a natural field experiment. *Journal of Economic Behavior & Organization*, *100*, 44–63. https://doi.org/10.1016/j.jebo.2014.01.001

Auriol, E., & Renault, R. (2008). Status and incentives. *The RAND Journal of Economics*, *39*(1), 305–326. https://doi.org/10.1111/j.0741-6261.2008.00015.x

Australian Government. Department of Defence. (2012). *Defence honours and awards manual: Volume 1*.

Australian Government. Department of the Prime Minister and Cabinet. (n.d.). *It's an honour*. Retrieved November 23, 2021, from https://www.pmc.gov.au/government/its-honour

Bradler, C., Dur, R., Neckermann, S., & Non, A. (2016). Employee recognition and performance: A field experiment. *Management Science*, *62*(11), 3085–3099. https://doi.org/10.1287/mnsc.2015.2291

Brennan, G., & Pettit, P. (2004). *The economy of esteem: An essay on civil and political society*. Oxford, England: Oxford University Press.

Cacioppe, R. (1999). Using team - individual reward and recognition strategies to drive organizational success. *Leadership & Organization Development Journal*, *20*(6), 322–331. https://doi.org/10.1108/01437739910292634

Conlan, D.R. (2021). *Marine Corps officer accession: An analysis of effects on career-level promotion* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://hdl.handle.net/10945/67118

Fifield, J. (2006). *A multivariate analysis of retirement intentions of enlisted Naval Reservists* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/handle/10945/2898

Frey, B.S. (2006). Giving and receiving awards. *Perspectives on Psychological Science*, *1*(4), 377–388. https://doi.org/10.1111/j.1745-6916.2006.00022.x

Frey, B.S. (2007). Awards as compensation. *European Management Review*, *4*(1), 6–14.

Frey, B.S., Benz, M., & Stutzer, A. (2004). Introducing procedural utility: Not only what, but also how matters. *Journal of Institutional and Theoretical Economics*, *160*(3), 377–401. https://doi.org/10.1628/0932456041960560

Frey, B.S., & Gallus, J. (2014). The power of awards. *The Economists' Voice*, *11*(1), 1–5. https://doi.org/10.1515/ev-2014-0002

Frey, B.S., & Gallus, J. (2016). Awards as non-monetary incentives. *Evidence-Based HRM: A Global Forum for Empirical Scholarship*, *4*(1), 81–91. https://doi.org/10.1108/EBHRM-05-2015-0016

Frey, B.S., & Gallus, J. (2017). Towards an economics of awards. *Journal of Economic Surveys*, *31*(1), 190–200. https://doi.org/10.1111/joes.12127

Frey, B.S., & Neckermann, S. (2008). Awards: A view from psychological economics. *Zeitschrift Für Psychologie*, *216*(4), 198–208. https://doi.org/10.1027/0044-3409.216.4.198

Gallus, J. (2017). Fostering public good contributions with symbolic awards: A large-scale natural field experiment at Wikipedia. *Management Science*, *63*(12), 3999–4015. https://doi.org/10.1287/mnsc.2016.2540

Gallus, J., & Frey, B.S. (2016). Awards: A strategic management perspective. *Strategic Management Journal*, *37*(8), 1699–1714. https://doi.org/10.1002/smj.2415

Governor-General of the Commonwealth of Australia. (2020). *Australian Honours and Awards*. https://www.gg.gov.au/australian-honours-and-awards

Grillo, M. A. (1996). *A study of promotion to major in the Marine Corps* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://hdl.handle.net/10945/32080

Hoffman, J.M. (2008). *Significant factors in predicting promotion to major, lieutenant colonel, and colonel in the United States Marine Corps* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://hdl.handle.net/10945/4227

Jeffrey, S.A., & Adomdza, G.K. (2010). Incentive salience and improved performance. *Human Performance*, *24*(1), 47–59. https://doi.org/10.1080/08959285.2010.530631

Kosfeld, M., & Neckermann, S. (2011). Getting more work for nothing? Symbolic awards and worker performance. *American Economic Journal: Microeconomics*, *3*(3), 86–99. https://doi.org/10.1257/mic.3.3.86

National Australia Day Council. *Australia Day Achievement Medallions and Lapel Pins*. Retrieved December 16, 2021, from https://www.australiaday.org.au/get-involved/medallions/

Neckermann, S., Cueni, R., & Frey, B. S. (2012). *Awards at work*. https://madoc.bib.uni-mannheim.de/31381/

Office of the Official Secretary to the Governor-General. (2007). *Schedule on the order of wearing Australian honours and awards*. https://www.pmc.gov.au/sites/default/files/files/pmc/Honours/order-of-wearing.pdf

Office of the Official Secretary to the Governor-General. (2018). *Order of Australia: Constitution of the Order of Australia*. https://www.gg.gov.au/australian-honours-and-awardsorder-australia/constitution-order-australia#:~:text=1%20(1)%20The%20Order%20of,Companion%2C%20Officer%2C%20or%20Member.

Stajkovic, A.D., & Luthans, F. (2003). Behavioral management and task performance in organizations: Conceptual background, meta-analysis, and test of alternative models. *Personnel Psychology*, *56*(1), 155–194. https://doi.org/10.1111/j.1744-6570.2003.tb00147.x

Steinpfad, M.A. (2017). *Promotion factors for enlisted infantry Marines* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://hdl.handle.net/10945/55540

Acquisition Research Program
Department of Defense Management
Naval Postgraduate School
555 Dyer Road, Ingersoll Hall
Monterey, CA 93943

www.acquisitionresearch.net