

The Fitness Report System for Marine Officers: Prior Research

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Photo credit line: Maj Mark Reid, executive officer for Battalion Landing Team 3/8, 26th Marine Expeditionary Unit, pins the rank of captain on Capt Kevin P. Newport, Tank Platoon commander, Company L, BLT 3/8, 26th MEU, during a promotion ceremony held aboard Camp Buehring, Kuwait, Jan. 1, 2011. Elements of 26th MEU debarked the ships of Kearsarge Amphibious Ready Group to conduct sustainment training and exercises with regional allies and partners in the U.S. 5th Fleet's area of responsibility. (1/1/2011 By Sgt Jesse J. John)

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Executive summary

The Marine Corps Fitness Report (FitRep) system provides the official evaluation and record of an officer's performance. Given the FitRep's importance in determining fair and equal opportunity for career progression and continuation, it is crucial that the system be reviewed periodically. The Marine Corps implemented the current FitRep system in 1999 to address concerns about grade inflation, and the system has not received a thorough examination since then.

The Director, Manpower Management Division asked CNA to conduct a systematic review of the FitRep system for officers and to examine whether the system is accomplishing what the Marine Corps intended. This is a broad question that encompasses several issues. Previous studies have focused on two issues:

- How do FitRep marks differ by observable characteristics?
- How do FitRep marks affect promotion and continuation?

This information memorandum reviews the literature on the Marine Corps FitRep system to inform our analysis of these two questions, and it notes the literature's relevance to our broader research agenda. Review highlights include the following:

- Estimates suggest that inflation of FitRep scores was a problem among company-grade officers and majors from FY99 to FY04, with scores increasing by 2 to 5 percent.
- Studies consistently found that black Marines—both enlisted and officers—received lower FitRep marks than white Marines. The only possible evidence of bias found was that black staff sergeants received lower FitRep marks from white reporting seniors (RSs) than from black RSs in the early 1980s.

- There is broad consensus in the literature that, among both enlisted personnel and officers, female Marines and married Marines have higher FitRep scores.
- Earlier research has found that officers commissioned at a younger age had higher marks, controlling for commissioning source.
- A consistent finding in the literature is that officers accessed through the United States Naval Academy (USNA) or enlisted-to-officer (E-to-O) programs had higher FitRep marks.
- Previous analyses show that officers with a higher class standing at The Basic School (TBS) received higher FitRep marks.
- Recent research suggests that officers in finance and legal occupations scored higher on FitReps than those in infantry and logistics, while officers in communications and artillery occupations received the lowest FitRep marks.
- The literature consistently indicates that RS marks are a positive predictor of promotion to major and lieutenant colonel.
- Studies report that reviewing officer (RO) marks are positive predictors of promotion to lieutenant colonel and colonel, but not to major.

The correlation of FitRep marks with observed quality indicators, such as class standing and prior military experience, is both unsurprising and encouraging. Systematic differences across occupations or between black and white officers are potential causes for concern that merit further study.

Introduction

The FitRep is an evaluation tool filled out by a Marine's RS and RO that communicates the reporting officials' assessments of the Marine's performance and character to promotion boards. The current FitRep system was implemented on January 1, 1999. Like the previous system, it supports promotion boards' selection and retention of the most qualified Marines in the grades of sergeant through major general, as well as the slating of officers for command or resident school billet assignments.

All features of the performance evaluation system are found in Marine Corps Order P1610.7F [1]. The current FitRep differs from the previous one in the following ways:

- The RS grades a Marine Reported On (MRO) on 14 instead of 21 evaluation dimensions.
 - The current FitRep has 14 performance-anchored rating scales (PARS) scored from A (lowest, 1 point) to G (highest, 7 points), with H indicating not observed. Any report with even one PARS marked A represents an “adverse” report. Descriptions are provided for B, D, and F but not for A, C, E, or G. Marks of F and G must be justified with comments.
 - The previous FitRep had 21 evaluation dimensions (7 for performance, 14 for qualities) with a 6-point rating scale from “unacceptable” to “outstanding.”
- There is no overall RS mark; an unweighted average of the PARS is calculated. In the previous FitRep, there was one overall mark for “general value to the service.”
- The RS's profile is tracked, and the MRO is assigned a relative value (RV) based on the RS's profile. The RV is a numerical representation of how a single MRO's FitRep compares with other reports written by the same RS on Marines of the same grade.

In the previous system, the RS had to provide a relative ranking if the report was “outstanding” and the RS had scored other MROs in the same rank as “outstanding.” If reports were submitted at different times for different MROs, each could be given the top relative ranking at the time of their report. There was no record kept of the RS’s reporting history.

- The RO provides an overall relative assessment, with an intended distribution shaped like a “Christmas tree.” There was no numerical RO mark under the old FitRep system.
- There are text boxes for the billet description and accomplishments written by the MRO, whereas there were none in the previous FitRep system.
- It is a 5-page rather than a 2-page evaluation.

Under both the current and previous FitReps:

- There is a comment section for the RS (the “word picture”) and the RO.
- There are boxes for the RO’s concurrence or nonconcurrence with the RS’s marks.

This information memorandum is part of a broader study for the Manpower Management Division examining whether the current FitRep system for officers is being executed in accordance with—and is accomplishing what the Marine Corps set out as—its intentions in 1999. We first provide background on the current FitRep system. Then, we summarize previous research on how FitRep marks (a) vary by observable characteristics and (b) affect promotion and continuation. Finally, we conclude and discuss our next steps.

Background

The Marine Corps uses FitReps to manage its manpower. The FitRep is the key factor in deciding who to promote, retain, or assign to command. A Marine's entire FitRep history is available to the promotion board as it decides whether to promote him or her. An officer promotion board is composed of 10 to 20 members (depending on the rank)—all high-quality Marine officers senior in rank to the Marine officer being considered for promotion. The composition of the promotion board is designed to reflect the officer corps in terms of gender and racial/ethnic diversity as well as primary military occupational specialties (PMOSs).

The FitRep is completed by the MRO's RS and RO. The RS is the first commissioned officer, warrant officer, or civilian grade GS-9 or above in the reporting chain that is senior to the MRO. For example, the RS may be either the MRO's commanding officer or the head of the staff section. The RS grades the officer on performance and qualities. The RO is the first commissioned officer, warrant officer, or civilian grade GS-9 or above senior in grade to the RS; he or she reviews and decides whether to concur with the RS's report. The RO also ranks the MRO against all Marines in the same grade that are known to the RO.

A FitRep is required at the following times for the following reasons:

- Annually for MROs from sergeant through major general in either the active or reserve component (semiannually for lieutenants only)
- At the completion of reserve training
- Because of a grade change
- Because of a status change
- Because of a change of RS

- Because of a change of duty
- Because of a change to temporary duty
- Because of a change from temporary duty
- Because of a transfer
- If directed by the Commandant of the Marine Corps
- For end of service

Thus, an MRO receives a FitRep at least once a year. The current FitRep includes administrative information on the MRO, identifies the RS and RO, includes the MRO's billet description and accomplishments, and displays the 14 PARS to be graded by the RS.

These 14 PARS fall into 5 sections:

1. Mission accomplishment—performance and proficiency
2. Character—courage, effectiveness under stress, and initiative
3. Leadership—leading, developing, and ensuring the well-being of subordinates, setting the example, and communication skills
4. Intellect and wisdom—professional military education (PME), decision-making ability, and judgment
5. Fulfillment of evaluation responsibilities—accuracy and timeliness of evaluations

Although some PARS are probably more applicable to some billets than others, each is treated with equal weight in calculating the report average and the RV.

How do FitRep marks differ by observable characteristics?

In this section, we review the literature on how FitRep marks differ by observable characteristics. We first address the previous FitRep system for both enlisted Marines and officers.¹ Then, we turn to the current FitRep system for Marine officers only.

Enlisted and officer FitReps, FY80 through FY99

We first examine how enlisted and officer FitRep marks under the previous FitRep system varied by demographic characteristics of the MROs and RSs and by measures of MRO quality.

By demographic characteristics of the MROs and RSs

Historically, FitRep marks differed by gender, among both enlisted Marines and officers. Earlier research by Palomba et al. [2] and Ergun [3] found that female Marines—both enlisted and officers—consistently received higher FitRep marks than their male counterparts. FitRep marks also differed by the gender of their RSs. Examining an FY80–FY84 cohort of sergeants and staff sergeants, the authors found that female RSs and warrant officers were harder graders: enlisted Marines were marked lower by RSs who were female or warrant officers [2].²

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1. After this subsection, we focus solely on the FitRep system for officers. We include the CNA study of enlisted Marines because this is the only comparison of Marines graded by RSs with different demographic characteristics (race, gender, type of officer)—an interaction we intend to explore in our analysis.
 2. At that time, female Marines mostly held administrative billets and most male Marines had not served with them. In our systematic review, we will investigate how officer FitRep marks differ by the gender of the MRO and RS.

An examination of FitRep scores by race showed that, among enlisted personnel and officers, black Marines consistently received lower FitRep marks than white Marines [2, 3]. The authors in [2] further compare the FitRep marks of black enlisted Marines—and, similarly, white enlisted Marines—who had been evaluated by RSs of different demographic characteristics. Among enlisted Marines, 45 to 70 percent of the difference in FitRep marks between black and white Marines (depending on the specification) could not be explained by characteristics of the Marine; rather, this black-white differential was primarily related to RSs' race, education, and rank. Black staff sergeants were marked lower by white RSs than black RSs (7.83 vs. 7.97), yet there was no difference in the FitRep marks of white Marines related to their RSs' race. The black-white FitRep differential was larger for Marines whose RSs had less than a bachelor's degree or who were captains.

Based on their analysis, the authors in [2] argued that the unexplained black-white differential likely represented a small, real bias in evaluations by RSs rather than actual performance-related differences. This bias affected promotion rates: black sergeants were 4 percentage points less likely than white sergeants to be promoted to staff sergeant because of the unexplained FitRep differential.

Overall, evidence from the 1980s and 1990s suggests that female Marines received higher FitRep marks than male Marines, and black Marines received lower FitRep marks than white Marines. The only evidence of bias we found was that, nearly 30 years ago, black staff sergeants were marked lower by white than by black RSs. In our systematic review, we will ascertain whether these marked differences in FitRep scores still exist by demographics of the MRO and RS.

By quality measures

Education and aptitude are two quality measures found to positively affect enlisted Marines' evaluations under the previous FitRep system. Enlisted Marines with at least a high school diploma or higher AFQT scores received higher FitRep marks [2]. Enlisted Marines who had daily contact with their RSs, passed the physical fitness test (PFT), received a commendatory report, received a semiannual FitRep (rather than a transfer), or were married also received higher marks.

Like enlisted Marines, Marine officers with higher quality indicators received more favorable FitReps. FitRep scores were higher for Marine officers with a higher TBS class ranking [3]. Officers received higher marks for service in combat or for a joint tour of duty while a major. Officers commissioned at a younger age had higher FitRep marks, after controlling for commissioning source.

Certain commissioning sources either produce or attract higher quality Marines. Under the previous FitRep system, officers accessed through the USNA or E-to-O programs had higher FitRep marks than officers accessed through the Naval Reserve Officer Training Corps (NROTC), the Officer Candidate Course (OCC), or the Platoon Leaders Class (PLC) [3].³

Overall, FitRep marks are positively correlated with other performance measures. Findings from the literature suggest that enlisted Marines who had at least a high school diploma, had higher AFQT scores, were married, or had regular contact with their RSs had higher FitRep scores. For Marine officers, those with a higher TBS class ranking, who were commissioned at a younger age, or who accessed through USNA or E-to-O programs scored higher on their FitRep evaluations. In our analysis, we will ascertain whether these relationships for enlisted Marines hold for officers, and if those that held for officers in the past continue to hold today. If so, it may have important implications for how RSs evaluate Marines.

Summary

Table 1 summarizes the research on enlisted and officer Marine FitRep trends under the previous FitRep system. Marine officers and enlisted Marines were more likely to receive high FitRep marks if they were female or white. Education and AFQT score, as well as marriage, were positive predictors of higher FitRep marks. Daily contact with one's RS, passing the PFT, and receiving a commendatory report all enhanced an enlisted Marine's FitRep score. Marine officer evalua-

3. Enlisted-to-Officer (E-to-O) programs include the Marine Corps Enlisted Commissioning Program (MECEP), the Enlisted Commissioning Program (ECP), and the Meritorious Commissioning Program (MCP).

tions were similarly given a boost by a higher TBS ranking, a younger age at commissioning, a combat FitRep, or accession through USNA or E-to-O programs.

Table 1. Summary of enlisted and officer FitRep trends, FY80 through FY99

Characteristic	Trend description
Gender	Female Marines received higher FitRep scores than male Marines. Enlisted Marines with female RSs received lower marks.
Race/ethnicity	Black Marines received lower FitRep scores than white Marines. Black staff sergeants were marked lower by white RSs than black RSs.
Education	Enlisted Marines with a high school diploma received higher FitRep marks.
AFQT score	Enlisted Marines with higher AFQT scores received higher FitRep marks.
FitRep items	Enlisted Marines who were in daily contact with their RSs, received a commendatory report, or passed their PFT received higher FitRep marks.
Marital status	Married enlisted Marines received higher FitRep marks.
TBS ranking	Marine officers with a higher TBS class ranking received higher FitRep marks.
Age at commissioning	Marine officers commissioned at a younger age received higher FitRep marks.
Commissioning source	Marine officers accessed through USNA or E-to-O programs had higher FitRep marks.
Type of duty	Marine officers received higher FitRep scores for service in combat.

Officer FitReps, FY99 through FY11

In this subsection, we review the literature on officer FitRep marks under the current FitRep system. In particular, we focus on how FitRep marks vary by the Marine officer's demographic characteristics, quality measures, commissioning source, PMOS, and rank.

By demographic characteristics and quality measures

The FitRep is an important carrier of information on past effort and skill and a predictor of potential at the next stage. With different RSs and ROs evaluating the MRO over time, movements in the FitRep average and standard deviation should begin to reveal the MRO's true ability. As in the previous FitRep system, TBS performance is a strong predictor of performance in the operating forces: Wiler and Hurndon [4] found that a higher TBS class ranking predicts higher FitRep marks, with TBS leadership score having the most predictive value.

More recent work finds that, as before, female officers receive higher FitRep marks than male officers, and black officers receive lower FitRep marks than white officers [3, 4]. Unlike in the previous FitRep system, married officers receive higher FitRep scores under the current system [3], which is corroborated in a study by Jobst and Palmer [5].

Captains who are younger at commissioning receive higher FitRep marks, controlling for commissioning source; under the old system this had been true for all paygrades through major [3]. Officers serving in combat, and majors in joint duty, receive higher FitRep marks just as before.

In terms of demographic characteristics and quality measures, Marine officers who shine under the current FitRep system did so, as well, under the previous system. Female or white Marine officers received higher FitRep marks under both systems, as did officers who had a higher TBS class ranking, had a combat FitRep, or were captains commissioned at a younger age. Unlike in the previous FitRep system, married officers receive higher marks, and age at commissioning has no predictive power for lieutenants or majors in the current system.

By commissioning source, PMOS, and rank

FitRep scores differ systematically by commissioning source, PMOS, and rank. As in the previous FitRep system, Marine officers who are

accessed through the USNA or E-to-O programs perform well, scoring higher on their FitReps.

FitRep scores differ across PMOSs in the current system.⁴ Officers in finance and legal PMOSs receive higher FitRep marks than those in infantry and logistics, while officers in communications and artillery PMOSs receive the lowest FitRep marks [5]. Marine officers who received one of their top three PMOS assignment preferences in TBS receive higher FitRep marks [4].⁵ This gives credence to the effect that matching preferences to assignments has on performance; intuitively, Marine officers are more motivated, satisfied, and productive in their preferred fields.

Recent research finds that FitRep scores are higher for higher officer ranks [5]. On a 7-point scale, compared with second lieutenants, scores are higher for: first lieutenants (by 0.3 point), captains (by 0.7 point), majors (by 1.0 point), and lieutenant colonels (by 1.3 points). Those promoted to higher ranks likely scored well on FitReps in their previous ranks and will continue to do so in their new ranks. Evidence of inflation also is found from FY99 to FY04, with year-to-year FitRep score increases ranging from 0.14 to 0.35 point, or 2 to 5 percent of the possible 7-point range. Similar evidence of grade inflation was found in [3].

A consistent finding under both FitRep systems is that commissioned officers from USNA and E-to-O programs receive higher FitRep scores. These commissioning sources may act as signals of quality or produce higher quality officers. A finding from the current FitRep system, not analyzed previously, is that Marine officers in certain PMOSs (finance and legal) receive higher marks than officers in other PMOSs (infantry and logistics), with officers in communications and artillery PMOSs scoring the lowest. It may be that some PMOSs' missions are more well defined and easier to achieve.

4. To our knowledge, this was not analyzed in the previous FitRep system.

5. This did not hold for contract aviators. In Wiler and Hurndon's sample [4], 45 percent of officers received their top PMOS preference and 61 percent received one of their top three preferences.

Summary

Table 2 summarizes observed trends in officer FitRep marks under the current FitRep system. The literature finds that—under both the previous and current FitRep systems—Marine officers with higher FitRep marks are more likely to be female, to be white, to have higher TBS rankings, to have been accessed through USNA or E-to-O programs, or to have received a combat FitRep. In addition, under the current FitRep system, Marine officers who are married, who are in a higher rank, or who received one of their top three PMOS preferences scored higher on FitReps.

Table 2. Summary of officer FitRep trends, FY99 through FY11

Characteristic	Trend description
Gender	Female Marine officers receive higher FitRep scores than their male counterparts.
Race/ethnicity	Black Marine officers receive lower FitRep marks than white Marine officers.
Marital status	Married Marine officers receive higher FitRep marks.
TBS ranking	Marine officers with a higher TBS ranking receive higher FitRep marks.
Type of duty	Marine officers who received a combat FitRep are evaluated more favorably.
Commissioning source	Marine officers commissioned through USNA or E-to-O programs receive higher FitRep marks.
PMOS	Marine officers in finance and legal PMOSs receive higher FitRep marks, while those in communications and artillery PMOSs receive the lowest FitRep marks.
PMOS preference	Marine officers (other than contract aviators) who received one of their top three PMOS preferences receive higher FitRep marks.
Paygrade	Marine officers in higher ranks receive higher FitRep marks.

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How do FitRep marks affect promotion and continuation?

In this section, we review the literature on the predictors of promotion and continuation for Marine officers. For promotion, we begin with the previous FitRep system and then address the current FitRep system. We focus on the effect of RS and RO marks on promotion and then consider other factors that affect promotion, for which we will control in our analysis. We also address trends in FitRep appeals and examine what they reveal about the current FitRep system. Next, we do the same for officer continuation, but we address only the previous FitRep system; we do not know of any studies that address Marine officer continuation in the current FitRep system.

Officer promotion, FY80 through FY99

We examine the effect of RS and RO FitRep marks on the likelihood of officer promotion under the previous FitRep system. We then explore other factors affecting officer promotion rates.

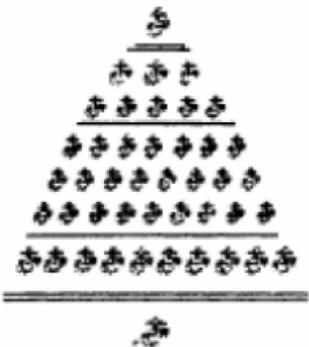
Effect of RS and RO marks

FitRep marks are a promotion board's best available measure of an officer's demonstrated performance. The Manpower Management Division provides the promotion board with a Master Brief Sheet (MBS) for each MRO at the time of the board, which includes such information as grade, time in grade, current duty assignment, billet description, awards, PMOS, training (rifle, pistol, fitness), civilian education, and PME. The most useful quantitative pieces of information to the promotion board are the RS and RO markings. The relative value (RV), calculated by Headquarters Marine Corps (HQMC), ranks an MRO's average FitRep score (range of 1 to 7) against Marine officers in his or her grade rated by the same RS and normalizes the RV on a range of 80 to 100. An MRO receiving an RS relative value of

90 has received the mean score. The MBS displays both the RV at the time the report was submitted and a cumulative RV updated by marks the RS has given since.

The board also observes the RO's relative assessment of the MRO and the RO's distribution of marks for all MROs in that rank. The RO ranks all Marine officers under his or her command by placing each MRO on a level (1 through 8, with 8 as the highest level) relative to Marine officers in his or her grade, ideally distributed in the shape of a Christmas tree, as illustrated in figure 1.

Figure 1. Reviewing officer's section of the FitRep

DESCRIPTION		COMPARATIVE ASSESSMENT
THE EMINENTLY QUALIFIED MARINE	<input type="checkbox"/>	
ONE OF THE FEW EXCEPTIONALLY QUALIFIED MARINES	<input type="checkbox"/>	
ONE OF THE MANY HIGHLY QUALIFIED PROFESSIONALS WHO FORM THE MAJORITY OF THIS GRADE	<input type="checkbox"/>	
A QUALIFIED MARINE	<input type="checkbox"/>	
UNSATISFACTORY	<input type="checkbox"/>	

FitRep marks are a positive predictor of officer promotion, with the marginal effect differing across ranks. This may be the result of differences in how much weight the board places on FitReps, by rank, but also it is surely because of different promotion probabilities across ranks. Specifically, promotion rates to O3, O4, O5, and O6 are set by policy and are 92 percent, 80 percent, 70 percent, and 50 percent, respectively [5].

RS marks were positive predictors of promotion to major and lieutenant colonel under the previous FitRep system, as seen in studies by Wielsma [6], Branigan [7], and Grillo [8].

Effect of other factors

In addition to RS marks, several demographic characteristics and quality measures were positively correlated with higher promotion rates. Four characteristics that had a significant effect on FitRep marks also had a direct effect on promotion rates: gender, marital status, TBS ranking, and age at commissioning. Female officers [3, 7] and married officers [3] had higher promotion rates under the previous FitRep system. TBS class ranking was a positive predictor of promotion in one study [3], whereas others found no direct effect [6, 7]. Officers commissioned at a younger age were more likely to be promoted to lieutenant colonel [7].

Other positive predictors of promotion included the number of awards and decorations [7, 8], PME completion [7], or earning a graduate degree [6, 7]. Marine officers in aviation support PMOSs were more likely to be promoted to lieutenant colonel than were those in combat arms PMOSs [3, 7].

Promotion rates to major were higher for officers accessed through PLC and OCC than through USNA, NROTC, or E-to-O programs under the previous FitRep system, controlling for prior enlisted experience but not FitRep marks [3]. Although this is the opposite of what we found for FitRep marks, it is not due to the lack of controlling for FitRep marks.⁶ Even the unadjusted promotion rates to major for officers commissioned through PLC and OCC are higher than for officers commissioned through USNA, NROTC, or E-to-O programs. Many officers commissioned through USNA, NROTC, and E-to-O programs during this time had indefinite regular officer contracts and did not have to compete for augmentation (i.e., compete to continue on active duty at the end of their initial service obligations).

The above trends from the literature suggest that, in our analysis of the effect of RS and RO marks on officer promotion, it will be important to control for other promotion correlates. Officer promotion

6. Controlling for FitRep marks would make the positive effect of PLC or OCC on promotion even larger because these officers received lower marks.

rates were higher for Marines who had the following characteristics: female, married, had a higher TBS class ranking, had more awards, had greater civilian or military education, were commissioned through PLC or OCC or at a younger age, or were in an aviation support PMOS rather than a combat arms PMOS.

Summary

Table 3 summarizes officer promotion trends under the previous FitRep system. The research shows that RS marks were positive drivers of promotion to major and lieutenant colonel. Officer promotion rates also were enhanced by having a higher TBS ranking or a graduate degree, completing PME, accessing through PLC or OCC, commissioning at a younger age, or being in an aviation support PMOS rather than a combat arms PMOS. Female officers and married officers had higher promotion rates, as did those with more awards.

Table 3. Summary of officer promotion trends, FY80 through FY99

Characteristic	Trend description
RS marks	Marine officers with higher RS marks were more likely to be promoted to major and lieutenant colonel.
Gender	Female Marine officers had higher promotion rates than male Marine officers.
Marital status	Married Marine officers had higher promotion rates.
Education	Marine officers with a graduate degree or who completed PME had higher promotion rates.
TBS ranking	Marine officers with a higher TBS ranking had higher promotion rates.
Age at commissioning	Marine officers commissioned at a younger age had higher promotion rates.
Commissioning source	Marine officers accessed through PLC or OCC had higher promotion rates to major, controlling for prior enlisted experience but not FitRep marks.
PMOS	Marine officers in aviation support PMOSs were more likely to be promoted to lieutenant colonel than those in combat arms PMOSs.
Awards	Marine officers with more personal awards had higher promotion rates.

Officer promotion, FY99 through FY11

Next, we review the literature on trends in officer promotion under the current FitRep system. We are interested in the effects of FitRep marks and other factors on Marine officer promotion rates. The Marine Corps introduced an appeal system for FitReps with errors or injustices on March 4, 1999. We also examine trends in appeals and investigate what they reveal about the promotion system.

Effect of RS and RO marks

Recent research by Reynolds [9], Hoffman [10], and Bowling et al. [11] shows that, as in the previous FitRep system, RS marks are positive predictors of promotion to major and lieutenant colonel (see table 4). RO marks, an addition to the current FitRep system, are positive predictors of promotion to lieutenant colonel and colonel, but not major, after controlling for RS marks [9, 10, 11]. One study shows that an increase in the RO percentile has the largest positive effect on promotion to colonel, a smaller positive effect on promotion to lieutenant colonel, and no effect on promotion to major [10].

Table 4. Effect of FitRep marks on promotion, under the current FitRep system

Promotion to	RS marks	RO marks
Major	+	
Lieutenant colonel	+	+
Colonel		+

Effect of other factors

As in the previous FitRep system, Marine officers are more likely to be promoted if they have a higher TBS ranking [11], more awards [10, 11], or a graduate degree [9, 10], if they completed PME [9], or if they are female [9]. There are caveats in promotion trends across FitRep systems for two factors—marriage and commissioning source. In both the current and previous FitRep systems, married Marines were more likely to be promoted to major or lieutenant colonel [9, 10], but, under the current system, they are *less* likely to be promoted

to colonel [10]. Under both FitRep systems, officers commissioned through E-to-O programs had lower promotion rates to lieutenant colonel [9, 10], while, under the current system, they have *higher* promotion rates to colonel [10]. A possible cause is that many E-to-O majors elect to retire at 20 years of service.

Recent research finds additional factors that have a direct effect on officer promotion—specifically to lieutenant colonel (unless otherwise noted). Under the current FitRep system, black Marine officers are less likely to be promoted than white Marine officers [9, 10]. Marine officers with higher PFT scores have a higher likelihood of promotion to major [10] and lieutenant colonel [9, 10]. Officers who attended Naval Postgraduate School (NPS) earlier in their careers (as company-grade officers rather than majors) also have a higher probability of promotion. Pistol expertise earns a Marine a higher likelihood of promotion, and rifle experts who were in-zone (but not above-zone) for promotion also are more likely to be promoted [9]. Lastly, combat FitReps consistently are found to improve the likelihood of promotion [9, 10, 11].

Trends from this subsection include higher promotion rates for female officers, those with more civilian or military education earlier in their careers, more awards, or a higher TBS ranking. Trends found in the literature that exist for the current—but not the previous—FitRep system include higher promotion rates for officers who are white, have combat experience, are pistol or rifle experts, or have higher PFT scores. Findings that are consistent across systems, with a caveat, include higher promotion rates to lieutenant colonel but lower promotion rates to colonel for married Marines or for officers commissioned through sources other than E-to-O programs.

Trends in PERB appeals

Marines can view their FitReps online and file appeals for any inaccuracies or components with which they disagree. Appeals go before a Performance Evaluation Review Board (PERB) for adjudication. The PERB appeal system was introduced on March 4, 1999; since then, the number of appeals has trended upward, more than doubling between FY99 (373 appeals per year) and FY10 (823 appeals per year). End-strength has not risen enough over this time period to account for the

surge in appeals. Roughly one-third of all appeals are from officers. Malone and Kelley [12] found that the number of officer appellants—which rose from 168 to 203 from FY04 to FY08—grew at less than half the rate of the number of enlisted appellants in that time.

The electronic submission of FitReps and the increased visibility of FitRep scores are likely responsible for the proliferation of PERB appeals. Marines now can monitor their FitReps online, more swiftly catch errors and injustices, and react by filing appeals. Also, once a FitRep is electronically submitted, it cannot be retrieved; an appeal must be submitted if an error was not caught in time. This likely occurs more frequently since the debut of electronic submissions.

The authors' analysis suggests that the majority of appeals are for nonadverse FitReps and have some merit. Over 80 percent of officer appeals were not adverse. About half of nonadverse appeals received the full requested change. Most nonadverse appeals (70 to 80 percent) resulted in at least some but not the full requested change to the FitReps. This suggests that, if the act of filing an appeal has no cost, there may be a net reward to doing so [12].

In FY10, over half of appeals requested that the full FitRep be removed from the record; 56 percent of such requests were approved [13]. One-quarter of removal requests were administrative in nature, and 100 percent of those were approved. The appeal most likely to be approved was a change of RO mark, with nearly a 90-percent approval rate; less than 15 percent of appeals made this request. Other appeals, in decreasing order of prevalence (and their approval rates), were removal of inappropriate comments (74 percent), change of RS mark (65 percent), and removal of section K (71 percent).

The existence of and increase in the number of PERB appeals since FY99 suggest that, as in most systems, implementation of the FitRep system is at least partially flawed. Trends in appeals reveal that answers to two of the questions in our systematic review may indeed be no:

- Is the FitRep system being executed in accordance with Marine Corps Order 1670.7F?
- Is the FitRep system fair to members of both genders and all racial/ethnic groups?

Without flaws in execution of the system, the PERB appeal board would not find merit in such a large share of appeals. The PERB appeal process exists as the way to fix errors and injustices that occur. This appeal system is not widely advertised; therefore, there likely are Marines who are not aware of their right to file an appeal. Indeed, out of 200,000 FitReps processed in FY10, only 800 were appealed. That said, technology has facilitated its visibility in recent years.

Summary

Table 5 shows officer promotion trends in the current FitRep system.

Table 5. Summary of Marine officer promotion trends, FY99 through FY11

Characteristic	Trend description
RS marks	Marine officers with higher RS marks have higher promotion rates to major and lieutenant colonel.
RO marks	Marine officers with higher RO marks have higher promotion rates to lieutenant colonel and colonel.
Gender	Female Marine officers have higher promotion rates than their male counterparts.
Race/ethnicity	Black Marine officers are less likely to be promoted to lieutenant colonel than white Marine officers.
Education	Marine officers with a graduate degree, who complete PME, or who attend NPS earlier in their careers have higher promotion rates.
Marital status	Married Marine officers are more likely to be promoted to major and lieutenant colonel, but less likely to be promoted to colonel.
TBS ranking	Marine officers with a higher TBS ranking have higher promotion rates.
Commissioning source	Marine officers accessed through E-to-O programs are less likely to be promoted to lieutenant colonel, but more likely to be promoted to colonel.
Tour of duty	Marine officers who serve in combat or receive a combat FitRep have higher promotion rates.
Awards	Marine officers who receive more personal awards have higher promotion rates.
PFT score	Promotion rates are higher for Marine officers with higher PFT scores.
Rifle/pistol expert	Marine officers who are rifle/pistol experts are more likely to be promoted when in-zone for promotion.

Overall, receiving higher FitRep marks increases the promotion probability for Marine officers. In particular, RS marks increased promotion rates to major and lieutenant colonel under the previous and current FitRep systems. RO marks, introduced under the current FitRep system, are positively correlated with promotion rates to lieutenant colonel and colonel.

It will be important to control for other factors that affect officer promotion rates in our analysis. In our literature review, we find that officers are more likely to be promoted if they are female, white, married, or more educated, if they ranked higher in their TBS class or were not accessed through E-to-O programs, or if they received a combat FitRep, a high PFT score, an expert score in rifle or pistol marksmanship, or more awards.

Officer continuation, FY80 through FY99

Next, we review research on the effect of RS marks on officer continuation rates. Then, we assess which other factors predicted continuation rates under the previous FitRep system.

Effect of RS marks and other factors

Higher quality Marine officers are less likely to separate. Officers with higher RS marks were more likely to stay in the Corps until their promotion to major or lieutenant colonel [6, 7]. Officers with graduate education had higher continuation rates to the major and lieutenant colonel promotion boards [6, 7]. Marines with a higher TBS ranking were more likely to stay to 10 years of service (YOS) [3, 6].

Marine officers with certain demographic characteristics have a greater propensity to remain in the Marine Corps. Female officers had higher retention rates to 10 and 16 YOS than male officers [3, 7]. Married Marines were more likely to stay until the major and lieutenant colonel promotion boards [3, 6, 7], and Marines with dependents were more apt to stay to the lieutenant colonel promotion boards [7].

Officers commissioned through certain sources may have a greater taste for the Marine Corps and, therefore, higher retention rates up to a given level. Marines accessed through commissioning sources

with greater exposure to the Marine Corps—E-to-O programs and the USNA—were more likely to stay to 10 YOS but less likely to stay to the lieutenant colonel promotion point than those accessed through PLC, OCC, and NROTC [3, 7]. Intuitively, because prior-enlisted officers are closer to retirement eligibility when commissioned, they were more likely to continue in the military until 20 YOS, at which point they could retire as a captain or a major.

Other predictors of officer continuation included PMOS, age at commissioning, combat exposure, and the unemployment rate. Officers in aviator PMOSs were more likely to stay to 10 and 16 YOS than those in combat arms PMOSs, while those in service support PMOSs were the least likely to stay [3, 7]. Officers who received a combat FitRep were more likely to stay in the Marine Corps, up until the lieutenant colonel promotion point [7]. As opposed to FitRep marks or promotion, Marine officers commissioned at a younger age had *lower* continuation rates to 10 YOS [3]. Intuitively, increases in the unemployment rate increased retention for Marines up for promotion to lieutenant colonel.

Summary

Table 6 summarizes trends in officer continuation rates under the previous FitRep system.⁷ Overall, earlier research found that Marine officers of higher quality were more likely to stay to the point of promotion to major and lieutenant colonel. Higher RS marks predicted higher officer continuation rates. The literature also found that Marine officers who were female, married, more educated, had a higher TBS ranking, or were older at commissioning had higher continuation rates. Also, Marine officers who received a combat FitRep, were in an aviator PMOS rather than a combat arms or service support PMOS, were commissioned through E-to-O programs or the USNA, or were in the officer corps when the unemployment rate was high had higher continuation rates, at least through 10 YOS.

7. As previously noted, we know of no research on Marine officer continuation rates under the current FitRep system.

Table 6. Summary of officer continuation trends, FY80 through FY99

Characteristic	Trend description
RS marks	Marine officers with higher RS marks were more likely to stay until their O4 and O5 promotion points.
Gender	Female Marine officers had higher retention rates to 10 YOS and the O5 promotion point than their male counterparts.
Marital status	Married Marine officers had higher continuation rates.
Education	Marine officers with graduate degrees had higher continuation rates.
TBS ranking	Marine officers with higher TBS rankings had higher continuation rates.
Age at commissioning	Marine officers commissioned at an older age were more likely to stay to 10 YOS.
Commissioning source	Marine officers commissioned through USNA or E-to-O programs had higher continuation rates to 10 YOS but lower continuation rates to the O5 promotion point.
PMOS	Marine officers in aviator PMOSs were more likely to stay to 10 YOS or the O5 promotion point than those in combat arms PMOSs, while those in service support PMOSs were the least likely to stay.
Type of duty	Marine officers who received combat FitReps had higher continuation rates.
Unemployment rate	Higher unemployment rates raised Marine officer continuation rates.

In our systematic review, we will investigate whether RS and RO marks, as well as other factors, are able to predict Marine officers' propensity to stay in the Marine Corps in the current FitRep system.

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Conclusion and next steps

This information memorandum reviews the literature on the FitRep system for Marine officers. CNA was asked to conduct a systematic review of the FitRep system for officers because of concerns about inflation and diversity in the field grades. Our literature review points to two main areas where research has been conducted: how FitRep marks vary by observable characteristics and how FitRep marks affect officer promotion and continuation rates. We will use this review to provide insights for our analysis.

A main finding from our literature review is that several factors are positive predictors of FitRep marks, promotion rates, and continuation rates: a higher TBS ranking, a combat FitRep, being female, or being married. Other factors are predictive of two of the three; RS marks are a positive driver of promotion rates and continuation rates. Evidence was found within the previous FitRep system, but not the current one, that officers with graduate degrees had higher continuation and promotion rates. Officers commissioned through USNA and E-to-O programs have higher FitRep scores and continuation rates but lower promotion rates. A lower age at commissioning predicts higher FitRep scores and promotion rates but lower continuation rates. Black Marines receive lower FitRep marks and have lower promotion rates than white Marines, but their continuation rates do not differ.

Our future analysis will include an investigation of how RS and RO marks differ by gender, race/ethnicity, rank, and Marine Air Ground Task Force (MAGTF) element (ground, aviation, or logistics). We will look at how RS profiles change as RSs gain more experience grading a certain rank, and how RS and RO marks correlate with each other and with other quality measures.

We will analyze time trends of RS and RO marks and will collect input from subject matter experts (SMEs) to determine what the Marine

Corps would like the current FitRep system to accomplish and how successful it has been in meeting these expectations. To date, we have met with SMEs from Manpower Management Officer Assignments (MMOA), Personnel Management Support Branch (MMSB), Performance Evaluation Review (MMER), Promotion Branch (MMPR), and TBS. We also will interview a sample of MROs, RSs, and ROs.

In the final study phase, we will describe the relationship between FitRep marks and other performance measures by matching PES data with personnel records. We will compare the characteristics of officers who receive especially high or low marks, and we will report summary statistics.

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