ATTRITION IN THE AIR WING: AN EMPIRICAL STUDY ON FLIGHT HOURS AND MARINE PILOT RETENTION

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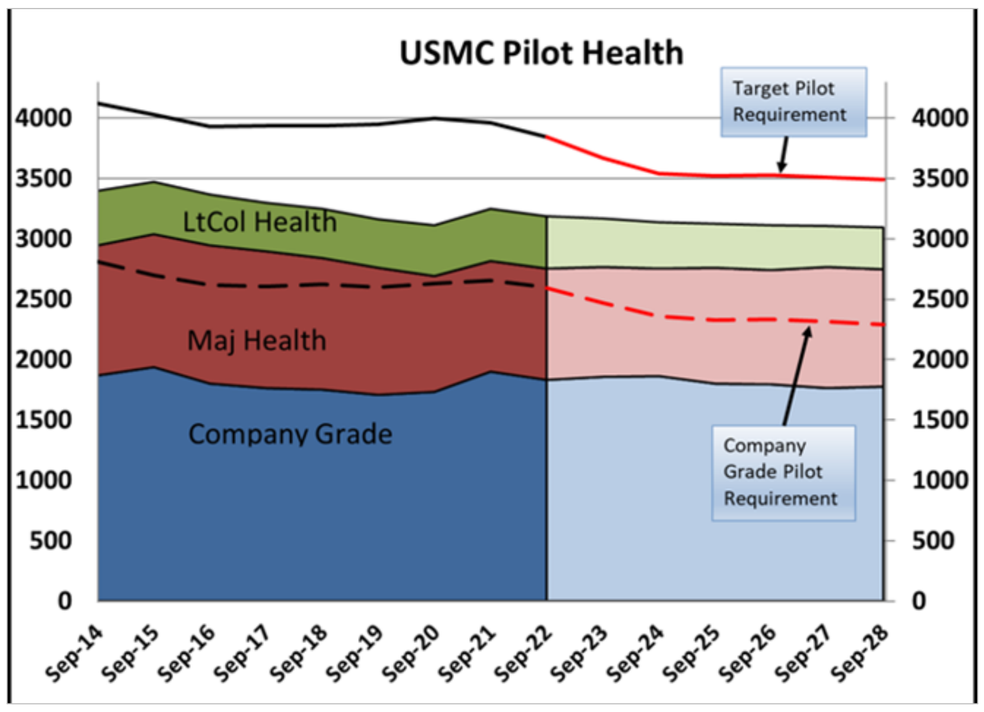
Abstract

The retention of Marine Corps pilots is challenged by civilian sector demand, aging fleets, and work-life balance issues. Despite extensive qualitative research on retention factors, the quantitative link between pilots' flight hours and their retention decisions remains underexplored. This study investigates the correlation between individual flight hours and Marine pilots' decisions to stay or leave the Service, aiming to offer insights into future retention strategies.



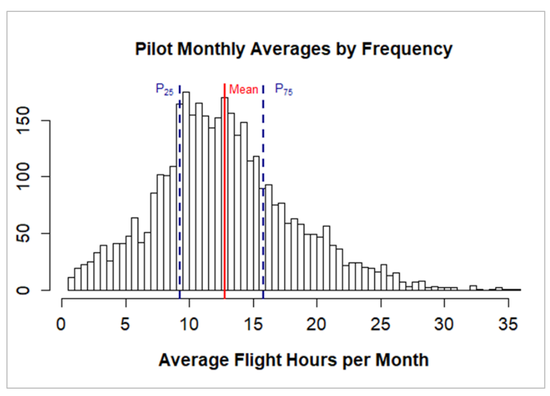
Historic and Forecast Marine Corps Pilot Inventory. Source: M&RA Brief (2023).

Methods

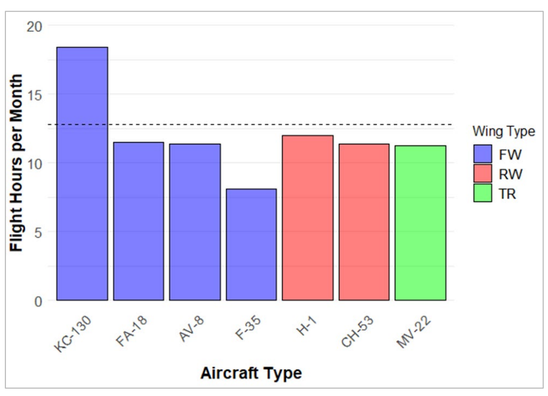
- This study looked at 3,820 pilots who flew Fixed Wing (FW), Rotary Wing (RW), and Tiltrotor (TR) aircraft between 2018 and 2022. It compared 606,295 flight events and their flight quality to determine the average Marine Corps flight experience.
- Used Ordinary Least Squares regression estimates to determine which variables contributed the most to flight hour variation between pilots.
- Used Linear Probability and Logit models to estimate covariate impacts on retention outcomes.
- Combined the leading variables in flight hour variance to graphically compare the flight hour averages of groups of pilots over their career.
- Formulated a pre-event study to compare the monthly flight hour averages of separating pilots, just prior to their separation, against a counterfactual line of similarly-experienced pilots that stayed in the Marine Corps.

Results & Their Impact

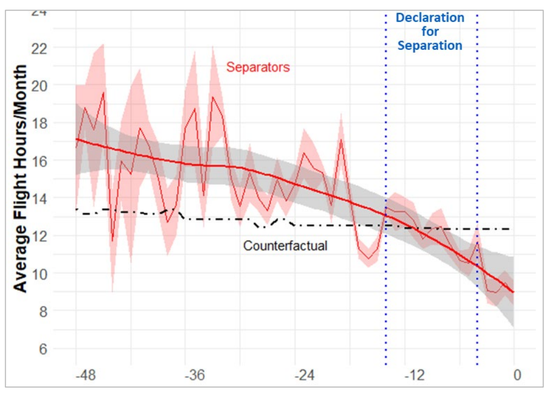
- Additional monthly flight time increased the probability of separation (7.2 pp for each additional 10 flight hours/month), indicating that pilots who fly more are possibly either burned out or more marketable, so they choose to leave.
- The pre-event studies showed that the relationship between flight hours and the retention decision may be specific to each aircraft community. Retention incentives should thus be tailored more narrowly across Marine Corps Aviation, as motivations and experiences may vary.



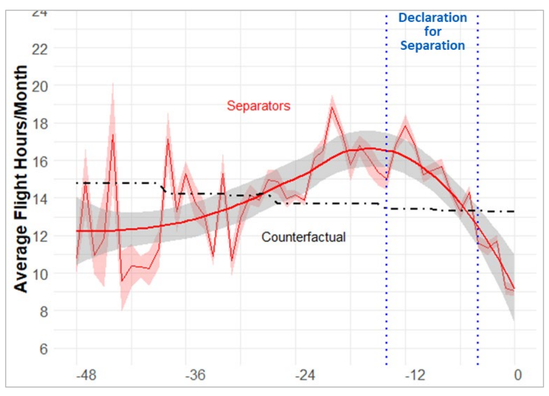
Histogram of Monthly Flight Hour Averages. Data from USMC (2023).



Average Monthly Flight time per Pilot. Data from USMC (2023).



(TR) Pre-Event Study on Separating Pilots. Data from USMC (2023).



(FW/RW) Pre-Event Study on Separating Pilots. Data from USMC (2023).

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