

Accepted Manuscript

Utilizing Reliability Modeling to Analyze United States Air Force Officer Retention

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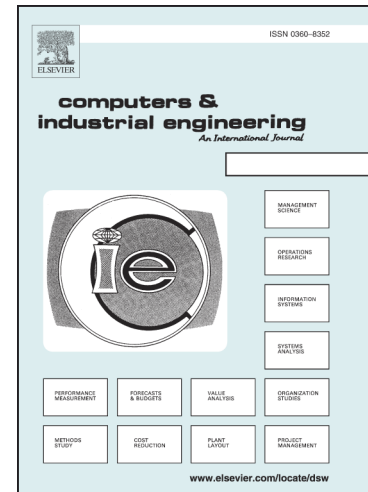
PII: S0360-8352(18)30019-6
DOI: <https://doi.org/10.1016/j.cie.2018.01.013>
Reference: CAIE 5046

To appear in: *Computers & Industrial Engineering*

Received Date: 12 September 2017
Accepted Date: 18 January 2018

Please cite this article as: Schofield, J.A., Zens, C.L., Hill, R.R., Robbins, M.J., Utilizing Reliability Modeling to Analyze United States Air Force Officer Retention, *Computers & Industrial Engineering* (2018), doi: <https://doi.org/10.1016/j.cie.2018.01.013>

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Abstract

The United States Air Force organizes its workforce around rank structure and work specialty codes (Air Force Specialty Codes (AFSCs)). Unlike civilian organizations, all active duty Air Force personnel start at the entry level ranks. The challenge is to develop and manage personnel to fill a variety of skill sets at a variety of ranks over a 20 to 30 year planning horizon. The Air Force uses sustainment lines to accomplish many of its manpower management goals. However, the current methodology for developing these sustainment lines is not statistically defensible based on the actual retention data and does not provide management a means to identify specialty codes of concern. Leveraging methods from reliability theory, we utilize survivability functions constructed from historical retention data to develop and demonstrate a statistically defensible methodology for creating the sustainment lines at the core of the Air Force personnel management system and provide a tool for managers to focus attention on potential workforce problem areas.

Keywords: OR in Human Resource Planning, survivability models, military, analytics, personnel modeling

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