



Calhoun: The NPS Institutional Archive
DSpace Repository

Acquisition Research Program

Selected Student Publications

2022-05-05

Navy Auxiliary Systems Defense Industrial Base Analysis

Belko, Raymond

Monterey, California. Naval Postgraduate School

<http://hdl.handle.net/10945/70358>

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



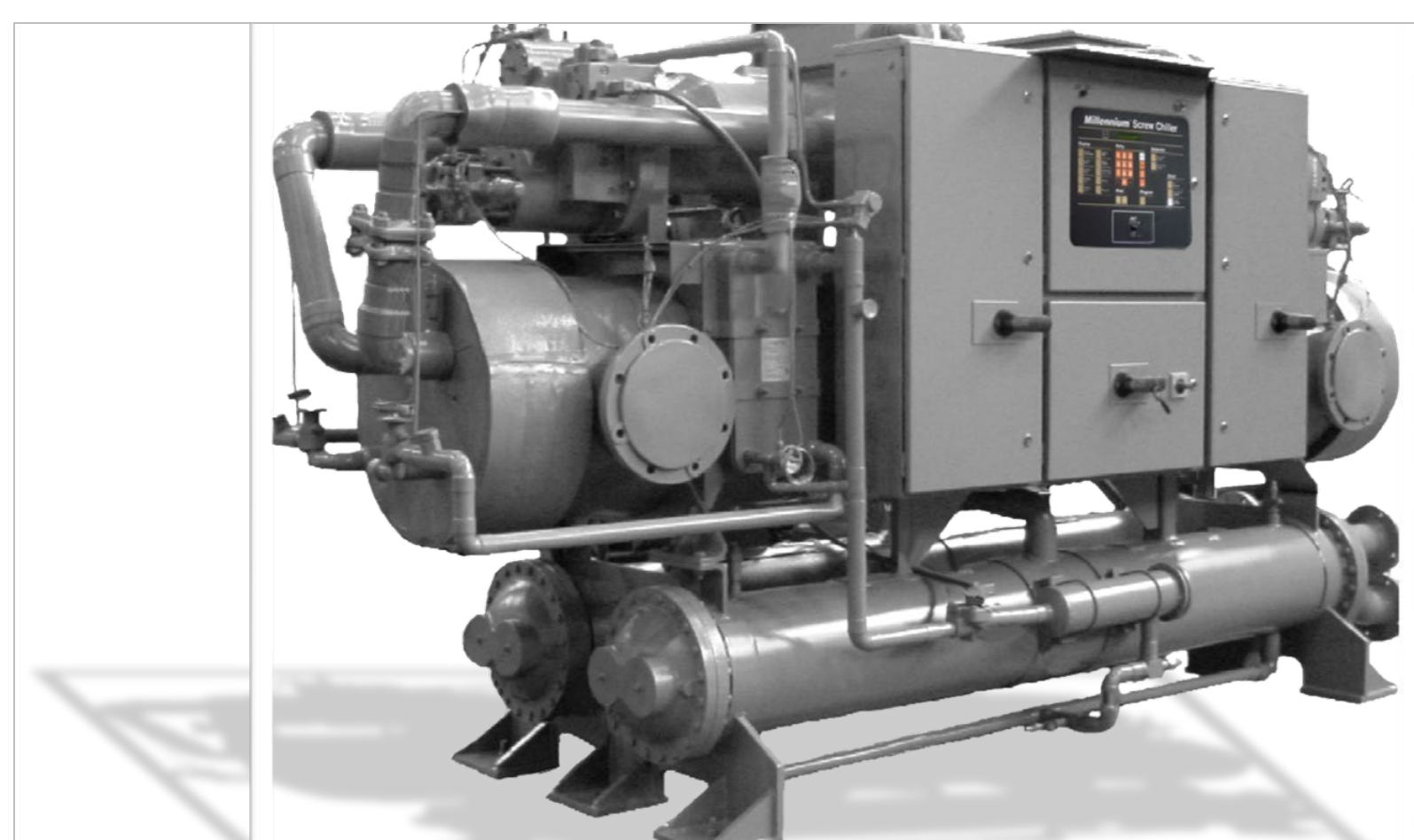
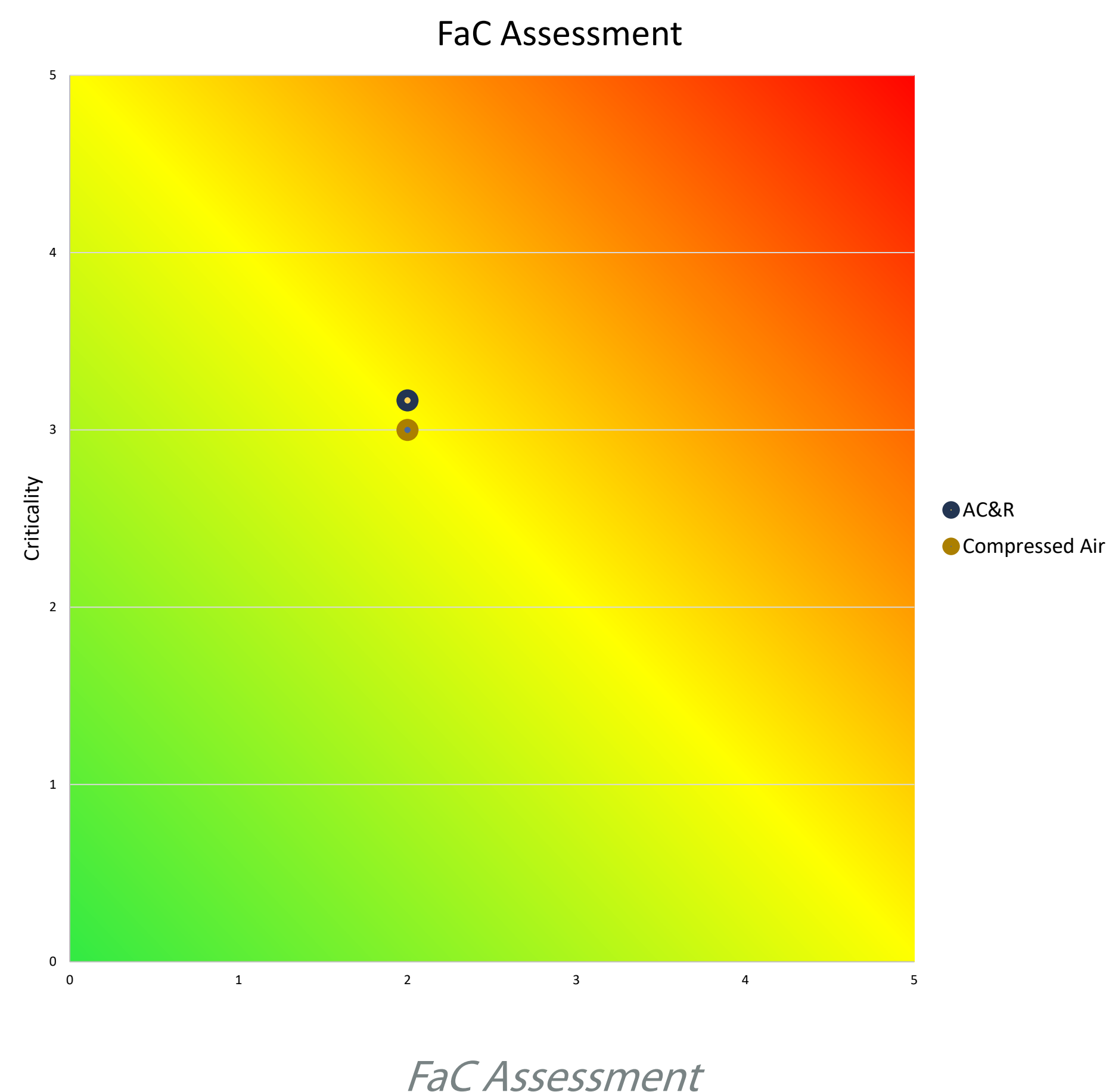
Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>

Abstract

The Defense Industrial Base (DIB) is an ever changing landscape that requires acquisition professionals to maintain vigilance over its climate. Ever since the mid-1990s the DIB has shrunk substantially due to a variety of reasons. In this study we focus on Navy Auxiliary Systems, particularly Air Conditioning and Refrigeration (AC&R) and Compressed Air system. Data gained through analysis of contracting history and from subject matter experts (SMEs) and In-Service Engineering Agents (ISEAs) is used to perform a Sector by Sector, Tier by Tier (S2T2) Fragility and Criticality (FaC) Assessment of AC&R and Compressed Air systems. The assessment revealed that both AC&R and Compressed Air systems are on relatively secure footing. With both systems it is important to avoid vendor lock with an aim to increase competition to optimize cost, schedule, and performance on future capabilities.



130 Ton Air Conditioning Chilled Water Plant

Methods

- S2T2, FaC Assessment
 - Fragility – indicator of whether the DoD will receive what it needs when it needs it
 - Criticality – characteristics that make a product or service difficult to replace

Results & Their Impact

- The Navy has projected to place orders with Johnson Controls (JCNS) for the next 25-30 years for Navy Ship AC&R systems.
- JCNS has invested \$15M in increasing its machining centers and equipment to increase production capacity.
- For smaller, Modular units, the Navy is pursuing a MIL-SPEC design to allow for more competition
- Air Compressor ISEAs have developed a Navy Common Core Controller (NC3), a Navy owned and designed controller to replace a variety of obsolete compressor control systems utilizing common parts.



NC3 (Prototype)

Recommendations

- Increase competition and provide opportunities for small businesses to compete for service contracts by procuring service and parts separately.
- Address IP limitations by expanding NC3 program to other Auxiliary Systems with similar controller obsolescence issues.