

Overview



**Keeping America's Navy #1
in the World**

Purpose

- **To provide an overview of the Naval Foundry and Propeller Center, manufacturer of the world's most advanced propellers and cast components**

Background

- **Mission**

- *NFPC exists to provide an organic source for the manufacture and repair of propellers for the United States Navy. While we maintain the capability to manufacture and repair propellers for all types of naval vessels, the core of our mission is the production of the world's most advanced propellers and propulsors, those for our submarine fleet.*
- *To satisfy that mission and the demanding technical requirements associated with submarine propulsor manufacturing, NFPC maintains an inventory of unique manufacturing equipment, measurement systems and skilled craftsmen and engineers. In combination, these assets provide the Navy with a full spectrum capability that translates the hydrodynamicist's concept and design into the best propellers and propulsors in the world.*
- *NFPC has been designated (CNO N43 Ltr. 3 FEB 97) the "National Consolidated Naval Ship Foundry" with the mission of providing castings previously manufactured at NSYs, IMFs and SIMAs. In addition to providing the Fleet with a source for emergent, hard to cast items, this second mission serves a critical function at NFPC by aiding in workload leveling and enhancing operational efficiency.*

Background

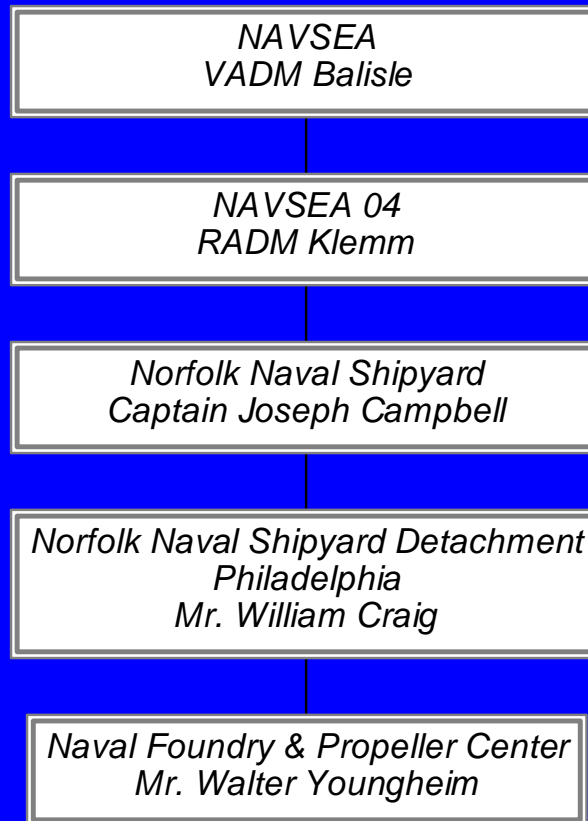
- **Foundry and Propeller Shop in operation for over 85 Years**
- **Foundry, Propeller Shop and support operations were part of Philadelphia Naval Shipyard**
- **BRAC '91 closed Philadelphia Naval Shipyard, retained Foundry and Propeller Shop**
- **9/95 NFPC stood up as a Detachment of Norfolk Naval Shipyard**
- **Foundry, propeller manufacturing and support operations consolidated from 16 buildings into 5**
- **2/97 All Naval Shipyard and IMA foundry work consolidated at NFPC**
 - *Strategic Assets transferred to NFPC from closed facilities*

Background

- **NFPC is a core logistics facility & NAVSEA Core Equity.**
 - *ASN/COMNAVSEA letters support NFPC as a core facility*
 - *The Navy's submarine industrial base for the manufacture of propulsors and propellers*
 - *NFPC is the only propeller manufacturer for Trident, Los Angeles & Virginia Class submarines*
 - *The Navy's only organic source of cast components for ships*
 - *Only co-located foundry and numerically controlled (NC) propeller machining facility in the US*

Naval Foundry and Propeller Center (NFPC)

Chain of Command



Key Assets

- **Personnel (191 People)**
 - **141 Production (Foundry: 36, Machine Shop: 105)**
 - **15 Manufacturing Engineering**
 - **10 Business Office**
 - **10 Quality Assurance**
 - **9 Administration**
 - **6 Facilities Engineering**
- **80% working direct labor assignments**

Key Assets (cont.)

- **Foundry**
 - *National Consolidated Naval Ships Foundry*
 - *the Navy's only organic ships foundry*
 - *supporting emergent & hard to contract fleet requirements*
 - *Among the largest non-ferrous pour capacities in the US (250K lbs.)*
 - *Large lift/crane capacity*
 - *Furnaces ranging from 50 lbs. to 50 ton capacity*
 - *Significant centrifugal casting capability*
 - *Capable of providing most castable alloys*

Naval Foundry and Propeller Center (NFPC)

Furnaces capacities from 50 lbs. to 50 tons



Naval Foundry and Propeller Center (NFPC)

Furnaces capacities from 50 lbs. to 50 tons



10 & 15 Ton Furnaces



50 Ton Furnace

Naval Foundry and Propeller Center (NFPC)

Selected Products



Naval Foundry and Propeller Center (NFPC)

Selected Products



Key Assets (cont.)

- **Machine shop**
 - ***Only co-located foundry and numerically controlled (NC) propeller machining facility in the US***
 - ***6 Large Scale Profilers***
 - ***(5) five-axis nc profilers***
 - ***support monobloc machining up to 31 feet in diameter***
 - ***(1) five-axis nc profiler with dual spindle***
 - ***supporting individual blade/part machining***
 - ***Automated Propeller Optical Measurement System (APOMS)***
 - ***The only one of its type***
 - ***providing pioneering surface measurement technology***

Naval Foundry and Propeller Center (NFPC)

Propeller Machining Center



Naval Foundry and Propeller Center (NFPC)

Propeller Machining Center

- *Automated Propeller Optical Measurement System (APOMS)*

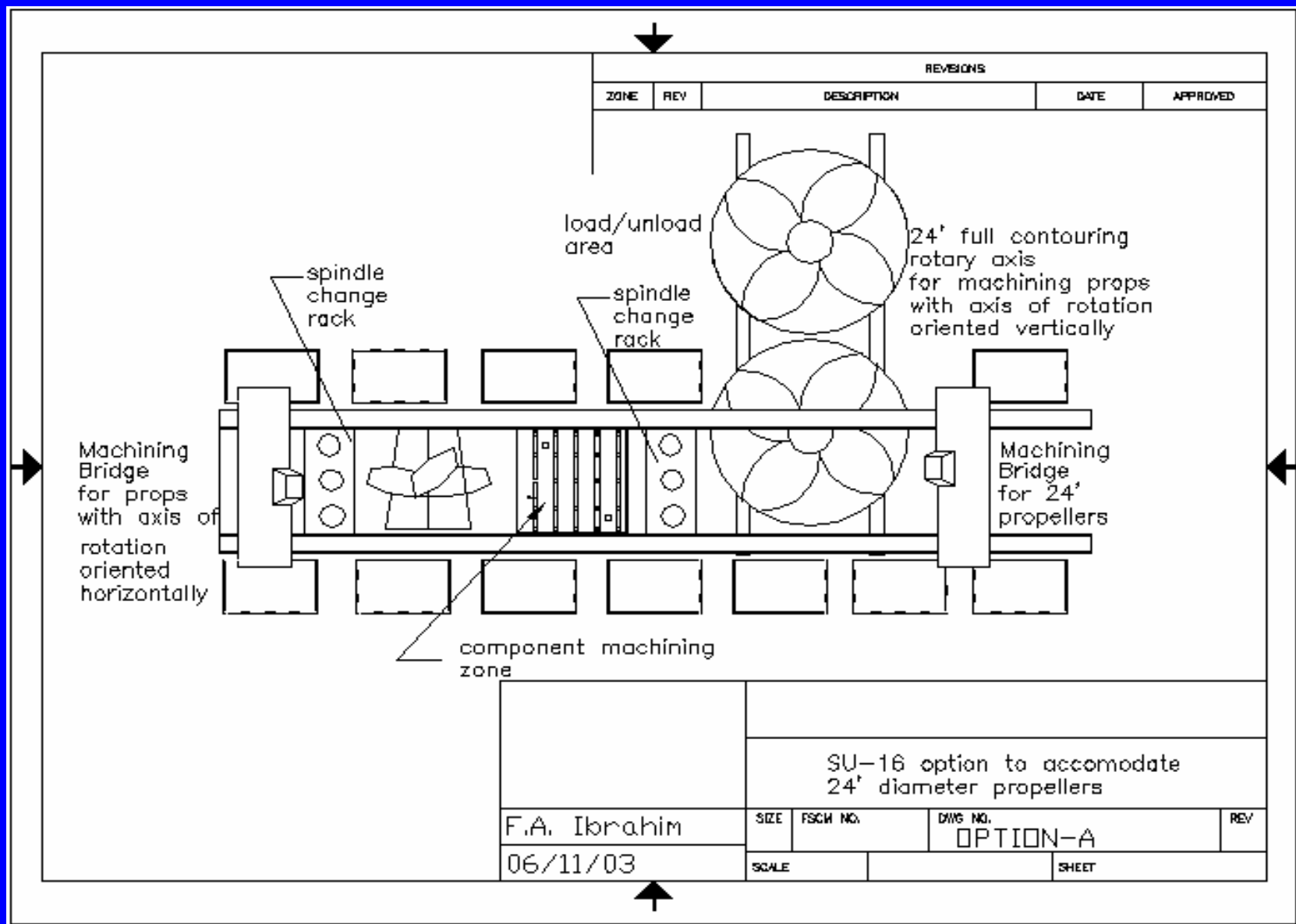


Naval Foundry and Propeller Center (NFPC)



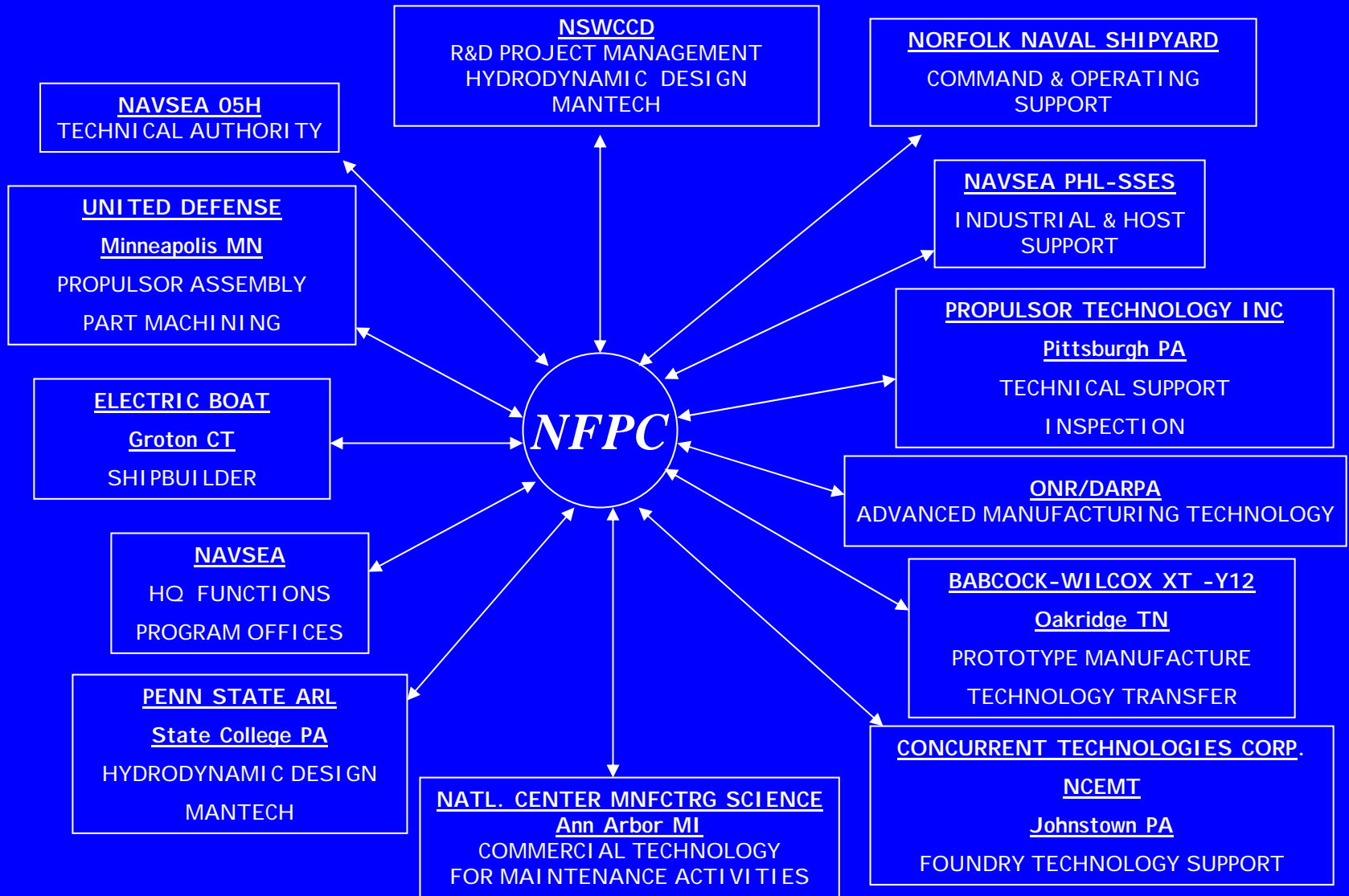
**SU-15 High speed machine
equipped with Linear motors**

Naval Foundry and Propeller Center (NFPC)



Naval Foundry and Propeller Center (NFPC)

BUSINESS / TECHNICAL PARTNERS



Technology Partnerships

- **Key technology test bed**
 - partners in developing and proving advanced manufacturing concepts
- **MANTECH**
 - *High Speed Machining (in partnership with UNC & NSWC)*
 - *APOMS upgrades, (with DOT 4)*
 - *enhanced surface measurement*
 - *Propulsor Casting Process Improvement (in partnership with NSWC)*
 - *reduced machining & welding*
 - *LASER Articulating Robotic System (LARS) (in partnership with PSU-ARL)*
 - *low distortion, high quality welding*
- **Friction Stir Metal Processing (in partnership with ONR/DARPA/NSWC)**

Naval Foundry and Propeller Center (NFPC)

Summary

- ***NFPC is a unique facility, critical to the submarine industrial base***
- ***NFPC is a Core Logistics Facility***
- ***Experienced in the manufacture and repair of most of the Navy's propellers/propulsors***
- ***NFPC can produce most any casting in almost any material***
- ***Continuation and extension of strategic initiatives will firmly position NFPC for the future***
 - ***Partnerships***
 - ***Development & Introduction of New Technology***
 - ***Capital/Facility Investment***