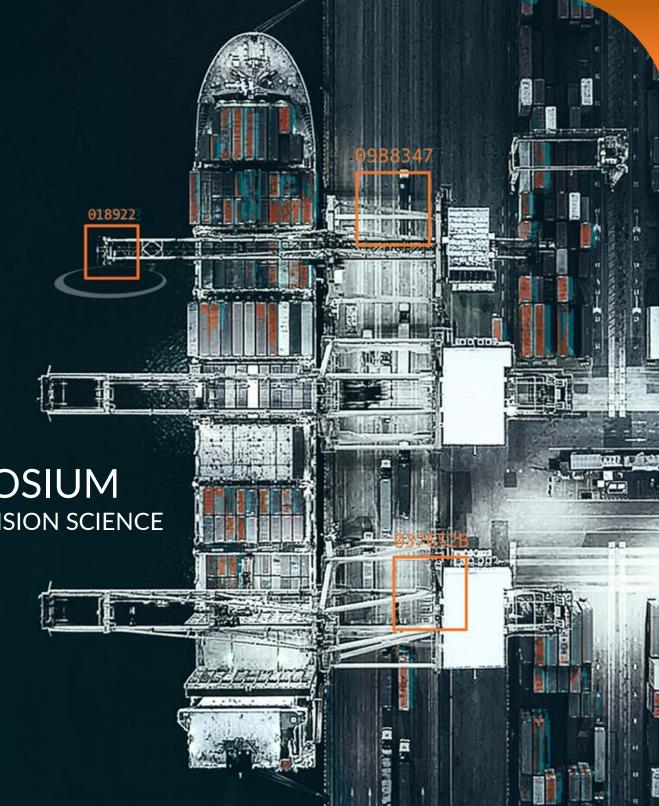
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ACQUISITION RESEARCH SYMPOSIUM

ADVANCING U.S. COMPETITIVENESS THROUGH DECISION SCIENCE

MAY 11, 2022



STUDY BACKGROUND

SPONSOR

U.S. Navy's Shipbuilding Industrial Base Task Force (SIB-TF) in conjunction with OSD's Industrial Base Analysis & Sustainment (IBAS) team.

SCOPE

- Geography: Gulf Coast Region
- Trades: Electricians, Metal Fabricators &
 Fitters, Inside Machinists, and Riggers
- Time Period: 7-year baseline (CY15-CY21) and
 5-year forecast (CY22-CY26)

RESEARCH QUESTION 1

Is there an adequate supply of skilled labor in select critical trades to meet current and projected demand for Navy ship construction in the U.S. Gulf Coast?

RESEARCH QUESTION 2

What drives supply and demand for select critical trades in the U.S. Gulf Coast?



APPROACH & ASSUMPTIONS FOR FORECASTING SHIPBUILDING LABOR DEMAND

HISTORICAL DATA

Contractor Performance Reports: HII

Contractor Performance Reports: Austal

- Includes hours for 5 distinct ship classes: DDG 51, LHA, LPD-17, LCS, WMSL 750
- CPR hours were converted to Full Time Equivalents (FTE) to ease comparison with supply-side forecasts

LABOR PROFILES BY TRADE

CPR-derived full-time equivalents (FTE) integrated with historical shipbuilding dates



Hull data for known ship classes to be built in the Gulf Coast Region over the next five years

EXPECTED SHIP

BUILDS, CY22-CY26¹



PROJECTED LABOR DEMAND BY TRADE

Quarterly workloads by hull projected using historical labor profiles by trade and ship class

- Quarterly workload per trade per hull was combined with historical keel, launch, and commission dates from the Naval Vessel Register and mapped to CPR dates
- Average build time and quarterly workload by trade was calculated for each ship class

• List of ships expected to be built during 2022-26 time frame as well as expected timelines were derived from the Navy's 30-year shipbuilding plan, reports to Congress on Navy force structure and Congressional Research Service (CRS) reports

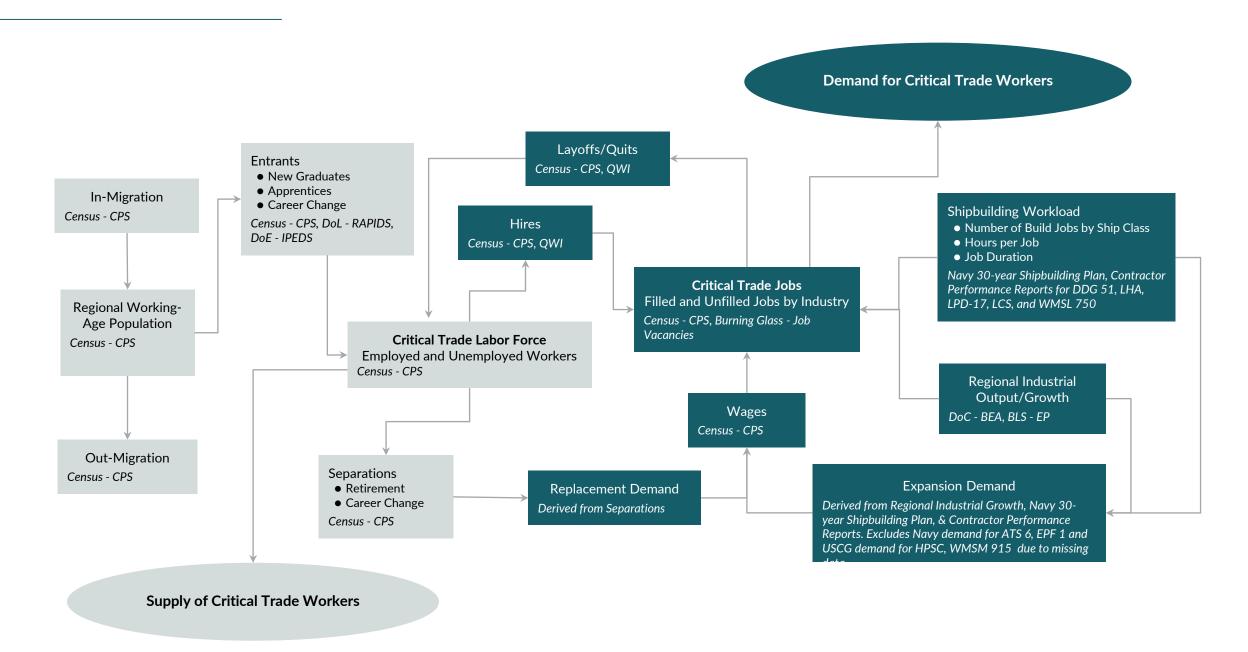
 Projected shipbuilding workloads for 2022-26 were calculated using shipbuilding labor profiles by trade and ship class, combined with ongoing and expected ship builds and their associated timelines

¹Expected ship builds for CY22 - CY26 include:

- Ongoing builds: DDG 121, DDG 123, DDG 125, DDG 128, LHA 8, LPD 28, LPD 29, LPD 30, LCS 24, LCS 26, LCS 28, LCS 30, and LCS 32
- Future builds: DDG 129, DDG 131, DDG 133, DDG 135, DDG 137, DDG 139, LHA 9, LPD 31, LPD 32, LPD 33, LPD 34, LCS 36, LCS 38, and WMSL 760



SHIPBUILDING LABOR MARKET MODEL (SLMM)





KEY FINDINGS

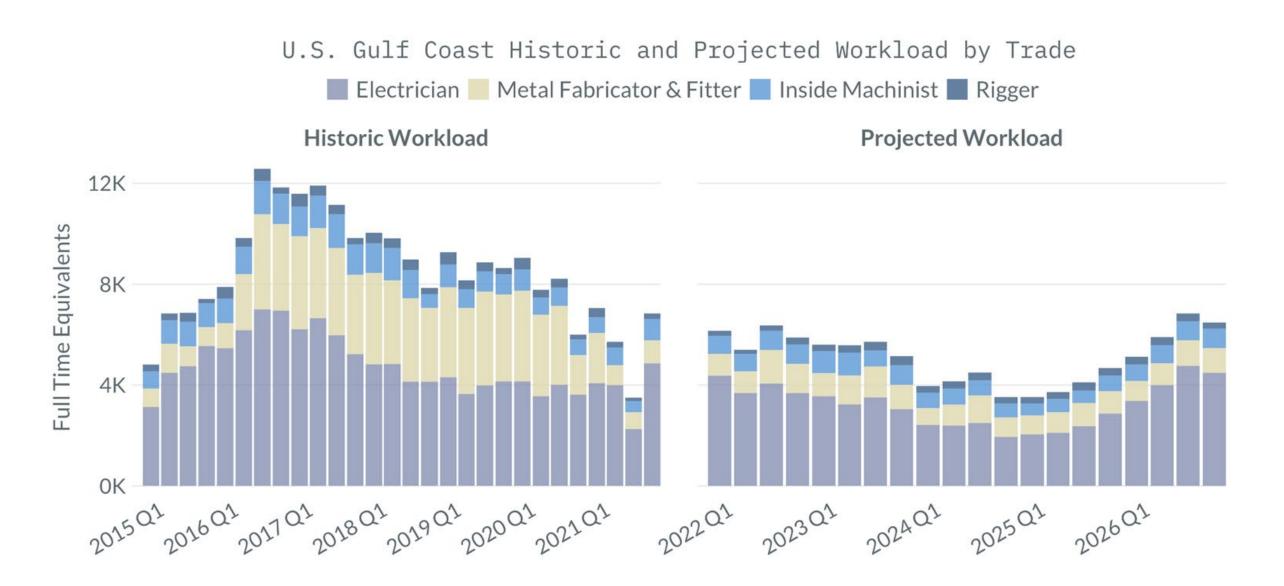
DEMAND FOR CRITICAL TRADE WORKERS IS INCREASING — BUT NOT FROM NAVY SHIPBUILDING

SUPPLY OF WORKERS CRITICAL TO NAVY SHIPBUILDING IS LARGELY FLAT

NAVY SHIPBUILDERS CAN EXPECT SUFFICIENT LABOR CAPACITY FOR ELECTRICIANS AND RIGGERS - BUT INSUFFICIENT CAPACITY FOR INSIDE MACHINISTS AND METAL FABRICATORS & FITTERS



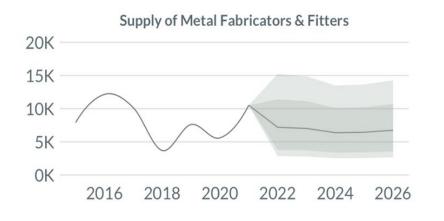
DEMAND FOR CRITICAL TRADE WORKERS IS INCREASING — BUT NOT FROM NAVY SHIPBUILDING





SLMM FORECASTS POTENTIAL IMBALANCES FOR SUPPLY & DEMAND OF METAL FABRICATORS & FITTERS, INSIDE MACHINISTS

Supply & Demand Forecasts for Gulf Coast Metal Fabricators & Fitters & Riggers

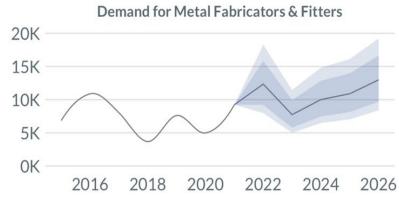


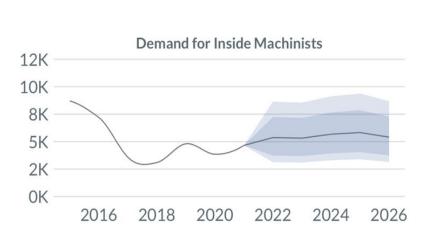
Supply of Inside Machinists

2022

2024

2026





	Metal Fabricators & Fitters		
	Average Case	Best Case	Worst Case
2022	-5,153	+7,237	-15,408
2023	-723	+9,854	-8,672
2024	-3,640	+7,015	-12,285
2025	-4,451	+6,595	-13,562
2026	-6,240	+5,880	-16,536

	Inside Machinists		
	Average Case	Best Case	Worst Case
2022	-250	+5,742	-5,934
2023	-487	+5,269	-5,999
2024	-289	+6,024	-6,282
2025	-1,207	+4,612	-6,934
2026	+282	+6,704	-5,691



12K

10K

8K

5K

2K

0K

2016

2018

AREAS FOR FUTURE ANALYSIS



Incorporate a broader set of relevant, critical trades into the Shipbuilding Labor Market Model with refinements & updates to data forecasts

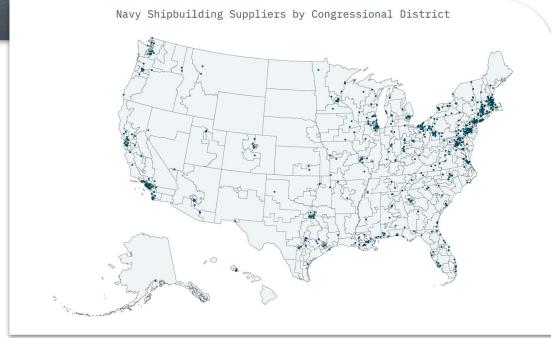


Expand the model to new, critical shipbuilding geographic regions, such as New England



Explore ship and related submarine industrial base supplier networks to look for labor risk in lower-tier suppliers across the country by industry







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