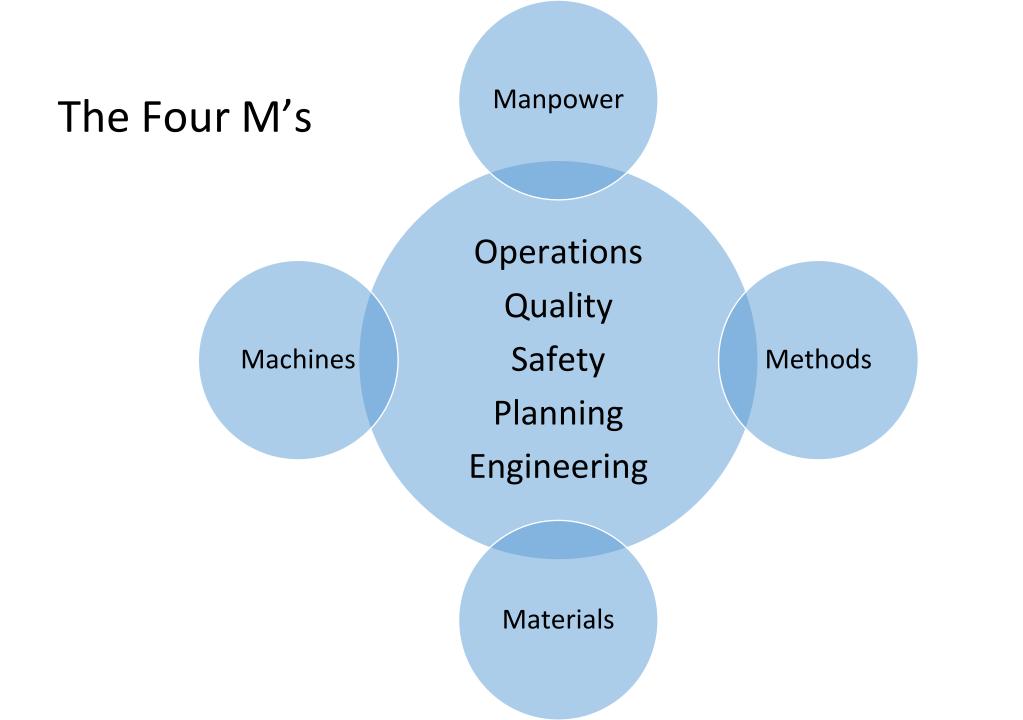
Operational Challenges



Personnel Issues

Vessels and Equipment Research Vessel

Science

Mission

Operations

Supplies and Services

- Life Cycle Management
- Repurpose, rebuild, replace
- Vessels and Science evolve at different pace
- Strategic or reactionary plans
- Fleet competition or collaboration

Vessels and Equipment Recruitment

- Retention
- Career path
- Generational Expectations
- QWL Crew comforts
- Work / Life balance

Science Mission

- Are boat limitations driving Science ?
- Obsolescence Technology advances
- Agency, Regulatory, Safety compliance

- Cost volatility vs funding
- Fuel, long lead times, inflation
- Technical / Engineering support
- Seasonal / Transient Dockage

Supplies and Services

Personnel

Issues

Research

Vessel

Operations