# CROWLEY MARITIME

## Ensuring Competency of mariners in an automated future
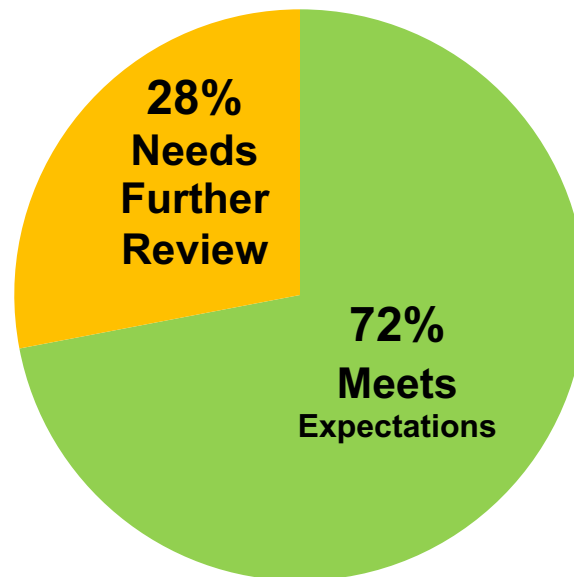
## Maritime Risk Symposium

## 2019

**CROWLEY®**
People Who Know®

# How will we ensure the competency of mariners who monitor and backup autonomous/automated vessel operations?

– Current licensure scheme not sufficient

**CROWLEY**®
People Who Know®

# How will we ensure the competency of mariners who monitor and backup autonomous/automated vessel operations?

– Current licensure scheme not sufficient



28%
Needs
Further
Review

72%
Meets
Expectations

**CROWLEY**®
People Who Know®

# How will we ensure the competency of mariners who monitor and backup autonomous/automated vessel operations?

– Current licensure scheme not sufficient

– Assume Autonomous/automated vessels will need:
  - Mariners onboard for arrival/departure and backup
  - Mariners in shoreside monitoring facilities

**CROWLEY**®
People Who Know®

# How will we ensure the competency of mariners who monitor and backup autonomous/automated vessel operations?

– Current licensure scheme not sufficient

– Assume Autonomous/automated vessels will need:
- Mariners onboard for arrival/departure and backup
- Mariners in shoreside monitoring facilities

– Mariners will require robust simulator based training / assessment
- Ensure competency
- Create the next generation

**CROWLEY**®
People Who Know®