

# Synthetics

## RVSS Appendix A

### Draft Operational Guidelines

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RVTEC 2022

Synthetic use by US ARF is relatively new with much to learn.

3x19 Wire rope has been in use for decades and we are still learning.

Both basically do the same thing, but each has its own advantages.

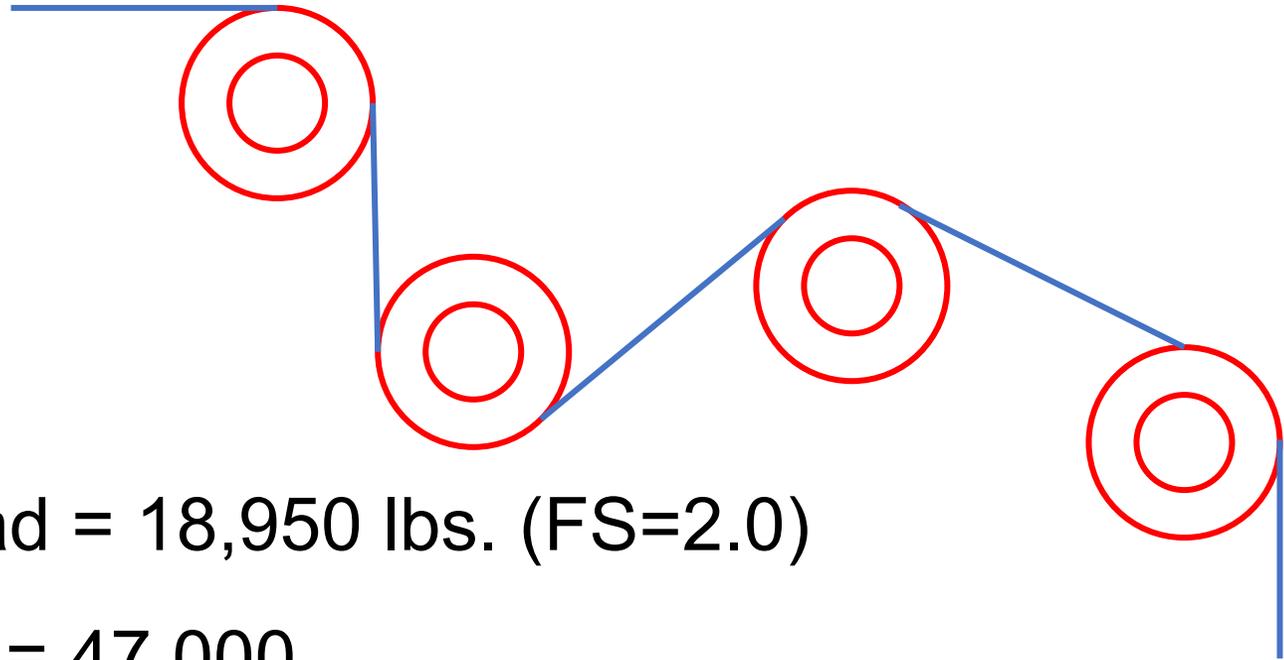


# Appendix A

- **Limited experience with Synthetic Rope**
  - Many international users apply a FS between 4 and 5
  
- **Appendix A has sections reserved for synthetics used to over-board equipment**
  - Draft guidelines are being reviewed by the Safety Committee
  
- **Recommend a review each application on a case-by-case basis to attempt to meet the needs of science while maintaining safe ops**
  - Taking advantage of manufacturer's expertise and their extensive testing



# R/V Neil Armstrong Coring Cruise



Maximum Permissible Load = 18,950 lbs. (FS=2.0)

Predicted cycles to failure = 47,000

With four sheaves ~10,000 operations to failure

# Synthetic Rope Has a Life

Damage is cumulative with each use.

Each operation reduces the remaining life.

Draft synthetic guidelines to Appendix recommends determining if the remaining rope life is sufficient to safely carry out the next proposed operation.

- Comprehensive tension member log, info on sheaves, max loads, no. of operations.
- Break test history
- Visual inspection, cuts, abrasion, deformity, etc.
- Specifics of the next proposed operation

If full review is not possible then the fallback position is to use a  $FS \geq 5$  and  $D/d = 40$

# Questions?

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