APPENDIX 16. PowerPoint Presentation given by Russ Brown

Experiment Cruise to Examine Gear Performance with Offset Warps

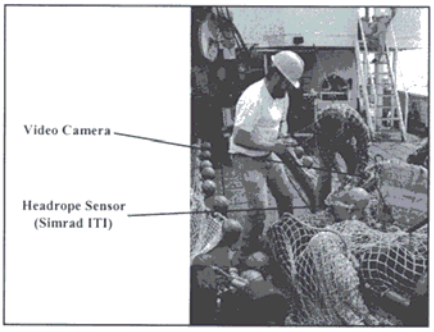
- **September 24-27, 2002**
  - Video & Mensuration work completed on September 25-26
- **Six Industry Participants**
  - Bud Fernandes
  - Stephen Lee
  - James Lovgren
  - Sam Novello
  - James Odlin
  - Matthew Stommel

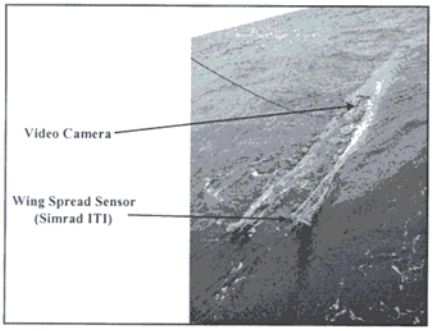
Trawl Warp Experiment

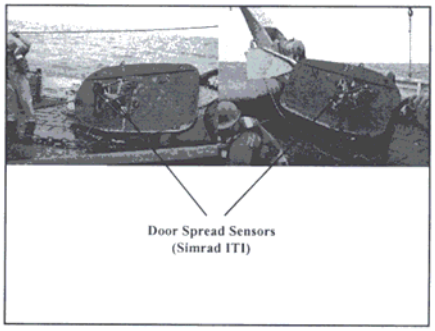
- **Two Primary Objectives**
  - **Provide initial qualitative observations of the effects of offset warps on net geometry and fishing gear performance**
  - **Provide a quantitative evaluation of the effects of offset warps on net wingspread, door spread and head rope height**

Experimental Approach

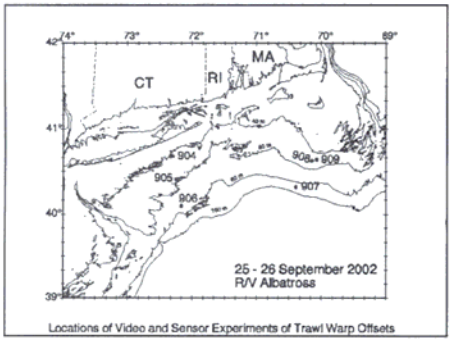
- **Intentional Manipulation of Trawl Warp Lengths**
  - **Even Warps**
  - **Starboard and port offsets of 0, 2, 4, 6, 12, 18 feet**
- **Qualitative Evaluation of Trawl Performance through Video Observation**
  - **Net shape and geometry**
  - **Roller and foot gear tending**
  - **Fish behavior**
- **Quantitative Evaluate of Trawl Geometry through Net Sensor Measurements**
  - **Wing Spread**
  - **Door Spread**
  - **Headrope Height**







APPENDIX 16 (CONTINUED).



Locations of Video and Sensor Experiments of Trawl Warp Offsets

Video Images & Sensor Data

Water Depth (m)	Starboard Longer ←				Even Warps			→ Port Longer	
25 - m	*Poor Visibility*				Even		*Poor Visibility*		
45 - m		6-ft		2-ft	Even	2-ft		6-ft	12-ft
51 - m	*Wing Camera Deployment – Full Sensors, Limited Video*								
52 - m		12-ft	6-ft	4-ft	2-ft	Even	2-ft	4-ft	6-ft	12-ft
60 - m		12-ft	6-ft	4-ft	2-ft	Even	2-ft	4-ft	6-ft	12-ft
71 - m		12-ft	6-ft	4-ft	2-ft	Even	2-ft	4-ft	6-ft	12-ft
92 - m	18-ft	12-ft	6-ft	4-ft	2-ft	Even	2-ft	4-ft	6-ft	12-ft	18-ft

Video Images Collected

- Roller Sweep
- Starboard Corner and Wing
- Port Corner and Wing
- Transitional Clips
  (during changes in warp length)

Results Presentations

- Net Mensuration Data (Lisa Hendrickson)
- Video Images (Henry Milliken)
  - Sampling of video images from each tow
    - Transition from previous to new warp length (when available)
    - Roller sweep
    - Port and starboard wings