

REPORT DOCUMENTATION PAGE

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1. REPORT DATE (DD-MM-YYYY)		2. REPORT TYPE		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (Include area code)



ITL Solutions DLA SBIR PHASE 1: FINAL Report

Project Title: The ALRE (Aircraft Launch and Recovery Equipment) Parallel Pendant

Contract Number: SP4701-21-P-0064

Proposal Number: L203-001-0051

BAA Topic Number: DLA2-3-001

Contract Performance Period: 04/01/21 – 11/30/21

Final Status Report: 1 DEC 2021

Reporting work performed: 04/01/21 – 10/1/21

Primary Company POC: Jay E Collette, Technical Sales, Principal Investigator,
jayc@itl-solutions.com, 757-563-5102

ITL Solutions Company Overview

- ITL LLC Doing Business As ITL Solutions (ITL) is a Service-Disabled Veteran Owned Small Business (SDVOSB) verified business by the Center for Verification and Evaluation of U.S. Department of Veterans Affairs.
- Founded in 2012, ITL Solutions has teamed with defense industry partners to provide engineering solutions and products to our Department of Defense customers. ITL has completed one contract under one Counter Weapons of Mass Destruction Other Transactional Authority (OTA) along with a second contract which is currently in progress. Selected as one of only 13 companies out of 47 to work with the US Airforce presenting new and innovative technologies for the AFWERX challenge for the Integrated Respirator Information System (IRIS).
- ITL is ISO 9001:2015 Certified and has a robust QA process to ensure all standards are met or exceeded.
- During the past three years ITL has been awarded and executed on over 900 contracts, of which 95% have been with the Defense Logistics Agency. ITL provides fluid transfer products for the Maritime and Chemical, Biological, Radiological Decontamination sectors.
 - Over \$12,000,000 in sales over the last 3 years.
- ITL's Engineering Team works to provide Mil-Spec and Commercial grade equipment as required by the Department of Defense. ITL will take commercially available products and with our partner subcontractors re-engineer the design to meet Mil-Spec requirements. Most recently ITL re-designed firefighting couplings to meet the MIL-DTL-52404 specification.
- ITL provides MIL-STD-2073 packaging and MIL-STD-129 labeling in support of our military customers.

ITL Solutions Company Overview

- Jay Collette is a retired Deck Limited Duty Officer. He started his career as an Undesignated Sailor and grew through the ranks for fourteen years as a Boatswain's Mate. He learned to splice double braid line through Personnel Advancement Requirements (PAR's). PARS are skills and abilities that can best be demonstrated (shown) by actual performance. Learning on the job and reinforcing that knowledge by attending schooling at the Boatswain's Mate Apprentice and Journeyman courses. Later in his career as a Boatswain's Mate First Class (BM1) he taught all facets of Seamanship, including splicing, as an instructor at the Afloat Training Group. He led the Seamanship Training Team on six afloat commands and one shore command as the subject matter expert for Deck Seamanship. He managed all aspects of amphibious and deck operations as the Senior Deck Subject Matter Expert on 4 US Navy vessels.
- Ocean Products Research, Inc. (OPR) will be the subcontractor on this project as part of the ITL Team. They will perform splicing requirements and complete testing procedures using the test bed located in Diggs, Virginia.
- Created by R.C. Hutson in 1964, OPR has been fabricating synthetic net and rope assemblies for the government, military, marine, industrial and commercial fishing ever since. Together the ITL Team has over 170 years of experience in the synthetic cordage field.
- OPR began in 1963 responding to a requirement to develop a helicopter sling with non-dielectric properties to minimize or prevent electric shock when hooking cargo to the bottom of helicopters.
- With 50 years of proven experience in the rope fabrication field, OPR ensures quality, authenticity, and transparency to all clients.

ITL Solutions Core Capabilities

- Maritime Equipment and Service
 - Underway Replenishment (UNREP) Equipment Sales, Service and Support
 - UNREP Training
 - Damage Control / Firefighting Equipment
 - Personal Protective Equipment (PAPRs, Hearing/Communications, Dry Suits)
 - Maritime Operational Safety Equipment
- Chemical Biological Radiological Nuclear (CBRN)
 - CBRN Decontamination Equipment and Chemicals
 - NATO Approved Equipment and Chemicals
 - Exclusive Cristanini / Ghibli Distributor for USA
 - CBRN Detection, Full Duplex Communication and Personal Protective Equipment
 - Remote monitoring and sensor integration systems
- System Development and Production
 - Provides Products as a Service with ongoing long-term support
 - War Wagon Remote Monitoring of Reactor Plant Maintenance for U.S. Navy
 - Air Sweep Corrosion Reduction System – Patent Awarded March 2021
 - New Firefighting and CBRN Defense valves for LPD 28 and LPD 29 Vessels
 - Production and fabrication of metal, fabric, plastic and composite components and systems
- System Engineering and Technical Assistance, Program Management, Training and Subject Matter Expertise
 - Maritime and Chemical, Biological, Radiological, Nuclear Defense (CBRN-D) Focus
 - Internationally known Experts supporting this capability



ITL Solutions Past Performance (Last 32 Contracts)

Date	Contract Number	NSN	Description	Quantity	Unit Price	Extension
4/30/2021	SPE7M3-21-P-3560	4730-00-349-4461	ELBOW,FLANGE TO HOSE	55	\$508.96	\$27,992.80
4/30/2021	SPE7MC-21-V-7476	4820-01-356-6762	VALVE,GLOBE	4	\$1,244.79	\$4,979.16
4/29/2021	SPE7M1-21-P-4287	4720-01-434-4811	HOSE ASSEMBLY,NONMET	3	\$2,560.39	\$7,681.17
4/26/2021	SPE7M1-21-V-6758	4730-01-122-1007	ADAPTER,STRAIGHT,TUB	16	\$265.70	\$4,251.20
4/26/2021	SPE7M3-20-D-61DC	4820-01-243-9945	VALVE,GLOBE	7	\$692.99	\$4,850.93
4/21/2021	SPE7M3-21-V-2368	4730-01-356-2642	ELBOW,HOSE	8	\$598.50	\$4,788.00
4/20/2021	SPE8E5-21-P-1053	4210-00-209-5023	ADAPTER,STRAIGHT,PIP	4	\$95.00	\$380.00
4/19/2021	SPE7MC-21-V-7083	4820-01-419-6311	VALVE,GLOBE	1	\$1,218.90	\$1,218.90
4/16/2021	SPE7M3-20-D-60QJ	4730-00-237-8171	SPOOL,BREAKABLE,FUEL	9	\$692.52	\$6,232.68
4/16/2021	SPE7MC-21-V-5801	2040-00-246-5192	PLATE,PROBE ASSY	27	\$249.92	\$6,747.84
4/16/2021	SPE7MC-21-V-7036	4820-00-889-2390	VALVE,GLOBE	1	\$1,929.89	\$1,929.89
4/15/2021	SPE7L1-21-V-4317	5331-01-289-2492	O-RING	94	\$8.93	\$839.42
4/14/2021	SPE4A6-21-V-230U	4030-01-595-4582	HOOK,PELICAN	1	\$1,684.27	\$1,684.27
4/14/2021	SPE7M3-20-D-60QG	4730-00-351-2031	ADAPTER,STRAIGHT,SWI	47	\$410.28	\$19,283.16
4/14/2021	SPE7MC-21-V-5669	2040-00-128-7982	FENDER,MARINE	26	\$575.32	\$14,958.32
4/12/2021	SPE7M2-21-P-1123	4820-01-220-1043	CARTRIDGE,SHUT-OFF V	16	\$342.10	\$5,473.60
4/9/2021	SPE7M4-21-V-2254	4720-01-342-8664	HOSE ASSEMBLY,NONMET	1	\$5,245.19	\$5,245.19
4/8/2021	SPE7M3-21-V-3290	4730-00-202-7223	ELBOW,HOSE	11	\$520.18	\$5,721.98
4/7/2021	SPE7M3-20-D-60TQ	4730-00-302-8037	ELBOW ASSEMBLY	13	\$359.74	\$4,676.62
4/5/2021	SPE7M1-21-V-6051	4820-01-365-2840	VALVE,GLOBE	2	\$1,285.74	\$2,571.48
4/5/2021	SPE7M2-21-V-1170	4820-00-980-2387	VALVE,GLOBE	3	\$619.70	\$1,859.10
4/2/2021	SPE7M0-21-V-3569	4730-00-590-9446	ADAPTER,HOSE	2	\$1,188.25	\$2,376.50
4/2/2021	SPE7M3-21-V-3150	4730-00-900-8536	SADDLE,HOSE	1	\$1,170.84	\$1,170.84
4/2/2021	SPE7MC-21-V-6542	4820-00-959-9865	CARTRIDGE,SHUT-OFF V	9	\$859.64	\$7,736.76
4/1/2021	SPE7M5-21-V-5273	4310-00-980-5004	STEM,DECONTAMINATING	72	\$6.88	\$495.36
3/31/2021	SPE7M3-20-D-61DC	4820-01-243-9945	VALVE,GLOBE	2	\$692.99	\$1,385.98
3/31/2021	SPE7L3-21-V-5626	3040-01-098-2414	SHAFT,ROLLER	16	\$189.99	\$3,039.84
3/24/2021	SPE7M3-21-V-3017	4730-00-302-8035	ELBOW ASSEMBLY	11	\$174.25	\$1,916.75
3/22/2021	SPE7M3-21-V-2978	4730-01-518-6884	COUPLING,TUBE	6	\$291.77	\$1,750.62
3/22/2021	SPE7M3-21-V-2986	4730-01-684-7671	REDUCER,PIPE	21	\$23.82	\$500.22
3/18/2021	SPE7M2-21-V-1079	4730-01-399-0061	ADAPTER,STRAIGHT,PIP	2	\$349.52	\$699.04
3/18/2021	SPE7M3-20-D-61GB	4720-00-854-6000	HOSE ASSEMBLY,NONMET	42	\$396.35	\$16,646.70

Contract Vehicles: Currently Supported

- SeaPort-NxG Prime Contractor
 - Approximately \$5 Billion per year Multiple Award Prime Contract
 - Engineering Support Services and Program Management Support Services for the United States Navy and United States Marine Corps
- Joint Enterprise-Research, Development, Acquisition and Production/Procurement (JE-RDAP) Prime Contractor
 - \$8.27 Billion multi-award ID/IQ Chemical, Biological, Radiological Research & Development and Procurement Contract
 - Establishes a cadre of qualified contractors to compete for Research, Development, Acquisition, and Production/Procurement (RDAP) task/delivery orders
- Other Transaction Authority (OTA) Consortia
 - Countering Weapons of Mass Destruction OTA
 - Naval Surface Technology & Innovation OTA
 - Cornerstone Other Transaction Authority OTA
 - National Security Technology Accelerator (NSTXL) OTA
- North Carolina Sheriff's Association Fire and EMS Procurement Program

ITL Past Performance

Norfolk Naval Shipyard War Wagon

- ITL Solutions designed, produced and upgraded a tailored system for Norfolk Naval Shipyard.
- ITL re-designed and upgraded the “War Wagon” system for the U.S. Navy to provide enhanced functionality for remote monitoring of maintenance operations in Radiation Areas on US Navy vessels.
- Support is based on Products as a Service model.
 - ITL provides the system and the technical support on a monthly basis to ensure continued operation of the system.



ITL Past Performance

- Regular supplier of CBRN, Damage Control and Fluid Transfer components to the DoD.
 - Delivered or in progress on over 1,000 contracts over the last 3 years totaling over \$12,000,000 in sales.
 - Source Approval Requests developed and submitted resulting in successful adoption of additional source of supply.
 - MIL-DTL-52404 Fire Fighting Fittings for the US Navy including widely used Wye Valves 4210-00-255-0234 per NSTM 555.
- AirSweep Development – Patent Issued in March of 2021
 - Developed to reduce manpower requirements when cleaning the non-skid surfaces of ships.
 - Internal project to ITL bringing the AirSweep system from TRL 1 to TRL 7.
 - System was successfully tested in operational environment in conjunction with Naval Research Laboratory on USS MAHAN.
- Material assessment of NAVSEA Underway Replenishment Equipment for material type and traceability
 - Completed analysis on parts provided by NAVSEA which discovered materials supplied into the DLA/DoD Supply Chain from another company was not in accordance with U.S. Navy drawings.
 - Based upon ITL's analysis and problem identification, NAVSEA is re-evaluating and updating procurement processes to secure the supply chain.
- Optimized CBRN Hydration System Prototyping
 - JPEO-CBRND/JPM-P requirement to provide hydration and nutrition to personnel in CBRN protective gear released under the CWMD OTA.
 - ITL developed a functioning prototype system in under a month which met the functional requirements of the Statement of Objectives.
 - Submitted Enhanced White Paper (EWP) under CWMD OTA and EWP was assessed as technically acceptable and was placed in basket awaiting funding.
- CBRN Decontamination System Development and Enhancements
 - Fluid and heat transfer analysis and management planning to develop system enhancements and design improvements for vehicle and personnel decontamination systems manufactured by Cristanini CBRN Decontamination systems.
 - Selected by DTRA for CBOA 2019 participation to demonstrate SX34 Sensitive Equipment Decontamination system.
 - Successfully decontaminated a JCAD contaminated with MES simulant in less than 5 minutes
 - Selected by DTRA for CBOA 2021 Participation to demonstration Tactical Steam Decontamination Module (TSDM) for field operations

OPR Past Performance (Last 27 Contracts)

3/18/2021	SPE5EJ-21-V-2744	5340-01-277-9859	SNAP HOOK	758	\$19.31	\$14,636.98
3/12/2021	SPE4A6-20-D-5179	4010-01-351-5676	CHAIN ASSEMBLY,SINGL	29	\$662.82	\$19,221.78
3/9/2021	SPE5E2-21-V-1182	5340-01-486-1493	SNAP HOOK	6	\$16.44	\$98.64
10/22/2020	SPE8EE-21-V-0071	4020-01-596-1134	FIBER ROPE ASSEMBLY	11	\$1,683.60	\$18,519.60
10/15/2020	SPE5EM-21-V-0178	5340-01-486-1493	SNAP HOOK	68	\$15.21	\$1,034.28
9/11/2020	SPE4A6-20-D-5179	4010-01-351-5676	CHAIN ASSEMBLY,SINGL	41	\$637.33	\$26,130.53
9/4/2020	SPE8EE-20-P-0806	4020-01-656-7149	ROPE,FIBROUS	1	\$198.00	\$198.00
7/23/2020	SPE8EE-20-P-0741	4020-01-665-0063	FIBER ROPE ASSEMBLY,	8	\$756.35	\$6,050.80
7/19/2020	SPE8EG-20-D-0125	4020-01-365-3115	FIBER ROPE ASSEMBLY,	59	\$317.00	\$18,703.00
7/13/2020	SPE8EE-20-P-0721	4020-01-424-0607	ROPE,FIBROUS	10	\$2,654.89	\$26,548.90
7/8/2020	SPE8EE-20-P-0703	4020-01-337-3185	FIBER ROPE ASSEMBLY,	65	\$478.97	\$31,133.05
6/22/2020	SPE8EE-20-P-7089	4020-01-665-0063	FIBER ROPE ASSEMBLY,	4	\$1,022.00	\$4,088.00
6/11/2020	SPE8EE-20-P-0658	4020-01-596-1134	FIBER ROPE ASSEMBLY	10	\$1,683.60	\$16,836.00
5/14/2020	SPE5EJ-20-V-4602	5340-01-486-1493	SNAP HOOK	29	\$16.44	\$476.76
4/30/2020	SPE8EE-20-P-0540	4020-01-318-5428	ROPE,FIBROUS	20	\$209.75	\$4,195.00
4/3/2020	SPE8EE-20-P-0477	4020-01-557-4386	ROPE,FIBROUS	18	\$177.00	\$3,186.00
4/2/2020	SPE8EE-20-V-0500	4020-01-337-3185	FIBER ROPE ASSEMBLY,	163	\$478.97	\$78,072.11
1/15/2020	SPE8EE-20-V-0269	4020-01-337-3185	FIBER ROPE ASSEMBLY,	151	\$459.97	\$69,455.47
12/31/2019	SPE8EE-20-P-0272	4020-01-365-3115	FIBER ROPE ASSEMBLY,	117	\$300.66	\$35,177.22
12/5/2019	SPE4A6-20-D-5179	4010-01-351-5676	CHAIN ASSEMBLY,SINGL	15	\$637.33	\$9,559.95
12/3/2019	SPE8EG-20-D-0125	4020-01-365-3115	FIBER ROPE ASSEMBLY,	8	\$317.00	\$2,536.00
10/16/2019	SPE8EE-20-P-0016	4020-01-337-3185	FIBER ROPE ASSEMBLY,	63	\$459.97	\$28,978.11
10/9/2019	SPE8ES-20-P-0097	4020-01-365-3115	FIBER ROPE ASSEMBLY,	170	\$300.66	\$51,112.20
8/27/2019	SPE4A4-19-V-7865	4010-01-351-5676	CHAIN ASSEMBLY,SINGL	29	\$612.82	\$17,771.78
5/16/2019	SPE4A6-19-V-183Q	4010-01-351-5676	CHAIN ASSEMBLY,SINGL	18	\$612.82	\$11,030.76
4/26/2019	SPE8EE-19-V-0633	4020-01-337-3185	FIBER ROPE ASSEMBLY,	134	\$448.75	\$60,132.50
4/15/2019	SPE8EE-19-V-0604	4020-01-337-3185	FIBER ROPE ASSEMBLY,	139	\$448.75	\$62,376.25

Similar Item to Parallel Pendant Currently Manufactured by OPR



P/N 27232 / BOS-14-K7
NSN 4020-01-337-3185
Contracts: SPE8EE-20-P-0703 and SPE8EE-20-V-0500
S.W.L. 25,000 lbs 11,340 kg
**Helicopter Recovery Pendant Registered
Trademark "Reach Pendant"**
P/N 27232 / DSG-5-11K
NSN 4010-01-365-3115
11,000 lbs - 4,990 kg Unit Weight - 9.0 lbs net

The pendant is made from **double braid**, torque free, synthetic rope. A rigid plastic pole, referred to as the "reach tube," encases the center portion of the pendant. It provides a means to "reach" and place the upper eye on the helicopter hook as the helicopter hovers above a load to be lifted.

The upper, or top, eye is encased in a preformed **semi-rigid urethane** shield which provides a means to place the upper eye on the helicopter hook. The shield also protects the strength member rope from wear, chafe, and cuts. The lower, or bottom, eye is larger than the top eye which provides a larger area for additional slings to be employed for lifting. The bottom eye also protects the rope strength member with a **nylon-reinforced urethane protective shield**. Both protective shields (top and bottom) allow the rope strength member to move or stretch freely under load. The pendant is 100% synthetic which minimizes electric static shock.

ITL Solutions Company Overview

- ITL Solutions has 2 warehouses in Hampton, Virginia and a sales office in Crofton, Maryland with over 8,000 square feet of design and development space.
- OPR houses the equipment required to test for certification of synthetic sling and hardware fittings up to a 400,000 lb. capacity. This allows for ropes and chains to be proof tested, a form of stress test to demonstrate the fitness of a load-bearing structure. The ropes and chains are subjected to loads above that which is expected in actual use, demonstrating the safety and design margin. At the OPR facility, OPR Proof tests may be performed before a new design or unit is allowed to enter service, or perform additional uses, or to verify that an existing unit is still functional as intended.
- OPR Capabilities include a 400,000 lb. Capacity Test Bed with 20 ft. of Stroke and a test bed length of 95 ft. Long Pin to Pin. OPR can complete Proof Testing, Break Testing, Cycle Loading to desired Specifications, Ram Speed 1" to 18" per Minute, and Computer Generated Elongation.



Pictured above is the test bed located at the OPR Facility in Diggs, VA.

Project Summary (Bottom Line Up Front)

- FINAL SUBMISSION sent to Mark A. Fossesca
 - NAVSUP Weapon Systems Support Philadelphia
 - Code: N231.27 Source Development
 - ALRE/AIRCRAFT Equipment Specialist Lead
- SBIR PHASE II proposal submitted as proposal # L2-0350 on 10-29-2021
 - Proposal title: ITL Solutions Development of New Sources of Supply and Capabilities Enhancement to Support the Department of Defense

Identification and Significance of the Problem or Opportunity

- Currently there is no consistent source to produce the ALRE Parallel Pendant. In addition, the drawings have made changes that prohibit cost savings and can raise the cost by as much as 10x to meet the specifications. Fiber Rope is not as rigid in construction as wire rope. Each length of rope can vary in the final elongation. Several factors including, Elastic Elongation (EE), Elastic Hysteresis, and most importantly Permanent Extension (PE) after relaxation can cause variations in the end product even when following the exact same processes and procedures to complete the eye splice.
- ITL is proposing through this effort to research and develop a Source Approval Request Package to become a manufacturing source for the Parallel Pendant (NSN 1710-01-497-6646). The ALRE (Aircraft Launch and Recovery Equipment) Parallel Pendant is a small part of the barricade system for emergency recovery of US Navy carrier-based aircraft.
- **What are the advantages to your solution?**
- ITL will conduct a thorough review of all the technical documents for Parallel Pendant (NSN 1710-01-497-6646) to ensure the requirements can be met. In the process, ITL will develop a Source Approval Request Package to become a source for DLA. During of the development of the SAR, we intend to clarify end product details and adequately provide justification that will demonstrate that the ITL Team will be another source for DLA.
- Our value add is to have another source that allows competition in the marketplace. As a local manufacturer, the ITL Team will provide shorter lead times, and greater availability in the future for DLA Procurement of the ALRE Parallel Pendant. Our manufacturing partner, Ocean Products Research, has developed several rope assemblies for the US Navy. Our Principal Investigator has over 24 years in experience with Marlinspike Seamanship which is the art of handling and working all kinds of fiber and wire rope, which includes every variety of knotting, splicing, serving, and fancy work. Leading divisions and departments as well as developing curriculum for training, he has the skill set to speak to requirement for fiber rope assemblies.

NSNs for this Contract

Prior ity #	Reverse Engineer (RE) or Source Development (SD)	NSN	AMC/ AMSC	Description	Status (Researching, Need Part or Tech Data, Tech Data In Progress, SAR Submitted, PR Awarded, etc...)
1	SD	1710-01-497-6646	1C	Parallel Pendant - 78-0	SAR SUBMITTED

*Priority # as agreed with by Customer. 4-Blocks should appear in Priority # order.

Color code the rows:
 Green – has all data/sample parts necessary to proceed with TDP/SAR;
 Red – does not have a sample part and/or does not have sufficient data to
 Proceed with TDP/SAR.

Item 1: Parallel Pendant; 78-0/ NSN 1710-01-497-6646

October Monthly Report – 9/01/21-9/31/21

Part Description

- The Parallel Pendant is a small part of the larger barricade system for arrestment of aircraft in distress.

The pendant is made of 2-in-1 Stable Braid and the current manufacturing base seems to have been unable to provide a reliable source to DLA. ITL Solutions is developing a SAR Package to become a new source for DLA and the US Navy.

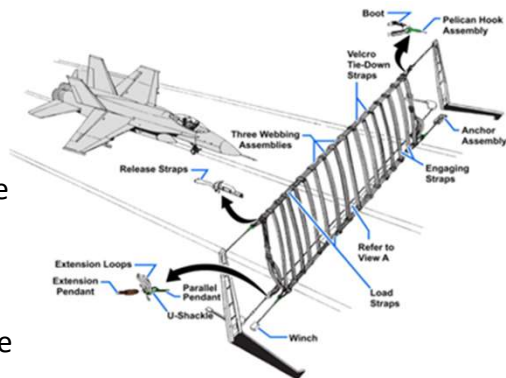


Figure 4-38 — Emergency arrestment.

Source Development Schedule

Event	OCD [^]	RevECD*	Actual
Drawings/Tech Data Research	05/01/21	05/14/21	
Sample Parts Acquired	05/03/21	MM/DD/YY	04/23/21
Technical Data Package (TDP)	06/01/21	06/01/21	
Program Office TDP Review	N/A	N/A	
Manufacturing Plan	06/14/21	06/15/21	
Source Approval Request	08/05/21	08/05/21	08/16/21
ESA Feedback/Approval	07/01/21	12/01/21	
Solicitation Proposal	08/30/21	10/31/21	10/29/21
Solicitation Award	09/15/21	MM/DD/YY	MM/DD/YY

[^]OCD = Original Est. Completion Date do not change *RECD=Revised Estimated Completion Date enter any changes

Recent Accomplishments

- SAR resubmitted for approval.**
- SBIR PHASE II Submission, # L2-0350 submitted on 10-29-2021.**
- Proposal title: ITL Solutions Development of New Sources of Supply and Capabilities Enhancement to Support the Department of Defense.**

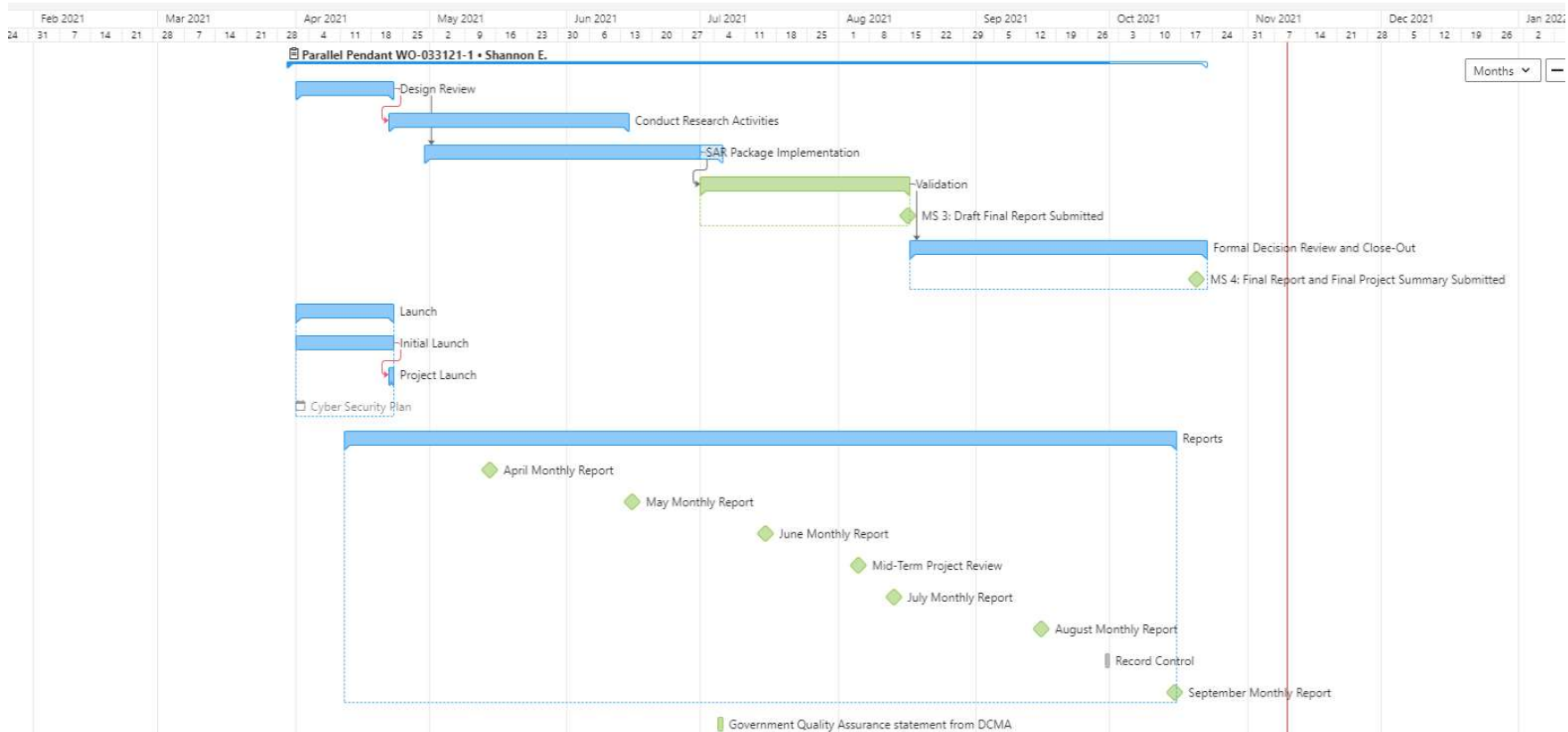
Issues

- None to report**

Proposed Next Steps

- SBIR Phase 2 feedback.**

Project Schedule With Milestones



- Proposed Project with milestones as promulgated on SBIR proposal.
- Current status as of **1 DEC 2021**.
- Next Slide shows detail of conduct research activities.

Parallel Pendant in Stowed Position



Parallel Pendant in stowed position. Note eye spliced at either end of the pendant.



Projected Logistics Data for NSNs for this Contract

NSN	Description	Manufacturing Lead time (Days)	Min Order Quantity	Price to Govt.	Additional Price Points	
					Order Qty.	Price
1710-01-497-6646	78-0 Parallel Pendant	90 Days	1	\$ 1600.00	20	\$ 1400.00

These numbers are very rough and in no way obligate any dollar amount shown. Current manufacturing processes were used to estimate these amounts. Assumptions are based on answers received from Engineers.

It is understood that estimates may not be possible until the Manufacturing plan has been formulated and that these are *estimates only* until the SAR is ready for submission or, for projects not requiring a SAR, a sample part is submitted to the ESA.

Financial Status

Financial Status and Funds		Funds Received	Total Received
April, 2021	\$7,966.00	\$7,966.00	\$7,966.00
May, 2021	\$7,966.00	\$7,966.00	\$15,932.00
June, 2021	\$7,966.00	\$7,966.00	\$23,898.00
July, 2021	\$7,966.00	\$7,966.00	\$31,864.00
August, 2021	\$7,966.00	\$7,966.00	\$39,830.00
September, 2021	\$7,966.00	\$7,966.00	\$47,796.00

1. **Total Monthly Invoice**

\$7,966.00

1. **Total Reimbursement Received**

\$ 47,796.00

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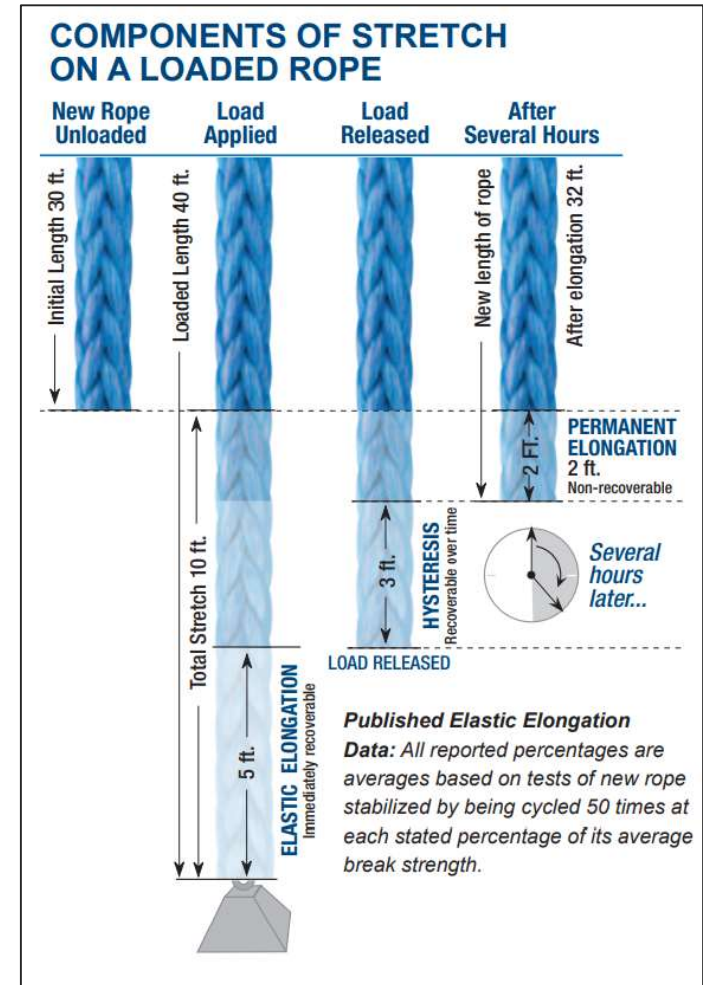
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BACKUP SLIDES

Technical Data: Elongation and Stretch

- Elastic Elongation (EE)
 - Elastic elongation refers to the portion of stretch or extension of a rope that is immediately recoverable after the load on the rope is released. The rope's tendency to recover is a result of the fiber(s) rather than the rope construction. Each type of synthetic fiber inherently displays a unique degree of elasticity. Relatively speaking, high-performance fiber has extremely low elasticity compared to nylon fiber.
- Elastic Hysteresis
 - Elastic hysteresis refers to a recoverable portion of stretch or extension over a period of time after a load is released. In measuring elastic recovery, it is the portion that occurs immediately when a load is removed. However, a remaining small percentage of elastic recovery occurs gradually over a period of hours or days. Elastic hysteresis is measured in a length/time scale.
- Permanent Extension (PE) after Relaxation
 - Permanent extension while working is the amount of extension that exists when stress is removed but no time is given for hysteretic recovery. It includes the nonrecoverable and hysteretic extension as one value and represents any increase in the length of a rope in a constant working situation, such as during repeated surges in towing or other similar cyclical operations. The percentage of PE over the working load range is generally in order of four or six percent for braided ropes and two to three times as much for plaited. However, it varies slightly with different fibers and rope constructions. In some applications, such as subsurface mooring or devices that demand precise depth location and measurement, allowances must be made for this factor.
- Creep
 - A material's slow deformation that occurs while under load over a long period of time. Creep is mostly nonreversible. For some synthetic ropes, permanent elongation and creep are mistaken for the same property and used interchangeably when in fact creep is only one of the mechanisms that can cause permanent elongation.
- Constructional Elongation
 - The elongation of a loaded rope that results from compaction as the fibers and strands align and adjust.
- Splice Setting
 - The elongation of a spliced rope caused by the adjustment and settling of the strands in the splice.



Technical Data: Samthane

Samthane

- Samthane coatings are a family of abrasion resistant coatings specifically formulated for specific rope constructions and their applications. The advantages of Samthane coatings and some of the common coatings are outlined below.

ADVANTAGES:

- Improved service life
- Reduced snagging
- Enhanced abrasion resistance
- Protection from contamination
- Reduced cutting damage
- Color coding for identification



Samthane Coating being mixed before coating at the factory.

Samthane (Type A)

- A spliceable coating used on polyester double braids, Samthane Type A greatly enhances abrasion resistance and makes splicing used rope much easier. It is available in a variety of colors for easy identification, tracking time in service, keying colors to specific operations, etc. Splicing done on ropes coated with Type A uses the same tools and techniques for splicing uncoated rope. Coating adds approximately 3% to 5% to the weight of the line.

Samthane (Type C)

- A non-spliceable jacketing type coating, Samthane Type C is usually applied to specific sections of a line that will be subjected to extreme abrasion. The coating is very tough, with excellent resistance to cutting and chafing. It is usually applied to a thickness of 1/8" or more, which has a stiffening effect on the rope. This coating is applied to prespliced ropes and may also be used for thimble encapsulation.