Gore RCN-8818 Cable for RBSP Spin Plane Boom RBSP-SPB-TN-025 Rev B

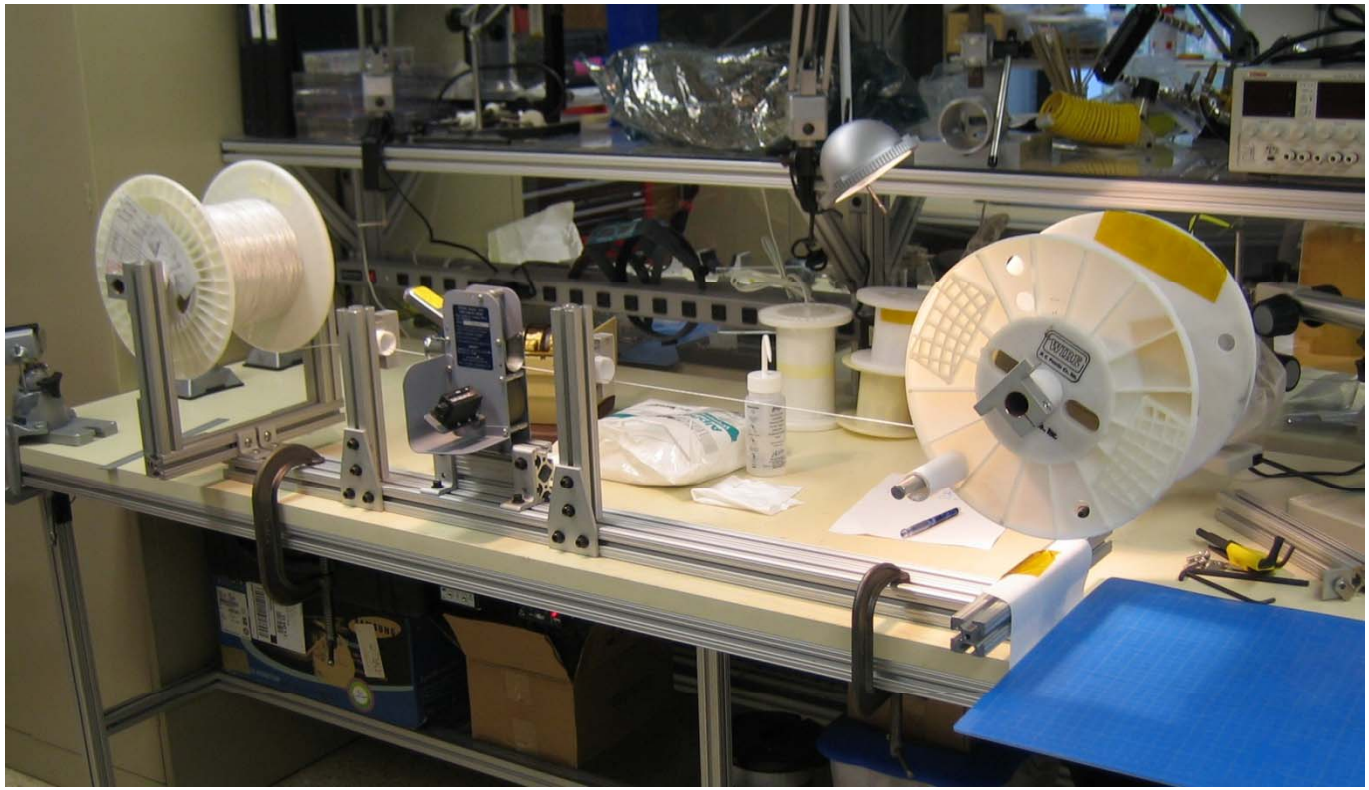
Detailed Inspection
Performed by Greg Dalton 1/8/09
Space Sciences Lab – UC Berkeley
UCB PO# 1-0001382652
Gore PO A74-32016
Sales Order #13807978
Work Order #2294768

Receipt Inspection performed on 11/19/08:

-Documentation was checked for completeness, see Appendix A.
-Cable spool was inspected and cable lengths noted by Gore on side of spool were recorded: 674, 287, 417, 615, and 353 ft lengths for uncoated cable, 300ft for Tefzel coated cable (for RBSP-AXB)
-Cable cursory inspection upon receipt verified proper cable construction, including seven conductors, Kevlar, aluminized Kapton, outer SPC braid, and Tefzel coating (on 300 ft of cable).

Inspection setup:

- Straight spool to spool cable path
- Soft touch, elastomer-lined wheel length counter in feet to prevent cable damage
- Hand cranked, hand inspected cable
- Teflon guides to prevent cable damage



Segment Table:

-How many 165 ft lengths of cable could be cut from the received spool

- Length was reduced to 157 ft as a bare minimum, which yielded 10 segments of useable cable

- Zero mark is from the outer cable end of the delivered spool

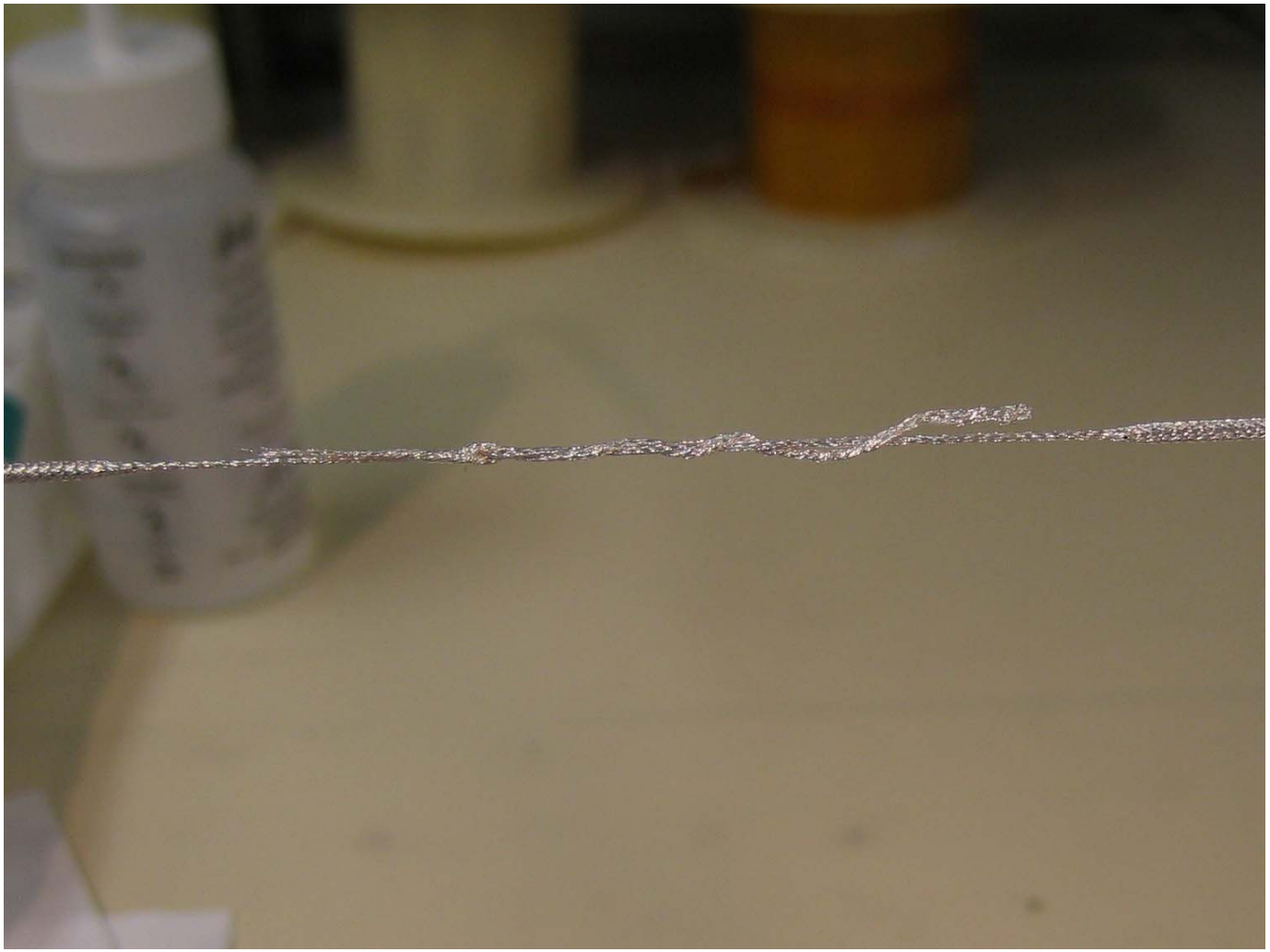
- Segment ends are at the approximate marks Gore indicated on the spool label.

- Defects in the cable were photographed, and continuity has NOT been verified across the affected sections.

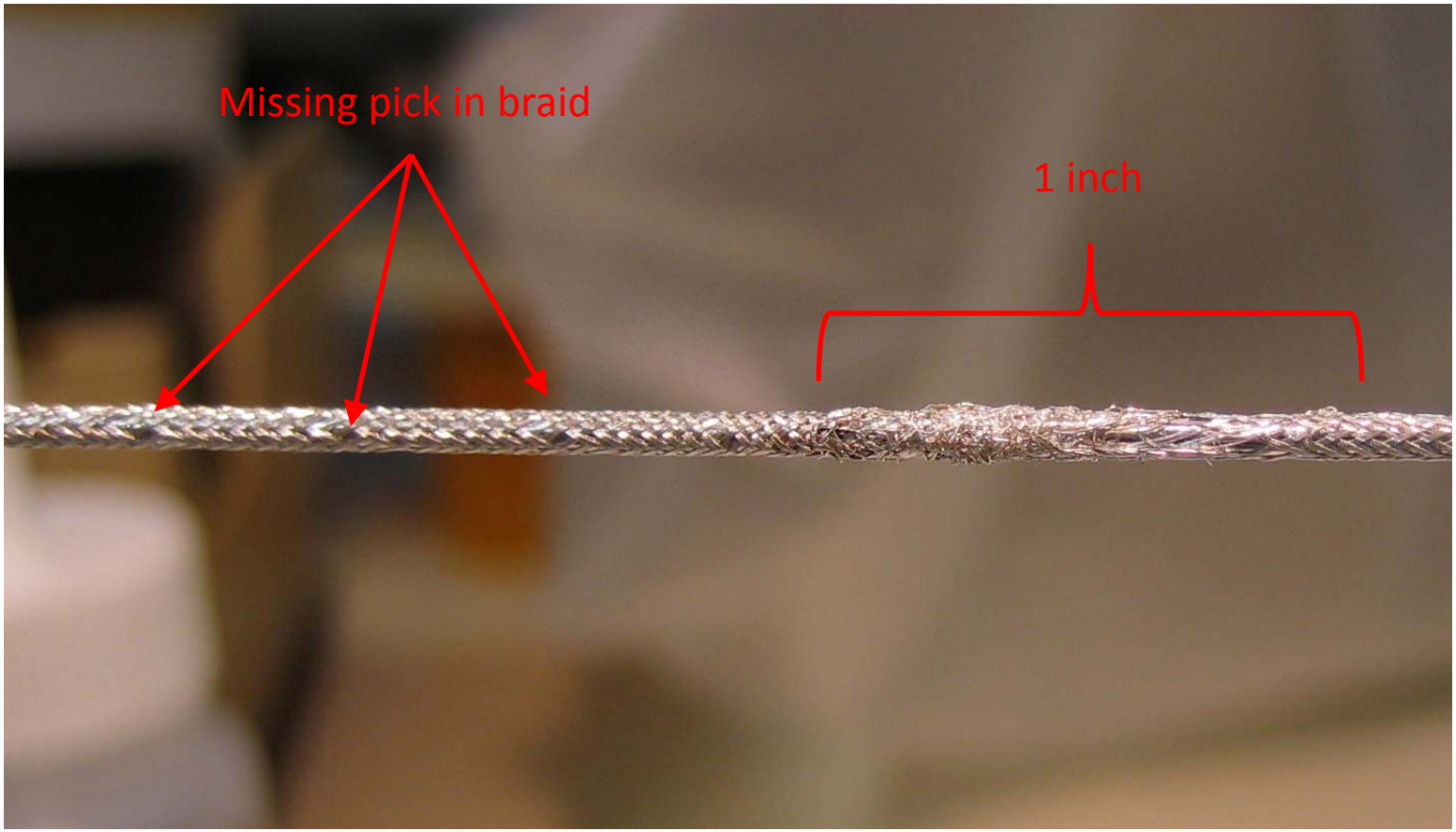
- Severity of the cable defect is indicated medium or bad. However, it has been deemed that none of the noted defective sections will be suitable for flight use.

mark (ft)	segment length (ft)	# flight cables	flight length 157	remainder ft	notes on segment
0					beginning
174	174	1	157	17	**defect in braid, bad**
347	173	1	157	16	end of 347 ft segment
533	186	1	157	29	**defect in braid, med**
589	56	0	0	56	**defect in braid, bad**
907	318	2	314	4	**defect in braid, med**
966	59	0	0	59	end of 619 ft segment
1388	422	2	314	108	end of 422 ft segment
1673	285	1	157	128	end of 285 ft segment
1730	57	0	0	57	**defect in braid, med**
2049	319	2	314	5	**defect in braid, med**
2184	135	0	0	135	**defect in braid, med**
2313	129	0	0	129	**defect in braid, med**
2340	27	0	0	27	end of 667 ft segment
	total	10		770	

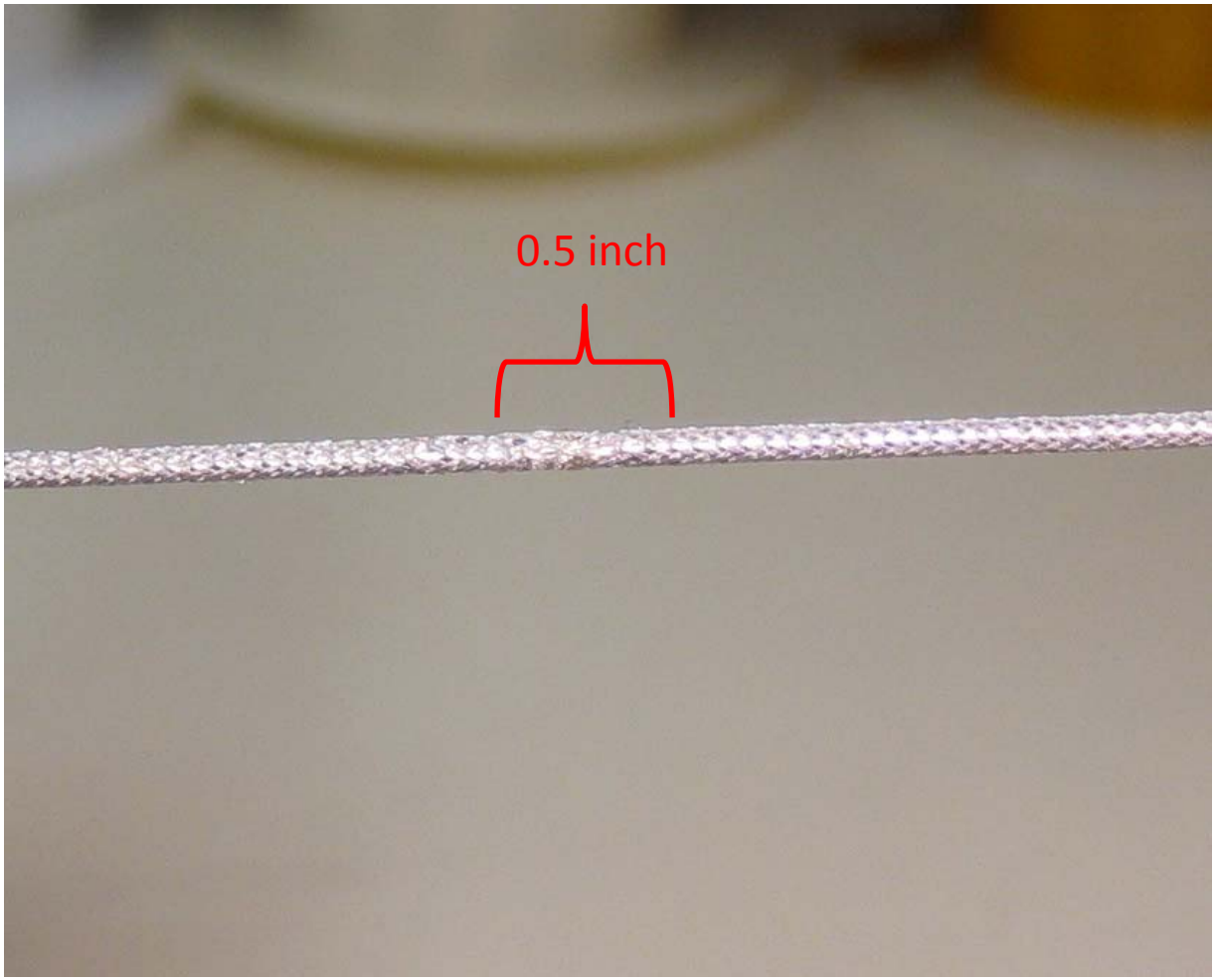
A photograph of a typical cable segment end, occurring 4 times in the delivered spool. The outer SPC braid is knotted together.



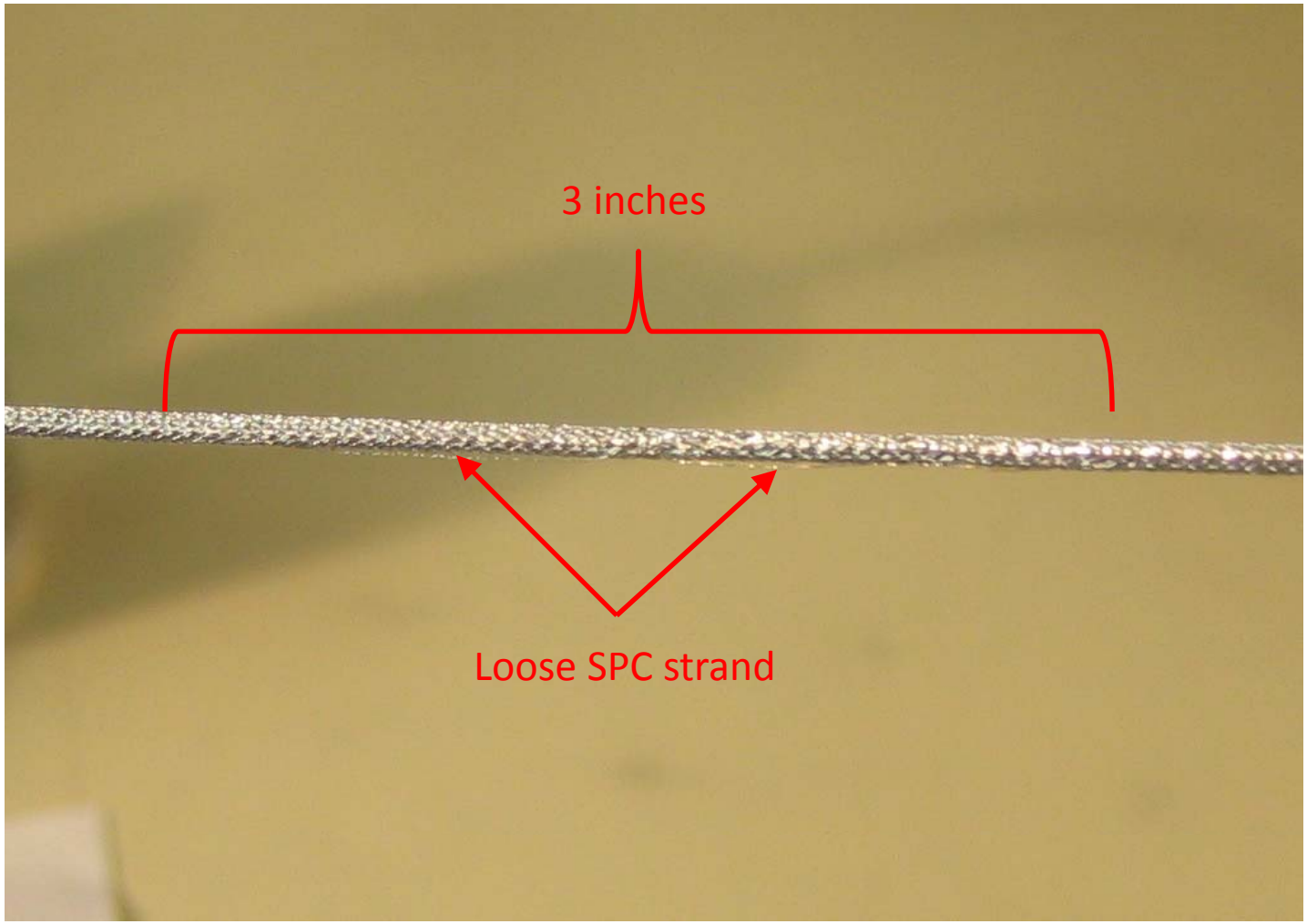
At the 174 ft mark, there is a severe defect approximately 1 in long in the outer SPC braid. Cable to the left of the braid shows an outer SPC pick missing or broken.



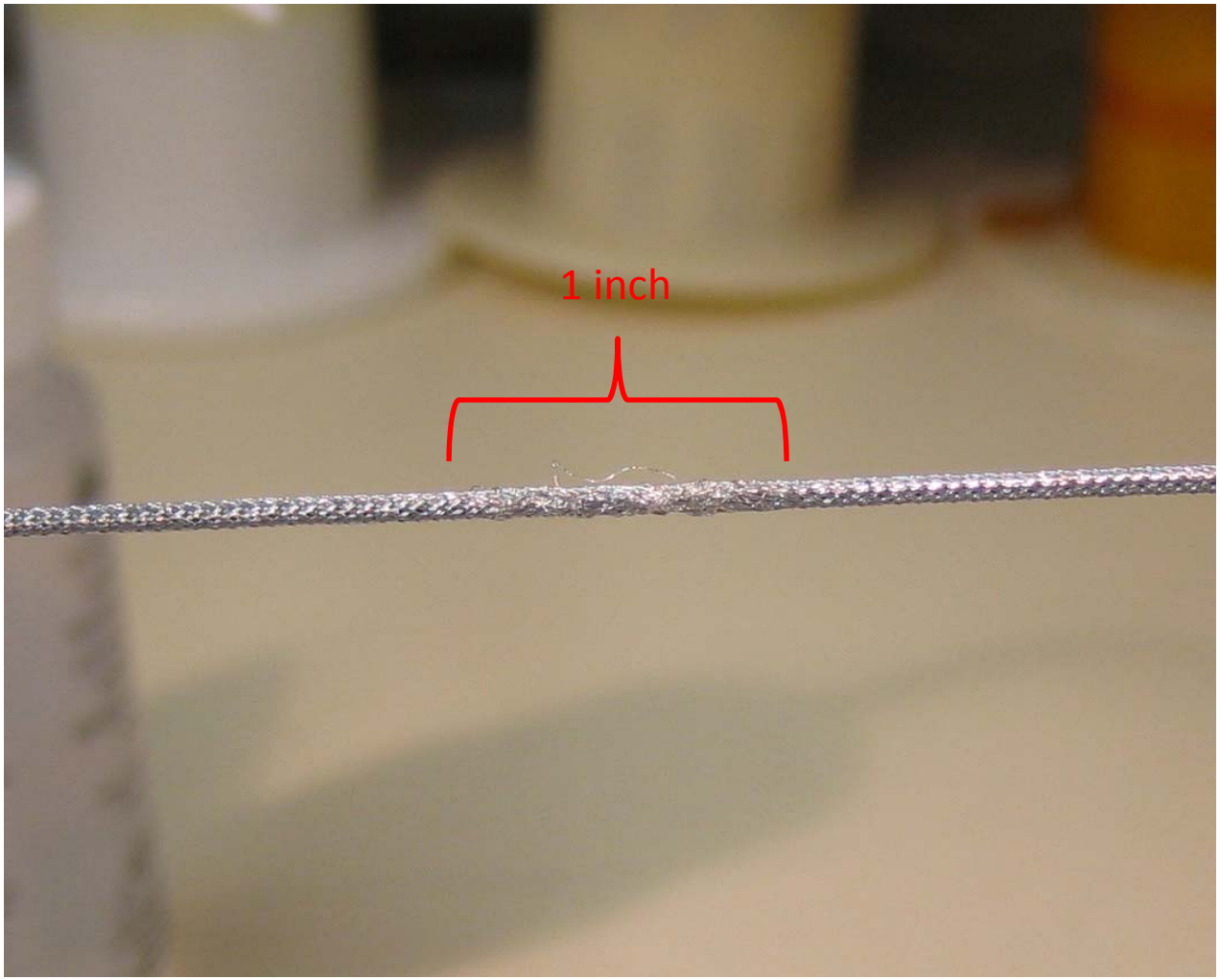
At the 533 ft mark, there is a defective section approximately 0.5” inch long in the outer SPC braid.



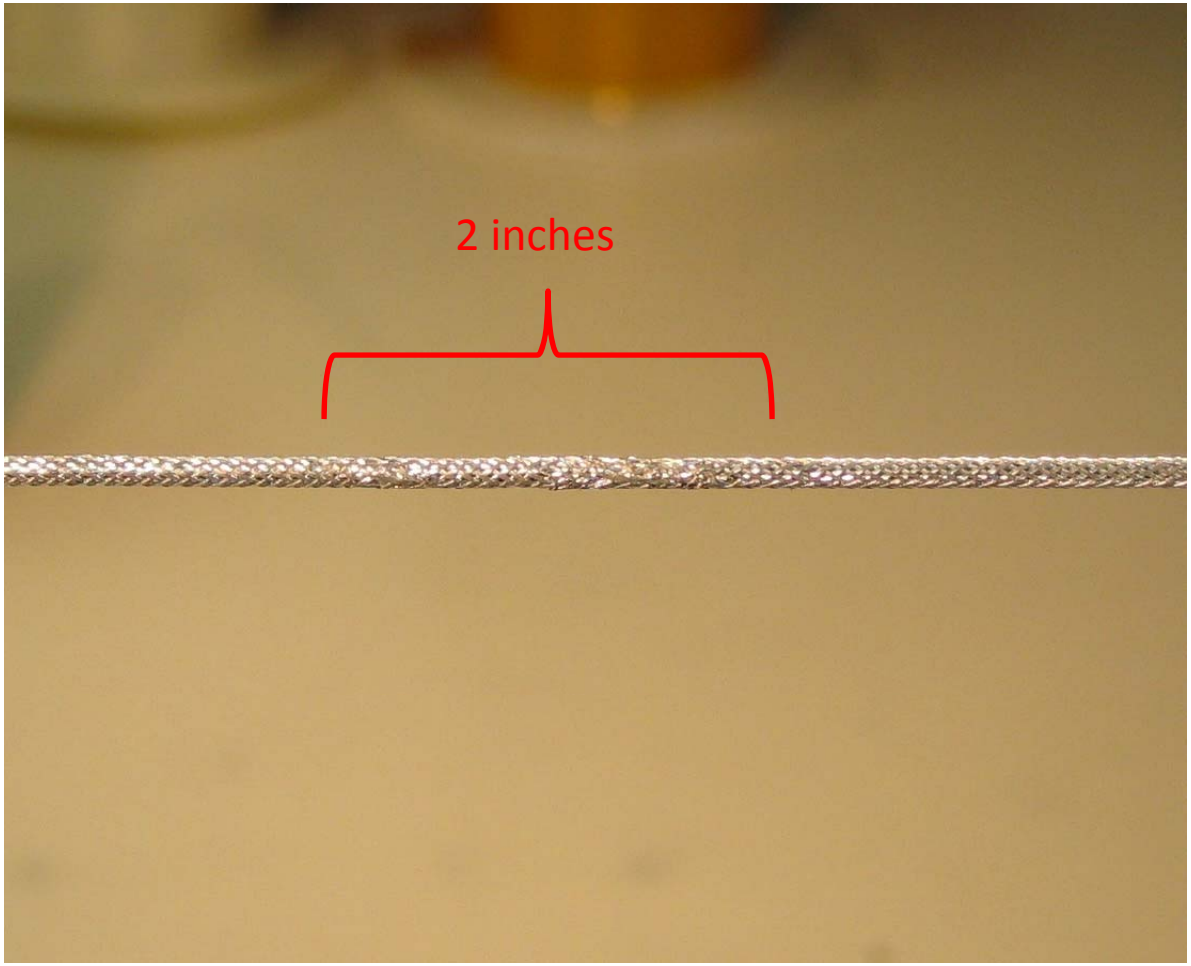
A few inches from the 533 ft mark, there is a second defect approximately 3 inches long that has a strand of SPC running outside the braid. Other minor defects in outer SPC braid were noted within 6 inches of this mark.



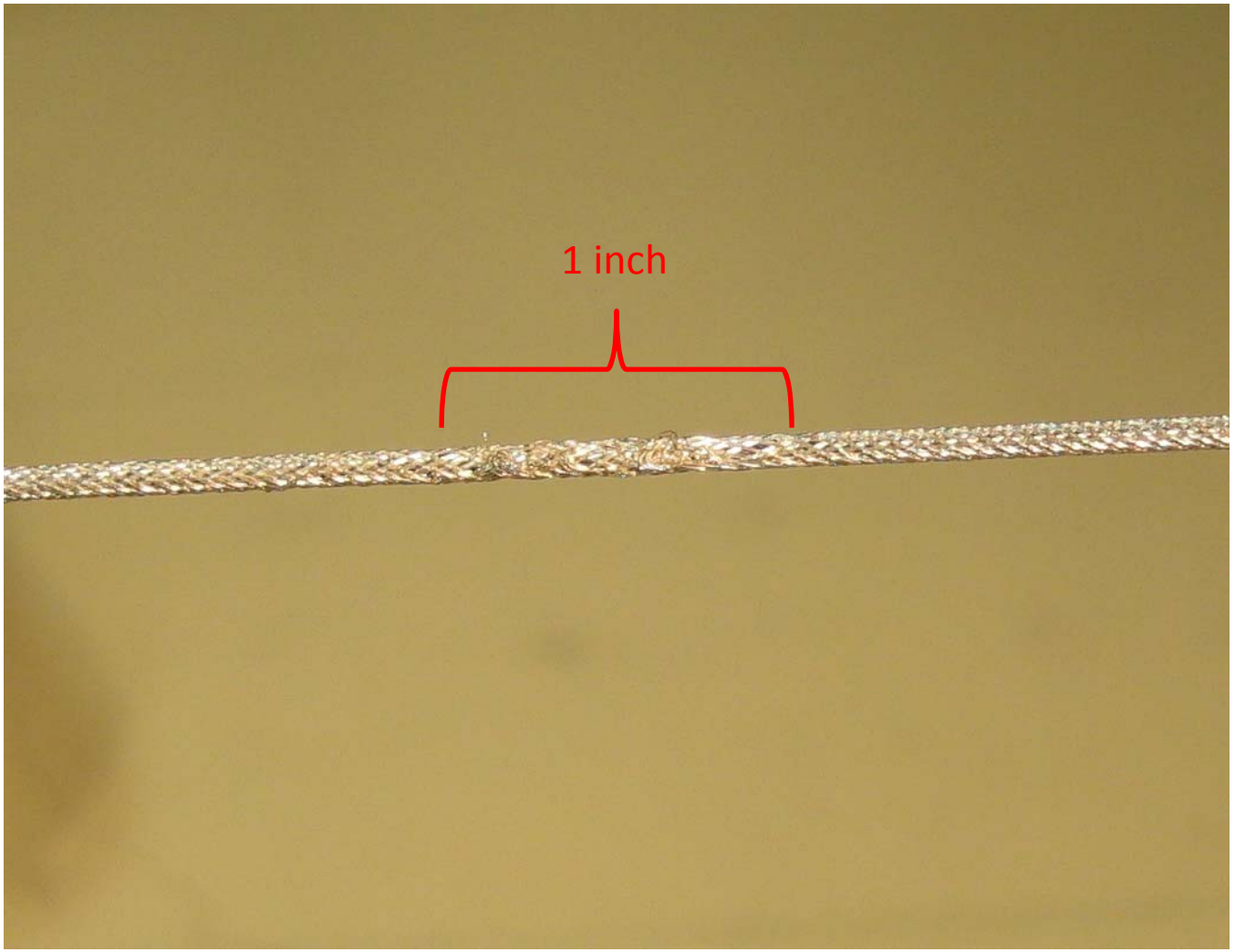
At the 589 ft mark, there is a severely defective SPC braid section approximately 1 in long. There are also a few other minor defects in the SPC braid within 10 inches of this mark.



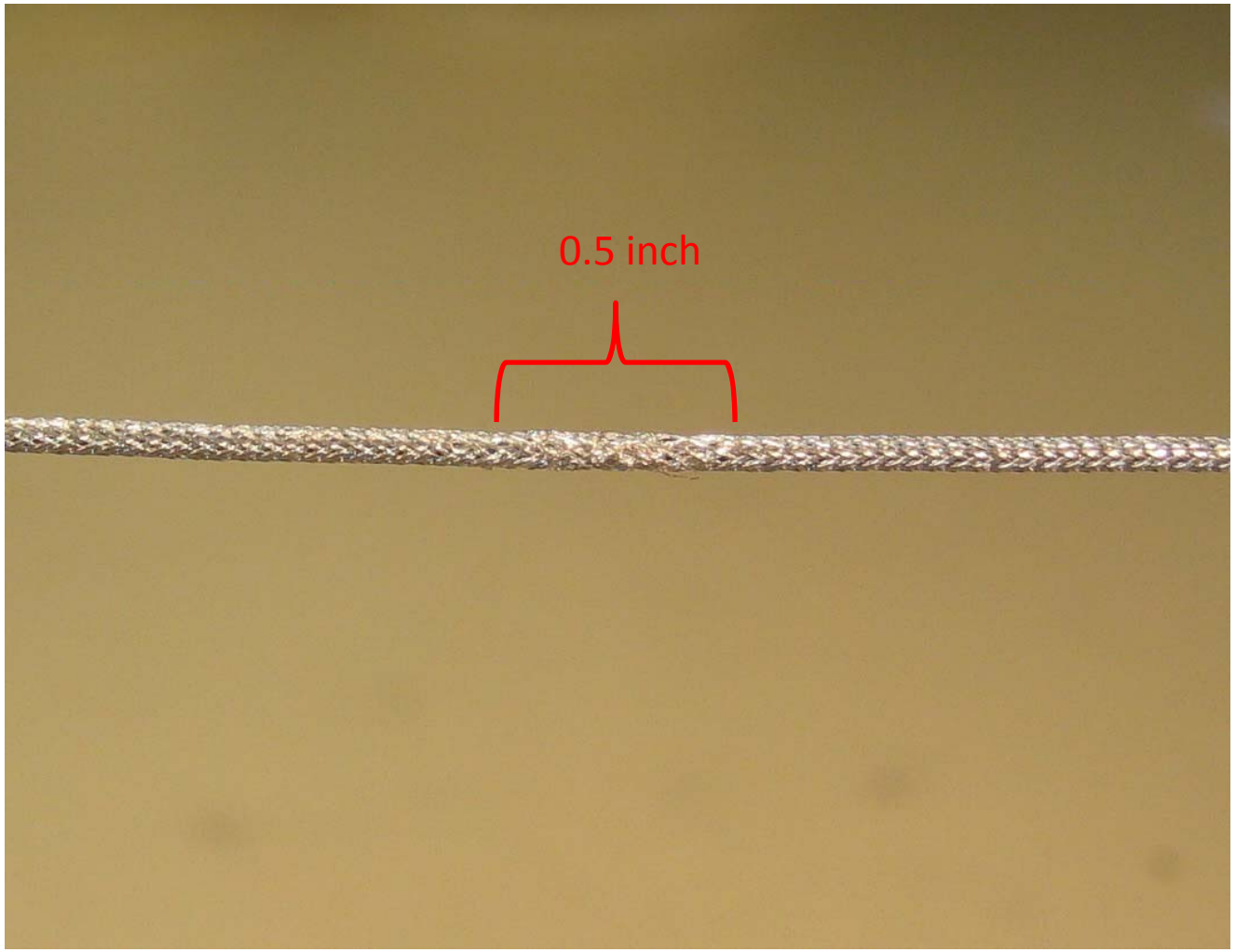
At the 907 ft mark, there is an approximately 1 in section of defective SPC braid. There are also a few other braid defects within 8 inches of this mark.



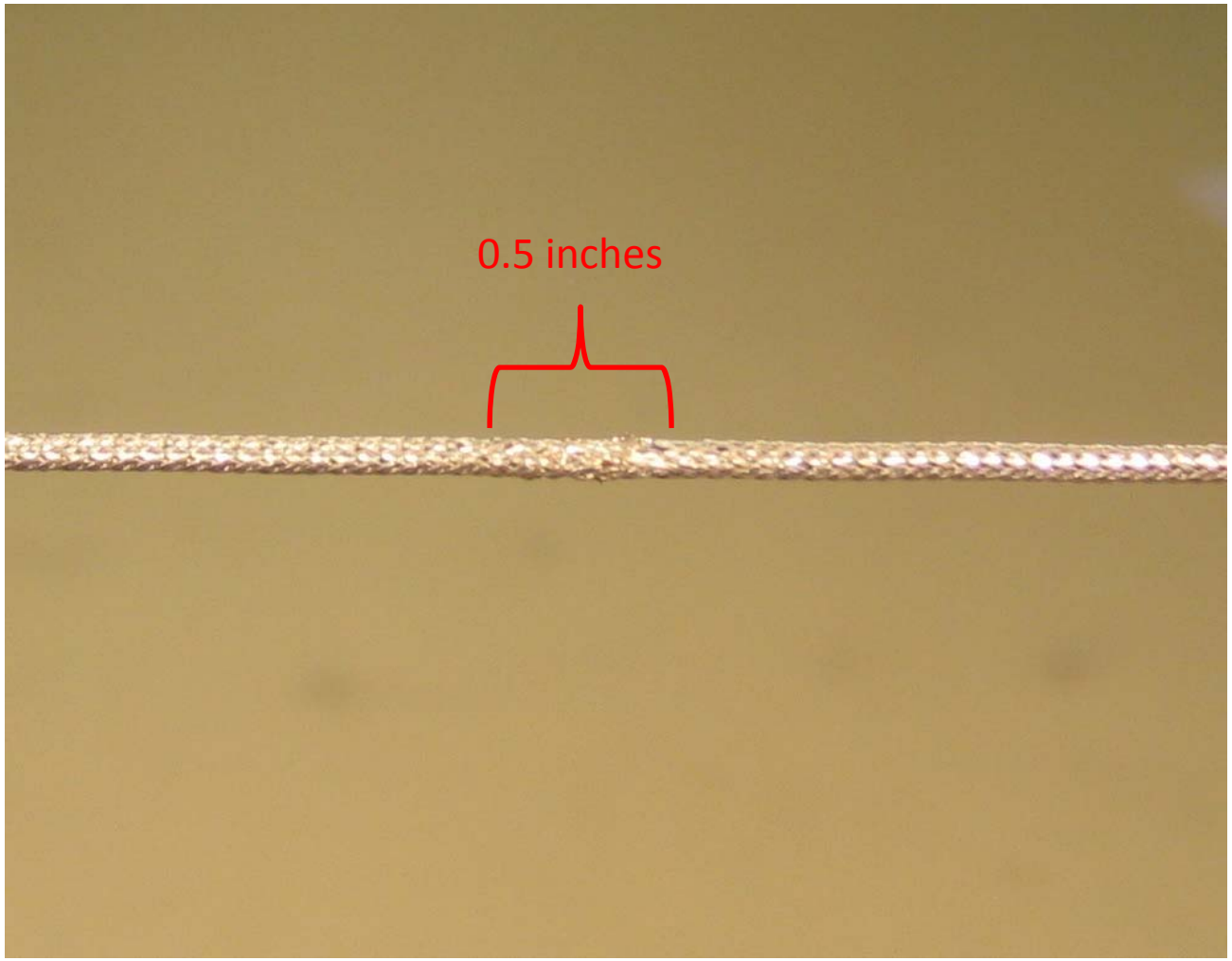
At the 1730 ft mark, a severely defective section. Other minor SPC defects within 6 in of this mark.



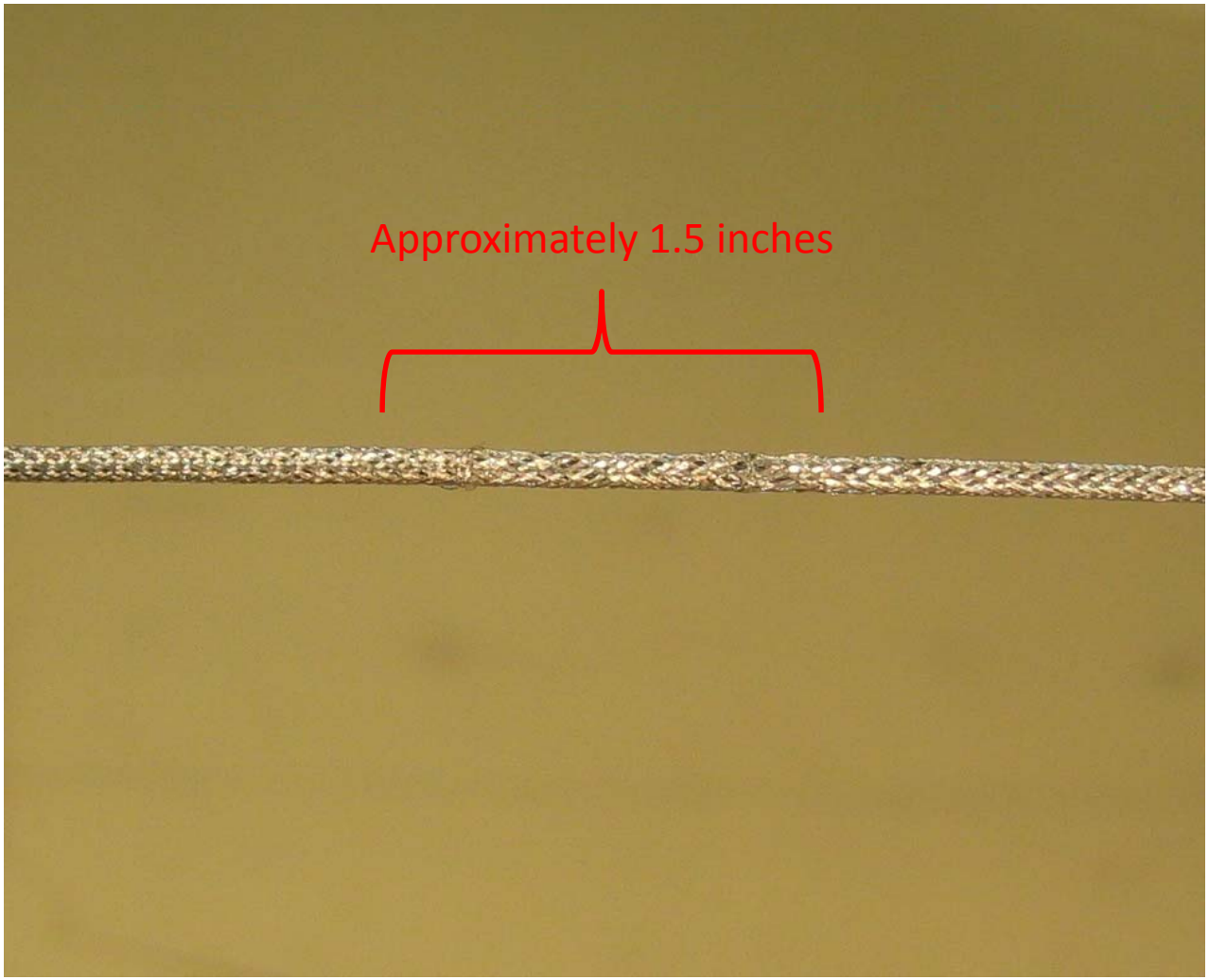
At the 2049 ft mark, there is a approximately 0.5 in SPC braid defect. Other minor defects are within 6 in of this mark.



At the 2184 ft mark, a defect in the SPC braid. Other small defects are within 6 inches of this mark.



At the 2313 ft mark, an SPC braid defect with other smaller defects within 6 in.



Conclusion:

- Cable sections with outer SPC braid damage are not repairable
- Insufficient cable to manufacture required flight cables
- Keep 347 and 619 ft segments
- Reject 422 and 285 ft segments based on overage (does not meet multiple of 165 ft requirement)
- Reject 667 ft segment based on excessive defects

Suggestions:

- Use what cable is available to make 5 flight cables
- Manufacture replacement 1374 ft of cable in multiples of 165 ft segments

Appendix A

W. L. GORE & ASSOCIATES, INC.
380 Starr Road Landenberg, Pennsylvania 19350
PHONE: 610/268-1000 • FAX: 610/268-1790
ELECTRONIC PRODUCTS DIVISION

Round Cable Final Inspection Report

Work Order/Lot Number: 2294768 Part Number: RCN 8818

Customer: A. E. Petsche Customer Spec. Number: _____

	Electrical Requirements		Pass/Fail/Record		Oper./Date
A	Continuity Check	Ohms Meter	Pass	Fail	WDK 11/7/08

The inspection operator is required to record the actual if there is a specification.

	Construction A Requirements Seven Singles		Specification	Actual	Oper./Date
A	Conductor	AWG 36(7/44) SPC	0.0058 – 0.0062	.0060	WDK 11/7/08
B	Insulation	KAPTON	OD 0.0092 – 0.0112	.0093	↓ ↓

Cabled Construction Requirements		Specification	Actual	Oper./Date
Construction A	Singles	7 places	✓	WDK 11/7/08
Strength Member	Kevlar Braid	Verify	✓	↓ ↓
Strength Member	Kevlar Braid	Verify	✓	
Binder	Aluminized Kapton	Verify	✓	
Overall Shield	AWG 42(1) SPC Braid	0.0025	.0023	
	Overall Diameter	(0.054)	.059	

Spooling

Spool #	Lengths
1	

Acceptable Footage: _____ Inspected by: WDK

Date: 11/7/08

SP#1
300

Appendix A

PACKING LIST ESPECIFICACION DE EMBALAJE

Seller (name, address)
WL GORE & ASSOCIATES INC
380 STARR ROAD
LANDENBERG, PA 19350
U.S.A.

Tax ID: 510083365NG

GORE
Creative Technologies Worldwide

Invoice number	PAGE 1 OF 2
Invoice date (tax point) 11/07/08	Seller's reference 13807978 SO B003
Buyer's reference A74-32016	Other reference 1259496

Consignee 11085321 Tax ID: 1-75-1238083-7
A E PETSCHE
2112 WEST DIVISION ST
ARLINGTON, TX 76012
U.S.A.

Buyer (if not consignee)

UPS/USA GROUND

Country of origin of goods	Country of destination
U.S.A.	U.S.A.

Terms of delivery and payment
FOB ORG FRT COLLECT
NET 30 DAYS

Vessel/ flight no. and date	Port/ airport of loading
Port/ airport of discharge	Place of delivery

Shipping marks; container number	No. and kind of packages; description of goods	Commodity code	Total gross wt (kg)	Total cube (m3)
FULLY ADDRESSED	2 Boxes	8544499000	6.8039 KG 15.00 LB	0.0368 M3 1.298 CF

Total net wt (kg)
5.4885 KG
12.10 LB

Item/ packages	Gross/ net/ cube Description	Quantity	Other details
	Gross: 5 LB 2.268 KG Net: 3.55 LB 1.6103 KG Cube: .649 CF		Cardboard Box(s) 11.75x8.125x11.75 in.(20
1	RCN8818 Round Cable Bulk ROUND CABLE REVB Track# 1Z78547X0300025333	300 ft	
	Gross: 10 LB 4.5359 KG Net: 8.55 LB 3.8782 KG Cube: .649 CF		Cardboard Box(s) 11.75x8.125x11.75 in.(20
1	RCN8818 Round Cable Bulk ROUND CABLE REVB Track# 1Z78547X0300025342	2298.5 ft	

Additional packing information
This is to certify that the material furnished pursuant with the lot number/s referenced above has been tested and/or inspected in accordance with the requirements of the applicable specifications,and that the results of such tests and inspections are in accord with the applicable specifications.The results contained herein represent the material properties at the time of testing, and are accurate and complete as of the date of certification.
REPLACES 13653325 ON B002
TEST REPORTS REQUIRED
BOX LABELS REQUIRED

Name of signatory
ANGELA R SOMERVILLE
Place and date of issue
ELKTON, 11/07/08
Signature

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