Table 1   **Estimated Cost and Savings for Laser Stripping Sealant of A-10 Center Wing Fuel Tanks (100% Availability)**

9/21/2004   Lifetime of System = 10000 hrs

Based on demo with 200 Watt Lamp Pumped Laser at GLC 9/21/04   Assume 1 minute per fastener

Current Technology **100% Reliability**   Manhours   800   160,000

Per Airplane   TT = Trigger Time, Staff cost = $200/hr

	Capital Cost	Basis	Expense Cost	Man Hours	Cost	Comment
200 W Diode Pump	$ 200,000	$1000 System Cost/watt	Work Hours	160		600 Fastner Equivalents*2min/60min/hr (assumes TT=50%)/Cell*8 cells/airplane
Spare Parts	$ 30,000		Total Man Hours	320	$ 64,000	Work hours * 2 staff
Training (4 manwks +)	$ 100,000		Maintenance		$ 1,024	2 man days @$200/hr per 500 hours
			Electric Power (8kW)		$ 64	Work Hours * 8KW*$0.05/kWh
Total	$ 330,000				$ 65,088	

Paid off after 4 Airplanes, then savings per airplane = $ 94,912

Airplanes serviced in 10,000 man-hrs =   63

	Capital Cost	Basis	Expense Cost	Man Hours	Cost	Comment
400 W Diode Pump	$ 400,000	$1000 System cost/watt	Work Hours	80		(400/200w) = 2 times more efficient at material removal
Spare Parts	$ 50,000		Man Hours	160	$ 32,000	Work hours * 2 staff
Training (4 manwks +)	$ 100,000		Maintenance		$ 512	2 man days @$200/hr per 500 hours
			Electric Power(16kW)		$ 64	Work Hours * 8KW*$0.05/kWh
Total	$ 550,000				$ 32,576	

Paid off after 5 Airplanes, then savings per airplane = $127,424

Airplanes serviced in 10,000 man-hrs =   125

Life Cycle Savings   Assumption   100% Reliability/Availability

Number Airplanes	Reliability = 100% Cumulative Savings (200w)	Reliability = 100% Cumulative Savings (400w)	Reliability = 100% 400w versus 200w **10,000 hr Savings**
1	$ (235,088)	$ (422,576)	
2	$ (140,176)	$ (295,152)	
3	$ (45,264)	$ (167,728)	
4	$ 49,648	$ (40,304)	
5	$ 144,560	$ 87,120	
6	$ 239,472	$ 214,544	
7	$ 334,384	$ 341,968	
8	$ 429,296	$ 469,392	
9	$ 524,208	$ 596,816	
10	$ 619,120	$ 724,240	
25	$ 2,042,800	$ 2,635,600	
42	$ 3,656,304	$ 4,801,808	
50	$ 4,415,600	$ 5,821,200	
63	**$ 5,649,456**	$ 7,477,712	
75		$ 9,006,800	
100		$ 12,192,400	
112		$ 13,721,488	
125		**$ 15,378,000**	$ 9,728,544

Current Technology can do 25 Airplanes in 10000 hours
200 watt Diode Pumped Laser can do 63 Airplanes in 10000 hours
400 watt Diode Pumped Laser can do 125 Airplanes in 10000 hours

Table 2   Estimated Cost and Savings for Laser Stripping Sealant of A-10 Center Wing Fuel Tanks (50% Availability)

9/21/2004

Based on demo with 200 Watt Lamp Pumped Laser at GLC 9/21/04   Assume 1 minute per fastener

Current Technology	**50% Reliability**		Manhours	800	160,000	
			Per Airplane			TT = Trigger Time, Staff cost = $200/hr
	Capital Cost	Basis	Expense Cost	Man Hours	Cost	Comment
200 W Diode Pump	$ 200,000	$1000 System Cost/watt	Work Hours	320		2 * 100% Reliable Time
Spare Parts	$ 30,000		Total Man Hours	640	$ 128,000	Work hours * 2 staff
Training (4 manwks +)	$ 100,000		Maintenance		$ 2,048	2 man days @$200/hr per 500 hours
			Electric Power (8kW)		$ 128	Work Hours * 8KW*$0.05/kWh
Total	$ 330,000				$ 130,176	

Paid off after 12 Airplanes, then savings per airplane = **$ 29,824**

Airplanes serviced in 10,000 man-hrs =   31

400 W Diode Pump	$ 400,000	$1000 System cost/watt	Work Hours	160		(400/200w) = 2 times more efficient at material removal
Spare Parts	$ 50,000		Man Hours	320	$ 64,000	Work hours * 2 staff
Training (4 manwks +)	$ 100,000		Maintenance		$ 1,024	2 man days @$200/hr per 500 hours
			Electric Power(16kW)		$ 128	Work Hours * 8KW*$0.05/kWh
Total	$ 550,000				$ 65,152	

Paid off after 6 Airplanes, then savings per airplane = **$ 94,848**

Airplanes serviced in 10,000 man-hrs =   63

Life Cycle Savings   Assumption   50% Reliability/Availability

Number Airplanes	Reliability = 50% Cumulative Savings (200w)	Reliability = 50% Cumulative Savings (400w)	Reliability = 50% 400w versus 200w **10,000 hr Savings**
1	$ (300,176)	$ (455,152)	
2	$ (270,352)	$ (360,304)	
3	$ (240,528)	$ (265,456)	
4	$ (210,704)	$ (170,608)	
5	$ (180,880)	$ (75,760)	
6	$ (151,056)	$ 19,088	
7	$ (121,232)	$ 113,936	
8	$ (91,408)	$ 208,784	
9	$ (61,584)	$ 303,632	
10	$ (31,760)	$ 398,480	
11	$ (1,936)	$ 493,328	
12	$ 27,888	$ 588,176	
16	$ 147,184	$ 967,568	
25	$ 415,600	$ 1,821,200	
31	*$ 594,544*	$ 2,390,288	
50		$ 4,192,400	
63		$ 5,804,816	$ 5,210,272

Current Technology can do 25 Airplanes in 10000 hours
200 watt Diode Pumped Laser can do 31 Airplanes in 10000 hours
400 watt Diode Pumped Laser can do 63 Airplanes in 10000 hours