



# Aircraft Spruce & Specialty Co.

Worldwide Distributor of Aircraft Parts and Pilot Supplies

www.aircraftspruce.com

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**Aircraft skin friction drag coefficient reduction**

C.N. Eastlake **3**  
**BOLD FONT INDICATES 400**  
 % skin friction reduction **3.60**

Length of flight (n.mi.)

Fuel cost (\$/gal)

	Drag reduction (lb)	Fuel savings (%)	Trip fuel savings (lb)	Trip fuel savings (\$)	Fuel savings (\$/hour)
Aircraft Model	3.24	1.227	1.99	1.19	0.62
Cessna 172	4.14	1.214	3.90	2.34	1.21
Columbia 400	5.63	1.707	6.13	3.68	1.90
Mooney Bravo GX	5.05	1.256	4.02	2.41	1.25
Piper 6XT					

Yearly fuel savings		
at 100 hr/yr (\$/year)	at 500 hr/yr (\$/year)	at 1000 hr/yr (\$/year)
61.57	307.83	615.67
120.78	603.89	1207.78
189.92	949.62	1899.24
124.65	623.25	1246.49

Surface area (sq. ft.)	Wax weight (lb)	Time to apply (min)	Labor cost (\$)
713.8	1.78	5.0	2.50
621.46	1.55	5.0	2.50
765.34	1.91	5.0	2.50
764.5	1.91	5.0	2.50

	ft^2/lb of wax	400
<b>Assumed values in making estimates.. Change them in column G as desired</b>	ft^2/hour	2500
Column E assumed 1 lb of wax covers	1-person spray team	1
Column F assumed 1 hr to spray	2500 sq. ft.	30
Column G assumed labor at \$30/hr and 2-person spray team		

Cell B6 uses actual 100LL	original Cdf	reduced Cdf	component reduced Cdo	total reduced Cdo	total reduced Cd	delta Cd
Intermediate steps	0.013768	0.013355	0.016484	0.029454	0.036566	0.000454
Cessna 172	0.013368	0.012967	0.016925	0.029148	0.034272	0.000421
Columbia 400	0.012514	0.012138	0.015838	0.020078	0.022704	0.000394
Mooney Bravo GX	0.142826	0.138542	0.178892	0.305457	0.353800	0.004499
Piper 6XT						