

2008 Polaris Dragon 700 SP w/ 12/08 reflash

Here's "XC8" Bill Rogers' Dragon 800. After receiving the latest Polaris "reflash" last month, Bill decided to come to DTR for evaluation, to try fine-tuning with a Power Commander III and test SLP and DynoPort single pipes. We tried to obtain a BMP pipe mod, but that pipe wouldn't be available in time.

We monitored pipe and coolant temp and watched for detonation/ protection on our Digital Wrench software. The deto protection of this sled is not as sensitive as the 09 D8's so rider be cautious. Ethanol wires were disconnected to add the 5% enrichment. The weather on New Year's Day was in the mid 20's outside, and on this day we had a 1% downward correction factor. Since the 08 airbox is not quite airtight, the airflow numbers are shown for comparison only. For A/F ratio we used the dyno's Innovate Wideband with a brand new Bosch O2 sensor (when purchased from major automotive retailers they carry a 12 month warranty). All dyno tests were hot pipe @1000 deg F at peak revs, with time at WOT 25-30 seconds.

With 93 octane ethanol pump gas and thermostat maintaining 120 plus degrees F coolant temp, we achieved this dyno data.

D7 reflash, 93 ethanol fuel, ethanol wires disconnected, stock exhaust

EngSpd	STPTrq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	psig
4900	59.0	55.1	56.1	1.01	14.0	29	113	58.7
5000	58.9	56.1	54.4	0.96	14.0	28	114	58.7
5100	61.3	59.5	53.6	0.89	14.0	28	117	58.7
5200	61.9	61.2	56.4	0.91	14.1	28	119	59.0
5300	63.1	63.7	56.3	0.88	14.2	29	121	58.8
5400	64.1	65.9	59.1	0.89	14.4	29	124	58.7
5500	66.3	69.4	57.7	0.83	14.4	29	128	58.7
5600	67.1	71.5	57.5	0.80	14.3	30	130	58.6
5700	68.0	73.8	62.5	0.84	13.8	28	133	58.6
5800	68.7	75.9	66.1	0.86	13.8	28	135	58.6
5900	69.3	77.8	66.6	0.85	13.5	29	137	58.7
6000	70.4	80.4	63.8	0.79	13.1	29	139	58.7
6100	71.2	82.7	65.1	0.78	12.9	29	142	58.6
6200	71.5	84.4	64.9	0.76	12.9	29	143	58.7
6300	72.5	86.9	65.5	0.75	12.8	30	145	58.7
6400	73.6	89.6	65.7	0.73	12.9	30	147	58.7
6500	74.1	91.6	67.3	0.73	13.1	30	149	58.7
6600	73.7	92.6	66.5	0.71	13.1	29	150	58.7
6700	75.6	96.4	66.8	0.69	13.2	29	155	58.7
6800	75.1	97.2	65.6	0.67	13.2	29	156	58.7
6900	74.7	98.1	65.2	0.66	13.3	29	157	58.7
7000	75.1	100.1	69.0	0.69	13.3	29	159	58.7
7100	82.1	110.9	80.3	0.72	13.2	29	178	58.5
7200	82.1	112.5	81.6	0.72	13.1	29	181	58.5
7300	85.2	118.5	90.2	0.76	12.6	27	189	58.4
7400	88.3	124.4	90.1	0.72	11.9	28	196	58.3

7500	88.7	126.7	96.0	0.75	11.5	29	199	58.2
7600	87.1	126.0	106.5	0.84	11.1	29	201	58.6
7700	86.5	126.8	105.9	0.83	10.5	28	204	58.2
7800	85.5	127.0	108.9	0.85	10.4	28	205	58.2
7900	85.9	129.2	105.9	0.81	10.4	28	206	58.2
8000	85.3	129.9	101.0	0.77	10.6	29	207	58.2
8100	84.5	130.3	100.8	0.77	10.8	29	207	58.3
8200	82.9	129.4	93.2	0.71	11.3	28	205	58.4

It was obvious that we had plenty of fuel flow for the SLP and DynoPort pipes we had to test with. Without the added expense of a Boondocker or PCIII fuel tuner, we decided to test the pipes with the stock fuel flow, ethanol wires disconnected for the ethanol fuel we were running. Here is the SLP single pipe with the stock muffler. This pipe flowed nearly 5% more air than the stock pipe, which leaned out the mixture a bit helping this ceramic coated pipe add 10 HP, while dropping BSFC to a still safe .66 lb/hphr.

D7 reflash, 93 ethanol, wires disconnected, SLP single pipe/ quiet stock muffler

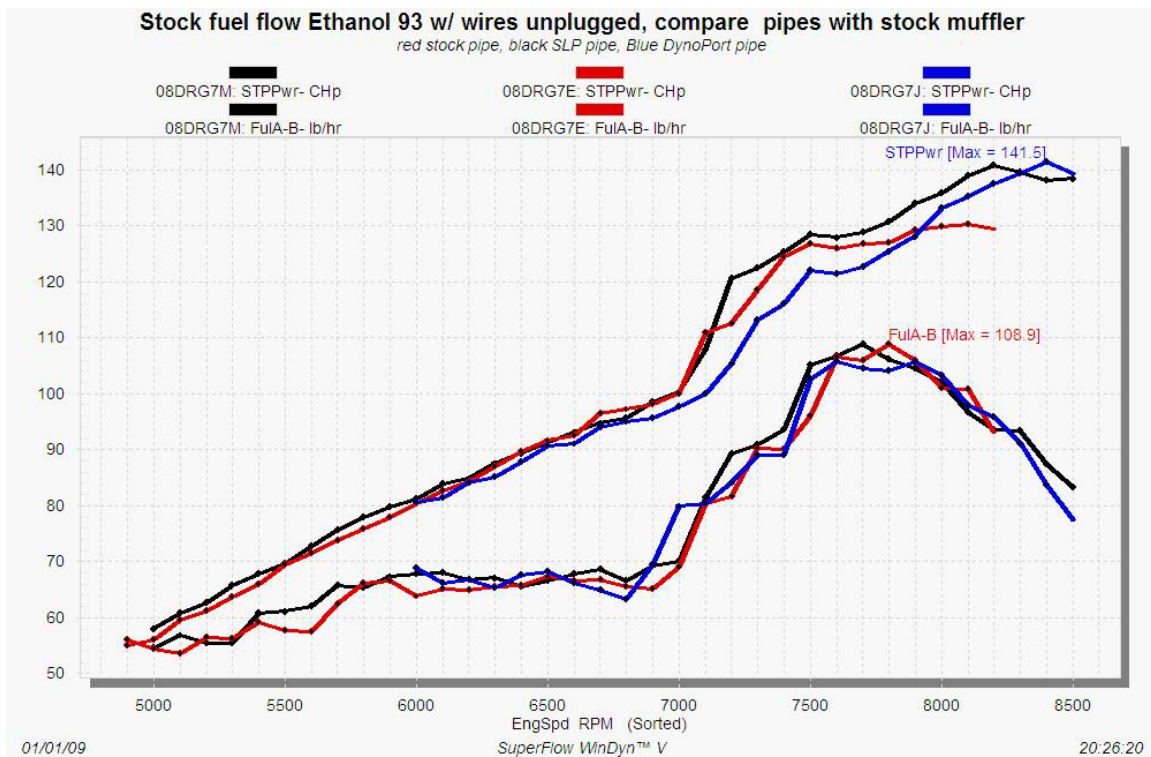
EngSpd	STPTRq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	psig
5000	61.0	58.0	54.6	0.94	15.1	31	114	58.8
5100	62.6	60.7	56.8	0.93	15.0	31	117	58.9
5200	63.3	62.7	55.5	0.88	14.9	30	119	58.9
5300	65.1	65.7	55.4	0.84	15.1	30	122	58.8
5400	66.0	67.9	60.9	0.89	15.2	29	125	58.9
5500	66.6	69.7	61.1	0.87	15.2	29	127	58.9
5600	68.2	72.7	62.0	0.85	15.0	30	130	58.8
5700	69.8	75.7	65.8	0.87	14.4	30	134	58.8
5800	70.5	77.9	65.3	0.84	14.1	31	135	58.8
5900	71.1	79.8	67.3	0.84	13.4	30	137	58.7
6000	71.1	81.2	67.8	0.83	13.3	30	138	58.7
6100	72.3	83.9	68.0	0.81	13.0	30	141	59.0
6200	71.9	84.8	66.8	0.78	12.9	30	142	59.0
6300	73.0	87.5	67.1	0.76	12.9	29	144	58.8
6400	73.3	89.4	65.6	0.73	12.9	30	146	58.8
6500	73.8	91.4	66.5	0.73	12.9	30	148	58.7
6600	74.0	93.0	67.9	0.73	12.9	30	150	58.8
6700	74.2	94.7	68.7	0.72	13.1	30	152	58.7
6800	73.8	95.6	66.5	0.69	13.2	30	152	58.7
6900	74.9	98.5	69.3	0.70	13.2	30	155	58.7
7000	75.2	100.3	70.1	0.70	13.2	30	156	58.7
7100	79.8	107.9	81.5	0.75	13.2	30	167	58.6
7200	88.0	120.6	89.3	0.74	12.5	30	187	58.5
7300	88.1	122.4	90.9	0.74	12.4	30	189	58.5
7400	88.9	125.2	93.6	0.74	12.2	30	194	58.5
7500	90.0	128.5	105.1	0.82	11.3	31	197	58.4
7600	88.4	127.9	106.7	0.83	11.2	30	199	58.3
7700	87.9	128.9	108.8	0.84	10.9	29	202	58.3

7800	88.0	130.7	106.2	0.81	10.6	29	205	58.3
7900	89.1	134.0	104.6	0.78	10.6	29	208	58.3
8000	89.2	135.9	102.0	0.75	10.6	30	207	58.4
8100	90.1	138.9	96.7	0.69	10.9	29	212	58.4
8200	90.2	140.8	93.6	0.66	11.3	28	212	58.5
8300	88.3	139.5	93.4	0.67	11.6	29	208	58.5
8400	86.4	138.2	87.4	0.63	11.8	29	208	58.6
8500	85.5	138.4	83.3	0.60	12.6	29	209	58.6

Next we installed the ceramic coated DynoPort single pipe. This one revved a bit higher than the SLP. This one, too, had more airflow than the stock pipe adding to the leaner more powerful A/F mixture. Since the DynoPort pipe peaked a hundred revs higher than the SLP, it received lower even leaner fuel flow because in that area of the map, fuel flow declines as revs climb. Here it is, 11 HP more than stock.

D7 reflash, 93 ethanol gas, wires disconnected, DynoPort pipe and stock muffler

EngSpd	STPTRq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	Psig
6000	70.5	80.6	68.9	0.85	12.5	30	135	58.2
6100	70.0	81.3	66.2	0.81	12.4	30	136	58.3
6200	71.2	84.1	66.7	0.79	12.4	30	138	58.1
6300	71.0	85.2	65.3	0.76	12.3	30	140	58.2
6400	72.0	87.8	67.6	0.77	12.3	30	141	58.2
6500	73.3	90.8	68.3	0.75	12.4	29	145	58.0
6600	72.4	91.0	66.1	0.72	12.4	29	146	58.0
6700	73.6	93.9	64.9	0.69	12.5	30	148	58.2
6800	73.4	95.1	63.2	0.66	12.6	30	150	58.2
6900	72.8	95.7	69.5	0.72	12.7	30	151	58.2
7000	73.3	97.7	79.9	0.81	12.6	30	158	58.1
7100	74.0	100.1	80.4	0.80	12.5	30	161	57.9
7200	76.9	105.4	84.0	0.79	12.2	30	166	57.9
7300	81.4	113.1	89.1	0.78	11.7	30	174	57.9
7400	82.4	116.1	89.1	0.76	11.5	30	177	57.9
7500	85.5	122.1	102.7	0.84	10.6	30	187	57.8
7600	83.9	121.4	105.8	0.87	10.3	30	191	57.8
7700	83.7	122.7	104.5	0.85	10.0	30	193	57.8
7800	84.5	125.4	104.1	0.83	9.9	30	197	57.8
7900	85.2	128.1	105.7	0.82	9.9	30	198	57.8
8000	87.5	133.2	103.3	0.77	10.1	29	202	57.8
8100	87.7	135.2	97.9	0.72	10.3	29	203	57.8
8200	88.0	137.5	95.8	0.69	10.6	29	204	58.0
8300	88.1	139.3	91.2	0.65	11.1	28	205	57.9
8400	88.4	141.5	83.6	0.59	11.6	29	204	58.0
8500	86.2	139.4	77.4	0.55	12.1	30	203	58.2



Next we decided to reduce fuel flow with a Power Commander III fuel controller. But before we did that, we decided to see how the stock ECU only with ultra safe mapping would work with ethanol fuel combined with ethanol wire *plugged* in the non-ethanol mode, about 5% leaner. With the wires plugged and stock exhaust we made three more HP—133 at peak. But while warming the engine, heating the pipe before this run we found a sure-death zone at 42% throttle opening and 5500 RPM it was registering super-lean 16.6/1, right where you might be on a long fast trail run! Unplugging in the wires, and going back to 42% 5500 A/F registered a lean but safe 14.5/1. Trying this sort of trickery to use ethanol fuel with wires in the leaner non-ethanol mode can make a few more HP, but might bite you hard in the midrange. Before going any farther, we used the PCIII to dial in 15% more fuel in that exact spot and now at 42% 5500 it is 14.6/1. That small area of added fuel would become part of every PCIII map we would make for the Dragon 700. That midrange fuel adder was deemed necessary, in case one would acquire ethanol fuel from non-marked pumps while wires were connected. But that change also would allow PCIII tuners the luxury of using ethanol fuel with an ethanol-based PCIII map, and use ethanol wires to quickly add power for racing on a lake without fear of midrange seizures!

Here is how we isolated the problem as this 8-lines of data demonstrate: we compared part throttle A/F ratio with wires both ways. Here, two data points were taken at each throttle position WITH ETHANOL FUEL USED as follows:

WIRES DISCONNECTED lines 1&2 42%, 3&4 50% (all very safe)

WIRES CONNECTED lines 5&6 42% (**danger zone**), 7&8 50% (not bad there)

NOTE: after this data was recorded, PCIII midrange map was fattened precisely to rectify the Wires-connected 42% TP at 5500 lean area, and enrichen wires-disconnected A/F ratio to @13/1.

EngSpd	STPTrq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	psig
5610	53.0	56.6	42.2	0.74	14.5	27	92	60.1
5590	53.0	56.5	46.7	0.82	14.2	27	92	60.1
5630	58.6	62.8	57.7	0.91	12.5	27	105	60.1
5580	58.1	61.7	53.5	0.86	12.4	28	104	60.0
5580	49.8	52.9	35.0	0.66	16.2	28	90	60.2
5580	50.4	53.5	37.3	0.69	16.6	27	90	60.2
5610	65.2	69.6	57.3	0.82	13.8	29	125	60.0
5600	66.2	70.6	60.7	0.85	13.8	28	125	60.0

With the lean-area behind us we used the PCIII to reduce that huge pile of fuel at 7750, then add some fuel beyond 8250 to provide a flat fuel curve from valve opening to 8500, especially to address the DynoPort pipe's higher RPM HP peak. Since Bill would be running his stock pipe, we created a slightly richer than optimal map with wires disconnected that he could expect to very safely run low octane Tug Hill bar gas. Then, for running on better fuel he can quickly connect the wires with a dash-mounted toggle switch, and add four HP. Here is the conservative but still powerful DynoTech PCIII stock pipe map for ethanol fuel.

D7 reflash, with DTR PCIII D7 stock pipe map, wires disconnected

EngSpd	STPTrq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	psig
4900	59.7	55.7	54.5	0.97	14.4	29	113	56.8
5000	60.5	57.6	53.3	0.92	14.3	29	115	56.8
5100	60.3	58.6	54.5	0.92	14.3	29	117	56.7
5200	62.9	62.3	58.8	0.94	14.3	29	120	56.8
5300	63.6	64.2	55.8	0.86	14.3	29	122	56.8
5400	65.2	67.0	59.3	0.88	14.6	29	125	56.8
5500	65.4	68.5	59.2	0.86	14.7	28	127	56.7
5600	67.1	71.5	58.0	0.81	14.6	29	130	56.8
5700	67.9	73.7	61.8	0.83	14.4	28	132	56.8
5800	69.5	76.8	63.7	0.83	13.7	30	135	56.8
5900	69.7	78.3	65.7	0.83	13.4	28	137	56.4
6000	70.6	80.6	64.3	0.79	13.1	28	139	56.6
6100	71.4	82.9	68.8	0.83	12.9	29	141	56.8
6200	71.5	84.3	66.8	0.79	12.8	29	143	56.7
6300	73.4	88.1	64.9	0.73	12.8	29	146	56.8
6400	73.8	90.0	64.5	0.71	12.8	28	148	56.8
6500	73.9	91.5	65.2	0.71	13.0	28	150	56.8
6600	74.7	93.9	68.1	0.72	13.0	29	152	56.7
6700	75.8	96.7	67.7	0.70	13.1	30	155	56.8
6800	75.0	97.1	68.0	0.70	13.1	30	155	56.8
6900	76.1	100.0	70.9	0.71	13.1	30	158	56.7

7000	77.8	103.7	75.1	0.72	13.1	29	164	56.7
7100	81.9	110.7	83.1	0.75	13.0	29	178	56.6
7200	86.0	117.8	90.6	0.76	12.7	29	187	56.6
7300	87.6	121.7	88.2	0.72	12.4	29	191	56.5
7400	89.9	126.7	93.0	0.73	12.3	29	196	56.5
7500	90.2	128.9	97.4	0.75	12.1	30	199	56.5
7600	90.7	131.3	99.4	0.75	11.8	30	200	56.5
7700	90.7	133.0	100.9	0.75	11.6	30	203	56.5
7800	90.5	134.5	96.2	0.71	11.5	30	205	56.3
7900	90.6	136.3	95.9	0.70	11.5	29	207	56.5
8000	89.3	136.1	94.2	0.69	11.6	28	209	56.6
8100	85.8	132.4	92.1	0.69	11.6	28	208	56.7
8200	83.4	130.2	94.3	0.72	11.6	29	206	56.6

We tuned the PCIII for each of the aftermarket pipes we had. This was conservative but powerful with A/F ratio close to 12/1 (max power is usually achieved at 13/1). Here are the two dyno tests of the final DTR PCIII aftermarket pipe maps plus the one stock pipe map with wires connected by switch:

D7 reflash, Ethanol fuel, wires disconnected, DTR SLP single pipe map

EngSpd	STPTrq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	psig
5000	60.0	57.1	53.6	0.93	15.9	27	116	59.6
5100	62.4	60.6	54.5	0.89	15.9	26	120	59.6
5200	62.7	62.1	55.0	0.88	15.8	26	121	59.6
5300	64.7	65.3	55.0	0.83	15.7	25	125	59.6
5400	66.7	68.6	56.4	0.82	15.8	25	127	59.8
5500	68.4	71.6	59.2	0.82	15.8	25	131	59.6
5600	68.7	73.3	60.6	0.82	15.7	25	133	59.6
5700	70.0	75.9	60.8	0.79	15.4	26	136	59.6
5800	71.1	78.5	61.0	0.77	15.0	27	138	59.5
5900	71.9	80.7	64.4	0.79	14.1	27	141	59.5
6000	72.1	82.3	65.6	0.79	13.6	26	142	59.5
6100	72.6	84.3	66.1	0.78	13.4	26	144	59.5
6200	73.4	86.6	64.9	0.74	13.2	26	146	59.4
6300	73.7	88.5	67.5	0.76	13.2	26	148	59.5
6400	74.3	90.6	68.5	0.75	13.2	26	149	59.5
6500	75.5	93.5	70.1	0.75	13.3	27	152	59.5
6600	75.9	95.4	65.5	0.68	13.5	26	155	59.5
6700	75.6	96.5	68.3	0.70	13.5	26	157	59.5
6800	77.4	100.2	68.7	0.68	13.6	26	163	59.5
6900	76.7	100.8	74.1	0.73	13.6	26	165	59.4
7000	76.7	102.3	76.9	0.75	13.5	26	166	59.4
7100	77.1	104.3	78.4	0.75	13.5	26	168	59.3
7200	79.3	108.7	81.7	0.75	13.5	26	174	59.3
7300	81.9	113.8	83.3	0.73	13.4	26	181	59.3
7400	90.3	127.3	86.2	0.67	13.3	27	200	59.3
7500	92.5	132.1	90.8	0.68	13.0	27	205	59.2
7600	93.0	134.6	92.9	0.69	12.7	27	207	59.2

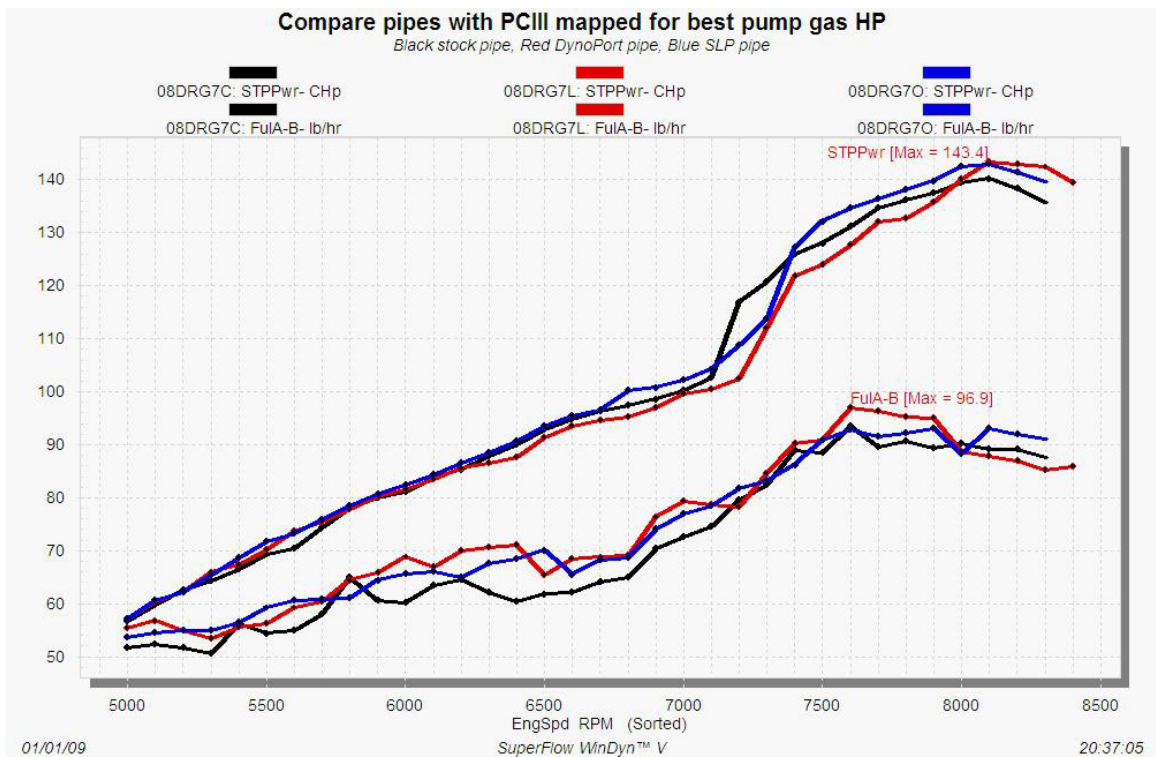
7700	93.0	136.4	91.6	0.67	12.5	27	210	59.2
7800	93.0	138.1	92.1	0.66	12.5	27	211	59.3
7900	92.9	139.8	93.0	0.66	12.5	27	213	59.2
8000	93.5	142.4	88.2	0.62	12.7	27	214	59.3
8100	92.7	143.0	93.0	0.65	12.7	27	216	59.3
8200	90.6	141.5	92.0	0.65	12.6	27	216	59.2
8300	88.3	139.6	91.0	0.65	12.5	27	216	59.3

D7 reflash, ethanol fuel, wires disconnected, DTR PCIII DynoPort Single pipe map

EngSpd	STPTrq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	psig
5000	59.9	57.1	55.3	0.96	15.4	28	114	59.0
5100	62.1	60.3	56.8	0.94	15.1	28	117	59.0
5200	62.8	62.1	54.9	0.88	15.0	27	119	59.0
5300	65.3	65.9	53.5	0.81	14.9	27	123	59.0
5400	65.4	67.3	55.6	0.82	14.9	27	124	59.0
5500	67.0	70.2	56.3	0.80	14.9	28	126	59.0
5600	69.0	73.6	59.2	0.80	14.6	27	131	59.0
5700	69.4	75.3	60.4	0.80	14.3	26	132	59.0
5800	70.5	77.9	64.4	0.82	13.8	27	134	58.9
5900	71.5	80.3	65.8	0.81	13.2	28	136	58.9
6000	71.3	81.5	68.8	0.84	12.9	27	137	58.9
6100	71.9	83.5	67.0	0.80	12.6	28	138	58.9
6200	72.5	85.6	70.0	0.81	12.4	28	140	58.9
6300	72.1	86.5	70.7	0.81	12.3	28	141	58.8
6400	71.9	87.6	71.0	0.81	12.3	28	141	58.9
6500	73.8	91.3	65.3	0.71	12.4	27	145	58.9
6600	74.4	93.5	68.5	0.73	12.5	27	148	58.9
6700	74.2	94.6	68.8	0.72	12.5	27	150	58.9
6800	73.6	95.3	69.0	0.72	12.5	27	151	58.5
6900	73.9	97.1	76.4	0.78	12.2	27	155	58.4
7000	74.7	99.5	79.4	0.79	12.0	28	163	59.0
7100	74.3	100.4	78.6	0.78	12.0	28	163	59.0
7200	74.8	102.5	78.2	0.76	12.0	28	167	58.9
7300	80.6	112.1	84.6	0.75	12.0	28	174	58.8
7400	86.4	121.7	90.3	0.74	11.7	29	182	58.7
7500	86.8	123.9	90.8	0.73	11.3	28	186	58.6
7600	88.3	127.7	96.9	0.75	11.2	27	190	58.6
7700	90.1	132.0	96.3	0.72	11.1	27	194	58.6
7800	89.4	132.7	95.2	0.71	11.0	27	196	58.6
7900	90.3	135.8	95.0	0.69	11.0	27	198	58.6
8000	91.9	140.0	88.7	0.63	11.2	25	202	58.7
8100	93.0	143.4	87.8	0.61	11.6	27	203	58.7
8200	91.6	143.0	87.0	0.61	11.9	29	203	58.7
8300	90.1	142.4	85.2	0.60	11.9	29	204	58.7
8400	87.2	139.5	85.9	0.61	11.9	29	204	58.7

D7 reflash, Ethanol fuel, ethanol wires connected, DTR PCIII map, stock exhaust

EngSpd	STPTrq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	Lb/hph	Ratio	degF	scfm	psig
5000	59.5	56.7	51.7	0.91	15.9	29	113	54.6
5100	61.5	59.7	52.4	0.87	15.6	29	117	54.9
5200	63.2	62.6	51.7	0.82	15.7	30	120	54.8
5300	63.8	64.4	50.6	0.78	15.5	30	122	54.6
5400	64.7	66.5	56.2	0.84	15.4	29	124	54.6
5500	66.1	69.2	54.4	0.78	15.3	27	127	54.6
5600	66.0	70.4	54.9	0.77	15.1	27	129	54.6
5700	68.5	74.3	58.0	0.77	15.0	28	133	54.7
5800	70.6	78.0	64.9	0.83	14.7	30	135	54.5
5900	71.2	79.9	60.6	0.75	14.3	29	137	54.5
6000	71.0	81.1	60.1	0.74	14.1	28	138	54.5
6100	72.0	83.6	63.5	0.75	13.9	27	140	54.5
6200	72.3	85.3	64.5	0.75	13.8	27	142	54.5
6300	73.3	87.9	62.1	0.70	13.8	27	145	54.6
6400	73.9	90.0	60.4	0.67	13.8	27	147	54.5
6500	74.9	92.7	61.8	0.66	13.8	28	150	54.5
6600	75.4	94.8	62.2	0.65	13.8	28	152	54.5
6700	75.5	96.3	64.0	0.66	13.7	29	153	54.5
6800	75.3	97.4	64.9	0.66	13.7	29	154	54.5
6900	75.1	98.6	70.4	0.71	13.7	29	156	54.5
7000	75.3	100.3	72.5	0.72	13.5	29	160	54.4
7100	75.9	102.7	74.5	0.72	13.2	30	163	54.4
7200	85.3	116.9	79.5	0.68	12.8	29	182	54.4
7300	86.9	120.7	82.3	0.68	12.9	29	188	54.4
7400	89.3	125.9	89.0	0.70	12.9	29	193	54.4
7500	89.6	128.0	88.4	0.69	12.7	28	196	54.3
7600	90.6	131.2	93.4	0.71	12.4	29	200	54.3
7700	91.9	134.7	89.5	0.66	12.1	28	203	54.3
7800	91.7	136.1	90.6	0.66	12.1	28	205	54.3
7900	91.5	137.6	89.3	0.64	12.2	28	207	54.6
8000	91.5	139.4	90.3	0.64	12.2	27	210	54.5
8100	90.9	140.2	89.1	0.63	12.1	27	209	54.4
8200	88.6	138.4	89.2	0.64	12.2	29	208	54.3
8300	85.9	135.8	87.5	0.64	12.3	26	209	54.4



After all of this was complete, Bill went back to his stock pipe to see what gains might be had by lowering his engine coolant temp by 20-25 degrees F. He removed the thermostat and used just the rubber grommet to seal the [former] thermostat housing. In this case, he picked up over two HP at peak with the identical PCIII setting. Here is the cool-engine dyno test of Bill's sled, the way he will ride it on the trail. Note that we would expect similar increases with the DP and SLP singles if coolant temp were dropped accordingly.

D7 reflash, ethanol fuel, DTR PCIII stock pipe map, wires connected, 100 degree F

EngSpd	STPTrq	STPPwr	FulA-B	BSFA-B	LAMAF1	AirTmp	Air 2	FuelP
RPM	Clb-ft	CHp	lb/hr	lb/hph	Ratio	degF	scfm	psig
5800	68.7	75.9	68.4	0.90	13.9	30	133	61.1
5900	69.3	77.9	64.9	0.83	13.7	30	135	61.1
6000	70.3	80.4	66.3	0.82	13.4	30	137	61.1
6100	71.6	83.1	66.7	0.80	13.3	29	139	61.1
6200	71.3	84.2	67.5	0.80	13.3	30	140	61.1
6300	72.6	87.1	63.2	0.72	13.5	30	143	61.1
6400	73.8	90.0	64.8	0.72	13.5	29	146	61.1
6500	74.1	91.8	63.4	0.69	13.6	29	149	61.1
6600	74.8	94.0	62.7	0.66	13.7	29	150	61.1
6700	76.0	97.0	65.3	0.67	13.7	30	153	61.1
6800	75.6	97.9	65.3	0.66	13.8	29	155	61.1
6900	75.2	98.8	67.8	0.68	13.8	29	156	61.1
7000	75.6	100.8	69.1	0.68	13.8	29	157	61.1
7100	81.0	109.5	74.4	0.68	13.8	29	175	61.0
7200	81.9	112.3	75.4	0.67	13.8	29	178	61.0
7300	86.6	120.4	81.3	0.67	13.7	29	188	60.8

7400	86.6	122.0	84.3	0.69	13.7	29	189	60.8
7500	91.3	130.4	87.0	0.67	13.2	30	197	60.9
7600	91.1	131.8	89.8	0.68	13.1	30	198	60.9
7700	91.9	134.7	89.5	0.66	12.6	30	201	60.8
7800	91.8	136.3	86.4	0.63	12.6	29	203	60.9
7900	92.4	139.0	87.4	0.63	12.6	29	206	60.9
8000	92.8	141.3	86.3	0.61	12.8	29	208	60.9
8100	92.3	142.3	83.5	0.59	12.9	30	208	60.9
8200	90.6	141.4	89.8	0.63	12.8	29	210	60.8
8300	85.4	135.0	90.6	0.67	12.6	28	207	60.9
8400	82.6	132.1	84.5	0.64	12.6	28	205	60.9

