DYNO COMPARISON OF 03 04 05 06 ECU's on Scott Norine's wife's (AKA Predator 711) 04 F7 EFI. Plus preliminary evaluation of new D&D Ypipe, and new Monster Single.

Scott is moving from NY back to the Milwaukee WI area—his wife is an OBGYN who has taken a good position there, and Scott has so many pals at GM, and he does such a great job for them in dealing with the dealers, that he has a "ticket to fly" so now he's back about where he started with his original boss at GM in WI. So this was his last chance to tweek his newest F7, an 04 EFI bone stocker that his wife would ride this winter (every wife's sled must be dynotuned). From now on, dyno sessions for Scott and his wife will be 700 miles one way. Or, he can just head west to Bikeman's dyno on the WI MN border and save a few hundred miles.

One interesting part of Scott's test session is that he has an armful of ECU's—03,04,05 and 06 to compare on the same sled. Yes he has triangles and squares but our observation has been not much difference whether fitted with correct injectors or not.

Plus we were anxious to try the D&D Ypipe with the stock pipe, D&D Monster single, and the Bikeman Mod stock single.

As usual, Bill DiFranco aka Looneytoon was with us, providing an entertaining mix of helpful assistance combined with a mix of some Joe Pesci-like agitation.

Here is Scott's wife Dierdre's 04 square F7, fitted with Scott's 03 square ECU.
F7SN05 135.7
Stock 04 F7, 03 ECU

EngSpd	STPTrq	STPPwr	FulA+B	Air1+2	Time-S	A/F	BSFC	AirTmp
RPM	Clb-ft	CHp	lb/hr	scfm	Second	Ratio	lb/hph	degF
5500	63.1	66.1	44.8	144.3	35.51	14.74	0.705	72
5600	63.5	67.7	44.9	144.8	35.86	14.76	0.689	72
5700	66.4	72.1	46.8	149.1	36.69	14.57	0.674	71
5800	67.8	74.9	47.4	151.7	37.09	14.65	0.657	71
5900	69.9	78.5	50.4	157.2	37.91	14.28	0.667	71
6000	71.9	82.1	53.1	162.2	38.81	14.01	0.671	72
6100	72.2	83.9	54.3	163.5	39.39	13.78	0.673	72
6200	74.7	88.2	55.2	165.9	40.12	13.76	0.651	72
6300	75.4	90.5	55.7	169.1	40.81	13.91	0.641	72
6400	75.7	92.3	56.3	169.7	41.08	13.81	0.634	72
6500	78.9	97.6	58.7	175.1	41.78	13.65	0.624	71
6600	80.9	101.7	59.9	181.5	42.31	13.87	0.611	71
6700	82.3	105.1	61.4	187.1	43.09	13.95	0.607	71
6800	83.6	108.3	62.1	194.1	43.93	14.31	0.595	71
6900	83.7	110.1	62.5	197.1	44.32	14.43	0.591	72
7000	85.7	114.2	63.7	203.9	45.14	14.65	0.579	72
7100	86.1	116.4	64.2	207.7	45.61	14.81	0.573	72
7200	87.6	120.1	66.4	210.6	45.92	14.52	0.575	73

7300	90.8	126.2	87.8	227.6	46.81	11.87	0.723	72
7400	92.8	130.7	93.6	236.7	47.77	11.58	0.743	71
7500	93.4	133.3	96.7	240.8	48.34	11.41	0.752	71
7600	93.4	135.1	100.5	243.5	49.09	11.09	0.773	72
7700	92.6	135.7	102.4	246.1	49.72	11.01	0.784	72
7800	89.1	132.4	104.9	249.1	50.61	10.87	0.823	72
7900	87.3	131.3	104.3	250.7	51.16	11.01	0.826	72
8000	83.6	127.3	98.9	253.7	52.37	11.74	0.808	72

Scott's 04 square ECU was fitted with these very similar results.
F7SN01 133.4
04 F7, 04 ECU

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	FulA+B lb/hr	Air1+2 scfm	Time-S Second	A/F Ratio	BSFC lb/hph	AirTmp degF
5500	63.3	66.3	47.3	145.1	25.08	14.03	0.742	72
5600	64.2	68.4	47.1	146.1	25.41	14.19	0.716	72
5700	67.6	73.3	50.3	150.1	26.11	13.66	0.714	73
5800	69.6	76.9	52.2	155.8	27.01	13.71	0.704	73
5900	71.1	79.9	53.3	160.1	27.75	13.74	0.694	72
6000	71.6	81.9	53.8	162.4	28.44	13.82	0.684	72
6100	71.9	83.5	54.1	163.8	28.74	13.88	0.672	72
6200	74.7	88.2	55.4	167.9	29.68	13.87	0.653	72
6300	75.4	90.4	55.5	168.9	30.21	13.93	0.638	72
6400	76.8	93.6	57.2	171.3	30.65	13.71	0.635	72
6500	79.5	98.4	59.9	177.4	31.47	13.56	0.633	72
6600	80.5	101.2	61.3	180.9	31.91	13.51	0.629	72
6700	83.5	106.6	62.7	189.1	32.83	13.81	0.612	73
6800	83.3	107.9	63.6	191.9	33.23	13.81	0.613	73
6900	84.9	111.5	66.4	198.4	33.85	13.68	0.619	72
7000	86.3	115.1	67.4	204.9	34.54	13.92	0.609	72
7100	87.5	118.3	69.2	210.3	35.29	13.91	0.608	72
7200	89.1	122.1	78.4	217.8	35.76	12.72	0.667	72
7300	90.2	125.1	91.3	229.1	36.49	11.48	0.759	72
7400	92.2	129.6	97.6	237.1	37.28	11.12	0.783	72
7500	92.4	132.1	101.4	241.1	38.02	10.88	0.799	72
7600	92.2	133.4	102.6	243.5	38.59	10.86	0.799	72
7700	90.9	133.2	104.9	246.7	39.41	10.77	0.819	72
7800	88.2	131.2	107.7	248.6	40.33	10.57	0.855	72
7900	85.1	127.8	104.7	250.5	41.06	10.95	0.852	72
8000	75.8	115.5	102.1	251.3	42.62	11.27	0.921	73

Next we have Dierdre's sled fitted with Scott's 05 square ECU. Note that both torque and HP are dramatically increased.

F7SN04 140.8

04 F7, 05 ECU

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	FulA+B lb/hr	Air1+2 scfm	Time-S Second	A/F Ratio	BSFC lb/hph	AirTmp degF
5500	65.1	68.1	45.9	146.3	35.78	14.59	0.701	72
5600	64.9	69.2	45.3	147.2	36.18	14.85	0.681	71
5700	67.4	73.1	45.7	150.2	36.94	15.04	0.649	71
5800	69.2	76.5	46.9	154.3	37.56	15.06	0.637	71
5900	70.1	78.7	48.9	158.5	38.35	14.84	0.645	71
6000	71.8	82.1	51.4	162.4	39.24	14.46	0.651	71
6100	71.8	83.4	51.6	163.3	39.63	14.49	0.642	71
6200	73.8	87.1	52.6	166.4	40.39	14.48	0.627	71
6300	74.5	89.4	52.2	167.9	40.88	14.72	0.605	70
6400	75.9	92.5	52.8	172.6	41.47	14.96	0.593	71
6500	76.6	94.8	53.6	175.4	41.86	14.98	0.588	72
6600	78.4	98.6	55.5	180.4	42.61	14.88	0.585	72
6700	81.1	103.5	58.5	187.6	43.47	14.68	0.587	72
6800	81.9	106.1	60.1	191.6	43.93	14.59	0.588	71
6900	85.5	112.3	65.1	201.2	44.82	14.17	0.611	71
7000	86.1	114.8	66.4	205.3	45.34	14.15	0.611	71
7100	87.5	118.2	66.8	211.6	46.14	14.51	0.586	71
7200	88.3	121.1	67.6	215.5	46.73	14.59	0.579	71
7300	89.6	124.6	70.5	218.6	46.96	14.19	0.588	72
7400	92.8	130.7	89.4	234.1	47.85	11.98	0.711	71
7500	94.5	135.1	92.3	241.1	48.52	11.96	0.709	70
7600	95.6	138.3	95.6	245.8	49.54	11.77	0.717	71
7700	95.5	139.9	95.2	247.5	49.89	11.92	0.706	71
7800	94.8	140.8	95.3	250.8	50.65	12.05	0.701	70
7900	93.6	140.8	94.7	253.2	51.21	12.24	0.698	71
8000	90.8	138.3	93.8	257.1	52.11	12.54	0.703	70

We're not sure how Scott got his hands on an 06 ECU, but here it is, although it's a triangle, it delivers similar fuel flow, torque and HP as the square 05 box.

F7SN07 140.7

04 F7, 06 ECU

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	FulA+B lb/hr	Air1+2 scfm	Time-S Second	A/F Ratio	BSFC lb/hph	AirTmp degF
5500	62.9	65.8	42.5	146.1	50.61	15.73	0.671	72
5600	63.5	67.7	42.4	146.2	50.93	15.78	0.651	72
5700	66.1	71.6	44.1	148.6	51.45	15.42	0.641	72
5800	68.9	76.1	46.4	156.5	52.69	15.44	0.633	71
5900	69.1	77.6	46.2	158.5	53.11	15.71	0.618	71
6000	70.3	80.3	48.8	160.8	53.69	15.08	0.631	72
6100	72.2	83.8	52.1	163.8	54.39	14.42	0.644	72
6200	73.2	86.2	53.3	165.5	54.83	14.21	0.642	72

6300	75.4	90.4	52.8	169.3	55.73	14.68	0.606	72
6400	75.2	91.7	53.2	171.9	56.16	14.79	0.601	70
6500	77.1	95.4	54.6	176.8	56.86	14.82	0.593	70
6600	78.3	98.4	55.5	179.9	57.34	14.84	0.585	71
6700	81.7	104.3	59.5	188.6	58.22	14.51	0.592	71
6800	81.8	106.1	60.1	191.1	58.55	14.55	0.588	71
6900	84.7	111.3	64.8	200.2	59.38	14.14	0.604	71
7000	86.3	115.1	66.4	206.3	0.14	14.22	0.599	71
7100	87.7	118.6	67.8	211.3	0.85	14.27	0.594	72
7200	88.1	120.7	68.7	214.3	1.25	14.28	0.591	72
7300	91.1	126.6	80.4	223.8	1.78	12.74	0.661	72
7400	92.3	130.1	88.6	233.5	2.44	12.06	0.707	72
7500	94.6	135.1	93.4	242.1	3.36	11.87	0.716	70
7600	95.2	137.8	95.6	244.8	3.96	11.72	0.721	71
7700	95.6	140.2	96.6	247.3	4.53	11.72	0.715	72
7800	94.7	140.7	96.3	250.3	5.31	11.91	0.711	72
7900	93.2	140.2	94.3	253.5	6.11	12.31	0.699	72
8000	90.5	137.8	92.7	256.5	6.91	12.67	0.699	72
8100	83.7	129.1	91.7	259.1	8.18	12.93	0.738	71

Leaving the 06 triangle box in place, Scott and Bill installed a new D&D Ypipe with the stock single pipe. Note that we picked up about 2% airflow increase and nearly 2% more torque and HP!

F7SN10 142.5

04 F7, 06 ECU, D&D Y pipe, stock single pipe

EngSpd	STPTrq	STPPwr	FulA+B	Air1+2	Time-S	A/F	BSFC	AirTmp
RPM	Clb-ft	CHp	lb/hr	scfm	Second	Ratio	lb/hph	degF
5500	64.1	67.1	45.3	146.5	52.59	14.81	0.703	73
5600	65.7	70.1	45.9	147.4	53.77	14.71	0.681	73
5700	66.6	72.2	46.2	148.5	54.19	14.71	0.665	73
5800	69.2	76.2	46.6	153.3	54.93	15.06	0.636	73
5900	70.7	79.5	48.4	158.6	55.68	15.01	0.633	72
6000	71.2	81.1	50.6	162.3	56.47	14.68	0.648	71
6100	71.7	83.2	51.4	162.2	56.89	14.44	0.641	72
6200	72.6	85.7	53.1	163.3	57.51	14.11	0.642	72
6300	74.3	89.1	53.9	166.2	58.05	14.11	0.629	72
6400	75.9	92.5	53.4	169.7	58.93	14.55	0.611	72
6500	76.4	94.6	54.1	172.5	59.31	14.61	0.594	72
6600	78.3	98.4	55.8	177.9	59.99	14.59	0.589	72
6700	80.7	102.9	58.9	182.7	0.68	14.21	0.594	72
6800	81.9	106.1	60.3	188.2	1.28	14.27	0.591	72
6900	83.2	109.3	61.6	191.7	1.51	14.25	0.585	72
7000	86.9	115.8	66.7	202.6	2.54	13.91	0.598	72
7100	88.6	119.7	67.6	209.2	3.31	14.17	0.586	72
7200	89.5	122.7	68.8	215.4	3.96	14.33	0.582	71

7300	92.4	128.4	83.3	229.3	4.56	12.61	0.673	71
7400	94.3	132.8	88.1	236.5	4.99	12.31	0.686	70
7500	96.6	138.1	92.1	245.8	5.91	12.22	0.691	70
7600	96.2	139.3	94.5	248.5	6.46	12.04	0.703	70
7700	96.9	142.1	96.1	252.3	7.41	12.02	0.703	72
7800	95.9	142.5	95.7	254.2	8.18	12.16	0.698	73
7900	94.5	142.1	96.2	255.4	8.51	12.15	0.704	73
8000	92.4	140.8	93.7	258.9	9.31	12.65	0.692	73
8100	82.7	127.6	97.8	261.4	11.05	12.24	0.797	72

Next Greedy Scott, of course looking out for his fine wife who surely needs all the HP avaiable, installed a two degree advanced key to go along with the 06 box and D&D Ypipe. Dierdre will surely be pleased. But, during the time it took Scott and Bill to change keyways, air temp climbed into the miserable high 70's where the stock Cat ECU seems to reverse direction, enrichening as temp climbs. So to duplicate our prior A/F ratio, we used a D&D pac valve to drop fuel pressure, and get us the 94 lb/hr fuel flow we needed at 78 degrees F.

F7SN20 146.4

04 F7, 06 ECU, 2 degree key, D&D y pipe, drop fuel pressure to compensate for 78 degree air temp

EngSpd	STPTrq	STPPwr	FulA+B	Air1+2	Time-S	A/F	BSFC	AirTmp
RPM	Clb-ft	CHp	lb/hr	scfm	Second	Ratio	lb/hph	degF
6700	80.1	102.1	54.9	185.2	29.73	15.44	0.563	78
6800	83.5	108.1	57.8	190.3	30.81	15.07	0.559	78
6900	84.7	111.2	58.5	192.3	31.09	15.05	0.551	78
7000	88.1	117.4	61.1	202.7	32.07	15.19	0.544	78
7100	89.1	120.4	62.3	208.1	32.74	15.28	0.542	78
7200	89.7	122.9	63.6	214.1	33.41	15.41	0.541	78
7300	89.7	124.7	62.9	215.2	33.57	15.66	0.528	78
7400	91.4	128.7	64.3	218.5	33.74	15.55	0.523	78
7500	99.5	142.1	89.9	243.5	35.41	12.41	0.662	78
7600	99.7	144.3	92.9	247.1	36.15	12.17	0.674	78
7700	99.3	145.6	94.8	249.1	36.75	12.02	0.681	78
7800	98.6	146.4	94.2	250.3	37.54	12.16	0.674	79
7900	95.6	143.9	94.6	251.6	38.15	12.17	0.689	79
8000	90.1	137.3	93.2	254.2	39.18	12.49	0.711	78

Meanwhile, we tested our Bikeman mod single that had added good HP to our tuned up F7carb w/ D&D Ypipe, and had added five HP to Matt Bennett's D&D F757 with stock Ypipe, but in this case, Dierdre's F7 gained no HP with the Bikeman mod pipe—perhaps because the lengthened stock pipe hit so hard at EG valve opening that the fuel flow jumped to 102-104 lb/hr, perhaps negating the HP increases we've seen prior to this. We're surmising that the rapid acceleration of the Bikeman mod pipe causes the ECU to blast extra fuel. We'll surely be doing more with the Bikeman single which has shown some excellent gains prior to this.

We purchased a D&D Monster single, which is designed for F8/F9's but some are experimenting with F7s. After several runs with the 06 ECU, we can say that this pipe would be best used with a Boondocker box since, because of it's high RPM power peak it goes wicked lean prior to peak.

There is no doubt this single can make 150 hp, but it needs way more than stock fuel flow to do that safely. A Boondocker should do this dandily. Though HP was climbing at 8500, I opted to stop the test there when I saw 14.22/1 A/F ratio (as dyno operator, I normally monitor A/F ratio and abort any test when my testicles begin to shrivel beyond 13.5/1). But here are the numbers with stock fuel pressure, 2 degree key.

F7SN22 148.6

04 F7, 06 ECU, 2 degree key, D&D Ypipe, D&D monster single, dyno run aborted at 8500

EngSpd	STPTrq	STPPwr	FulA+B	Air1+2	Time-S	A/F	BSFC	AirTmp
RPM	Clb-ft	CHp	lb/hr	scfm	Second	Ratio	lb/hph	degF
5700	62.2	67.5	43.9	140.9	15.51	14.69	0.681	78
5800	62.1	68.5	45.2	141.8	15.98	14.36	0.689	75
5900	61.8	69.4	45.1	142.3	16.18	14.47	0.678	76
6000	63.1	72.1	47.3	144.1	16.47	13.94	0.687	77
6100	63.7	74.1	51.6	145.6	16.86	12.92	0.731	77
6200	63.5	75.1	52.3	146.9	17.11	12.86	0.731	77
6300	64.1	76.8	53.3	148.1	17.36	12.71	0.726	77
6400	65.3	79.5	53.1	149.3	17.61	12.89	0.698	78
6500	67.9	84.1	54.3	151.2	17.94	12.75	0.677	78
6600	70.7	88.8	55.1	155.2	18.29	12.92	0.648	78
6700	70.9	90.5	57.4	159.1	18.55	12.69	0.665	78
6800	70.7	91.6	58.2	160.8	18.68	12.65	0.666	78
6900	74.9	98.4	65.5	170.9	19.51	11.94	0.697	78
7000	74.2	98.8	65.7	172.4	19.69	12.01	0.696	78
7100	75.2	101.7	67.2	176.7	19.94	12.04	0.692	78
7200	76.1	104.2	67.3	181.7	20.13	12.36	0.676	78
7300	77.9	108.3	71.1	186.4	20.32	12.01	0.688	78
7400	80.5	113.5	92.3	204.4	21.09	10.14	0.852	78
7500	80.3	114.7	90.8	207.2	21.24	10.44	0.829	78
7600	82.7	119.7	95.3	213.1	21.52	10.23	0.835	79
7700	83.6	122.5	97.2	215.8	21.69	10.16	0.831	78
7800	88.8	131.8	98.2	225.7	22.06	10.52	0.781	78
7900	90.1	135.6	97.3	230.8	22.45	10.86	0.751	78
8000	92.5	140.9	94.7	236.6	22.81	11.44	0.703	78
8100	93.7	144.5	91.1	241.5	23.14	12.13	0.661	78
8200	94.2	147.1	93.2	248.9	23.68	12.23	0.663	78
8300	93.6	147.9	91.9	252.3	24.03	12.57	0.651	78
8400	92.6	148.1	89.5	257.1	24.37	13.14	0.633	78
8500	91.8	148.6	84.8	263.4	24.86	14.22	0.597	78