Appendices

I. A Comparison of Training in Slalom, Sprint, and Wildwater

In attempting to capture what Greg Barton did for the 1987 season, extensive use has been made of his training log. The author believes, by the way, that logs from such champions are probably the most valuable resource a student of sports training can get and that not enough study has been made of them in the past. It is possible to go through these logs and summarize in charts the work done. One of the key modes of recording the work is the concept of "minutes per week" in several different categories, for the entire year. This is a format the author has used in books on slalom and wildwater racing, too, so someone interested in a cross-discipline comparison may, for the first time, consult the summary data in the following table for world champions in the three kayaking disciplines of slalom, sprint, and wildwater, for selected years.

Training Time in Average Minutes per Week

Richard Fox, Slalom, 1985
Total Training: 789 minutes

Whitewater Gates	379	Weights	81
Flatwater Gates	11	Stretch	58
Downriver Training	136	Bike/Swim/Run	92
River Play	32		
Water Training	558	Total Athletic Training	231

Greg Barton, Sprint, 1987
Total Training: 690 minutes

Flatwater	474	Weights	135
		Running	46
		Bike/Swim/Other	14
Total Water Training	474	Total Athletic Training	216*

* Numbers do not match exactly due to rounding.

Claude Benezit, Wildwater, 1981

Total Training: 566 minutes

Whitewater	68	Weights	68
Flatwater	302	Cross-Country Skiing	49
		Running	47
		Other	31
Total Water Training	370	Total Athletic Training	195

It's wrong to say that this data represents all "top" paddlers in the respective disciplines, but it suggests that slalom may take the most time, followed by sprint, and lastly wildwater. Furthermore, it suggests that top slalomists may spend a larger percent of their total training time in the boat than the others, followed by sprint, and then wildwater. Probably this is due to the fact that slalom requires more varied skills than sprint or wildwater and therefore requires more time in the boat to develop these skills. (For comparison, gymnasts often spend six or more hours per day perfecting their skills.) Total training time should therefore be greater for slalom, but continuous physical exertion is a lower percentage of the total because some of the training is idle time analyzing the water or the gates. It is not readily apparent, however, why wildwater should require less training time than sprint, and it may be just a difference in training methods between two individual athletes.

II. Barton's 1987 Total Training
(in minutes per week)

Week No.	Date	Total Train	Water Train	Total Athletic Train	Athletic Breakdown: Weights	Run	Bike	Swim	Other
42	11/3-9	588	282	306	156	60	90	0	0
41	11/10-16	318	66	252	108	30	0	108	6
40	11/17-23	642	384	258	138	36	48	36	0
39	11/24-30	882	498	384	246	18	72	48	0
38	12/1-7	684	438	246	222	0	0	24	0
37	12/8-14	510	198	312	174	48	54	30	6
36	12/15-21	522	198	324	198	84	90	0	24
35	12/22-28	624	162	462	264	84	0	36	6
34	12/29-1/4	108	54	54	54	0	0	0	0
33	1/5-11	504	331	173	125	48	0	0	0
32	1/12-18	618	336	282	210	36	36	0	0
31	1/19-25	609	321	288	156	72	0	0	60
30	1/26-2/1	683	329	354	228	84	42	0	0
29	2/2-8	642	333	309	220	47	42	0	0
28	2/9-15	588	258	330	216	114	0	0	0
27	2/10-22	660	336	324	222	102	0	0	0
26	2/23-3/1	798	360	438	228	108	102	0	0
25	3/2-8	847	415	432	234	126	60	12	0
24	3/9-15	612	384	228	198	30	0	0	0
23	3/16-22	876	528	348	198	54	96	0	0
22	3/23-29	834	558	276	168	48	60	0	0
21	3/30-4/5	942	738	204	162	42	0	0	0
20	4/6-12	816	498	318	210	54	36	18	0
19	4/13-19	756	510	246	132	48	48	18	0
18	4/20-26	948	744	204	150	54	0	0	0
17	4/27-5/3	582	492	90	54	30	0	6	0
16	5/4-10	678	534	144	108	36	0	0	0
15	5/11-17	912	690	222	186	36	0	0	0
14	5/18-24	546	522	24	0	24	0	0	0
13	5/25-31	714	624	90	78	12	0	0	0
12	6/1-7	696	546	150	108	42	0	0	0
11	6/8-14	774	684	90	54	36	0	0	0
10	6/15-21	678	660	18	0	18	0	0	0
9	6/22-28	822	678	144	66	30	48	0	0
8	6/29-7/5	828	702	126	78	48	0	0	0
7	7/6-12	894	702	192	102	0	30	0	60
6	7/13-19	858	708	150	120	30	0	0	0
5	7/20-26	610	544	66	48	18	0	0	0
4	7/27-8/2	714	648	66	36	30	0	0	0
3	8/3-9	737	695	42	0	24	0	0	18
2	8/10-16	570	540	30	0	30	0	0	0
1	8/17-23	678	630	48	0	48	0	0	0
Totals		28,902	19,858	9,044	5,655	1,919	954	336	180
Avg./Week		688	473	215	135	46	23	8	4

III. Barton's 1987 Monthly Workouts
(expressed as sessions per day)

Month	Workouts	1/day	2/day	3/day	4/day	5/day	off
November	51	6	15	5	0	0	4
December	49	8	16	3	0	0	4
January	42	14	14	0	0	0	3
February	46	10	18	0	0	0	0
March	58	7	18	5	0	0	1
April	58	7	15	7	0	0	0
May	57	10	11	7	1	0	1
June	70	4	8	11	3	1	3
July	63	6	12	11	0	0	2
August	59	6	4	9	2	2	1
Totals	553	78	131	58	6	3	19

NOTE: Five-a-days were done on race days when Barton had many heats and went for a warm-up, heat or race that many times in a day.

IV. Barton's 1987 Water Training Time

The notion of paddling on the water year-round always has struck this author as a key ingredient in rapid improvement in canoeing and kayaking, whether it be whitewater or flatwater, but for many years — and even today in some places — there is resistance to it. The author's theory is that what started out of necessity — it was simply too cold to paddle in European winters — acquired a false rationale. The rationale was that it was better to concentrate on weight lifting, running, cross-country skiing and general athletics for three or four months because it gave one a mental break from being in a boat. For many years, countries following this strategy could win the world championships or Olympics in both flatwater and whitewater, so it became the accepted way.

In retrospect, however, it appears that they were winning for other reasons. They were better-organized, had full-time athletes and government subsidies and they were not competing against athletes who could train on the water all year. What started out as a convenience then acquired a false rationale retarded the sport's development for a long time. The breakthrough to paddling hard on water all year round started with the American whitewater paddlers in the latter 1970's and led in fairly short order to their winning a number of world championship medals.

The development of year-round paddling in flatwater, ironically, seems to have come a bit later, with the emergence of the New Zealanders and Australians. Subsequently, people like Britain's Jeremy West and American Norman Bellingham were able to duplicate those benefits. It is possible that Greg Barton would have gotten better faster had he started paddling outdoors year-round sooner than he did.

In the following table, we can see a breakdown of the 1987 on-water time by percent speed. It is the only method this author knows of in any type of canoeing in which an athlete's entire year — at least the water training — can be expressed with an accompanying evaluation of intensity. It appears likely that methods such as this, or perhaps improved versions, will be an important part of training in future years.

The reader should bear in mind that the 10 percent speed category consists mostly of warm-up and warm-down and the easy paddling time between hard efforts. It was not that Barton consistently went out with the objective of paddling really easily as the major objective of his workout. It is simply that every bit of his paddling time is accounted for here, whereas other boaters may tend to ignore the very low intensity paddling time altogether.

Barton's 1987 Water Training Only (in minutes per week)

Week No.	Total Water Train	Water training expressed as percent speed																		
		100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10
42	282	3		5						60		28		18						168
41	66																66			
40	384			3						42					40			65		234
39	498	6									20			106		20			60 . 78 .	208
38	438			3						32		25		25				66		287
37	198			3							6 . 25								54 .	110
36	198																198			
35	162																32	130		
34	54																			54
33	331									19			32 . 24					122		134
32	336	3		4						10			30					83		206
31	321		4		4							45		40						228
30	329		8							42			24							255
29	333	7										74								252
28	258	2		4						22								65		165
27	336	6								12						34		20		264
26	360		8								60			49						243
25	415	7								10				96				63		239
24	384									4			40					29	118 .	193
23	528	1								21		39			53		47			367
22	558	7					10			30		40			48	24				399
21	738	4		8						46		40		32		65		74		469
20	498	4		8						39		20	30	32						365
19	510	6					18			10		42		32				69		333
18	744	3		5			10			75		32				75		92		452
17	492	8					21			22						110			54 .	277
16	534		7		12					25			4			12				474
15	690		6	8	21		6	14	20	53				32		90				440
14	522		6		13		17			30							41			415
13	624		5	11					11		16	14	3		36		50			478
12	546		6				11			23			62			123				321
11	684	3			11		26			23			17		20			51		533
10	660			4	2		8			20			22				62	20		522
9	678							14		18		32 . 18			48		80		62 . 55 .	351
8	702							32		6		18			48	32	75		116	375
7	702		3			10		13			48		51 . 42		16		30		48	441
6	708		14				16	28		7		24		18						601
5	544	3			5		2			24			10 . 16					36		448
4	648	4		15		20		4		17			10					65		513
3	695	7		22		9	4	13				19			16			27		578
2	540				6		32	15		19				6						462
1	630				13		7			3			26 . 36		2					543
Totals	84	125		94		209				770		656		556		870		1,649	13,397	
	37	8		42		133				199		370		140		160		359		

V. Barton's 1988 Total Training
(in minutes per week)

Week No.	Date	Total Train	Water Train	Total Athletic Train	Weights	Athletic Breakdown Run	Bike	Swim	Other
48	11/2-8	642	408	234	150	54	0	30	0
47	11/9-15	696	426	270	174	84	0	12	0
46	11/16-22	744	426	318	180	96	42	0	0
45	11/23-29	744	474	270	132	96	42	0	0
44	11/30/12-6	570	354	216	192	24	0	0	0
43	12/7-13	672	396	276	198	78	0	0	0
42	12/14-20	312	126	186	132	54	0	0	0
41	12/21-27	600	306	294	162	108	24	0	0
40	12/28-1/3	612	378	234	150	36	48	0	0
39	1/4-10	696	372	324	204	90	30	0	0
38	1/11-17	654	348	306	228	36	42	0	0
37	1/18-24	678	366	312	210	60	42	0	0
36	1/25-31	708	384	324	222	72	30	0	0
35	2/1-7	756	444	312	240	42	30	0	0
34	2/8-14	792	486	306	240	66	0	0	0
33	2/9-21	678	366	312	198	72	42	0	0
32	2/22-28	705	519	186	120	66	0	0	0
31	2/29-3/6	786	522	264	198	66	0	0	0
30	3/7-13	708	450	258	180	78	0	0	0
29	3/14-20	792	498	294	192	72	30	0	0
28	3/21-27	792	522	270	198	72	0	0	0
27	3/28-4/3	870	666	204	138	66	0	0	0
26	4/4-10	834	522	312	228	84	0	0	0
25	4/11-17	810	642	168	132	36	0	0	0
24	4/18-24	876	594	282	234	18	30	0	0
23	4/25-5/1	834	630	204	144	18	42	0	0
22	5/2-8	552	480	72	72	0	0	0	0
21	5/9-15	870	696	174	138	36	0	0	0
20	5/16-22	780	570	210	126	0	84	0	0
19	5/23-29	708	558	150	108	6	36	0	0
18	5/30-6/5	738	660	78	18	18	42	0	0
17	6/6-12	588	522	66	0	66	0	0	0
16	6/13-19	714	480	234	144	12	42	36	0
15	6/20-26	582	540	42	36	6	0	0	0
14	6/27-7/3	684	678	6	0	6	0	0	0
13	7/4-10	672	594	78	54	0	0	24	0
12	7/11-17	648	552	96	96	0	0	0	0
11	7/18-24	732	648	84	60	0	0	24	0
10	7/25-31	660	432	228	84	30	6	0	108
9	8/1-7	960	660	300	120	72	108	0	0
8	8/8-14	918	672	246	120	78	0	12	36
7	8/15-21	870	612	258	120	48	0	0	90
6	8/22-28	732	570	162	132	30	0	0	0
5	8/29-9/4	648	564	84	42	42	0	0	0
4	9/5-11	822	660	162	90	54	18	0	0
3	9/12-18	504	432	72	42	30	0	0	0
2	9/19-25	708	624	84	30	54	0	0	0
1	9/26-10/2	432	396	36	0	36	0	0	0
Totals		34,083	24,225	9,858	6,408	2,268	810	138	234
Avg./Week		710	505	205	134	47	17	3	5

VI. Barton's 1988 Monthly Workouts
(expressed as sessions per day)

Month	Workouts	1/day	2/day	3/day	4/day	5/day	off
November	56	5	24	1	0	0	0
December	41	13	14	0	0	0	4
January	51	12	18	1	0	0	0
February	50	8	18	2	0	0	0
March	59	8	18	5	0	0	0
April	57	9	15	6	0	0	0
May	53	10	17	3	0	0	0
June	67	7	14	5	3	1	1
July	70	8	9	7	2	3	2
August	68	8	8	12	2	0	1
September	72	3	8	11	5	0	3
October	4	0	0	0	1	0	0
Totals	648	91	163	53	13	4	11

NOTE: Five-a-days were done on race days when Barton had many heats and went for a warm-up, heat or race that many times in a day.

VII. Barton's 1988 Water Training Only
(in minutes per week)

Week No.	Total Water Train	Water training expressed as percent speed																		
		100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10
48	408			7						14		30		30		104				223
47	426			5						26		20		70		49				256
46	426		4		1					22		20		30		36		50		263
45	474		4					8		16		58		39		27				322
44	354			3						53		43				36				219
43	396		5					10		16		30		35		36				264
42	126									8										118
41	306													40				209		57
40	378									16		66				36		67		193
39	372			4				5				32				74				257
38	348		4			10				32		36								266
37	366			5				13		35						24				289
36	384			5						38		51								290
35	444		4							35				40		84				281
34	486		5							21		58				86				316
33	366			3				14		20		28				18				283
32	519		4		1			16		21		8		18		18				75 . 358
31	522		4		3		9			9		15				92				390
30	450			4		2		5		12		30		32						329
29	498		8			10				12		4		15			40		36	373
28	522		6				5			22				24		64		49		273
27	666		2		3		8			10		12		16		75			147	393
26	522		5		7					13				16		45 . 24				74 338
25	642		4			12						29		32		30		7		36 492
24	594		6		3					15		15		40				65		36 414
23	630		6					24		10				32		25		36		64 433
22	480		3			12		4		12				24						36 389
21	696		10					11		21				48		82				66 458
20	570		7							37		37		15						474
19	558					8				23		5		20					126	376
18	660		10		4					20				10		30				52 534
17	522					4				10				24				25		44 18 . 34 . 363
16	480					5				28		8		24		13 . 24				378
15	540		3		5									26		29 . 36				54 30 357
14	678		1				8		3			20		36		44				566
13	594		2				7		8			9		20		22		24		44 40 418
12	552				8				8					26		49				37 38 386
11	648		1				7		7			8		15		13		30		57 510
10	432													14				80		110 228
9	660									21				18		18		40		48 100 65 350
8	672		1							48				24		32 . 92				60 415
7	612		2					4		12				22		35		16 . 42		110 369
6	570				9		10			15				46				99		391
5	564		3				19		11					23				15		37 456
4	660		3			5				37				24				3		3 63 56 466
3	432			2		11				7				48				6		44 58 52 204
2	624			8				6				37				8		9		5 551
1	396					8		3		4				11				16		61 293
Totals	113		91		158		448		1,037		1,131		847		1,924		860		16,622	
	45		19		60		181		233		323		24		0		109			

VIII. Last Two Weeks before 1987 World Championships

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Fly to Germany	K-2 6x25", 1' rest; 3x1', 2 rest. 50%	Run 9'	Run 6'	Run 8'		Run 8'
					K-2 2x1,000m 60%	6x70", 20" rest; 4x30", 10" rest.
		3x1,000m every 10', 65%	K-4 5x500m, 5' rest. 70%	2x1,000m, 10' rest. 70% rest. 70%		
		K-2 2x1,000m, 10' rest. 70%	6x500m, 100m easy. 80%	3x500m 100m easy. 80%		
Run 8'	Run 7'	Run 6'	Run 9'	Run 7'	Run 5'	Run 7'
6x250, every 2:. 80%	K-2 1x1,000m; 1x500m. 50%	K-1 Warmup 21" 50%	2x1,000m, 2' rest. 50%	K-1 warmup 21'. 50%	K-1 warmup 500, 250m. 50%	K-1 warmup 500m,
250m.						45%
30' paddle at 40%	500m at 40%	1,000 heat 70%	K-1 cruise, 50%	1,000 semi, 70%	K-1 1,000 final, 80%	K-1 10,000 final, 50%
		K-2 1,000 heat, 80%		K-2 1,000 semi, 70%	K-2 1,000 final, 80%	

IX. Last Two Weeks before 1988 Olympic Games

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6x25", 60" rest; 4x1', 2' rest. 90%	1,000m, 60%	Run 8'	Run 10'	Run 8'	Run 8'	2x500, 50%
Weights	K-2 2x1,000, 10' rest. 70%	K-2 5x500m, 70%	2x1,000m. 70%	6x250, every 2'. 80%	5x70", 20" rest; 4x30" 10" rest. 70%	K-2 1,000m, 500m. 50%
Run 22'	1x1,000m. 70%	45' at 40%	K-2 1,000m at 60%	K-2 Five starts. 90%		
Run 9'	Run 8'	4x500m, 250 easy. 60%	Run 8'	Cruise 37". 20%	Run 8'	
4x500m, 250 easy. 50%	K-1 warmup 500, 250m. 50%		K-1 warmup 2x500, 1x250 60%		K-1 warmup easy 500m, then harder 500 and 250m. 50%	
	K-1 heat 70%		K-1 semi 75%		K-1 final 80%	
	K-2 warmdown 20%		K-2 warmdown 20%		K-2 warmdown 20%	
	K-2 heat 75%				K-2 final 80%	