# Building A Bigger Engine: A Step by Step Guide Developing Speed, Power & Injury Free Development

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#### **Energy Systems**

#### **Speed & Power Events**

Sprint, Jumps, Throws



- Anaerobic Phosphate (ATP-CP): 0-10sec
- Anaerobic Lactate (Glycolytic): 10-60sec
- Aerobic Energy System: 60sec.-?

Note: Proper Recovery of ATP & CP:

A. 30 Seconds-50%

B. 1 Minute-75%

C. 90 Seconds-80%

D. 3 Minutes-98%

### **Balancing The Energy Systems**

- Percentages and Ratios of Energy Systems are defined by Performance!
- Neural Development: Approach the training of athletes from the rate of impact it has on the nervous system. (CNS-PNS)
- ➤ All Three Energy Systems will be Used.
- How Much, When, & Where? You're the Artist!

## The Importance of Order and Exercise Prescription

Optimal Improvement

Possible Injury

Warm-Up

**Event** 

Special Strength

Maximal Strength



Annual Plan: Off Season, Summer, Fall, Indoor, & Outdoor



Amy Haapanen- Annual Plan 20011-2012

CYCLE #	<u>DATES</u>	<u>WEEKS</u> <u>Per-Cycle</u>	WEEK THEME	<u>CYCLE</u> <u>THEME</u>	<u>COMPS.</u>
CYCLE II	26/10/09- 22/11/09	4	1: Maximal Strength 2: Special Strength 3: Maximal Strength 4: Max-Combo Stre.	Special Preparation	
CYCLE III	23/11/09- 20/11/09	4	1: Maximal Strength 2: Special Strength 3: Maximal Strength 4: Max-Combo Stre.	Spec. Prep. I Throws Spec.	
CYCLE IV	04/01/10- 31/01/10	4	1: Maximal Strength 2: Special Strength 3: Maximal Strength 4: Max-Combo Stre.	Spec. Prep. II Throws Spec.	
CYCLE V	01/02/10- 28/02/10	4	1: Maximal Strength 2: Special Strength 3: Max-Combo Stre.	Pre. Comp. I Throws Spec.	
CYCLE VI	01/03/10- 28/03/10	4	1: Maximal Strength 2: Special Strength 3: Maximal Strength	Pre. Comp. II Throws Spec.	
CYCLEVII	29/03/10- 25/04/10 Cal Track & Field	4	4: Max-Combo Stre  1: Maximal Strength 2: Special Strength 3: Maximal Strength 4. Max-Combo Stre	Comp. I Throws Spec.	

- Annual Plan: Off Season, Summer, Fall, Indoor, & Outdoor
- Cycle Theme: General Preparation, Special Preparation, Pre-Competition, & Competition

Amy Haapanen- Annual Plan 2011-2012

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Amy Haapanen- Annual Plan 2011-2012

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- Cycle Theme: General Preparation, Special Preparation, Pre-Competition, & Competition
- Weekly Theme: Maximal Strength, Special Strength, Combo Max-Strength
- > Daily Theme: Power, Olympic, Or Recovery

#### **Amy Haapanen:** Training Plans (Comp II:Throws-Performance.)

Special

Strength

Power	Recovery	Olympic	Recovery	Power	Olympic
Mon	Tu	Wed	Thur	Fri	Sat
Hammer: A.M.: 12lb P.M.: 4k,3k	Hammer: A.M.: 12lb P.M.: 4k,3k	Hammer: A.M.: 12lb P.M.: 4k,3k	Hammer: A.M.: 12lb P.M.: 4k,3k	Hammer: A.M.: 12lb P.M.: 4k,3k	Hammer: A.M.: 12lb P.M.: 4k,3k
MJ Rudiment 30m x 1	GSC Pedestal 1x8	Speed           2x20         1x40           2x30         1x50	GSC Pedestal 1x8	MJ x 2 Box x 3 Hurdle x 3	Speed: B.U. 1x50 1x60 1x70
Jumps Squats 1x6x81% 1x4x83% 1x2x85% 1x1x87% Pull-Ups (Continuous) 1x6x81% 1x4x83% 1x2x85% 1x1x87% Multi Throw OH Throw 4k X 6-8	ASC Throws Spec 2x6 Ows ½ Set Short Strength Med-Ball Twisting I 1 x 8	Snatch Pull 4x2x85% Hang Snatch 2x2x85% 2x2x87% DB Jerk 2x3x85% 2x3x87%	ASC Throws Spec 2x6 Ows ½ Set Short Strength Med-Ball Twisting I 1 x 8	Jump Squats 1x6x81% 1x4x83% 1x2x85% 1x1x87% Pull-Ups (Continuous) 1x6x81% 1x4x83% 1x2x85% 1x1x87% Multi Throw FH Throw X 6-8	Snatch Pull 4x2x85% Hang Snatch 2x2x85% 2x2x87% DB Jerk 2x3x85% 2x3x87%

What is Special Strength?

## Special Strength (Exercises Specifically Intended for Performance)

- Multiple Jumps: Jump Circuits (Series of 6-8 exercises with jumping at low amplitude), Box Jumps (5 Boxes Arranged in Ascending Order), Hurdle Hops (Continuously Jumping Over 5 Hurdles & Focusing on Low Ground Contact Times of 0.2 Seconds)
- Sprints: Maximum Velocity efforts at Ranges of 10m-50m (Speed Much Acceleration), 50m-120m (Speed Development), 80m-150m (Speed And Endurance) & Velocity in a Global Sense (Backwards, Sideways)

How

- Multiple Throws: These can be done with a shot Putt, a kettlebell, a powerball, a medicine ball or a weightlifting plate.
- General Strength Circuits: A series of 8-10 exercises using body weight as resistance.



Exercises	The resul	The result for of sportsmen of various sport grading									
	45-50 m	50-55 m	55-60 m	60-65 m	65-70 m	70-75 m					
Hammer 3 kg	53-58	58-63	63-68	68-73	73-78	78-82					
Hammer 5 kg	36-41	41-46	46-51	51-56	56-61	61-66					
Hammer 6 kg	31-36	36-41	41-46	46-51	51-56	56-61					
Hammer 7.260		1000	65 500	38-44	44-48	48-52					
kg											
Snatch (kg)	50	55	65	75	80	85					
Clean (kg)	65	70	80	90	100	110					
Twist (kg)	10	15	20	25	30	35					
Half squat (kg)	100	120	130	140	160	170					
Long jump (m)	230	240	250	270	270	270					
Triple jump (m)	710	740	780	820	820	820					
Up jump (m)	60	65	65	65	70	75					
30 m b/s (sec)	4.8	4.8	4.6	4.6	4.5	4.5					

	Sports results, coefficients correlations									
Exercises	45- 50m	50- 55m	55- 60m	60- 65m	65- 70m	70- 75m				
Hammer 3 kg	0.876	0.788	0.724	0.710	0.690	0.650				
Hammer 5 kg	0.742	0.712	0.825	0.860	0.880	0.920				
Hammer 6 kg	0.654	0.698	0.876	0.820	0.900	0,950				
Hammer 7.260 kg	_	-	-	0.760	0.810	0.876				
Snatch	0.578	0.670	0.590	0.440	0.430	0.460				
Clean	0.625	0.560	0.542	0.510	0.496	0.512				
Squat	0.560	0.602	0.524	. 0.500	0.480	0.340				
THE RESERVE AND ADDRESS OF THE PARTY OF THE	0.425	0.396	0.256	0.230	0.298	0.326				
Long jump  Triple jump	0.425	0.196	0.224	0.270	0.210	0.270				
	0.520	0.426	0.368	0.320	0.290	0.324				
Up jump	0.345	0.276	0.212	0.276	0.324	0.280				
Shot put forwards	0.504	0.425	0.478	0.460	0.350	0.320				
30 m b/s	0.304	0.186	0.240	0.200	0.220	0.186				



AMY HAAPANEN TRAINING PARAMETERS 2011-2012
Primary Event: HAMMER (65-70m)

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Exercise	Target	ST	II	III	IV	V	VI	VII	VIII	IX	X	XI
Twisting	TP											
Long Jump	2.75m											
15m Sprint	TP											
30m Sprint	4.20s											
45m Sprint	TP											
60m Sprint	TP											
Back Heave	18.00m											
Front Heave	16.50m											
Body Weight	85k											
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Researched Variables



**Amy Haapanen:** Training Plans (Comp II:Throws-Performance.)

Theme: Max-Strength Cycle #: C-VIII **Date:** 05/03/12-05/30/12

Tu Wed Thur Fri Mon Sat Hammer: Hammer: Hammer: Hammer: Hammer: Hammer: **Throws** A.M.: 12lb A.M.: 12lb A.M.: 12lb A.M.: 12lb A.M.: 12lb A.M.: 12lb P.M.: 4k,3k P.M.: 4k,3k P.M.: 4k,3k P.M.: 4k,3k P.M.: 4k,3k P.M.: 4k,3k Speed: B.U. GSC **Speed GSC MJ** x 2 **MJ** Special 2x20 1x40 Pedestal Pedestal Box x 3 Rudiment 1x50 30m x 1 1x8 2x30 1x50 1x8 Hurdle x 3 1x60 1x70 Strength Maximum

What is Maximal Strength?

Strength

	Jumps Squats	ASC	Shatch I un	ABC	Jump Squats	Shatch I un
	1x6x81%	Throws Spec	4x2x85%	Throws Spec	1x6x81%	4x2x85%
	1x4x83%	2x6	Hang Snatch	2x6	1x4x83%	Hang Snatch
	1x2x85%	Ows ½ Set	2x2x85%	Ows ½ Set	1x2x85%	2x2x85%
	1x1x87%	Short	2x2x87%	Short	1x1x87%	2x2x87%
	Pull-Ups	Strength	DB Jerk	Strength	Pull-Ups	DB Jerk
	(Continuous)	Med-Ball	2x3x85%	Med-Ball	(Continuous)	2x3x85%
	1x6x81%	Twisting I	2x3x87%	Twisting I	1x6x81%	2x3x87%
	1x4x83%	1 x 8		1 x 8	1x4x83%	
	1x2x85%				1x2x85%	
	1x1x87%				1x1x87%	
	Multi Throw				Multi Throw	
	OH Throw				FH Throw	
	4k				X 6-8	
\	X 6-8					
7						
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## Maximal Strength (Weightlifting)

- Power Lifting: Full Squat (Front & Back), Jump Squat, Bench Press, Incline Press, Military Press, etc.
- Olympic Lifting: Cleans (From the Floor & Hang), Snatch (From The Floor & Hang), Jerks (Front & Back), etc.
- Ancillary Strength Circuits: A series of 8-10 exercises with weights

When Is Strong, Strong Enough?



Exercises	The result	t for of	sportsmer	of vario	us sport	grading
	45-50 m	50-55 m	55-60 m	60-65 m	65-70 m	70-75 m
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AMY HAAPANEN TRAINING PARAMETERS 2011-2012

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Exercise	Target	COTT	77	TITE	П	TZ.	T/T	1/11	1/III	TV	V	VI
TOTAL CINE	141801	ST	II	III	IV	V	VI	V 11	VIII	LA	X	M
Snatch	80k											
Hang Snatch												
Clean	115k											
Hang Clean	105k											
BN Jerk	100k											
FN Jerk	80k											
Bench	80k											
DB Bench	50k											
Incline Bench	70k											
DB Inc. Benc												
Pull Up	6FBW											
Back Squat	150k											
Front Squat	100k											
½ Squat	180k	4		Resear	archad	Variab	lec		_			
Jump Squat	90k			Nese	arched	Variab						
Step-Ups	80k											
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**Amy Haapanen:** Training Plans (Comp II:Throws-Performance.)

Special Strength

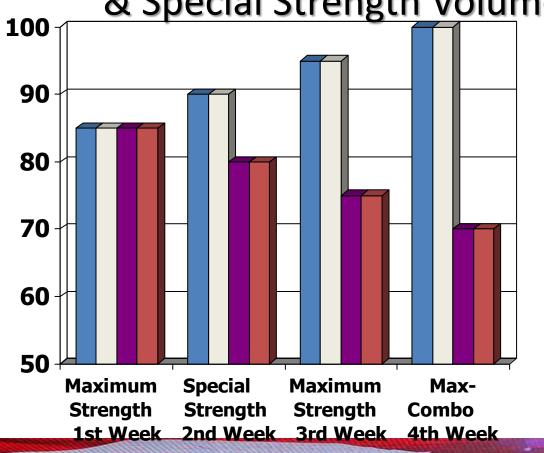
Maximum Strength

Mon Hammer: A.M.: 12lb P.M.: 4k,3k	Hammer:   Hammer:   A.M.: 12lb   A.M.: 12lb   P.M.: 4k,3k   P.M.: 4k,3			Fri Hammer: A.M.: 12lb P.M.: 4k,3k	Sat Hammer: A.M.: 12lb P.M.: 4k,3k
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Neural	Recovery	Neural	Recovery	Neural	Neural



Notes: As Percentages Increase, The Volume will Decrease: As Percentages Decrease, The Volume will Increase:

Balancing Maximal Strength & Special Strength Volumes



- Monday (Power)
- Tuesday (Olympic)
- Thursday (Power)
- Friday (Olympic)

Questions?

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