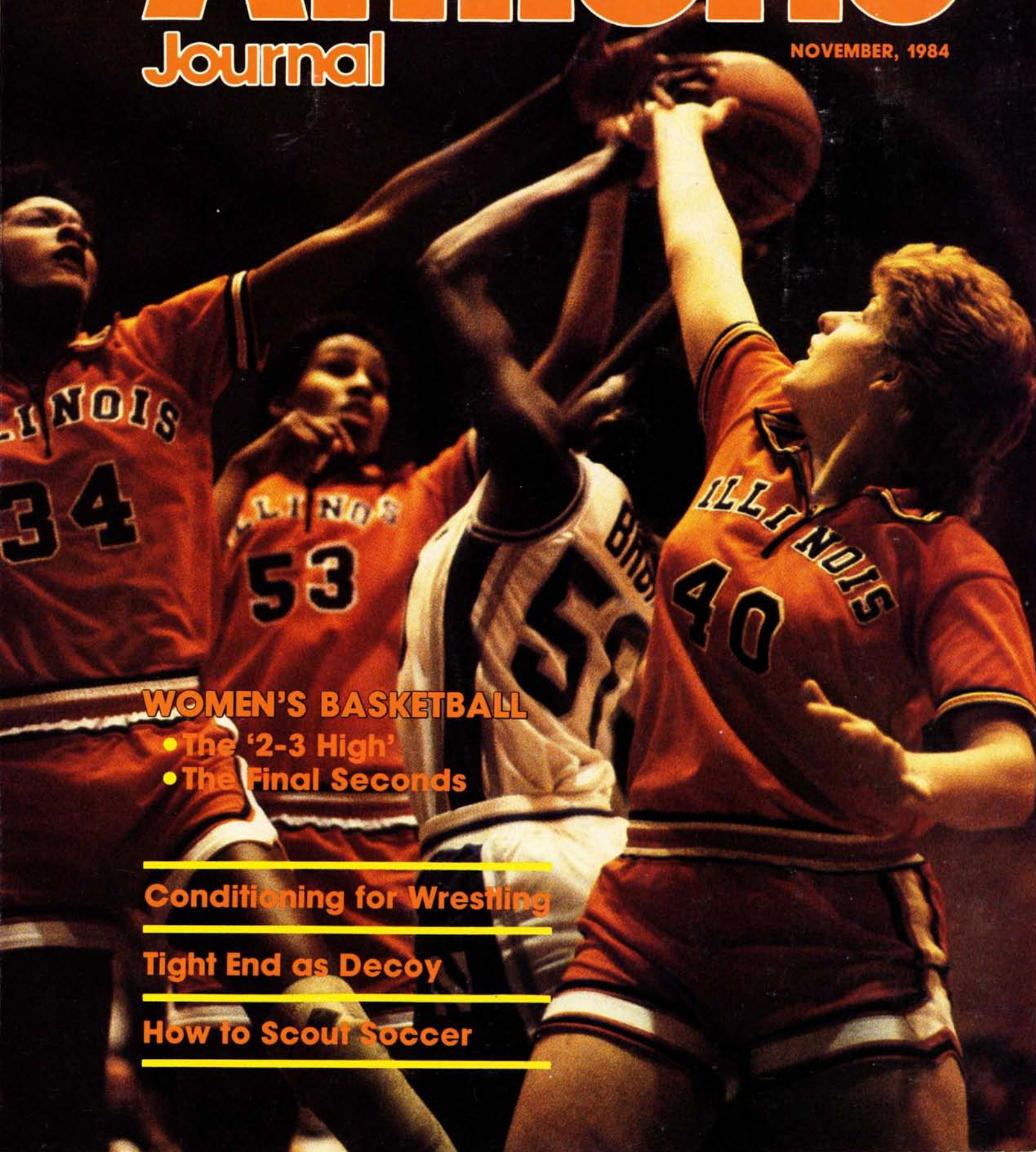


Athletic

Journal

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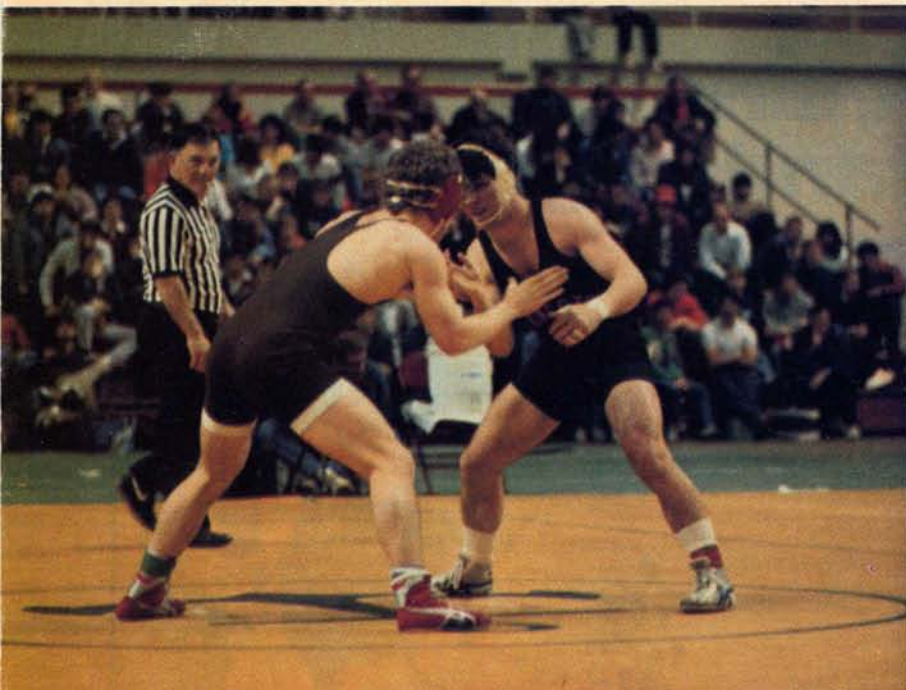
WOMEN'S BASKETBALL

- The '2-3 High'
- The Final Seconds

Conditioning for Wrestling

Tight End as Decoy

How to Scout Soccer



range of movement.

Muscular strength and muscular endurance are rather obvious goals and usually are attained regardless of the type of strength training program utilized. However, we feel that the best way to achieve our goals in the least amount of time is through high-intensity exercise. Intensity is the key to obtaining maximum gains.

Increased cardiovascular efficiency is often sacrificed in many strength training programs. Our wrestlers always train to momentary muscular failure and move from station to station as quickly as possible in order to maintain a high heart rate. This will elicit a cardiovascular training effect. It is not unusual to see our wrestlers running between stations.

We also believe that the high-intensity workouts required of our wrestlers will increase their mental toughness, especially near the end of the match and at the end of the season. Furthermore, an intense strength and conditioning program gives our athletes

Strength and Conditioning for Wrestling: The Princeton Way

By Matt Brzycki
Assistant Strength Coach,
Rutgers University;
formerly of Princeton

In order to wrestle effectively at higher levels of competition, an organized and supervised strength training program is essential. At Princeton University, we firmly believe that a stronger wrestler is a better wrestler. If two wrestlers of nearly equal skill meet on the mat, then the stronger, better conditioned athlete will undoubtedly emerge victorious. Indeed, a properly conducted strength and conditioning program will give a wrestler a competitive edge.

Program Goals

The goals of our strength and conditioning program are to increase: 1) muscular strength; 2) muscular endurance; 3) cardiovascular efficiency; 4) mental toughness; 5) confidence on the mat; 6) flexibility/joint

added confidence on the mat, so they will not be intimidated by any opponent.

Finally, we require our athletes to perform each exercise throughout a full range of movement. Exercising throughout a full range of movement against a resistance will improve flexibility, thereby reducing the risk of injury.

General Guidelines

Our wrestlers follow general strength and conditioning guidelines throughout each phase of the program. In some cases, specific guidelines are given during particular phases. The general guidelines are as follows.

1. Wrestlers train with a partner who is of about the same body weight. You can always train more intensely when encouraged and supervised. If the spotter does not push the lifter hard enough, then he is keeping his partner from getting stronger. A submaximal effort will result in submaximal gains.

2. One partner takes the other through the entire routine. Upon completion of the workout, the partners switch roles.

3. We perform one set of each exercise to the point of momentary muscular failure.

Momentary muscular failure can best be defined as that instant when it is literally impossible to execute another repetition in good form—not when the athlete *thinks* he cannot do another repetition.

4. Good form or technique is raising the weight without momentum, pausing distinctly in the contracted position and lowering the weight at the same speed it was lifted or slower. This applies to all modes of training—Nautilus, Universal, free weights, manual resistance, etc. This will ensure that a) the muscles are raising the weight (rather than momentum); and b) the chances of incurring injury while strength training are minimized.

5. We always perform the exercise through its full range of movement. Done properly, this will increase flexibility, again reducing the risk of sustaining an injury.

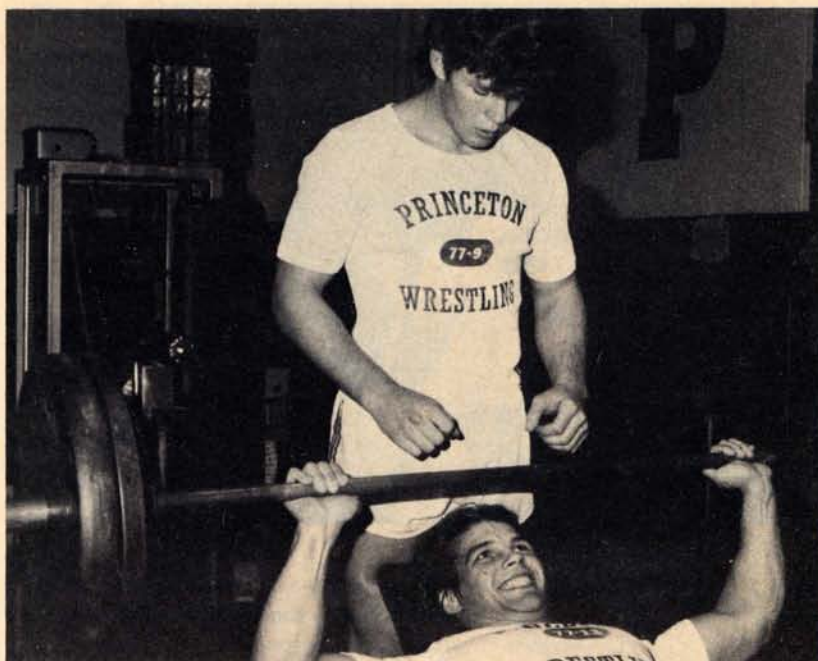
6. We perform a total of 8-12 repetitions each set. The lifter should reach momentary muscular failure (not momentary psychological failure) between 6-8 repetitions. The spotter will then assist the lifter in performing an additional 2-4 repetitions by helping the lifter raise the weight. The lifter should lower the weight by himself while the spotter provides additional resistance.

7. Once the lifter is able to execute eight repetitions by himself in good form, the weight has become too light for him and resistance should be increased for his next workout. But, never sacrifice good form or technique for the sake of increasing the weight. Train to gain strength, not to demonstrate it. Best results are produced by how you lift the weight, not how much weight you lift.

8. We rest as little as possible between sets. This will promote a cardiovascular training effect and enhance mental toughness and confidence. It will also typify the high-intensity effort characteristic of a wrestler.

9. Our athletes perform no more than three bouts of strength training per week. More is not better. Any more than three workouts per week involving the same muscle group will be counterproductive. The body needs a 48-96 hour recovery period after an intense strength training workout. It is during this recovery period that the muscles will adapt to the stress placed on them and respond by increasing in size and strength.

Often, a strength and conditioning program does not provide enough variety. The quickest way to get into a "rut" or lose motivation is to do the same routine each workout. Our wrestlers perform different workouts depending upon what part of the season we are in. By using a variety of routines, the wrestlers will not get stale or lose enthusiasm in the program. If an athlete performs the same workout three times per week, over a short period of time, his body will almost



Intensity is the key to obtaining maximum gains. Rick Rochelle performs an incline bench press while Tim Kernan spots.

"expect" the next exercise in the workout. The end result of using the same routine is that strength gains are slowed and may even stop.

In addition to variety in the workouts, we also vary the equipment used, whenever possible. At Princeton, we do not prefer one type of equipment over another. We use a combination of all the types of equipment available to us—Nautilus, Universal and free weights. In fact, a large portion of our strength training is performed without equipment by using manual (partner) resistance. Make the best use of whatever equipment is available.

Our strength and conditioning program is divided into three distinct phases: pre-season, in-season, and post-season.

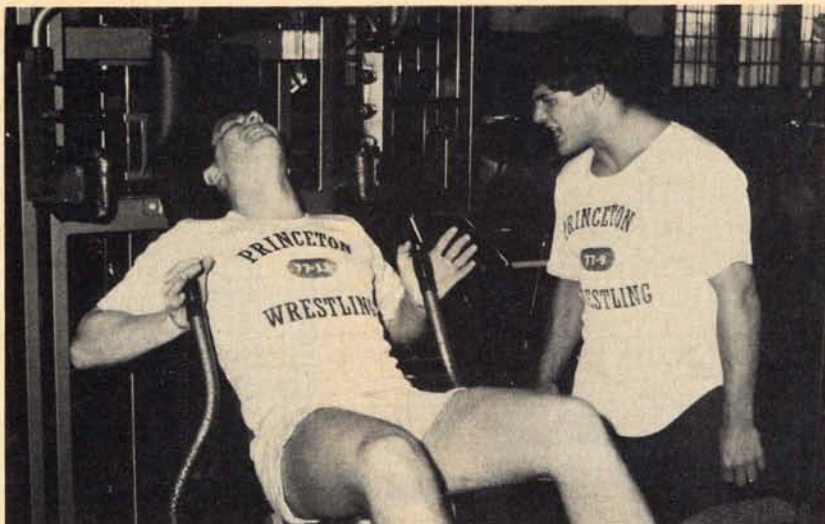
Pre-Season

Our pre-season strength and conditioning program begins the day the wrestler arrives on campus to begin classes and ends when practice sessions start. The objective of this phase of strength training is to raise the wrestlers' level of conditioning and intensity to meet the demands of intercollegiate wrestling competition.

Our wrestlers perform three different workouts during pre-season. For convenience (and motivation) we designated our workouts using the school colors—black (pre-exhaust) and orange (push-pull), along with a negative workout. The wrestlers perform a pre-exhaust workout on Monday, a push-pull workout on Wednesday and a negative workout on Friday.

Pre-Exhaust Workout

In a pre-exhaust workout, exercises are paired



You can always train more intensely when encouraged and supervised. Rich Tavoso shouts encouragement to Eric Karchmer on the Nautilus Double Chest machine.

so that the first set isolates a given muscle. (Generally, any movement involving rotation around a single joint isolates a muscle.)

This set is followed quickly by a second set in which additional muscle groups are enlisted to further exhaust the muscle, thereby stimulating greater strength gains. This second set should be a compound exercise in which there is movement around more than one joint. An example of a pre-exhaust set is a bent arm fly which, when done correctly, isolates the pectoralis muscle. This set is followed immediately by a bench press which recruits the anterior deltoid and the triceps to force the already fatigued pectoralis muscle to work even harder. It is especially important to move from the first set to the second set as quickly as possible since a muscle will recover much of its resting strength within a few seconds (see accompanying example of a pre-exhaust workout).

In a push-pull workout, exercises are

paired so that antagonistic muscle groups are worked alternately. The muscles of the body are set up in such a way that one muscle group opposes another. For instance, one muscle extends a joint and its antagonist (or opposing muscle) flexes a joint. Examples of antagonistic pairs are the quadriceps and hamstrings, the hip extensors (gluteals) and hip flexors, the pectoralis and latissimus and the triceps and biceps. The major advantage of this type of workout is that it ensures symmetrical muscle development. Many muscle pulls occur due to muscle imbalances between antagonists. This is especially true of pulled hamstrings in which the quadriceps overpower the leg biceps. Therefore, exercising antagonists further minimizes the risk of injury (see accompanying example of a push-pull workout).

Negative Workout

In a negative workout, the lifter only performs the negative (or eccentric) portion of the exercise. He will lower the weight by himself for a total of eight repetitions. The length of each repetition should be approximately six to eight seconds, depending upon the range of movement of the exercise. The spotter performs the positive (or concentric) portion of the exercise by raising the weight for the lifter.

The advantage of training in a negative-only fashion is that it gets our wrestlers accustomed to handling a much heavier weight than they could normally lift. Our athletes utilize approximately 60 percent more resistance when they train in this manner. This is an integral part of our program, giving our wrestlers exceptional power. A negative-only workout should not be performed more than once per week. Since training in this

(Continued on page 44)

EXAMPLE OF A PRE-EXHAUST WORKOUT

Leg Extension (N)
 Leg Press (N)
 Leg Curl (U)
 Seated Calf Raise (F)
 Bent Arm Fly (F)
 Bench Press (F)
 Pullover (N)
 Lat Pulldown (U)
 Front Raise (M)
 Shoulder Press (U)
 Bicep Curl (F)
 Chins (F)
 Tricep Extension (U)
 Forearm Curl (F)
 Neck Flexion (M)
 Neck Extension (M)
 Situps (M)

EXAMPLE OF A PUSH-PULL WORKOUT

Leg Press (N)
 Hip Flexion (N)
 Leg Extension (U)
 Leg Curl (U)
 Arm Cross (N)
 Pullover (F)
 Incline Bench Press (F)
 Pullups (F)
 Shoulder Press (F)
 Upright Row (U)
 L-Seat Dip (M)
 Bicep Curl (M)
 Forearm Curl (U)
 Neck Flexion (M)
 Neck Extension (M)
 Hyperextensions (U)
 Situps (M)

EXAMPLE OF A SPLIT ROUTINE WORKOUT (PUSHING MUSCLES)

Bench Press (F)
 Incline Press (F)
 Arm Cross (N)
 Decline Press (N)
 Side Lateral Raise (M)
 Shoulder Press (U)
 L-Seat Dip (M)
 Tricep Extension (U)
 Situps (M)
 Crunches (M)

N—Nautilus U—Universal F—Free Weight M—Manual Resistance

Conditioning

(Continued from page 14)

fashion is extremely taxing to the muscular system, we do our negative workout on Friday, so that our athletes have a full 72 hours to recover for their next bout of strength training on Monday. A pre-exhaust workout or a push-pull workout may be performed as a negative workout.

In-Season

Strength training should not end once the season begins. Coaches often have their athletes perform a strength and conditioning program during pre-season, but do not require them to strength train during the season. Yet, it is during the season that a wrestler must be at his strongest in order to maximize his performance. Athletes will lose strength over the course of the season unless their muscular systems are properly stimulated by bouts of high-intensity strength training. Wrestling practice alone is not sufficient to stimulate gains in strength.

Our in-season strength and conditioning program begins the day practice sessions start and ends at the conclusion of the NCAA championships. The objective of this phase is to continue to increase (or at least maintain) the wrestlers' level of conditioning and intensity throughout the season, peaking at tournament time.

During the season we perform two bouts of strength training per week. One workout is done manually (with a partner) no sooner than 72 hours before a match. Consequently, if a match is on a Saturday, our wrestlers perform a manual resistance workout after Wednesday's practice. Our other strength training workout comes the day after the meet (Sunday) using resistance machines. For a Friday match, we perform a manual workout on Tuesday and a resistance machine workout on Saturday (unless, of course, we also have a Saturday match). We always do a manual resistance workout before a meet—never a workout on resistance machines.

Our wrestlers perform their manual workout in the wrestling room immediately following practice. The workout consists of bent arm flies, pushups, bent over rows, side lateral raise, front raise, shoulder press, bicep curl, tricep extension, neck flexion, neck extension and situps, in that order. Since it is too difficult to spot leg exercises manually, our wrestlers do the lower body routine in the weight room, performing one set each of leg extension, leg press, leg curl and calf raise. For our resistance machine workout, we alternate our black and orange routines, doing a pre-ex-



A large portion of Princeton's strength training is performed using manual (partner) resistance. The team's captain and NCAA second place finisher John Orr spots Gardy Grissom in a manual bicep curl.

haust workout one week and a push-pull workout the next.

Post-Season

Our post-season program begins the day after the NCAA championships and ends the day the wrestler arrives on campus to start classes. Obviously, we encourage our wrestlers to strength train during the summer months. The objective of this phase of strength training is to continue to raise the wrestlers' level of conditioning and to maintain their intensity after the conclusion of the season. Our post-season routine is designed to be less intense than pre-season and in-season workouts, but it is still performed with a moderate level of intensity.

During the post-season, our wrestlers perform a split routine. Although we train four times per week, each body part is worked only twice. We do all the pulling movements (back, traps and biceps) plus legs and neck on Monday and Thursday and all the pushing movements (chest, shoulders and triceps)

Athletes will lose strength over the course of the season unless their muscular systems are properly stimulated by bouts of high intensity strength training. Rick Rochelle performs the Nautilus Super Pullover; Tim Kernan spots.



Photos /Chet Dalgewicz

on Tuesday and Friday. The only body part we exercise each workout is the abdominals.

Two sets of each exercise (one set for the neck) are performed. The first set is executed with a weight that the lifter can handle easily for 8-10 repetitions. The second set is performed with a weight such that momentary muscular failure occurs within 6-8 repetitions. The weight is immediately reduced by approximately 25 percent and the lifter performs an additional two to four repetitions by himself with the lightened resistance. The partners alternate sets, but should rest no more than one minute between sets (see example of split-routine workout for the pushing muscles of the upper body).

All too often, coaches implement the strength and conditioning programs of the well-known wrestling schools. What they fail to realize is that although the strength programs bolster the wrestling programs, these schools are primarily successful because their wrestlers practice excellent techniques and fundamentals. Winning schools do not have any secret programs in building strength. Coaches need only apply a few basic principles to come up with a solid strength program. Use what works best for you—not what works best for others.

Finally, a program should be structured with efficiency in mind. An athlete should spend as little time as necessary in the weight room to stimulate the maximum amount of results. He should then concentrate on his techniques on the wrestling mat. □

Matt Brzycki received his bachelor's degree from the Pennsylvania State University, where he also was vice-president of the Penn State Barbell Club and represented the school in intercollegiate powerlifting competition in the 165-pound class. He served on the health/fitness staff at Princeton until September, 1984, when he became assistant strength coach at Rutgers University.

Pre-Practice

(Continued from page 22)

then compiled. Every day we shoot our free throws with some pressure, and only two at a time, in order to simulate game conditions. We also change partners every day.

We keep track of how many baskets our players make during the entire season, using these six stations. We also keep an improvement chart in order to show them the progress they have made, as indicated by the number of baskets made during the pre-practice station work. Seeing is believing, and believing leads to increased self-confidence and better performance.

Toward the middle of the season we start to

change our stations in order to avoid staleness. Later in the season we occasionally skip a day and do something completely different during the first twelve minutes of practice.

Coaches can develop their own forms of pre-practice station work; make certain the program is well organized and challenging. Use some sort of timing device and set goals for the players to achieve. With the first twelve minutes of practice devoted to this type of station work, players will demonstrate measurable improvement and begin to play up to their potential. □

Anthony Pappas previously served for a year as head girls basketball coach at North High of West Union and for two years as head girls basketball coach at Mallard Community High School. He holds his bachelor's and master's degrees from Mankato State University and is in his third season at Waterloo West.



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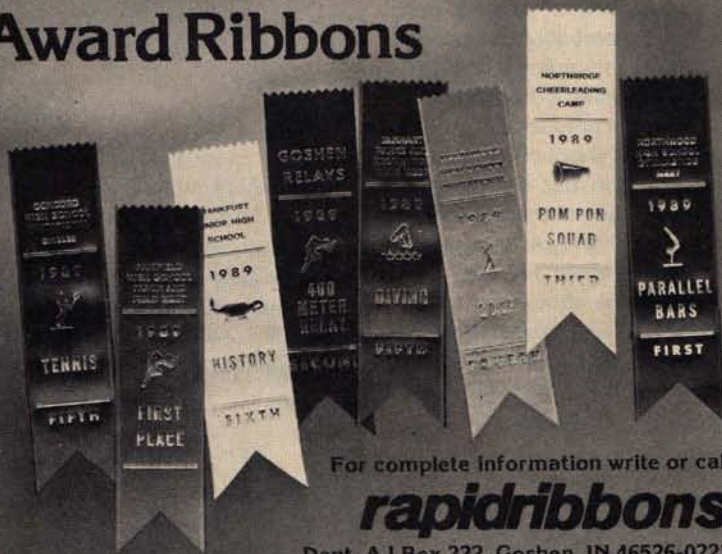
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