



BI 199 APWT Discussion 12

- I. Announcements*** Presentation schedule posted.
Comments, suggestions for posters. Q last t?
Thurs skulls & vertebrae + NSCA squat articles!
- II. Weight Training-Sports Medicine News*** Pitchers?
- III. Fundamental Training Principles Overview***
Homeostasis, Overload, Reversibility
- IV. Olympic-Advanced Lifts: Clean & Jerk & Snatch***
 - A. Exercise technique – multi-joint action power!
 - B. Anatomy, physiology & biomechanics
- V. Joint Muscle Activity Kits***
 - A. Single-joint action movement
 - B. Multi-joint action movement
Agonistic-antagonist pairs → cross 2 joints:
hip-knee, shoulder-elbow

Weightlifting OK for pitcher

Dear Dr. Donohue: I am a 16-year-old baseball pitcher. I'd like to increase my throwing speed, so I have taken up weightlifting. I've gotten two different opinions on this. One tells me that I will get muscle-bound and tight, and that I won't be able to throw like I can now. The other encourages me to train with weights. Which is right?

I also think I am at a disadvantage because of my height. I am 5 feet 9 inches. Wouldn't being taller give me more throwing power?

— R.K.

Dear R.K.: When people use that word, they're indicating someone with large, bulky muscles. The thought is that such muscles hinder fluid movement; that's not the case. Bodybuilders with huge muscles move with swiftness, grace and power.

Go ahead and lift weights. Don't focus exclusively on your arm and shoulder. Much of the power

imparted to a thrown baseball comes from leg, hip and trunk muscles.

Plyometric exercises are recommended for increasing throwing speed. Plyometrics indicate an exercise in which a rapid muscle stretch is followed by muscle shortening. Overhead throwing of a 6-pound medicine ball is an example.

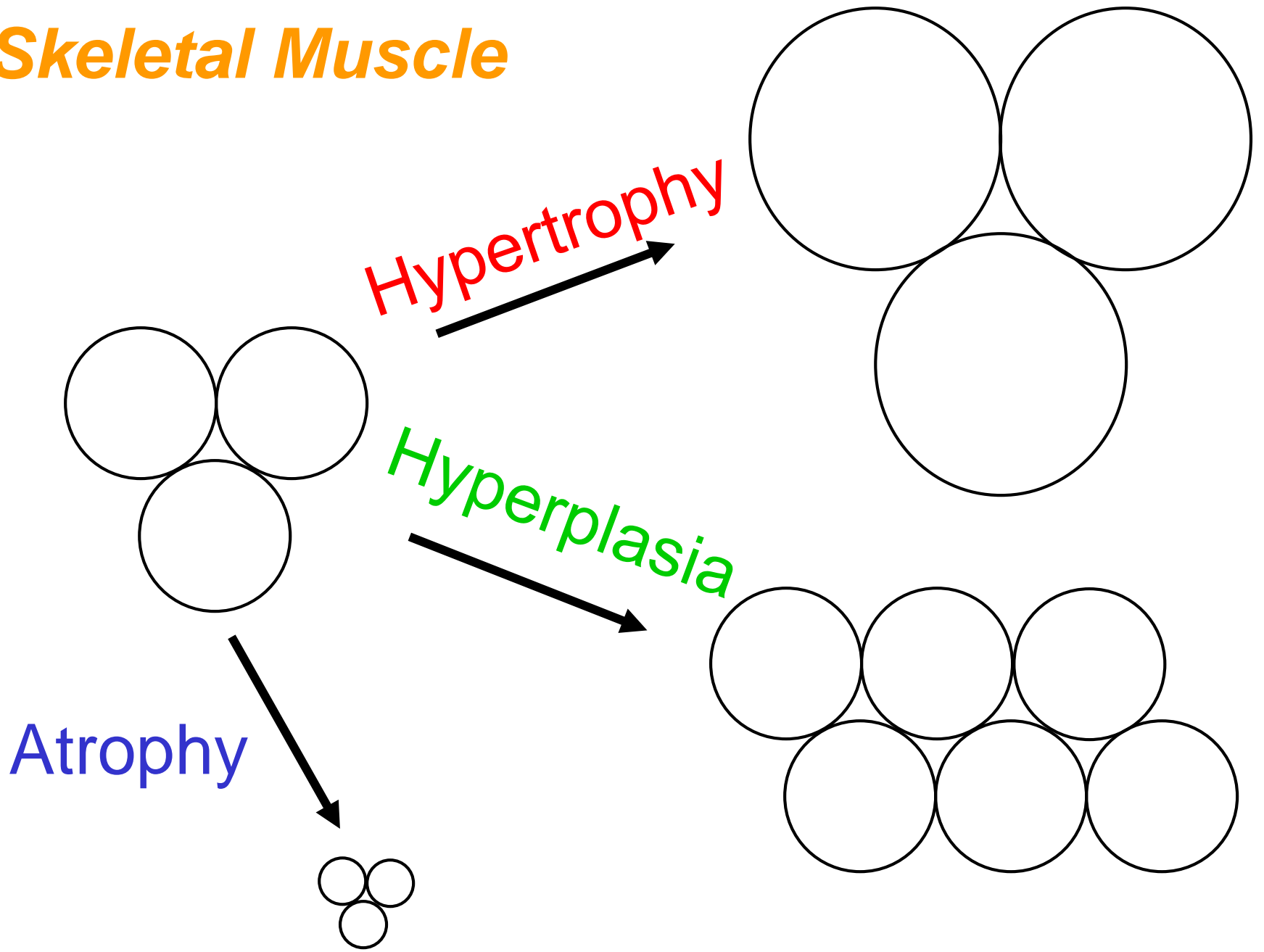
If you're actively in season, practice and play now, but go easy on exercises. Save this program until the season is over.

Your height isn't a disadvantage. Major-league pitchers Randy Johnson and Tim Lincecum both throw over 90 miles per hour. Johnson is 6 feet 10 inches; Lincecum is 5 feet 11 inches. They derive their power from the rotation they make in their deliveries.

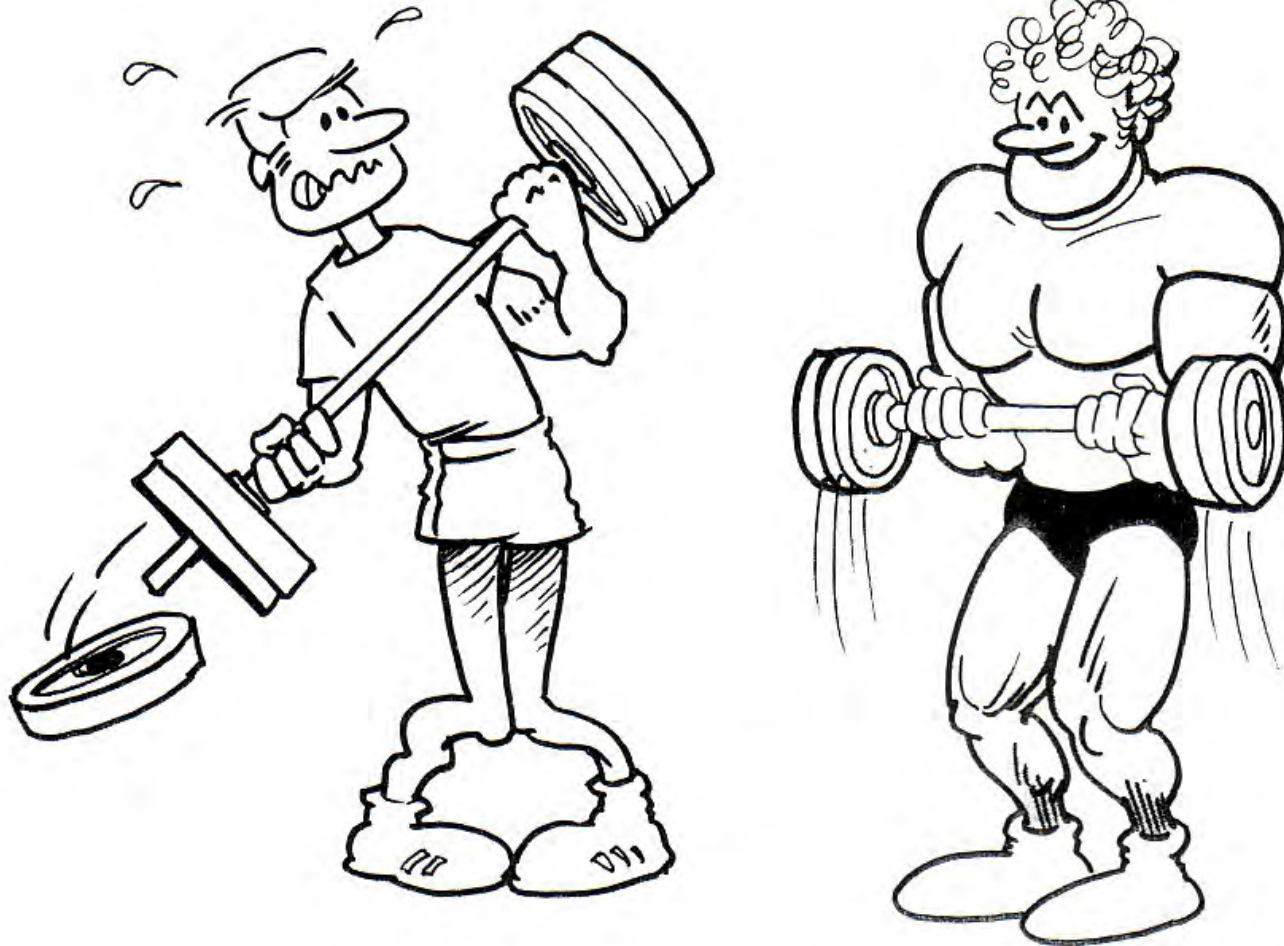
Dr. Donohue is unable to answer individual letters. Write to him at P.O. Box 536475, Orlando, FL 32853-6475.

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Skeletal Muscle



Overload, Not Over Overload! Stress the Form, Not the Weight!!



Source: VP Lombardi & Diann Laing. Beginning Weight Training: The Safe & Effective Way, 1989.



Atrophy

*decrease in size
& strength*

Hypertrophy

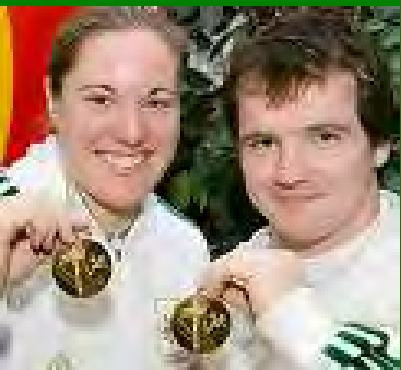
*increase in size
& strength*



Olympic Lifts

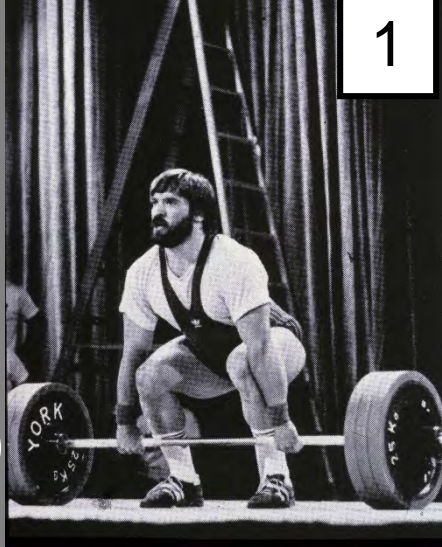
1. Clean & Jerk

2. Snatch

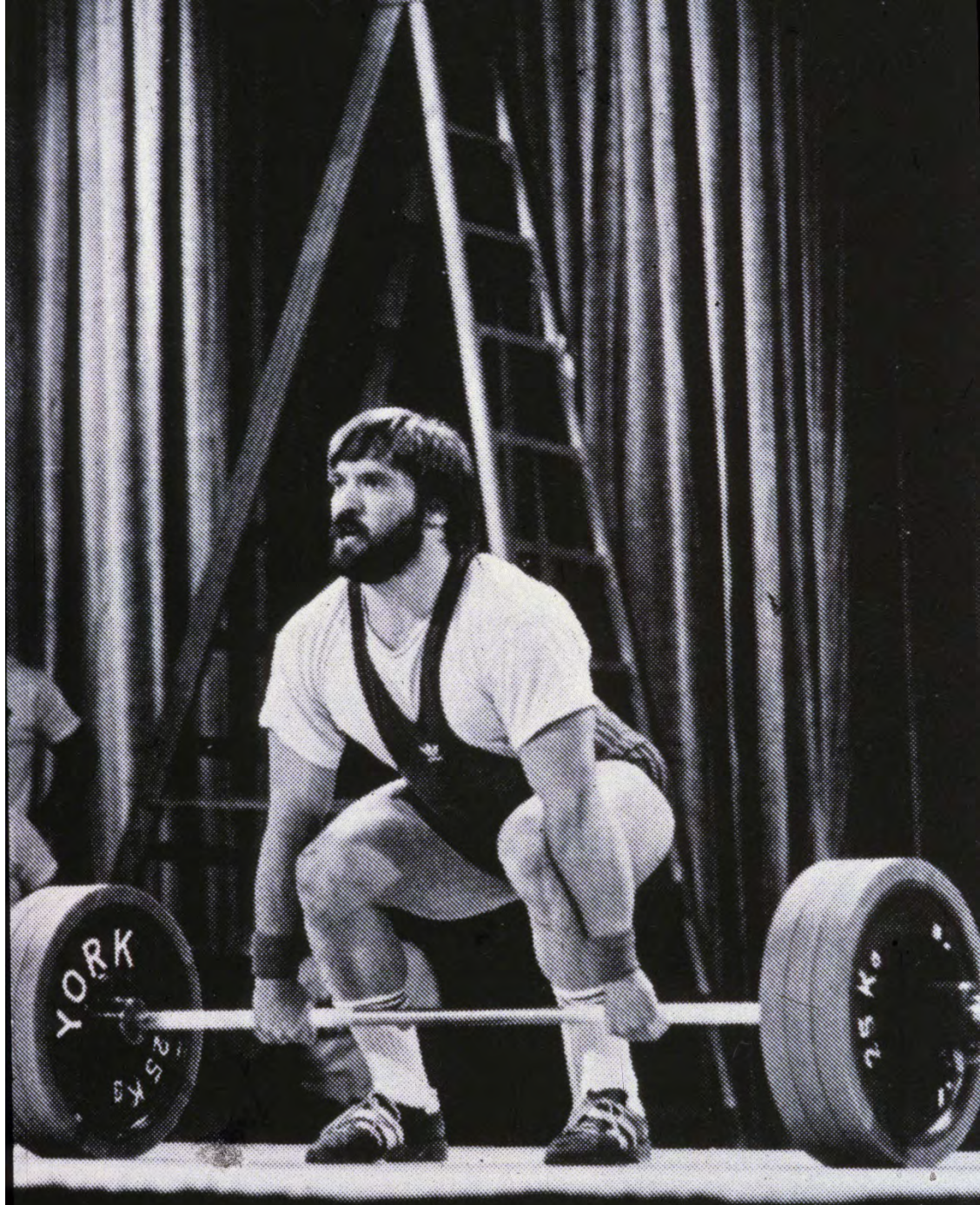


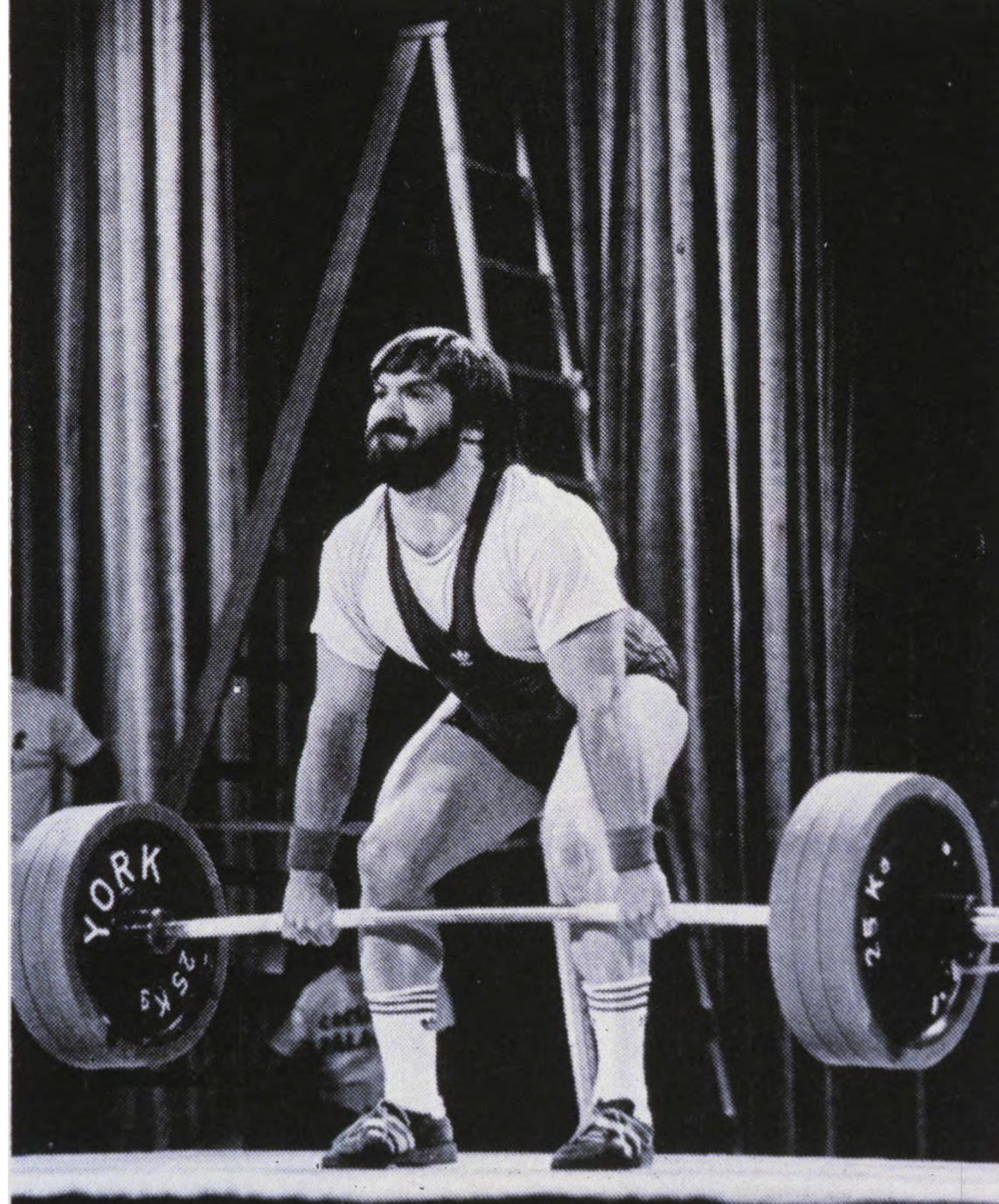
Clean & Jerk

Hip
Thigh front
back
(inside)
Back lower
upper
Neck
Shoulder
Arm front
back
Forearm front
back



Gluteal group
Quadriceps
Hamstrings
(Adductors)
Erector spinae
Quadratus l+
Trapezius
Rhomboids
Levator s
Splenius c+
Deltoid
Biceps brachii
Triceps brachii
Brachioradialis+
Flexor digit+

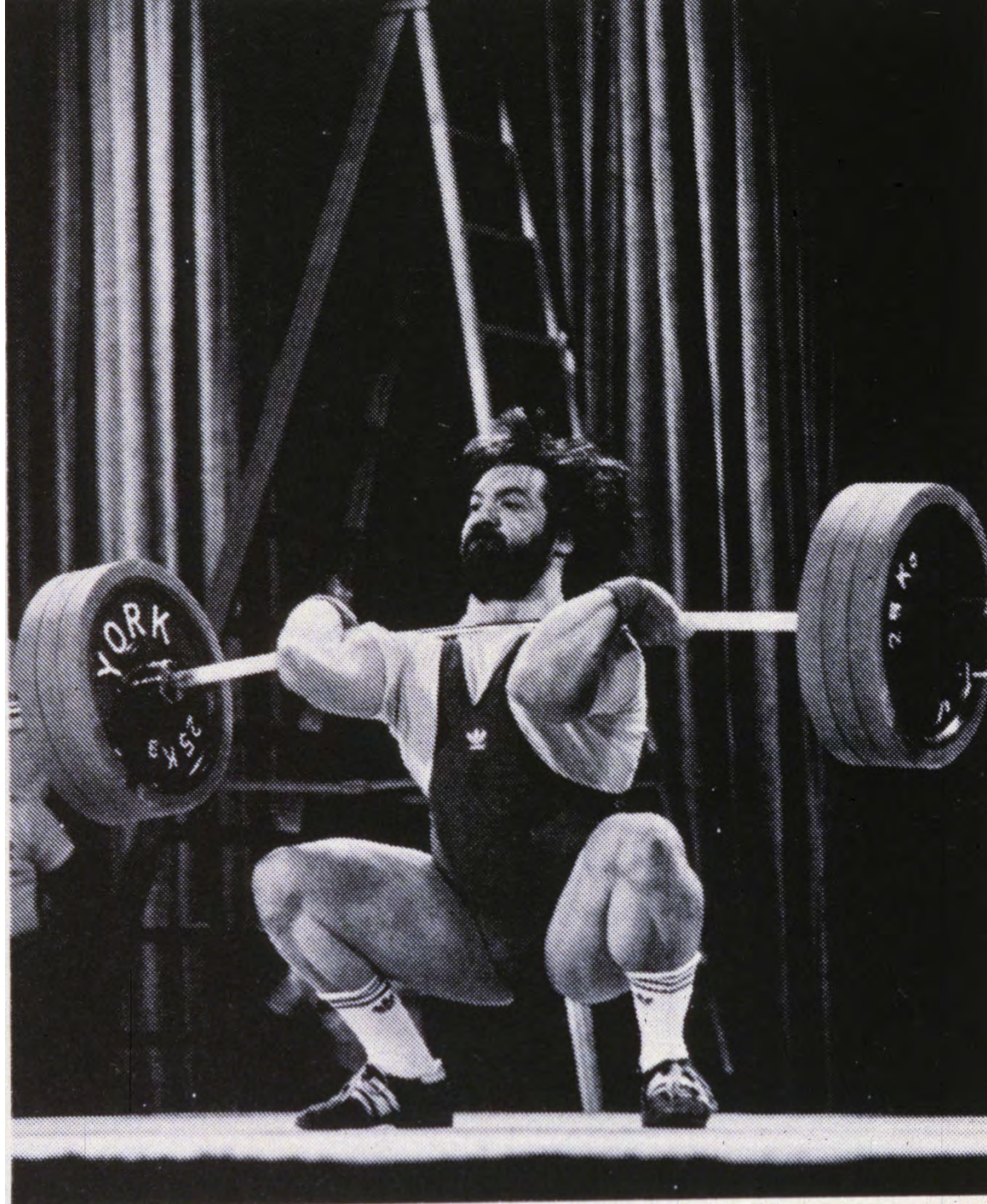




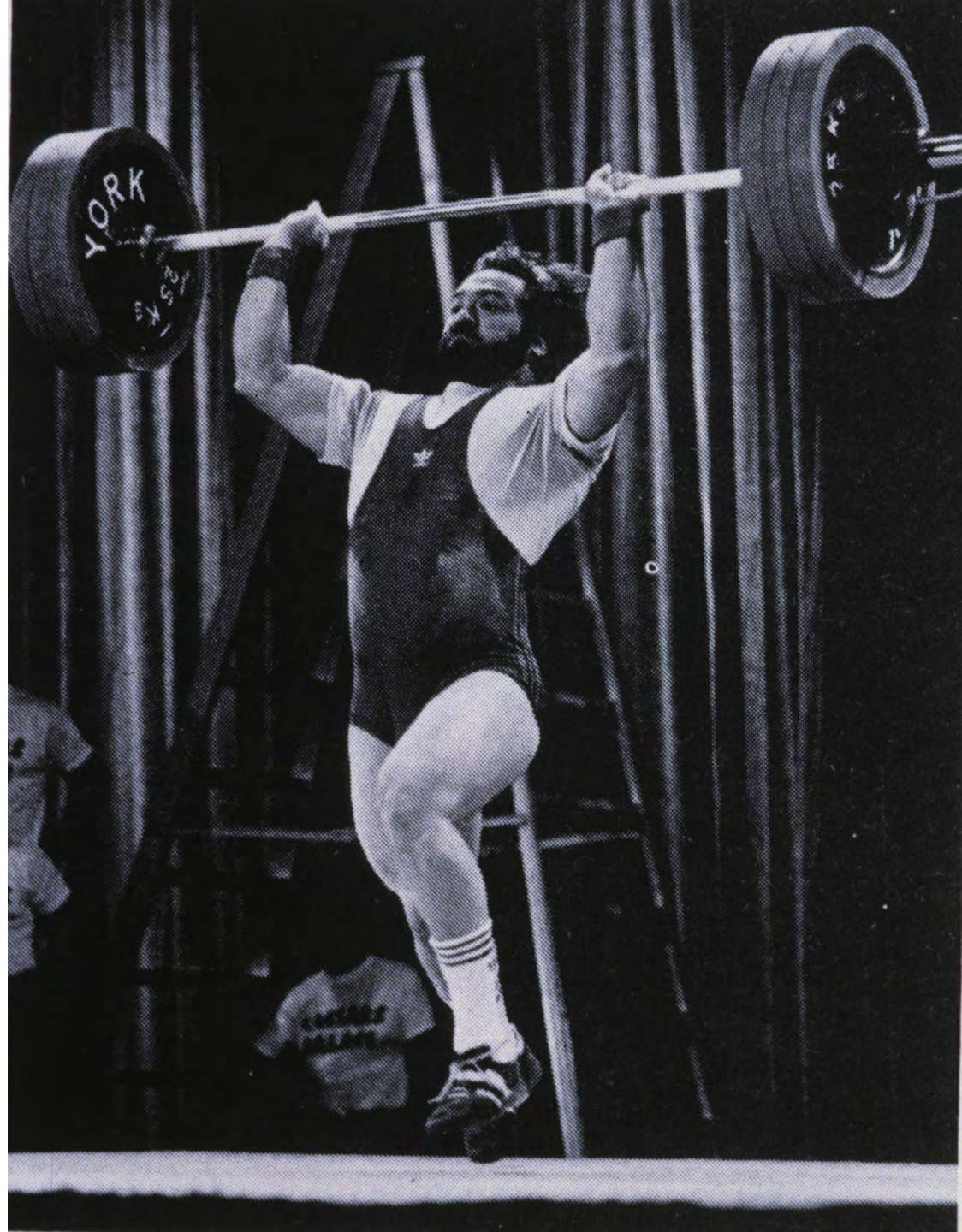


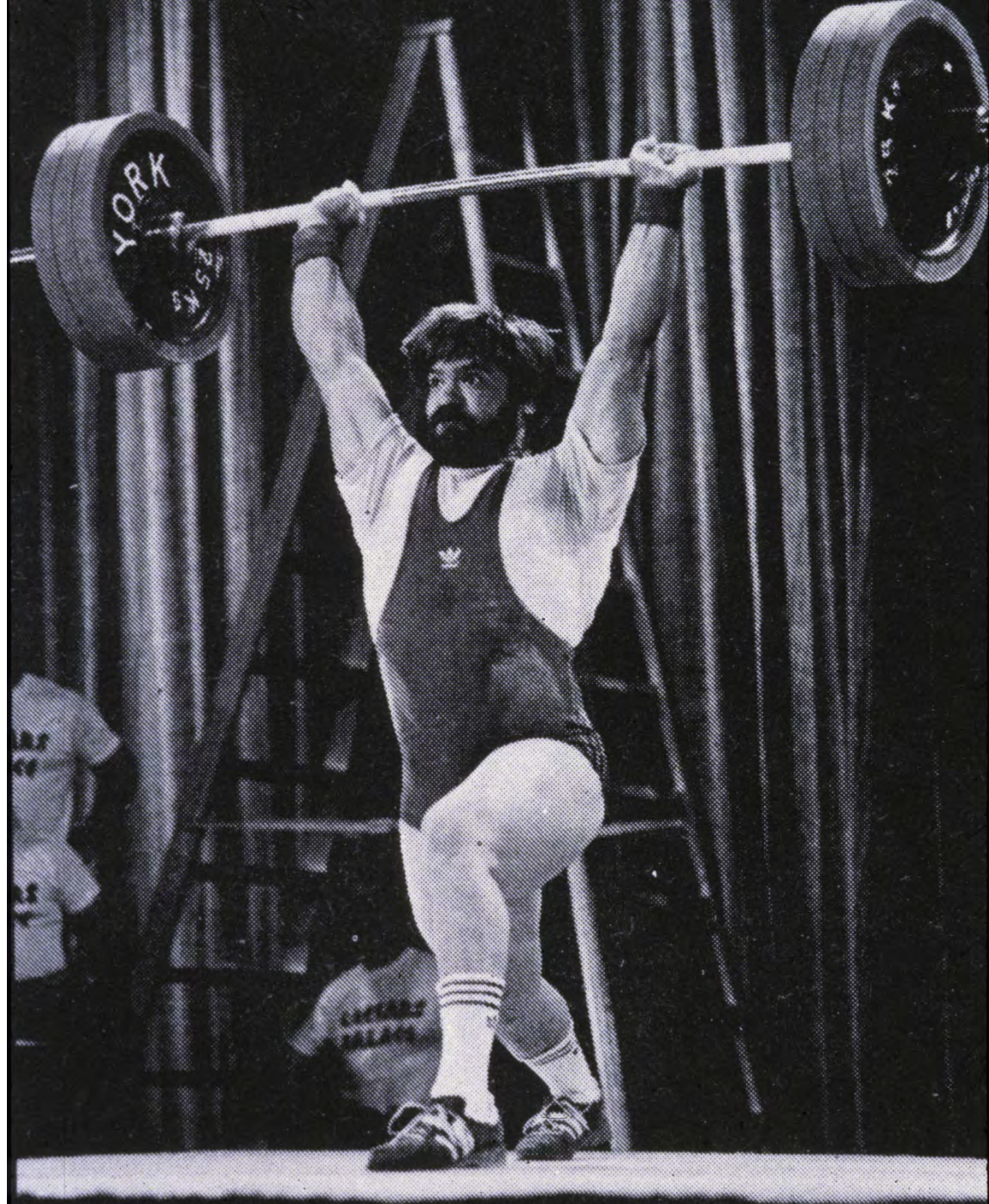






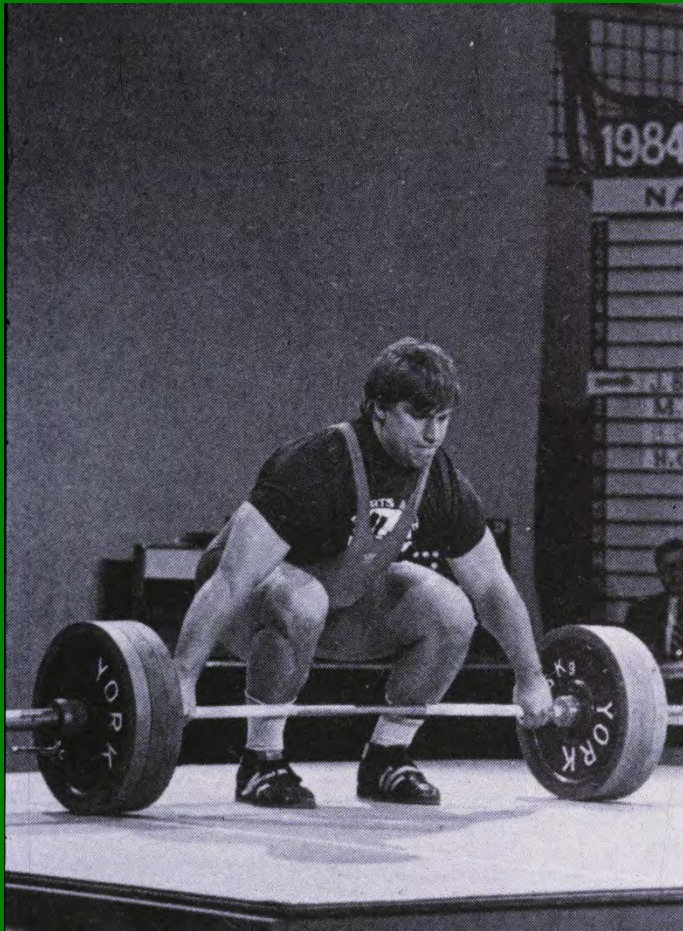




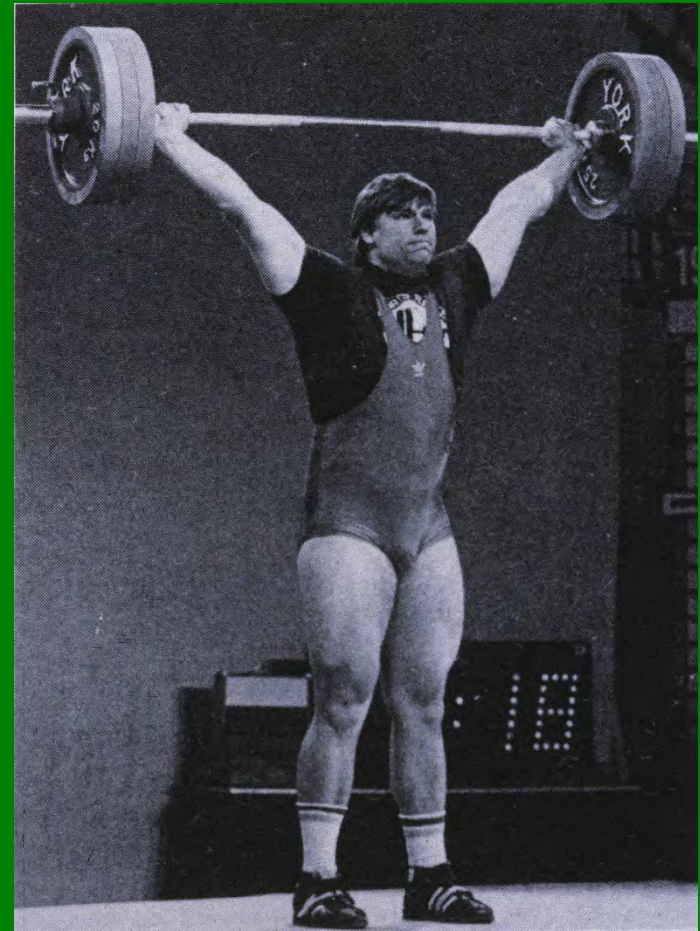


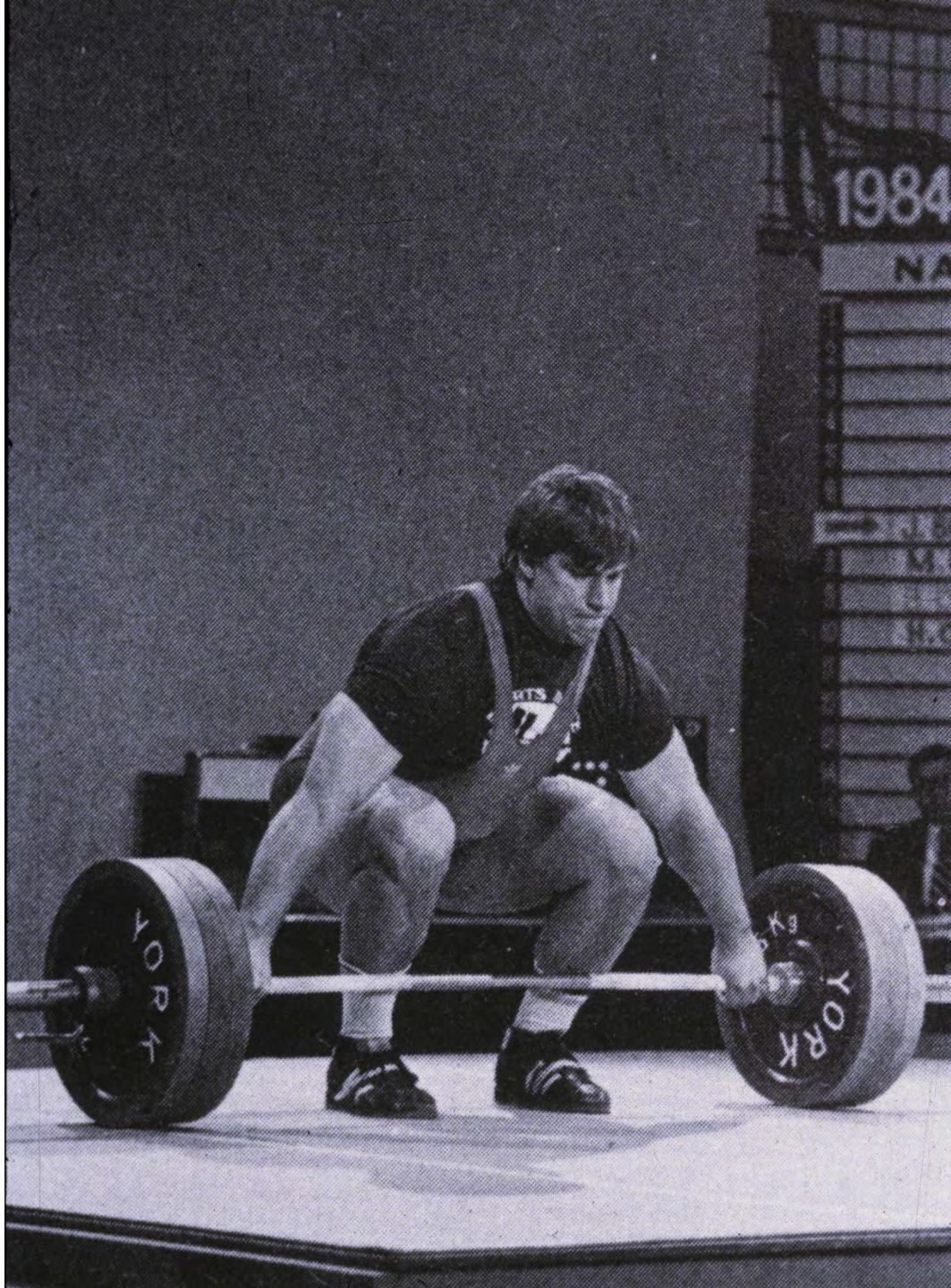


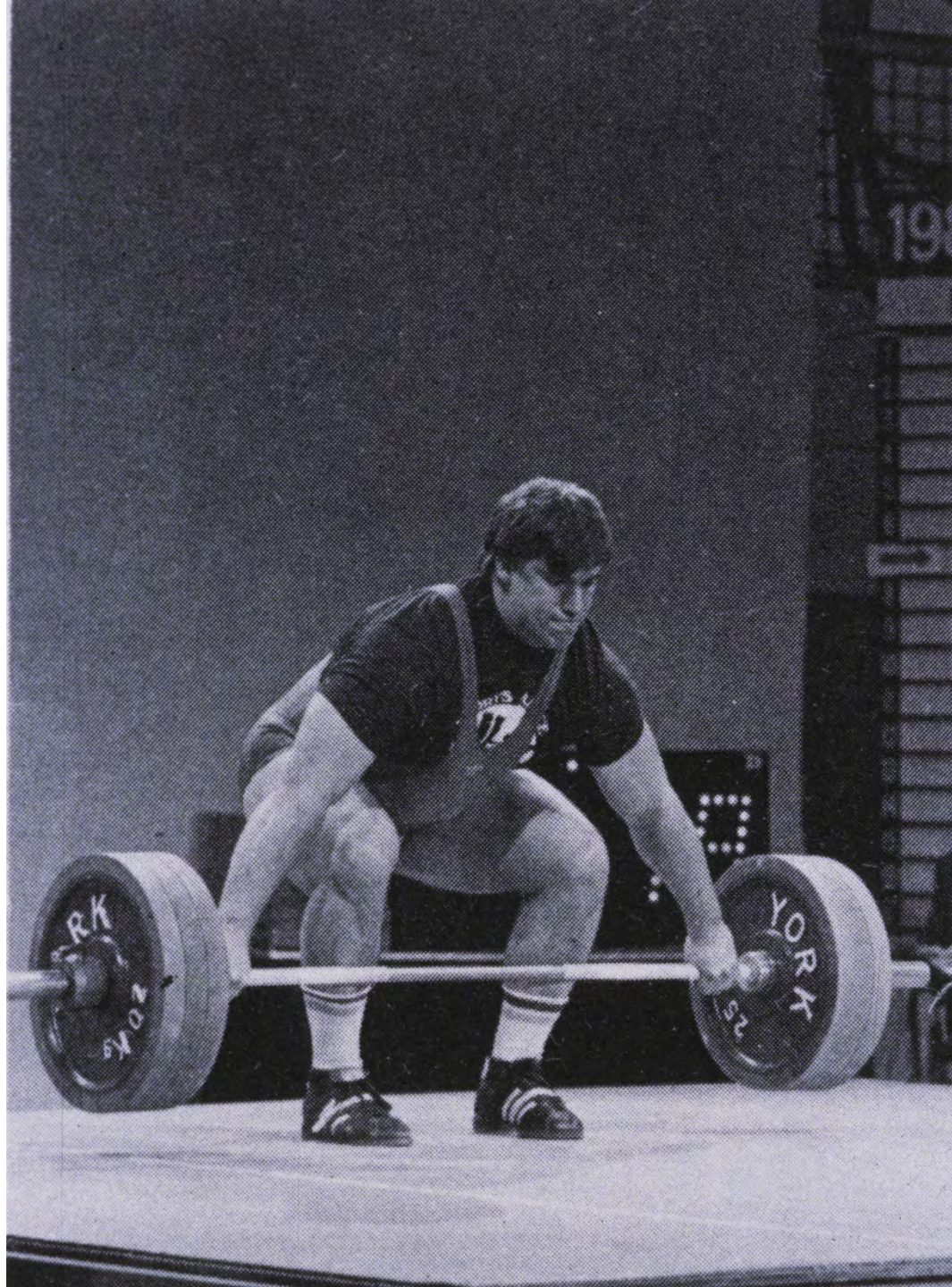
The snatch works nearly identical muscles, but is a more continuous movement of the bar from the floor to a point directly overhead! Wow!

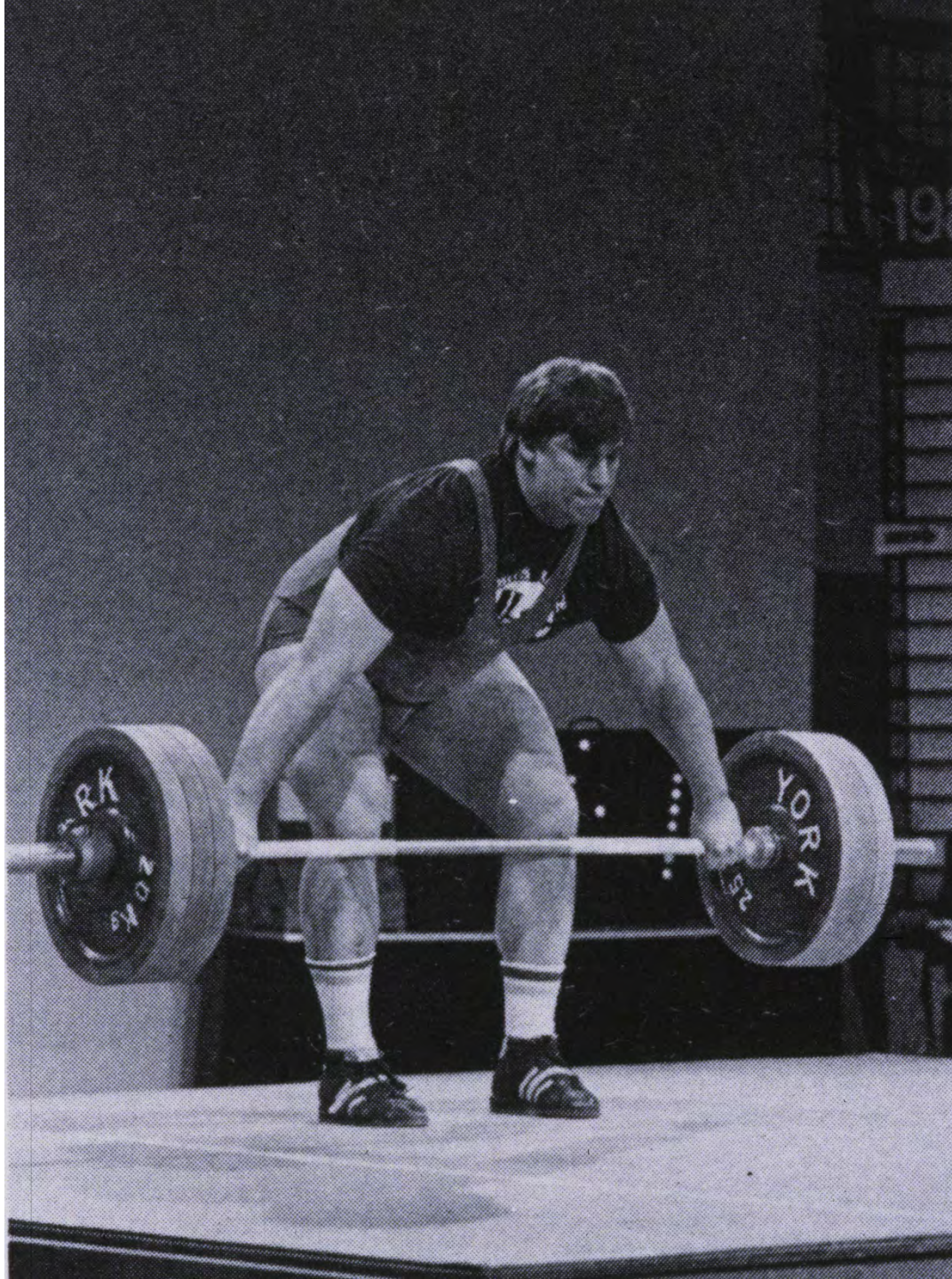


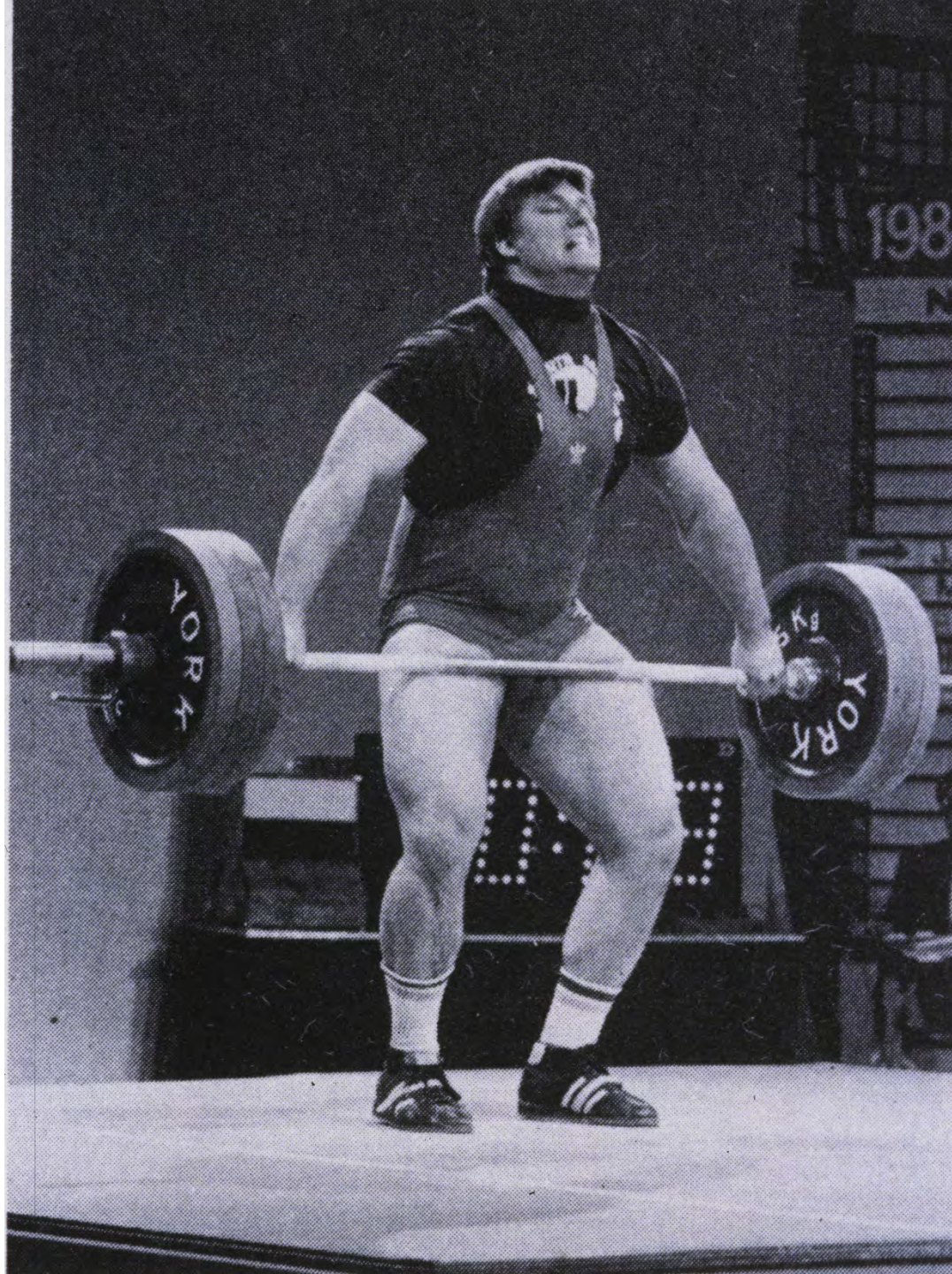
*Shear
Power*

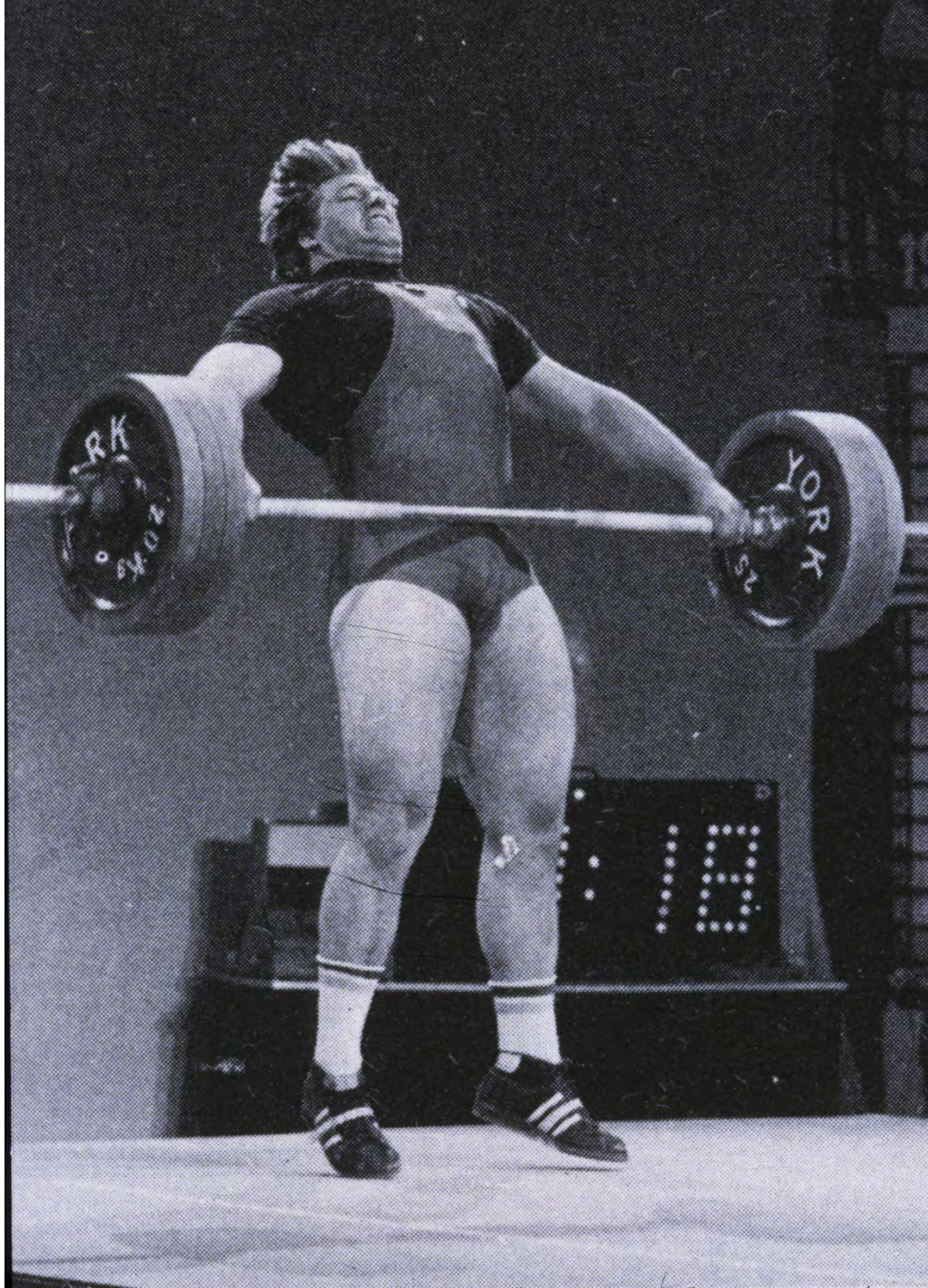


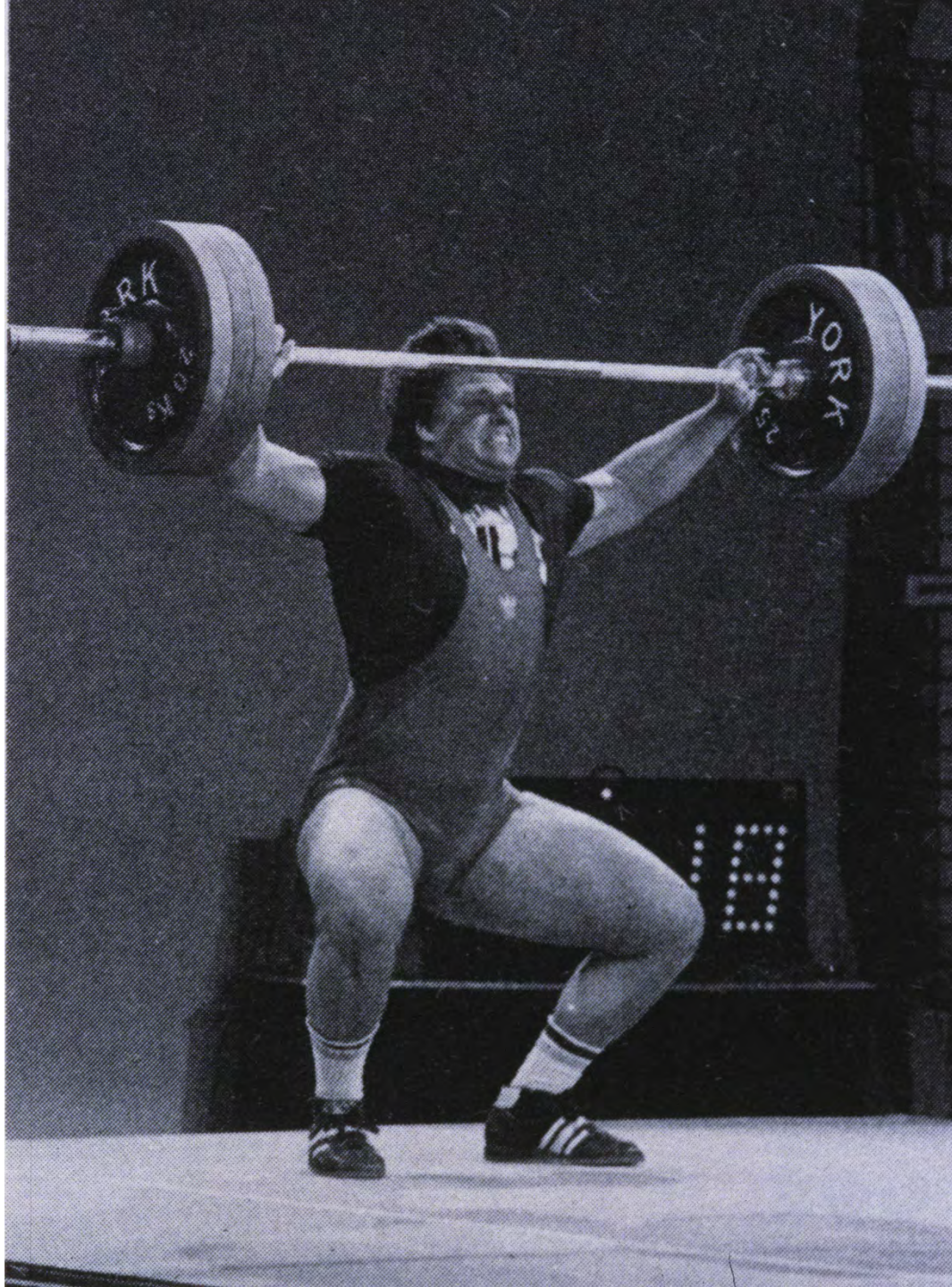


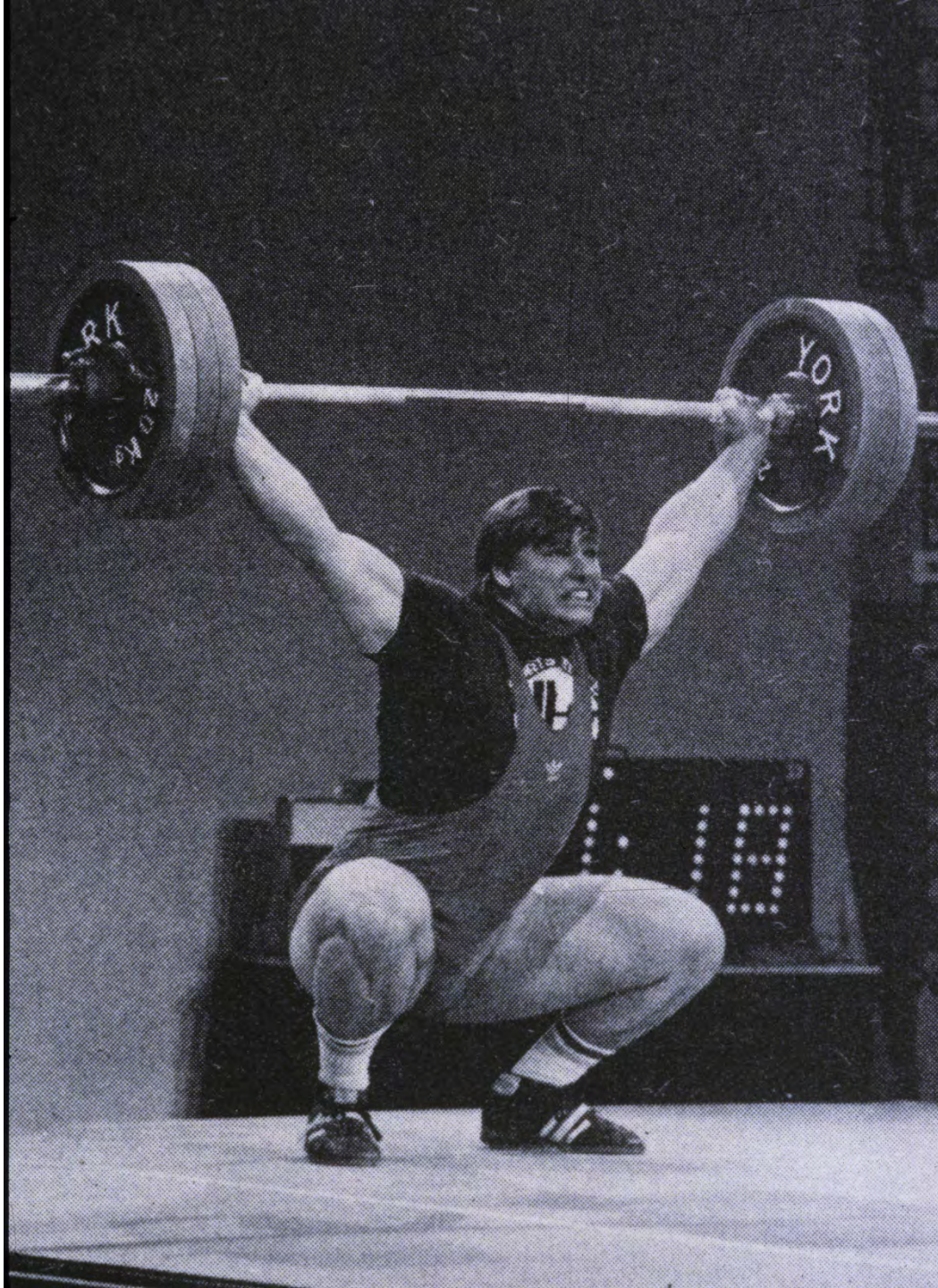


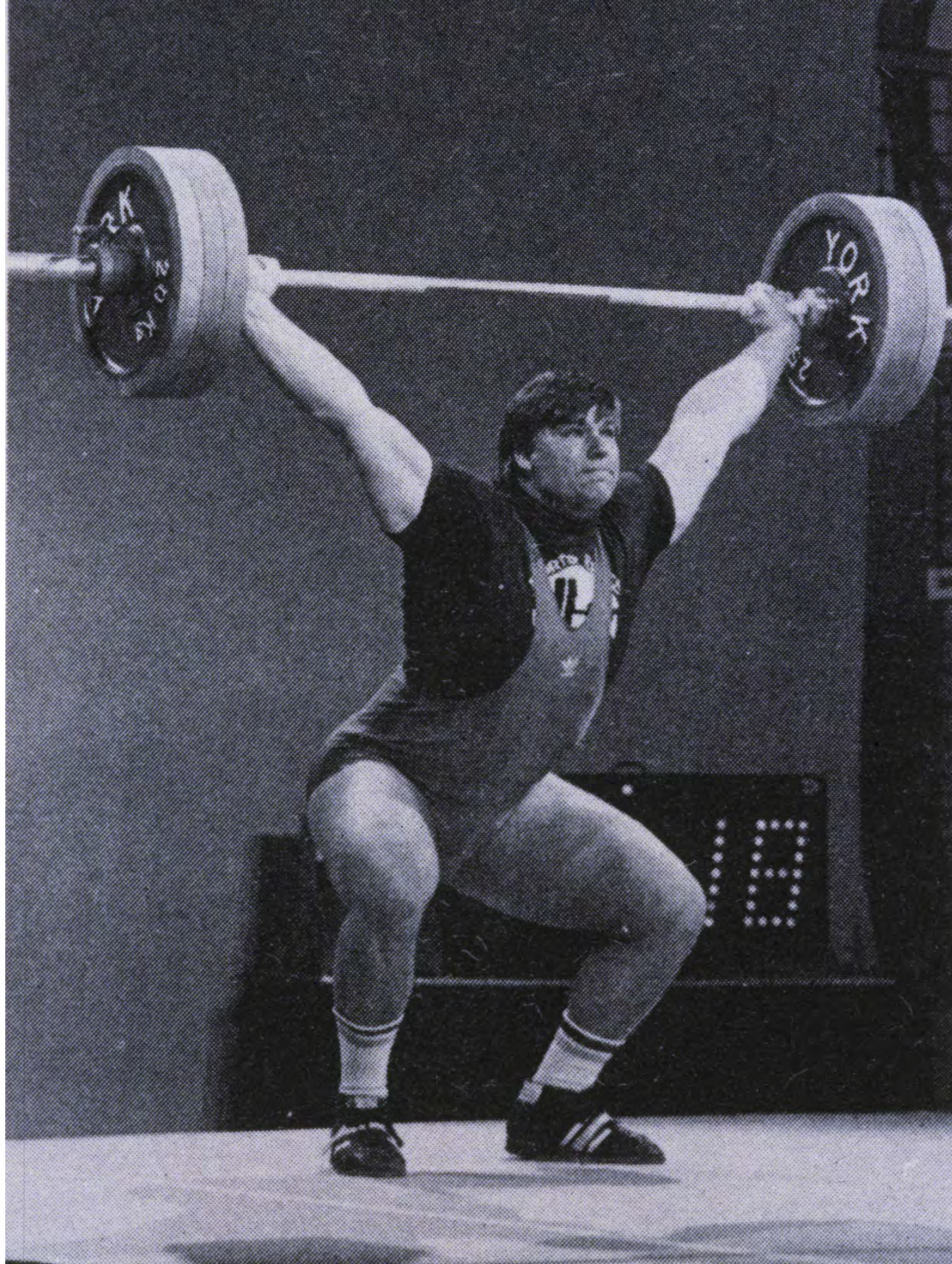


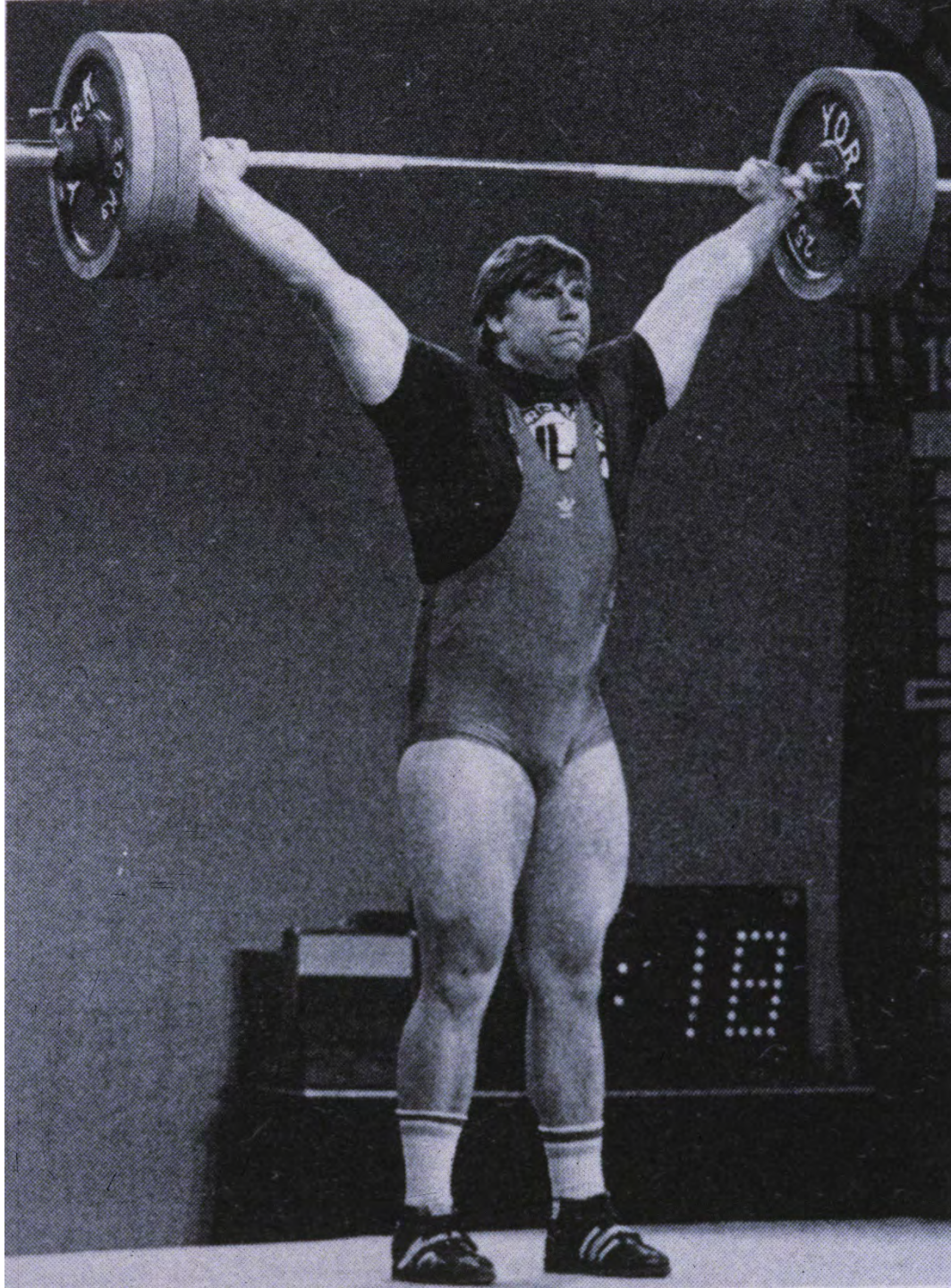






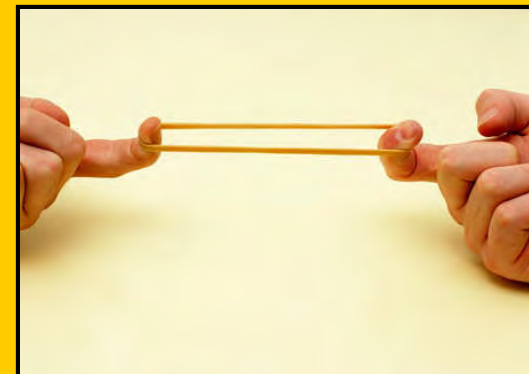
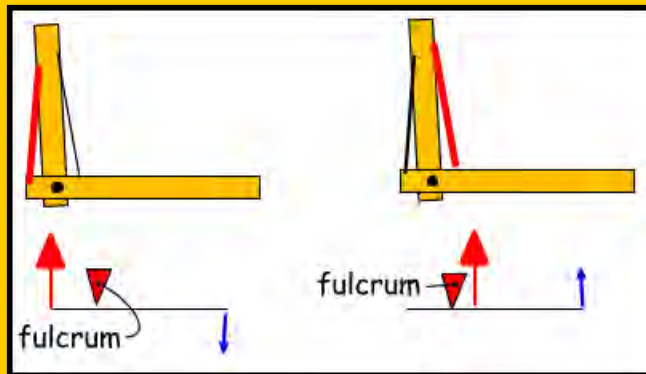
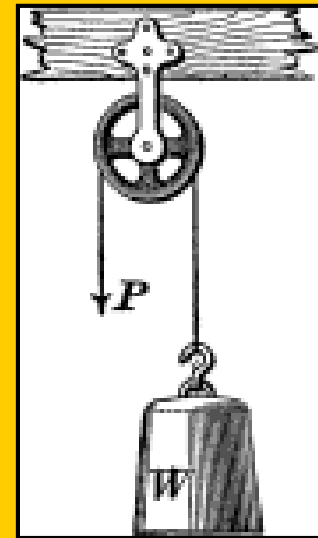
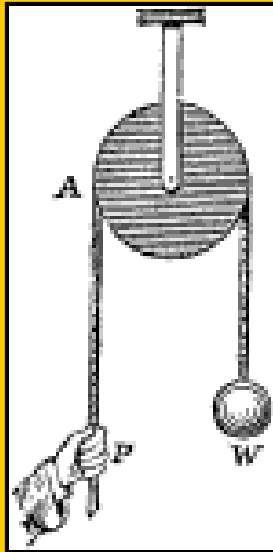


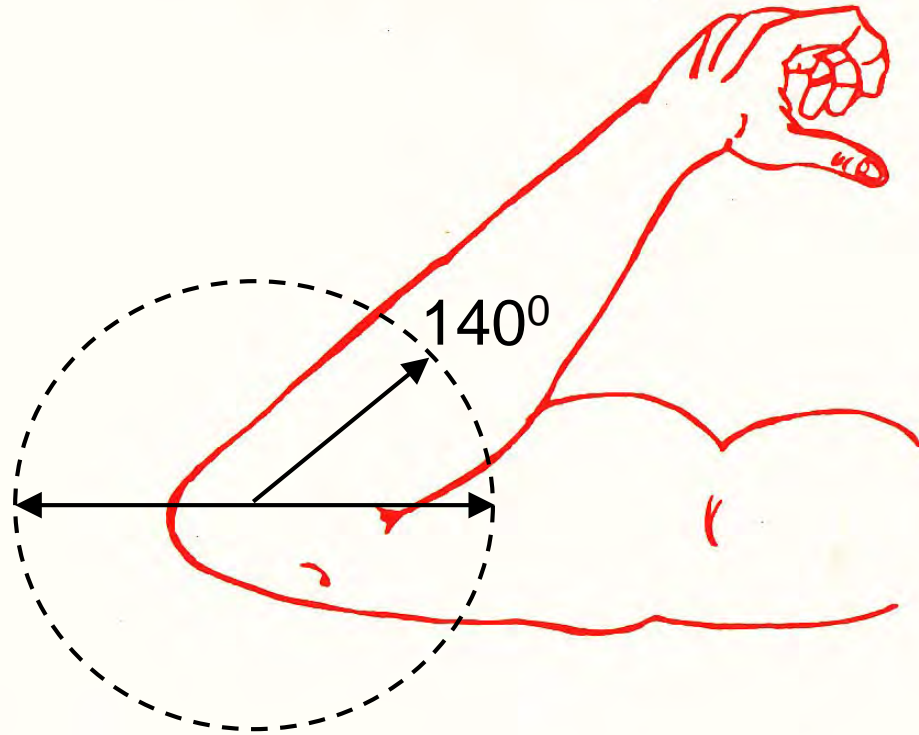




J-MAK!

Joint-Muscle Activity Kits!





FROM Principle

Agonistic - Antagonistic?

Push - Pull

Prime Move(r) - Resist(er)

Promotes - Opposes

WT Exercise eg?

Bench press? - Bent-over row

Biceps curl? - Triceps extension

Leg extension? - Leg curl

Discussion

+ Q?