CHAPTER III

Facilities, Equipment, Maintenance, Substitutes

INDOOR FACILITIES AND EQUIPMENT

Indoor Gymnasium

The gymnasium for gymnastics should be of adequate size and proportion with dimensions of 100′ x 100′ x 25′ or 30′. At least 25 square feet should be allowed for each cadet. A hardwood floor is desirable; white walls help solve any lighting problem; natural light is preferable and adequate ventilation is essential. The gymnasium should be free from all obstructions. It should be entirely apart from the area being used for basketball, volleyball and other activities, since uncontrolled balls bounding into the gymnastic area, together with the noise and vibrations caused by the players, are not conducive to either effective teaching or performance.

However, if desirable gymnasium space is not available, do not permit that lack to defeat a gymnastic program. The use of any available space is recommended. Make use of an alcove, a hallway for after school activities, or the like.

At a Pre-Flight School, approximately 2,000 cadets can be handled efficiently in gymnastics and tumbling with the listed equipment for the combined purposes of class instruction and the sports program. The equipment permits efficient handling of nine periods a day, six of which are instructional periods for platoons of 40 to 75 cadets, and for three sports programs in which approximately 120 participate at one time. In the summer the sports program is held during one period. The program then takes care of twelve teams of approximately twenty men on each team. Thus a total of 240 cadets are accommodated in a limited area.*

Tumbling Equipment

	*Number Suggested***
Mats.—15 square feet for each cadet in class should be allowed.	
1. 5′ x 20′ x 2″	20
2. 5′ x 10′ x 2″	10
3. Tumbling mat (50′ x 5′ x 2″)	1
Trampoline. (Spare springs and bounding mats)	2
Safety Belts. (Hand mechanics)	4-6
Semi-Guyed Adjustable Horizontal and Vaulting Bar	4
Floor Horizontal Ladder.—This apparatus is useful for sub-squad work; 100 cadets can get a strenuous workout on two such ladders in 30 minutes.	4

* See Chapter XIII.

** For minimum equipment for the various stages of training see Appendix, p. 366.

PLATE 1. *Indoor Gymnasium*

Gymnastic Apparatus

	Number Suggested
Side Horse.—Vaulting boxes cheaply and readily made could be substituted for vaulting and can be used instead of the side horse and long horse.	4
Bucks	4
Beat Boards	4
Springboards	4
Rings	3 or 4 sets
Adjustable Horizontal Ladder	2
Parallel Bars (10 feet)	6
Low Parallel Bars	4
Long Horse	2
Vaulting Box with 3 Underlifts	4
Suspended Safety Belts (Overhead mechanics)	4
Balance Beams (12″ high)	4
Balance Beams (3′ 6″ high)	2
Chest Pulley Weights	12
Inclined Rope	3

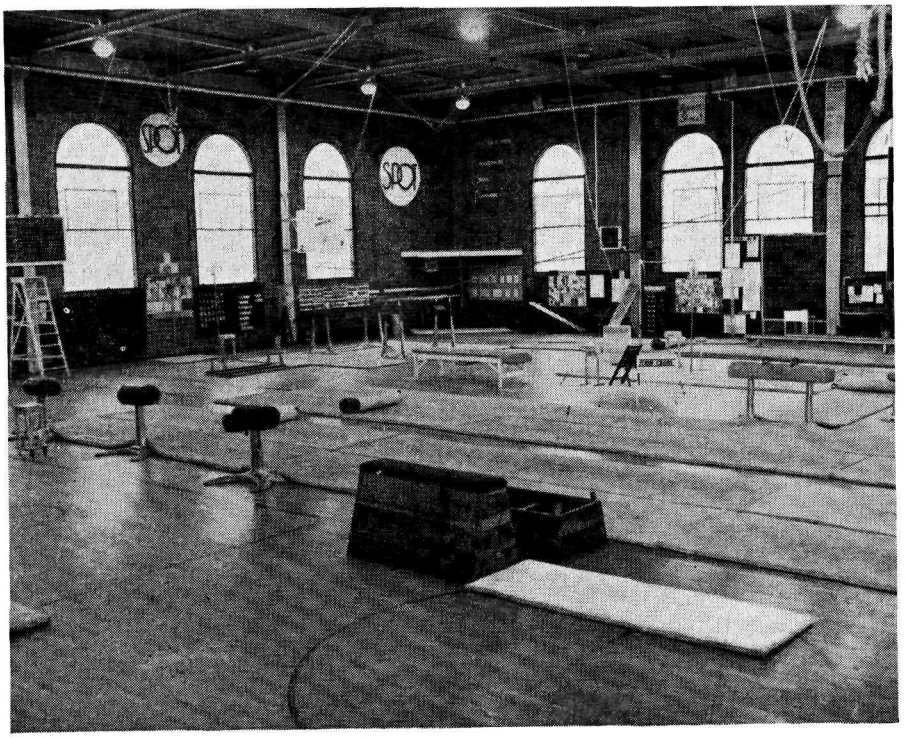

PLATE 2a. *Indoor Gymnasium*

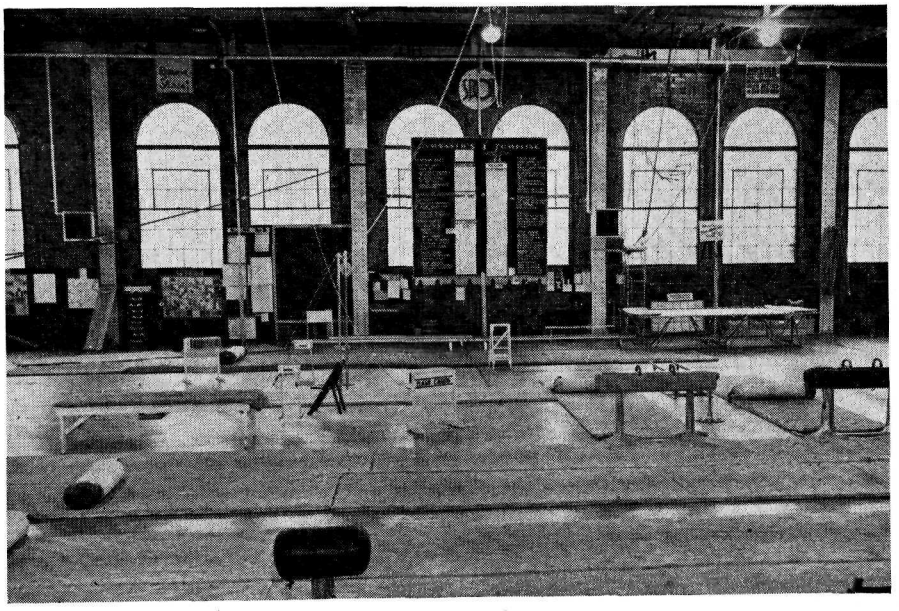

PLATE 2b. *Indoor Gymnasium*

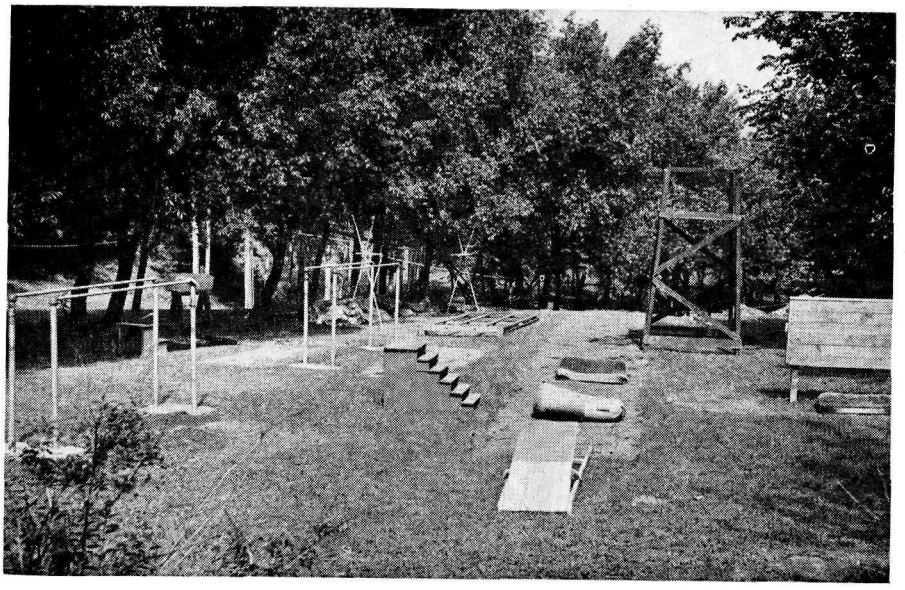

PLATE 3. *Outdoor Gymnasium*

Developmental and Corrective Equipment

	Number Suggested
Section of 3 Stall Bars	6
Adjustable Bar Bell	6
Medicine Ball 8 lb.	12
Climbing Shelf (8′ high, 20′ long, 4′ wide)	2
Inclined Board	4
Wrist Twist	6
Horizontal Ropes	2
Vertical Ropes	8-10

Miscellaneous Equipment

	Number Suggested
Coasters for Relays	8-10
Aerowheels	6
Jumping Platforms for Parachute.—These are 3 step affairs with steps 2′ x 4′ x 6′ high	2
Cargo Nets (if possible)	4
Cabinet (double depth 16½″ x 40″ x 60″)	4
Racks for cadets' gear (25-75) 14′—3 shelves	2
Bulletin Boards (8′ x 8′)	2
Magnesium Carbonate Resin	
Storm Boards and Agility Pegs, and Swinging Rope	

OUTDOOR FACILITIES AND EQUIPMENT

Outdoor Gymnasium

An outdoor gymnasium is an asset. Apparatus may be constructed reasonably for permanent use outdoors from scrap pipe lengths and lumber, and left outdoors; or if practicable, apparatus may be moved and used outside if weather permits.

An outdoor gymnasium project, carried to completion at the preflight schools successfully utilized sawdust combinations to take the place of mats. A pit seven inches in depth, filled with sawdust combined with crank case oil and covered with heavy canvas securely held in place proved effective for ground tumbling.

Mats

Suggestions

1. Sawdust and crank case lubricating oil.
2. Sawdust and sand (mixed) covered with taut canvas. Mixture: Two parts of sand one part of sawdust.
3. Canvas over sawdust pits.
4. Carpet on lawn.
5. Springless mattresses.
6. Homemade mats.

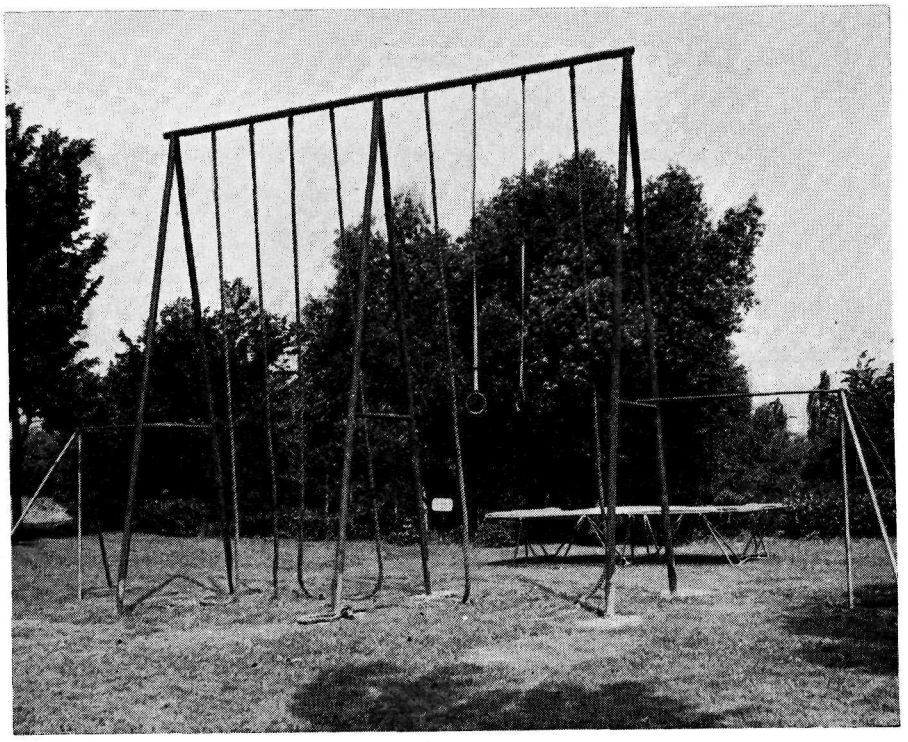

PLATE 4a. *Outdoor Gymnasium*

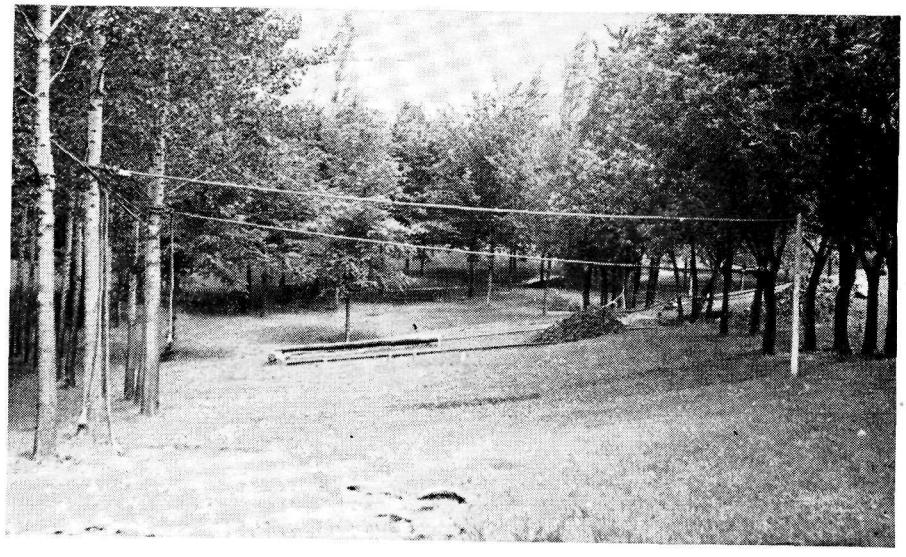

PLATE 4b. *Outdoor Gymnasium*

Parallel Bars

Suggestion (Suitable for permanent outdoor use)

1. Pipe in pipe framework (2″).
2. Pipe in wood framework (2″).
3. Standard measurements for both types of equipment regarding height and width.

Buck or Horse

Suggestions (For outdoor use)

1. Parallel bars covered with mats; or covered box which must have durable, stable base.
2. Covered pipes arranged between uprights (2″). Perhaps pipes could be arranged between trees.
3. A tree trunk cut to size.
4. A series of bucks or horses may be made by using a long tree trunk.

Vaulting Fence

(A very satisfactory apparatus for outdoors.)

Balance Beam

May be made from a steel rail or board twelve feet long and two inches wide. A tree trunk will also prove serviceable.

Vertical, Horizontal and Inclined Ropes

May be hung without much difficulty.

Springboards

May be improvised from old automobile springs. Automobile cushions are also very serviceable for front somersaults and vaulting.

PLACEMENT OF EQUIPMENT IN INDOOR GYMNASIUM

Stationary equipment should be so located that it will not interfere with movable equipment.

Movable

1. Excessive moving should be eliminated.
2. Equipment should be placed in permanent position if possible. Depreciation is then kept at a minimum.
3. If equipment must be moved, mats should have a definite location for placement while not in use. If they are stacked, the bottoms should be together. The mats should be carried and not dragged.
4. Heavy apparatus should be so located that it may be rolled towards the center or the sides for relays and games.

CARE OF EQUIPMENT

The longevity and usefulness of gymnastic equipment depends almost entirely upon proper maintenance. Equipment is hard to replace and should be taken care of properly in terms of safety, operation and cleanliness. Apparatus in poor condition offers no incentive for its use. It should be inspected closely each week. Below are listed items that should be checked regularly in regard to care of equipment.

General Hints

1. Demonstrate handling and adjusting of the apparatus.
2. Keep apparatus in a permanent location to minimize wear and tear.
3. Handle all apparatus carefully; observe safety rules.
4. Adjust mechanism according to manufacturer's directions.
5. Inspect equipment bi-weekly for loose parts and lubrication needs.

Horizontal Bar

1. Check floor plates.
2. Inspect guy wires closely and replace frayed and rusty cables.
3. Tighten shackle bolts.
4. Lubricate movable parts.
5. Keep bar coated with a film of vaseline or grease, when bar is not in use over a period of time. A bar that becomes rusty will soon become pitted and unfit for use.
6. Keep bar clean. Use emery cloth.

Side Horse, Long Horse, Buck

1. Clean leather with saddle soap once a month.
2. Turn horse on side and tighten screws and bolts.

3. Oil casters and movable parts.

4. Shoe polish will add to the looks and give a frictional surface desired by the better performers.

5. Loose pommels may be corrected by soaking leather in hot water and allowing to dry.

6. Do not allow hard surfaced shoes to be used when performing on horse.

7. Tape pommels of side horse.

Mats

1. Mats are protective devices aand should be treated accordingly.

2. Keep mats clean. Wash as often as necessary. Do not let them become too soiled before this is done. If the mat is used while dirty the dirt finally works into the inside padding causing the padding to pack. Special paint is available for mats and has proved very successful. The loss of resiliency of the painted mat is compensated by the ease of quick and effective washing.

3. Always carry a mat or use a mat truck. Do not drag. Mats receive unnecessary wear from this source. Six cadets should carry the large mats and four should handle small mats. A dolly also may be used for this purpose.

4. When not in use stow away from the gymnasium traffic. In stowing mats place tops to tops and bottoms to bottoms. The bottom is the tasselled side of the mat.

5. Do not walk on the mats when in street shoes.

6. Replace torn handles and tufts that have become loose. The tufting keeps a mat in shape and prolongs its usefulness.

7. Repair torn mats immediately.

8. Keep mats dry. If they become damp they should be placed in the sun as soon as possible. Mats should be put in the sun about every two weeks.

9. Tumbling mats should be cleaned on both sides with vacuum cleaner three times a week.

10. Check on footwear before allowing performer to take his position on mats. Clean socks, clean canvas shoes or tumbling boots should be worn.

Parallel Bars

1. Keep bars tight.

2. When adjusting for height or width be sure mechanical appliances are secure and in a locked position.

3. Lubricate casters and movable parts for easy maneuverability.

4. Inspect wooden bars for defects and keep bars smooth. Use sand paper on bars.

5. Do not allow bars to be moved without first raising from the floor. Leather pads on the bottom prevent the bars from sliding. Inspect periodically.

6. Do not use parallel bars for obstacles where rough treatment may break or weaken a bar.

Rings

1. Adjust flying rings 7′-9″ from the deck according to National Intercollegiate rules. Fasten ropes securely before using.

2. Inspect ropes and webbing for signs of wear and loose fittings.

3. Check movable parts at ceiling for wear and looseness regularly.

4. If wall type, check wall bracket and securing apparatus.
5. Tape rings.

Trampoline

1. Keep trampoline well tightened.
2. Keep canvas sanitary by washing. Mat covers may be used on the trampoline.
3. Inspect springs and make sure springs are properly inserted.
4. Do not allow practice in street shoes.
5. If necessary to stow away make sure this is done properly and that there is no strain on any section.
6. Do not allow two persons on the trampoline together, unless preparing for a special act.

Miscellaneous Equipment

Keep miscellaneous equipment in cabinets or racks.

ADEQUATE PROVISION FOR SAFETY*

1. Magnesium carbonate should be rubbed on hands before performing on apparatus.
2. Resin, lump or rock, should be used on hands in rope climbing and on shoes or feet in tumbling.
3. Suspended equipment should be inspected bi-weekly to be sure the ceiling attachments of ropes, rings and high bars are secure. Equipment should not be used if there is any doubt as to its safety.
4. The adjusting screws on the high bars and the parallel bars should be checked before each class.
5. The mats should be arranged properly around the apparatus.
6. The deck should be cleared of hazardous objects.
7. Hazards should be eliminated: When class is not in session, the use of previously setup equipment, such as springboards and vaulting braces *must be forbidden.* This policy protects the unskilled performer against attempting stunts beyond the range of his ability. Springboards and trampolines should be locked against the wall and should be used only when competent supervision is available.

WHEN REGULATION EQUIPMENT CANNOT BE SECURED

Mats

Mattresses or canvas bags (stuffed with hay or cottonseed hulls)
For Outdoors.—Shallow pits filled with sawdust-oil combination.

Horizontal Bars

A horizontal bar may be constructed from pipe 1⅛ inches in diameter to 1¼ inches (preferred size) in diameter. About 7 feet long, and 7 feet 9 inches from the deck. (Use 4″ x 4″ uprights with bottom support and two braces.)

For outdoors a bar may be made out of scrap pipe and placed in concrete, making a permanent fixture.

* Also refer to Chapter V.

Parallel Bars

May be made of unadjustable wooden frame standard height. The hand rails should be oval-shaped, ten feet long and spaced eighteen inches apart. Parallel bars also may be constructed from piping with collars or welding, using floor plate with collar. A wooden frame, with pipe for hand rail, also may be used.

For outdoors.—Either pipe or wooden hand rails mounted on pipe, or wooden structure mounted in concrete.

Vaulting Box

Build a vaulting box on a pyramid form and pad the top. Build in sections so the height (approximately 5′6″ from deck) is adjustable.

For outdoors.—A wooden horse may be made of half a log cut lengthwise, cleaned of its bark, and mounted rounded side up on four legs. Height approximately forty-two inches from the deck.

Springboard

The many uses to which the springboard can be put in conjunction with side horse, bucks, parallel bars and jumping standards make it very serviceable. Make the base of hickory and have it rubber shod. Make the top board of narrow hickory strips and cover with cork carpet cemented on with the edges protected by flush wood moulding strips.

Beat Boards

Use with the horse, buck and parallel bars as a take-off. Make the top of narrow ash strips and cover with cork carpet cemented on and have the base rubber shod to prevent slipping on the deck. The edges of the cork carpet are protected by well rounded wood moulding strips on all four sides. Hardwood cross cleats on the underside of the board are fastened by means of wood screws.