PROCEDURE

In this chapter, the procedure for the selection of the subjects, criterion measure, reliability of data, design of the study, procedure for administering the test, administration of training programme and statistical techniques used for analyzing of data has been discussed.

Selection of Subjects

Seventy-five female students from different colleges of Bundelkhand University Jhansi were selected as subjects for the study. On the basis of best performance in 100 meters sprinting. The average age of the subjects was 20 years ranging between 18 to 22 years.

In order to ensure medical fitness of the subjects their medical examinations were conducted by the qualified doctors working in Bundelkhand University Campus. The examination indicated that all the subjects were medically fit to undergo the testing and training requirements of this investigation.

The requirements of the research study were explained to all subjects in the presence of the coaches of the college concerned and all of them agreed voluntarily to undergo the testing and training programmes. A thorough orientation of the requirements of the experimental procedures, testing as well as exercise schedules were explained to the subjects so that there was no ambiguity
regarding the effort required on their part and what hardship they might have to endure. Coaches of the respective colleges urged the subjects to co-operate in the study even though they might have to work hard in the interest of new scientific findings and improvement in their own performance levels. No special techniques were used to motivate the subjects to put in their best efforts, but the subjects were very enthusiastic and co-operative throughout the project.

The subjects were oriented to testing and training procedure for two weeks to eliminate the learning effect. The subjects were exempted from attending the required programme of the college and were asked not to take part in any voluntary sports programmes or unusual physical exertions.

The subjects were at random, assigned to four experimental groups and one control group, each consisting of 15 Subjects. The experimental groups were Sand running group (Group A), weight training group (Group B), Uphill running group (Group C) and Harness running group (Group D).

Performance of the subjects in 100 meters run was taken at the beginning and after an experimental period of 12 weeks.

**Criterion Measures**

The criterion measure chosen to find out the effect of sand running, weight training, uphill running and harness running, was the time taken by the subject to run a distance of 100 meters as fast as possible and recorded to the nearest 1/100th of a second. The time was clocked with the help of stopwatches, which were
Reliability of Data

The reliability of data was ensured by establishing instrument reliability and tester competency.

Instrument Reliability

The stopwatches used in this study were supplied by Sports Pvt. Lt. Sadar Bazar, Jhansi, a well known and reputed dealer of Jhansi district and these watches were also used in the 35th U.P. State Annual Athletic Championship 2001-2002 held at Jhansi and various Inter College Athletic meet held at Jhansi & Rath, in the year 2002, District Hamirpur (U.P.).

Therefore all the stopwatches used for measuring the performance of the subjects were considered reliable and precise enough for the collection of data needed for the study.

Tester Competency and Reliability of the Tester

The tester competency was evaluated together with the reliability of the test. To determine the reliability of test, data on 100 meters sprint performance were recorded twice with a gap of one day in between, under identical conditions, on 15 subjects selected at random under guidance of Dr. R.P. Jha, Sports Officer Bundelkhand University, Jhansi (U.P.) All the measurements were taken by the investigator with the assistance of Bachelor's degree
students and Lecturers of M.D.I.P.E. Bundelkhand University, Jhansi (U.P.). The scores thus obtained on two occasions were co-related using Pearson's Product Moment Co-relation method. The co-relation of co-efficient of 0.887 thus obtained showed that data were reliable and also verified the competency of the tester.

**Design of the Study**

For the present study the experimental design adopted was random group design. Equal number of subjects were assigned randomly to five groups of 15 subjects each. The experimental treatments were also assigned randomly to the four experimental groups (A, B, C, D) and control group E. The four experimental groups were administered four different kinds of training programmes for the development of sprinting speed. One group was trained with the method of sand running (Group A), the second group with the weight training (Group B), the third group with up hill running (Group C) and the fourth group with harness running (Group D). The distance chosen for each of the training was 80 meters. The training sessions were conducted thrice a week i.e. on Mondays, Wednesdays and Fridays. Timing for 100 meters was taken before and after an experimental period of 12 weeks. The subjects were advised not to take part in any voluntary sports programmes or unusual physical exertions so that physical activities remained uniform for all the groups chosen for the study.

**Procedure for Administering the Test**

All the subjects were assembled on the track of the Dhyan Chand Stadium, Jhansi. They were briefed on the objectives and the
requirements of the test.

The test was conducted on the 400 meters track of Dhyanchand Stadium. All the eight lanes of 100 meters straight were properly marked. The subjects were instructed to warm-up on their own in order to gain best performance and avoid possible injuries. The subjects were started in groups of five and assigned chest numbers for identification by the judges and timekeepers.

**Sprinting Speed Test (100 Meters Dash)**

**Equipment Used and Marking**

**Clapper and Stop watches**

100 meters distance was measured with eight parallel lines with a gap of 1.22 meters in between each two consecutive lines.

**Description of Test**

All the subjects ran with running shoes and Crouch start was adopted by all. The starting command’ used by the research scholar ‘on your marks”, “set” and in place of “go” the clapper was sounded. Timekeepers at the finishing line recorded the time.

**Rules**

The conduct of the test and recording the official timing of each
subject was as per the rules and regulation prescribed by the I.A.A.F.

Scoring.

The elapsed time from the starting signal until the runner’s torso crossed the finish line was recorded to the nearest 1/100w of a second for each subject.

Administration of Training Programme

The experimental groups met thrice a week for a period of 12 weeks. The first two weeks training for all the experimental groups was for physical conditioning, determining the starting weight, practice of weight training exercises, sand running and harness running, so that physical and physiological system of the subjects were ready to undertake the specific load.

In case of weight training the maximum weight, which a subject lifted in one single effort was recorded and fifty percent of the maximum was lifted by the subject in each of the weight training exercises.

The load in respect of harness running was fixed according to the pulse rate reached at the end of the 80 meters of hill running. Each subject performed three sets in weight training and 6 to 8 repetitions in sand miming, up-hill running and harness running. A rest period of ensuring complete recovery was provided between
the two sets.

Sand Running

The subject was asked to run with a distance of 80 meters on sand. Subject performed 6 to 8 repetition with complete recovery between the two sets. Subject covered this distance as fast as possible.

Selection of Exercises for Weight Training

The research scholar went through the available literature pertaining to training of the sprinters using weight training and also after a discussion with the expert of athletic training, Dr. A. K. Srivastva, Director, Physical Education, Delhi College of Engineering, New Delhi, the following exercises were chosen:

1. Half squat
2. Leg press
3. Step-up
4. Heel raise
5. Bench press.

Half Squat

The barbell rested across the shoulder and back of the neck with hands grasping the bar with over grip somewhat greater than shoulder width. The subject went down to the half squat position and come back to starting position. Again the same was repeated.
Leg Press

The athlete was asked to lie on his back and press the barbell up with his feet by extending his legs and thighs and lowering down up to squat position. Same exercise was repeated.

Step - up

From standing position stepping was done with weight (50 per cent of maximum weight) in four counts on a bench of 12 to 18 inches in height - (i) stepped up with one foot, (ii) stepped up with second foot body erect legs straight on the bench, (iii) stepped down with the same foot, (iv) stepped down with other foot maintained the four count. The subject was asked to take lead with same foot each time or change feet as desired.

Heel Raise

Using a block of wood about 2 inches thick, the subject stood in a way that the toes just rested on the edge with the heels on the floor. A barbell was placed across the back of the shoulders. The body was raised upward as high as possible by raising on the toes. The heels were lowered back to the floor and the same was repeated\(^1\).

\(^1\)George Kirkley and John Goodbody, The Manual of Weight Training (London Stanley Paul and Company Ltd.), p. 81-82.
Bench Press

The subject assumed supine - position on a bench and started with the barbell at straight-arm length directly above the chest. An over grip with hand spaced slightly wider than shoulder width was used. The barbell was lowered straight down until it touched the mid chest and pressed back to arms length. Same exercise was repeated.  

Up-hill Running

The subject was asked to run distance of 80 meters on a up-hill track with a gradient of 15 to 30°. Subject performed 6 to 8 repetition with complete recovery between the two sets. Subject covered this distance as fast as possible.

Harness Running

The subject ran a distance of 80 meters with weights in his drag making a proper body lean and running action. He ran as fast as possible and performed 6 to 8 repetitions with complete recovery between the sets.

It was one of the important training methods employed during the strength build up period. The athletes performed the movement with a belt secured about the waist. The belt was attached to

ropes, which were connected to a drag made of wood weighing nine kilograms including the ropes attached to the drag. Three weights plates of 10 Kilograms were used so that the total weight of one drag was 39 kilograms. Harness runs were performed by the subjects over a distance of 80 Mt. An Interval of 3 minutes was provided between the successive repetitions. The load of resistance was set with the pulse rate of up hill running of 80 meters.

**Physical Conditioning Programme for the Experimental Groups**

**Monday.**

20 minutes warm-up.
Calisthenic exercises.
80 meters sprint x 8 rept.
Limbering down.

**Tuesday.**

20 minutes warm-up.
80 meters acceleration runs x 6 rept.
Dips.
Sit-ups with bent knees.
Hopping
Skipping
Limbering down.
Wednesday.

20 minutes warm-up
Calisthenic exercises
Fartleg - 30 minutes
Limbering down.

Thursday.

Same as Monday.

Friday.

Same as Tuesday.

Saturday.

Same as Wednesday.

Same programme was repeated for two weeks.

Group A

Training Programme for Sand Running
(Third and Fourth Week)

Monday.

a) 15 - 20 minutes warm-up.
b) 80 meters acceleration run x 4 rept.
   Intensity 80 - 100 per cent.

c) Sand run 80 meters 6-8 rept. x 2 sets.

d) Limbering down.

**Tuesday**  (Active Rest)

**Wednesday.**

a) 15 20 minutes warm-up

b) 120 meters Ins and Outs Runs x 4 rept.
   Intensity 80-100 per cent.

c) Sand run 80 meters 6-8 rept. x 2 sets.

d) Limbering down.

**Thursday**  -  Active Rest.

**Friday**  -

a) 15 - 20 minutes warm-up.

b) 60 meters acceleration run x 6 rept.

   Intensity 80 - 100 per cent.

   c) Sand run 80 meters 6-8 rept. x 2 sets.

   d) Limbering down.

**Saturday**  Active Rest

(Fifth and Sixth Week)
Monday.

a) 15 - 20 minutes warm-up.

b) 80 meters acceleration run x 5 rept.
   Intensity 80 - 100 per cent.

c) Sand run 80 meters 8-10 rept. x 2 sets.

d) Limbering down.

Tuesday - Active Rest.

Wednesday.

a) 15 - 20 minutes warm-up.

b) 120 meters Ins and Outs run x 4 rept.
   Intensity 80 - 100 per cent.

c) Sand run 80 meters 8-10 rept x 2 sets.

d) Limbering down.

Thursday - Active Rest.

Friday.

a) 15 - 20 minutes warm-up.

b) 60 meters acceleration run x 6 rept.
   Intensity 80 - 100 per cent.
c) Sand run 80 meters 8-10 rept. x 2 sets.
d) Limbering down.

**Saturday - Active Rest.**

(Seventh and Eighth Week)

**Monday:**

a) 15-20 minutes warm-up
b) 80 meters acceleration run x 6 rept
   Intensity 80-100 percent
c) Sand run 80 meters 8-10 rept. x 3 sets
d) Limbering down

**Tuesday: Active Rest**

**Wednesday:**

a) 15-20 minutes warm up
b) 120 meters Ins and Outs run x 5 rept
   Intensity 80-100 percent
c) Sand run 80 meters 8-10 rept x 3 sets
d) Limbering down.

**Thursday: Active Rest.**

**Friday:**

a) 15-20 minutes warm up
b) 60 meters acceleration run x 7 rept
   Intensity 80-100 percent

c) Sand run 80 meters 8-10 rept x 3 Sets
d) Limbering Down.

Saturday: Active rest.

(Ninth and Tenth Week)

Monday:

   a) 15-20 minutes warm up
   b) 80 meters acceleration run x 8 rept
       Intensity 80-100 percent
   c) Sand run 80 meters 10-12 rept x 3 sets
d) Limbering down.

Tuesday: Active Rest

Wednesday:

   a) 15-20 minutes warm up
   b) 120 meters Ins and Outs run x 5 rept
       Intensity 80-100 percent
   c) Sand run 80 meters 8-10 rept X 3 sets
d) Limbering down.

Thursday: Active Rest
Friday:

a) 15 -20 minutes warm up
b) 60 meters acceleration run x 8 rept
   Intensity 80-100 percent
c) Sand run 80 meters 8-10 rept x 3 sets
d) Limbering Down

Saturday: Active Rest

(Eleventh And Twelfth Week)

Monday:

a) 15-20 minutes warm up
b) 80 meters acceleration run x 8 rept
   Intensity 80-100 percent
c) Sand run 80 meters 12-14 rept x 3 sets
d) Limbering down

Tuesday: Active rest

Wednesday:

a) 15-20 minutes warm up
b) 120 meters Ins and Outs run x 6 rept.
   Intensity 80-100 Percent
c) Sand run 80 meters 10-12 rept x 3 sets
d) Limbering down
Thursday: Active rest

Friday:

a) 15-20 minutes warm up
b) 60 meters acceleration run x 8 rept
   Intensity 80 -100 Percent
c) Sand run 80 meters 10-12 rept x 3 sets
d) Limbering down

Saturday: Active Rest

Group B

Training Programme for Weight Training
(Third and Fourth Week)

Monday.

a) 15 - 20 minutes warm-up.
b) 80 meters acceleration run x 4 rept.
   Intensity 80 - 100 per cent.
c) Weight training with 40% of weight of maximum load.

   Half squat 6 –12 rept. x 2 sets.
   Leg Press 6- 12 rept. x 2 sets.
   Heel Raise 6 –12 rept. x 2 sets.
   Step-up 6 –12 rept. x 2 sets.
   Bench Press 6 –12 rept. x 2 sets
d) Limbering down.

**Tuesday - Active Rest.**

**Wednesday.**

a) 15 - 20 minutes warm-up.

b) 120 meters Ins and Outs run x 3 rept.
   Intensity 80 -100 per cent.

c) Weight training with 40% of weight of maximum load.

   - Half Squat 6 – 12 rept.x 2 Sets
   - Leg Press 6 – 12 rept.x 2 Sets
   - Heel Raise 6 – 12 rept.x 2 Sets
   - Step-up 6 – 12 rept.x 2 Sets
   - Bench Press 6 – 12 rept.x 2 Sets

d) Limbering down.

**Thursday - Active Rest.**

**Friday.**

a) 15 - 20 minutes warm-up.

b) 60 meters acceleration run x 6 rept.
   Intensity 80 - 100 per cent.

c) Weight training with 40% of weight of maximum load.

   - Half Squat 6 – 12 rept.x 2 sets.
   - Leg Press 6 – 12 rept.x 2 sets.
Heel Raise  6 – 12 rept. x 2 sets.
Step-up  6 – 12 rept. x 2 sets.
Bench Press  6 – 12 rept. x 2 sets.

d) Limbering down.

Saturday - Active Rest.
(Fifth and Sixth Week)

Monday.

a) 15 - 20 minutes warm-up.
b) 80 meters acceleration run x 5 rept.
   Intensity 80 - 100 per cent.
c) Weight training with 50% of weight of maximum load.

Half Squat  8 – 12 rept. x 2 sets.
Leg Press  8 – 12 rept. x 2 sets.
Heel Raise  8 – 12 rept. x 2 sets.
Step-up  8 – 12 rept. x 2 sets.
Bench Press  8 – 12 rept. x 2 sets.

d) Limbering down.

Tuesday - Active Rest.

Wednesday.

a) 15 - 20 minutes warm-up.
b) 120 meters Ins and Outs run x 4 rept.
   Intensity 80 - 100 per cent.

c) Weight training with 50% of weight of maximum load.

   Half Squat  8 – 12 rept. x 2 sets.
   Left Press  8 – 12 rept. x 2 sets.
   Leg Raise   8 – 12 rept. x 2 sets.
   Step-up     8 – 12 rept. x 2 sets.
   Bench Press 8 – 12 rept. x 2 sets.

d) Limbering down.

Thursday - Active Rest

Friday

a) 15 - 20 minutes warm-up.

b) 60 meters acceleration run x 6 rept.
   Intensity 80 - 100 per cent.

c) Weight training with 50% of weight of maximum load.

   Half Squat  8 – 12 rept x 2 sets
   Leg Press   8 – 12 rept.x 2 sets.
   Heel Raise  8 – 12 rept.x 2 sets.
   Step-up     8 – 12 rept.x 2 sets.
   Bench Press 8 – 12 rept.x 2 sets.

d) Limbering down.

Saturday - Active Rest.
(Seventh and Eighth Week)

Monday:

a) 15-20 minutes warm up
b) 80 meters acceleration run x 6 rept
   Intensity 80-100 percent
c) Weight training with 60% of weight of maximum load
   Half Squat  8 – 10 rept x 3 sets
   Leg press 8 – 10 rept x 3 sets
   Heel raise 8 – 10 rept x 3 sets
   Step up 8 – 10 rept x 3 sets
   Bench Press 8 – 10 rept x 3 sets
d) Limbering down

Tuesday: Active rest

Wednesday:

a) 15-20 minutes warm up
b) 120 meters Ins and Outs run x 5 rept
   Intensity 80-100 percent
c) Weight training with 60% of weight of maximum load
   Half squat 8 – 10 rept x 3 sets
   Leg press 8 – 10 rept x 3 sets
   Heel raise 8 – 10 rept x 3 sets
   Step up 8 – 10 rept x 3 sets
   Bench press 8 – 10 rept x 3 sets
d) Limbering down
Thursday: Active Rest

Friday:

a) 15-20 minutes warm up
b) 60 meters acceleration run x 7 rept.
   Intensity 80-100 percent
c) Weight training with 60% of weight maximum load
   - Half squat 8 – 10 rept x 3 sets
   - Leg press 8 – 10 rept x 3 sets
   - Heel raise 8 – 10 rept x 3 sets
   - Step up 8 – 10 rept x 3 sets
   - Bench Press 8 – 10 rept x 3 sets
   (a) Limbering down

Saturday: Active Rest

(Ninth and Tenth Week)

Monday:

a) 15-20 minutes warm up
b) 80 meters acceleration Run x 8 rept
   Intensity 80-100 percent
c) Weight with 60% weight of maximum load
   - Half Squat 10 – 12 rept x 3 sets
   - Leg press 10 – 12 rept x 3 sets
   - Heel raise 10 – 12 rept x 3 sets
   - Step up 10 – 12 rept x 3 sets
Bench press 10 – 12 rept x 3 sets

d) Limbering down

**Tuesday**: Active Rest

**Wednesday**:

a) 15-20 minutes warm up

b) 120 meters Ins and Outs run x 5 rept

   Intensity 80-100 percent

c) Weight training 60 % weight of maximum load

   Half squat 8 – 10 rept x 3 sets
   Leg Press 8 – 10 rept x 3 sets
   Heel raise 8 – 10 rept x 3 sets
   Step up 8 – 10 rept x 3 sets
   Bench Press 8 – 10 rept x 3 sets

d) Limbering down

**Thursday**: Active Rest

**Friday**:

a) 15-20 minutes warm up

b) 60 meters acceleration run x 8 rept

   Intensity 80-100 percent

c) Weight training with 60 % weight of maximum load.

   Half squat 8 – 10 rept x3 sets
   Leg press 8 – 10 rept x3 sets
Heel raise     8 – 10 rept x 3 sets
Step up       8 – 10 rept x 3 sets
Bench Press   8 – 10 rept x 3 sets
d) Limbering down

Saturday: Active Rest

(Eleventh and Twelfth Week)

Monday:

a) 15-20 minutes warm up
b) 80 meters acceleration run x 8 rept
   Intensity 80-100 Percent
c) Weight training with 60% weight of maximum load
   Half Squat   12 – 14 rept x 3 sets
   Leg press   12 – 14 rept x 3 sets
   Heel raise  12 – 14 rept x 3 sets
   Step up     12 – 14 rept x 3 sets
   Bench Press 12 – 14 rept x 3 sets
d) Limbering down

Tuesday: Active Rest

Wednesday:

a) 15-20 minutes warm up
b) 120 meters acceleration run x 6 rept.
Intensity 80-100 percent

c) Weight training with 60% weight of maximum load
   Half squat  10 – 12 rept x 3 sets
   Leg press   10 – 12 rept x 3 sets
   Heel raise  10 – 12 rept x 3 sets
   Step up     10 – 12 rept x 3 sets
   Bench press 10 – 12 rept x 3 sets

d) Limbering down

**Thursday**: Active Rest

**Friday**: 

a) 15-20 minutes warm up

b) 60 meters acceleration run x 8 rept.
   Intensity 80-100 percent

c) Weight training with 60% weight of maximum load
   Half squat  10 – 12 rept x 3 sets
   Leg press   10 – 12 rept x 3 sets
   Heel raise  10 – 12 rept x 3 sets
   Step up     10 – 12 rept x 3 sets
   Bench press 10 – 12 rept x 3 sets

d) Limbering down

**Saturday**: Active Rest
Group C

Training Programme for UP Hill Running
(Third and Fourth Week)

Monday.

a) 15 - 20 minutes warm-up.
b) 80 meters acceleration run x 4 rept.
   Intensity 80 - 100 per cent.
c) UP Hill run 80 meters 6-8 rept. x 2 sets.
d) Limbering down.

Tuesday : Active Rest

Wednesday.

a) 15 - 20 minutes warm-up
b) 120 meters Ins and Outs Runs x 4 rept.
   Intensity 80 - 100 per cent.
c) UP Hill run 80 meters 6-8 rept. x 2 sets.
d) Limbering down.

Thursday : Active Rest.

Friday

a) 15 - 20 minutes warm-up.
b) 60 meters acceleration run x 6 rept.
Intensity 80 - 100 per cent.

c) UP Hill run 80 meters 6-8 - rept. x 2 sets.
d) Limbering down.

Saturday - Active Rest

(Fifth and Sixth Week)

Monday.

a) 15 - 20 minutes warm-up.
b) 80 meters acceleration run x 5 rept.
   Intensity 80 - 100 per cent.
c) UP Hill run 80 meters 8-10 rept. x 2 sets.
d) Limbering down.

Tuesday - Active Rest.

Wednesday.

a) 15 - 20 minutes warm-up.
b) 120 meters Ins and Outs run x 4 rept.
   Intensity 80 - 100 per cent.
c) UP Hill run 80 meters 8-10 rep. x 2 sets
d) Limbering down.

Thursday - Active Rest.
Friday.

a) 15 - 20 minutes warm-up.
b) 60 meters acceleration run x 6 rept.
   Intensity 80 - 100 per cent.
c) UP Hill run 80 meters 8-10 rept. x 2 sets.
d) Limbering down.

Saturday - Active Rest.

(Seventh and Eighth Week)

Monday:

   a) 15-20 minutes warm-up
b) 80 meters acceleration run x 6 rept
   Intensity 80-100 percent
c) Up Hill run 80 meters 8-10 rept. x 3 sets
d) Limbering down

Tuesday: Active Rest

Wednesday:

   a) 15-20 minutes warm up
b) 120 meters Ins and Outs run x 5 rept
   Intensity 80-100 percent
c) Up Hill run 80 meters 8-10 rept x 3 sets
d) Limbering down
Thursday: Active Rest

Friday:

a) 15-20 minutes warm up
b) 60 meters acceleration run x 7 rept
   Intensity 80-100 percent
c) Up Hill run 80 meters 8-10 rept x 3 sets
d) Limbering down

Saturday: Active Rest

(Ninth and Tenth Week)

Monday:

a) 15-20 minutes warm up
b) 80 meters acceleration run x 8 rept
   Intensity 80-100 percent
c) Up Hill run 80 meters 10-12 rept x 3 sets
d) Limbering down

Tuesday: Active Rest

Wednesday:

a) 15-20 minutes warm up
b) 120 meters Ins and Outs run x 5 rept
   Intensity 80-100 percent
c) Up Hill run 8-10 rept x3 sets

d) Limbering down

**Thursday:** Active Rest

**Friday:**

a) 15-20 minutes warm up

b) 60 meters acceleration run x8 rept
   
   Intensity 80-100 percent

c) Up Hill run 80 meters 8-10 rept x 3 sets

d) Limbering down

**Saturday:** Active Rest

(Eleventh and Twelfth Week)

**Monday:**

a) 15-20 minutes warm up

b) 80 meters acceleration x 8 rept
   
   Intensity 80-100 percent

c) Up Hill run 80 meters 12-14 rept x 3 sets

d) Limbering down

**Tuesday:** Active Rest
Wednesday:

a) 15-20 minutes warm up
b) 120 meters Ins and Outs run x 6 rept
   Intensity 80-100 percent
c) Up Hill run 80 meters 10-12 rept x 3 sets
d) Limbering down

Thursday: Active Rest

Friday:

a) 15-20 minutes warm up
b) 60 meters acceleration run x 8 rept
   Intensity 80-100 percent
c) Up Hill run 80 meters 10-12 rept x 3 sets
d) Limbering down

Saturday: Active Rest

Group D

Training Programme for Harness Running
(Third and Fourth Week)

Monday:

a) 15 - 20 minutes warm-up.
b) 80 meters acceleration run x 4 rept.
   Intensity 80 - 100 per cent.
c) Harness run 80 meters 6 - 8 rept. x 2 sets.
d) Limbering down.

**Tuesday** - Active Rest.

**Wednesday.**

a) 15 - 20 minutes warm-up.
b) 120 meters Ins and Outs run x 3 rept.
   Intensity 80 - 100 per cent.
c) Harness run 80 meters 6 - 8 rept. x 2 sets.
d) Limbering down.

**Thursday**- Active Rest

**Friday.**

a) 15 - 20 minutes warm-up.
b) 60 meters acceleration run x 6 rept.
   Intensity 80 - 100 per cent.
c) Harness run 80 meters 6 - 8 rept. x 2 sets.
d) Limbering down.

**Saturday** - Active Rest.
(Fifth and Sixth Week)

Monday.

a) 15 - 20 minutes warm-up.
b) 80 meters acceleration run x 5 rept.
   Intensity 80 - 100 per cent.
c) Harness run 80 meters 8-10 rept. x 2 sets.
d) Limbering down.

Tuesday - Active Rest.

Wednesday.

a) 15 - 20 minutes warm-up.
b) 120 meters Ins and Outs run x 4 rept.
   Intensity 80 - 100 per cent.
c) Harness run 80 meters 8-10 rept. x 2 sets.
d) Limbering down.

Thursday - Active Rest

Friday.

a) 15 - 20 minutes warm-up.
b) 60 meters acceleration run x 6 rept.
   Intensity 80 - 100 per cent.
c) Harness run 80 meters 8-10 rept. x 2 sets.
d) Limbering down.
Saturday - Active Rest.

(Seventh and Eighth Week)

Monday:

a) 15-20 minutes warm up
b) 80 minutes acceleration runs x 6 rept
   Intensity 80-100 percent
c) Harness run 80 meters 8-10 rept x 3 sets
d) Limbering down

Tuesday: Active Rest

Wednesday:

a) 15-20 minutes warm up
b) 120 meters Ins and Outs runs x 5 rept
   Intensity 80-100 percent
c) Harness run 80 meters 8-10 rept x 3 sets
d) Limbering down

Thursday: Active Rest

Friday:

a) 15-20 minutes warm up
b) 60 meters acceleration run x 7 rept
   Intensity 80-100 percent
c) Harness run 80 meters 8-10 rept x 3 sets  
d) Limbering down

**Saturday:** Active Rest

(Ninth and Tenth Week)

**Monday:**

a) 15-20 minutes warm up  
b) 80 meters acceleration run x 8 rept  
   Intensity 80-100 percent  
c) Harness run 80 meters 10-12 rept x 3 sets  
d) Limbering down

**Tuesday:** Active Rest

**Wednesday:**

a) 15-20 minutes warm up  
b) 120 meters Ins and Outs run x 5 rept  
   Intensity 80-100 percent  
c) Harness run 80 meters 8-10 rept x 3 sets  
d) Limbering down

**Thursday:** Active Rest
Friday:

a) 15-20 minutes warm up
b) 60 meters acceleration run x 8 rept
   Intensity 80-100 percent
c) Harness run 80 meters 8-10 rept x 3 sets
d) Limbering down

Saturday: Active Rest

(Eleventh and Twelfth Week)

Monday:

a) 15-20 minutes warm up
b) 80 meters acceleration run x 8 rept
   Intensity 80-100 percent
c) Harness run 80 meters 12-14 rept x 3 sets
d) Limbering down

Tuesday: Active Rest

Wednesday:

a) 15-20 minutes warm up
b) 120 meters Ins and Outs run x 6 rept
   Intensity 80-100 percent
c) Harness run 80 meters 10-12 rept x 3 sets
d) Limbering down
Thursday: Active Rest

Friday:

a) 15-20 minutes warm up
b) 60 meters acceleration run x 8 rept
   Intensity 80-100 percent
c) Harness run 80 meters 10-12 rept x 3 sets
d) Limbering down

Saturday: Active Rest

Statistical Analysis

To find out the effects of training, the following statistical techniques were adopted:

1. To find out the significance of differences between pre-test and post-test means ‘t’ test was employed.

2. To find out the significance of mean differences among pre-test and post-test and adjusted mean analysis of variance and covariance techniques were employed, whereas ANCOVA was used to analyze the significance of differences among the training effects brought by different training means. Critical difference was applied to study the significance of differences between the ordered paired means in case where significant F-ratio was obtained.