ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

Impact of the use of a proposed training device in the special force and the completion of discus throwing disabled class (54)

Raja Abdul Karim Hamid ,Taha Abdulelah Jasim , Alaa Ibrahim Jasim
University of Diyala / physical education and sport science

Abstract
The importance of this study highlighted the importance of the proposed device, which includes improving the motor trajectory of the disc in the phase of throwing (strength mode) and throwing, as well as improving the special strength and development of the muscles working in these two important stages, and helping to develop the special force associated with skilled performance To add integration in the development of the technical performance of disc throwing and achieving the outstanding achievement of this category of disabled people under study category (54),the study aimed at designing a proposed disc throwing device for the disabled category (54) and recognizing the impact of training on this device in the development of Special force and achievement of disc throwing for the disabled category (54), researchers used the experimental method to suit the nature of the problem by designing the same group to suit the nature of the problem to be solved, the research sample was selected in the intended manner, from the players of the Paralympic Sub-Committee in Diyala With athletics for the disabled in a class (54) discus throwing event (8) players, (2) players were excluded for the purposes of reconnaissance experiments, as the research sample (8) and the research sample accounted for (80%) Fromthe original researchcommunity, the research procedures included the conduct of the design and manufacture of the proposed device as well as conducting reconnaissance experiments and pre- and post- tests for tests (maximum force, explosive and characteristic speed),theexercises were applied using the training device for a period of (8) weeks and spots (3) training units per week and the number of total units (24) training units during the duration of the experiment, with the number of training units (24) units,and the time of the total training unit (90) minutes The exercises using the device are from(35-40)minutes in each training unit and from the main section, and theresearchers concluded that the exercises on the proposed device led to the development of special force (maximum force, explosive force, special force speed) for the members ofthe researchsample, and that the exercises applied to the proposed device led to an improvement in the strength ofthe arms,torso, and recommends researchers emphasize the use (manufactured device) as a means of helping to develop the special force of disc shooters, especially disabled class (56).
Keywords: Training device, special force, discus throwing, disabled class (54)

1.Introduction:

Athletics is one of the activities affected by all elements of fitness, as each event has its own specifications and requirements has become one of the most diverse events, and each competition constitutes a different appearance depending on the characteristics of each event, and among the events of athletics discus throwing, which has increased exciting and exciting in the recent period with the high level of players, and the high achievements achieved the best evidence of this, reflecting the extent of the scientific development of sport in general, the sporting achievements of different countries of the world have shown very great progress, especially In the last few years.

The use of mechanical devices for different areas of motor, skills and sports means designing motion simulation devices using physical laws to find solutions and applications with precise measurement methods that directly affect performance and are interested in constantly evolving non-stop, and recently have been heavily associated with the industrial development of hardware production (training equipment) and new and sophisticated technology that meets the increasing requirements for finding assistance in education and training as well as evaluation of various sports movements, as engineering designs in the field of sports reached during the millennium The third in countries such as Federal Germany , soon, more than (80) devices designed for sports engineering in various sports fields, especially athletics, including throwing events (discus throwing, hammer, and weight).

The aim of the innovation of technological systems and special devices in discus throwing is to judge the level of performance using the latest measuring devices and also give quick and objective results on education and training for the basic acceleration phase in discus throwing, which shows the variables affecting the throw distance, especially since the throwing stage is the main stage in judging

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

the achievement of The goal of the performance level, which is increasing in speed from the moment of dual anchoring to the phase of disposal of the tool and to address this problem only mechanical systems were created using digital technology to evaluate the programs of education and training and the sports equipment industry to develop special force, especially in throwing events, including (discusthrowing). War,1998,89

Through the experience of researcher Yen in the field of athletics, especially throwing events as he participated in many training courses, as well as his knowledge of sources, research and scientific studies, note that there is a decrease in the digital level to accomplish disc throwing for the disabled in our dear country compared to the levels of continental and international digital, and since special physical abilities are among the basic determinants of achieving disc throwing for the disabled, which requires identifying these variables and working to develop them and develop them, the researcher went to study this problem design device that simulates the status of The final throwing of the disc, which is part of the motor track of throwing disc for this category during the race during the performance of the stages of this event without disrupting the motor tracks required during the performance, especially for the stages of throwing and throwing mode and believing that these procedures will develop the special physical abilities and achievement of the players in this game, in order to solve this scientific problem that limits the digital achievement of this event within this category, from this point of view came the importance of this study to highlight the importance of this study to highlight the importance of The proposed device, which includes improving the motor trajectory of the disc in the phase of throwing (strength mode) and throwing, as well as improving the special strength and development of the muscles working in these two important stages, and helping to develop the special force associated with skilled performance to add integration in the development of the technical performance of disc throwing and achieving the outstanding achievement of this category of disabled people under study category (54).

The study aims to design a proposed disc throwing device for the disabled category (54) and to identify the impact of training on this device in the development of special force and achievement of disc throwing for the disabled category (54).

The researchers also assume that the proposed training device has an impact on the special force and achievement of the research sample, and that there are statistically significant differences between the results of pre- and post- tests in special force and achievement and in the interest of post- tests.

2 Research approach and field action:

1.2. Research Approach: Researchers used the experimental approach to match the nature of the problem by designing a single group to suit the nature of the problem to be solved.

2.2. Research sample: The research sample was selected in the intended intentional manner, from the players of the Paralympic Sub-Committee in Diyala athletics for the disabled in a class disc throwing event (54) of (8) players, (2) players were excluded for the purposes of reconnaissance experiments, as the research sample (8) and the research sample formed a percentage (80%) from the original research community.

The researchers found the normal state of the research sample on the one hand: height, age, and lumps, using twisting coefficients, indicating (±3) homogeneity among sample members as shown in Table 1.

Table (1)
Shows sample homogeneity in age, age, training, mass and lengths.

Variables	Unit of measurement	Middle	Broker	Standard deviation	Sprain factor
lifetime	year	24.333	24.500	1.751	.248
body mass	he murmured	61.000	61.000	2.898	.000
Training age	year	5.166	5.000	1.169	.668
Arm length aimed at	poison	66.166	65.500	2.401	.879
Upper end length	poison	50.66	50.000	2.338	.600

3.2. Devices and tools used in research:

Proposed training device, electronic longitudinal and mass measurement device, number (1), Delllaptopcalculator, (1), laser discs(CD), number (6), hand timer type(Casio), number (4), metric bar, number (1), throw discs number 20 different weights (1kg, 1.5 kg, 1.750 kg), electronic balance

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

To measure the mass type(Ketecto)japanese-made, medical balls (3) kg number (3),iron rod Bar)zena (20) kg
number (3), iron discs with weights (1.25- 2.5-5-7.5-10-15-20 kg), specially applied (Bench)forthe disabled number (3).

4.2. Proposed training device (manufacturing, characterization, and modus operandi):

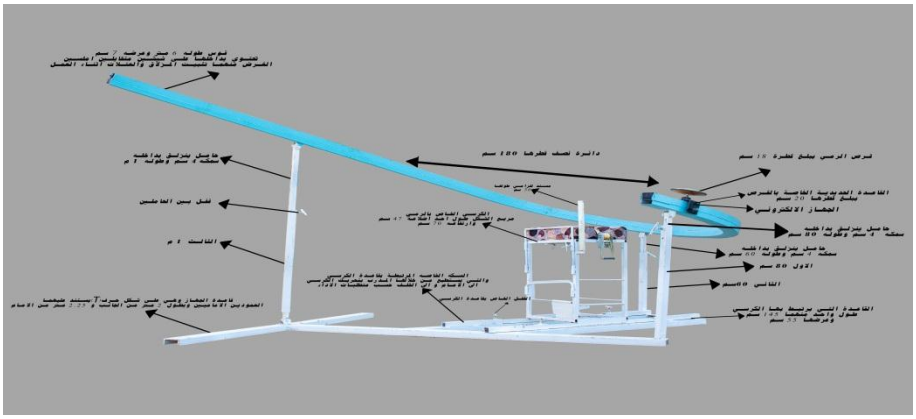
The proposed training device was designed by Researcher Yen andsimulates the last throwing mode of the disc throw, and the goal of the device is to develop the special force and achievement of the disabled disc shooters class (54), this device was made of iron material based on three moving columns up and down depending on the length of the player and the angle of the throw.

The device is manufactured in the form of a semi-circled metal railway made of steel iron (2mm), radius (180cm) and length (6 m) containing a cart loaded with different weights and a legal disc that runs smoothly, and theresearcher took into account that the railway should take the same motor path as the tool during the performance of the throwing phase, and the metal railway was fixed on a group of shawa The researcher took into account that the angle of the throw was similar to the ideal angle, as the chargers proved to be the angle of throwing (37-40) extracted through a right-hand triangle and transported and a vertical line on the ground from the moment of throwing to that angle from the horizontal line parallel to the earth.

The work on this device is done by sitting the athlete in the center of the bow and then holds the handle of the cart and then move towards the back and then to the imam and then the throwing process, and is given to the player freedom to perform a number of weights for the vehicle before the throwing process, and the resistances have been fixed on the factory device as described in the training units of the program, note that the device has the ability to change its position to suit the various physical measurements of samples of different categories, and therefore it is suitable for training in the first two directions is performance Al-Mahari is a tool for motor learning of the effectiveness of discus throwing, and the second trend is to develop some physical qualities of effectiveness, physical load and resistance weight, as well as the possibility of loading the vehicle manufactured with iron weights.

2-4-1 parts of the device:

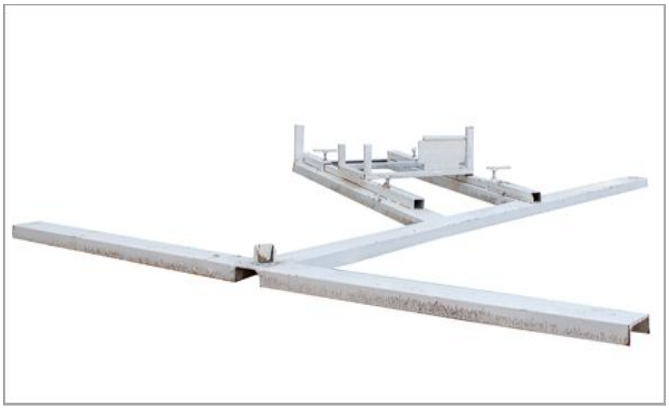
- Iron Arch: - The device consists of a folded iron arch, as shown in figure(2)



Figure(1)
Shows the folded iron bow

- Columns: - Three columns installed in the ground are high and low and according to performance requirements.
- The base of the device: - consists of boiled iron (Shilman) in the form of a letter (T)on which the front columns arebased and length (2 m) from the side and (2.25 m) from the front, and these columns are installed by the base of the device, and is connected to the front base Another base base from the back is attached to the rear column and seating chair and length (145 cm), width (55cm), ironfish (10cm) high (4.5cm), as shown in figure(3).

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021



Figure(2)

Figure(3)

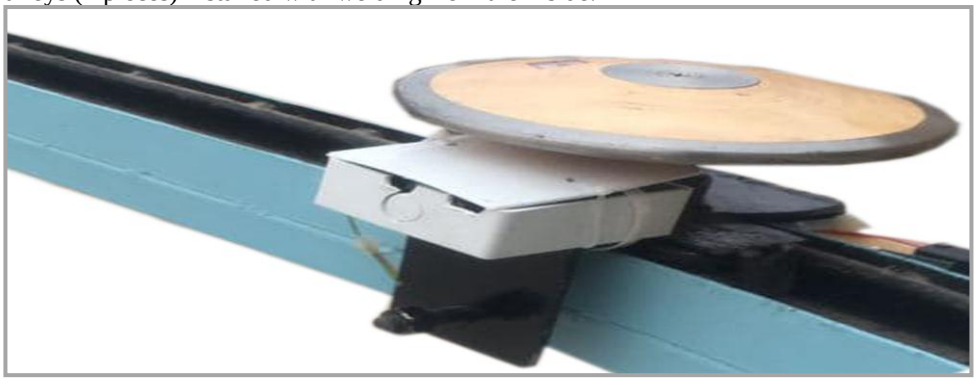
Shows the columns of the device explains the base of the proposed device

- Moving base: - Installed on the iron circle contains a handle (legal throw disc) moving according to the length of the player's arm, as well as a rod to place weights length (10 cm) and the height of the machine (5 cm) and its width (7 cm) and attached inside it shish smooth on both sides and its purpose is to install the slide and levers in its own and carrying weights and is made of iron material and as shown in the form(4).

Figure(4)

Shows the moving base on the slide

- The wheelchair is legal for the category (56) disabled: - it is a square shape of boiled iron, height (70 cm) according to the legal specifications of the Olympic Committee, and contains a belt that is attached to its end by (Rawages) to zoom and contains a front brace to stabilize the player's foot during performance, and is connected from the bottom to the main base and designed so that the coach can control it according to the physical measurements of the players.
- Slide: - The slide consists of thickness-resistant iron (2 mm) and easy-to-move double bullburn iron pulleys (2 pieces) installed with welding from the inside.



Figure(5) Shows the slide mounted on the iron bow

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

5.2. Testsused in the search:

First: Pressure test from lying on the flat terrace to lift the maximum weight (Mystic:47:2004):

- Test goal: Measure the maximum strength of the muscles of the arms and chest.
- Tools used: 20 kg iron rod, iron suspenders, iron discs of different weights, and a special iron terrace for the disabled.
- Performance specifications: The laboratory takes the position of the neck on the back above a special terrace for the disabled and all his body, and then the player lifts the iron penis from above the iron suspenders to be the iron penis in front of the chest completely, and with an opening between the arms with an amplitude of the chest estimated at (81) cm, and the test begins by trying the player to bend the arms fully and extend them fully and the weight is carried.
- Registration: The laboratory is calculated as a result of the highest weight it achieves for a single repetition.
- Safety precautions: Two or more assistants must be present to help the laboratory if it cannot lift the weight.

Second: pressure test of lying on the flat terrace to perform as many repetitions as possible within (10) seconds (Mystic:47:2004):

- Test goal: Measure the strength of the arm and chest muscles at speed.
- Tools used: 20 kg iron rod, iron suspenders, discs of different weights, special iron terrace for the disabled, stop and whistle hours.
- Performance specifications: The laboratory takes the position of the neck on the back above the terrace, the iron penis is placed over the suspenders, and a weight equal to the intensity of 70%) is placed From extreme intensity, the test begins to lift the weight from above the suspenders after the laboratory hears the whistle, as the laboratory fully bends and extends the arms and tries to perform as many repetitions as possible in (10) seconds
- Registration: The laboratory calculates the number of repetitions it achieves within (10) seconds and gives the laboratory only one attempt.
- Security precautions: One or more assistants must be present during the laboratory's efforts to help it if it cannot lift the weight.

Third: Test throwing medical ball zena (3) kg of sitting(Mystic:49:2004):

- Test goal: Measure the explosive force of the muscles of the arms and torso.
- Tools used: 3 kg medical ball, 15-meter measuring tape.
- Performance specifications: The test performs from sitting on the special chair of the laboratory and the test begins by holding the laboratory of the medical ball with both hands and throwing it as far as possible in a semicircular motion and bending the trunk forward, and the arms must be bent during the test performance, and a line drawn with chalk or colored adhesive is placed behind the laboratory to begin its attempts.
- Registration: The best of three attempts granted to each laboratory is calculated.

6.2. Exploratory Experiments:

The researchers conducted the first reconnaissance experiment at 3:00 p.m. on Thursday, September 5, 2020, on a sample of (2 players) from the research sample, which was at the Al-Katun Sports Forum, and was intended to know the contents of the device and link the parts together and how to work on the device and see how to measure Senses (senses) to measure distance and speed on the device, as well as know how to determine the angles on the device and how to determine the height and occasion of the device with the lengths of players and perform some simple exercises on the device, and were identified some notes for the device, including adding some sensors to give some digital values in addition to adding a front brace to the device.

The researchers conducted the second reconnaissance experiment on the research sample with the help of the auxiliary team, on Thursday, 10 September 2020 at 3 p.m. and was at the Al-Katun Sports Forum, the purpose of which was:

1. Learn how to work, and how to determine the training intensity to perform on the search sample.
2. Determine the right time for exercise and rest time.
3. Know the validity of the devices and tools used in training.
4. Find out how appropriate the physical exercises used in the sample level training curriculum are.

7.2. Pre- tests:

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

On Saturday, 12 September 2020, at 3:00 p.m. at the Al-Katun Sports Forum, the discus throw (achievement) test was carried out and special force tests (maximum force test, explosive force testing, speed testing) were carried out.

8.2. Training used in research (device training):

After informing the researcheryen about previous sources and studies, and surveying the opinions of experts and specialists on the development of training on the proposed device, to show its impact in the development of absolute power and achievement of disc shooters for young people, The training began on Tuesday, 15 September2020 and was completed on Saturday, 7 November 2020 and was at the Al-Katun Sports Forum and was carried out at 3 p.m., and these exercises were applied within the main section of the training unit, and took the training time from (35 to 40 minutes) by three training units per week for eight weeks,

- ResearcherYen has developed some exercises to develop the special force using a manufactured device for this purpose as the training on the device is by taking the throwing mode of seating mode (motor performance similar to the legal performance during the race).
- There is a link between the content of public and private training exercises, the technique, the psychological preparation, and the connection between them.
- Start all training units with general preparation in order to create all the muscles of the body, then make a special preparation for the muscles involved in performance within the training unit, and finish the training units with calming and relaxing exercises for muscles.
- The exercises were applied using resistors as part of the word training units, which were applied in the part of the main section of the training unit.
- The duration of training units (8) is weeks, two average sessions, and (3) training units per micro-course.
- The training units were applied in two intermediate courses and in spots (4) small courses in each medium cycle, and the movement of pregnancy was rippled in the middle cycles (3:1) and depending on the intensity of the maximum work.
- The intensity of the training is determined by determining the amount of strength through electronic sensors via Bluetooth via a screen, or through maximum weight.
- Each junior course consisted of (3) training units per week, i.e. the research sample (24) carried out training units during the trial period, and the training units were conducted on Saturdays, Mondays and Wednesdays.
- The repetitive training method was used in the exercise application.

9.2. Post- tests:

The researchers conducted the tests on Tuesday, 10 November 2020 at 3:00 p.m. and were carried out in accordance with the points used in pre- tests in terms of location, climatic conditions, measuring tools and other application procedures.

10.2. Statistical means: Researchers used the statistical bag (SSPS) to process the results.

3.View, analyze and discuss the results.

3.1 Presentation, analysis and discussion of the results of pre--post- tests of special force variables:

Table(2)

Shows the computational circles and the standard deviations of special force variables.

Variables	Unit of measurement	Pre- testing		Post- testing	
		A	STD	A	STD
Maximum power	he murmured	98.333	6.055	111.666	5.163
Speed-defining power	reiteration	8.833	752.	12.000	894.
Explosive force	meter	3.500	428.	4.175	227.

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

Table (3)
It shows the arithmetic circles, the deviation of differences, the value of (t) and the error ratio between pre- and post- tests of special force variables.

Variables	QP	P	Value (t)	Error rate	Moral significance
Maximum power	13.333	4.082	8.000	.000	Spiritual
Speed-defining power	3.166	408.	19.000	.000	Spiritual
Explosive force	675.	331.	4.991	.004	Spiritual

Table3above shows usthat (t) values calculated for research sample members below a lower error level (0.05) in special force variables, indicating the morality of differences in favor of post- tests, and the researcher attributes the cause of this development to the nature of the exercises applied to the proposed device of the research sample members, which aimed to develop the special strength of general muscle groups to throw the disc, especially for the upper parties, which gives an indication of the development of control over the technical performance of the performance stages.

ResearcherYen believes that this development in the level of special strength to the exercises used on the training system led to the development of the explosive and rapid capacity of the arms and torso where it was influential in obtaining this result as the exercises contributed to the development of speed and muscle strength through speed and muscle strength so-called ability and ability is a necessary element in understanding the performance of sports skills, especially athletics events(Eliassari and Abdul Hamid:111:2004).

Some scientists pointed out the importance of special force training for discus shooters and that most of their reference supported the results of the research, as Stamper, 1983 pointed out the force is very important and yet it must be specific as the development of strength is one of the most important concepts that the coach is interested in in training but should be focused on development, especially in young people

The appearance of moral differences in the results of the pre- and post- test in special strength variables that the exercises used were influential in obtaining this result, as the exercises used on the device increased the amount of muscle capacity of the research sample, as "increased strength in the muscles of the torso and arms through resistance exercises used on the device leads to the speed of the arms and therefore increased muscle strength is important for muscle-based sports activities" (Stamper,54,1983).

According to the researcher Yen, the development that took place in the level of rapid strength was clearly influential in improving the digital level, pointing out (Kamal al-Rubadi) the possibility of developing rapid strength by giving exercises similar to the performance required in competitions but the repetition of the effort must be a little (Al-Rubadi:42:2004).

On the other hand, researcherYen believes that the use of different devices and tools in training helps in the development of the speed of motor performance as well as the muscle fitness of the muscles working for this ability and since the ability consisting of strength and speed can increase by increasing the two components and usually the best way to increase it is the strength component (Ali and Jaber:72:1999).

The development of muscle capacity contributes to enhancing their efficiency and neuromuscular compatibility, and controlling the orientation of muscle fibers within the framework of special requirements of effectiveness, as more muscle fibers are involved in performance, thus causing an increase in muscle strength and upgrading of muscle capacity (Osman:48:200).

The special exercises used on the device, which were applied to the members of the research sample, may include exercises that require the production of maximum absolute muscle capacity for the muscles of the arms and torso, particularly using the manufactured device, and the continued output of this force as quickly as possible and for a specified period of time, as "the greater the muscle strength, the greater the resistance, the higher the speed" (Hammad:162:1988).

When the muscle contraction of the working muscles, whether central or not central according to the nature of the joint work, the central nervous system sends successive shipments of electrical cells in a certain order and through the motor nerves to the motor unit represented by the muscles and this effort is related to the work of the nervous and muscular organs and to various muscles both at the lower and upper end, which means good neuromuscular compatibility, which is a factor positively affected by training (Osman:120:1987).

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

Yurgen,2010,79,also pointed out from his point of view that the development of the strength of thediscus thrower is of paramount importance, as this force not only determines the overall pattern of throwing movement, which includes budget, coordination and timing, but enhances technical performance and creates a variety of training through technique-related exercises, especially for emerging discus shooters.

The development in the characteristics of special strength through the exercises in which the resistance was used where it was directed to a certain muscle group and this led to the creation of neuromuscular compatibility by linking the components of strength and speed in a consensual motor framework, and this is consistent with what he said (Frank Abdul Karim, 1986,44)quoting (Qassim Hassan Hussein) that focusing on exercises in which the same muscle groups are used common in sports activity is considered more effective and useful.

"Discus throwing requires the strength of the torso and arm muscles, so the development of muscle strength takes the main point in the training process, and although strength speed exercises take their own place from training during discus throwing, maximum strength resolves good achievement" (Hussein:77:1987).

The importance of rapid force development plays a key role in the training of the table, kinetic accuracy and flexibility, which often develop directly during the stages of the construction of explosive force, for example, the means and methods used by the discus thrower to develop explosive force work to build the special table, kinetic accuracy, flexibility and muscle aggregates at the same time, which bear the main burden of one-handed throwing performance (Nassif and Hussein:61:1978).

4.Finale:

In light of the results obtained by the researchers, the exercises on the proposed device led to the development of special force (maximum force, explosive force, speed strength) for the members of the research sample, and that the exercises applied to the proposed device led to an improvement in the strength of the arms, and the torso and the exercises applied to the device led to the development of effective variables in achieving good achievement, so there has been a development in the distance of throwing, and the researchers recommend to emphasize the use (manufactured device) as a means of helping to develop the special force of discus throwers, especially the disabled. Class (56), as well as the emphasis on explosive and rapid force exercises, which ensure in the development of achievement, and the conduct of exercises on the proposed device in accordance with the kinetic paths of the technical stages of the disc.

Sources

- Thamer Ghanem Daoud Mohammed Al-Sufi, The impact of the use of weight training in the methods of high-intensity and bureaucratic period training in special muscle strengths and achievement in the throwing of weight for the disabled - seating class(Master's letter, Mosul University, Faculty of Sports Education,2004).
- Frank Abdul Karim Abdul Sahib, The Impact of The Power Of Speed in the Level of Achievement in Triple Jump (Master's Letter, Faculty of Sports Education, Baghdad University, 1986).
- Abdul Ali Nassif and Qassim Hassan Hussein; Force Training (Baghdad, Arab Printing House, 1978).
- Essam Ali and Mohammed Jaber;
- Qassim Hassan Hussein, The Theoretical and Practical Foundations of Arena and Field Games,i1 (Book House for Printing and Publishing).
- Kamal Jamil Al-Rubadi; Sports Training for the 21st Century, i1: (Amman, University of Jordan, 2004).
- Mohammed Jassim al-Bari and Marwan Abdul Hamid, Recent Trends in Sports Training,I1: (Amman, Paper Publishing and Distribution Corporation 2004).
- Mohamed AbdelGhani Osman; Training load and adaptation biophysical responses to the pressures of training loads between theory and training reality:(Cairo, Arab Thought House, 2000).
- Mohammed Osman: Motor Learning and Sports Training:I1, (Kuwait, Pen Publishing and Distribution House, 1987).
- Mufti Ibrahim Hammad: Sports Training (Cairo, Dar al-Ma'aqf, 1988).
- Stamper, B.. developing sprinters, (Athletic Journal 63,1983).

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 02, 2021

- Ward, P.; Mechanical Principles of the discus, In: Gambetta, (Ed): (Track and field): que Annual, 81, Los Altos, 1998.
- Yurgen, Schiffer. sport-science research and training center's , (N.S.A. by I.A.A.F vo.25.no2 2010.

Supplement (1)

Exercises used on the device for the first month.

Week	Al , Wahda	severity	Iteration	Totals	Comfort between repetitions	Rest among totals
First	First	65%	3×10	3	2-3 D	3-4 D
	Second	70%	3×8	3	2-3 D	3-4 D
	3rd	65%	3×10	3	2-3 D	3-4 D
Second	Fourth	70%	3×8	3	2-3 D	3-4 D
	Fifth	75%	3×7	2	2-3 D	3-4 D
	Sixth	70%	3×8	3	2-3 D	3-4 D
Third	7th	75%	3×7	2	2-3 D	3-4 D
	8th	80%	3×6	2	2-3 D	3-4 D
	9 th	75%	3×7	2	2-3 D	3-4 D
Fourth	10 th	70%	3×8	3	2-3 D	3-4 D
	Eleventh	75%	3×7	2	2-3 D	3-4 D
	Twelfth	70%	3×8	3	2-3 D	3-4 D