Original Article

Designing a Test to Measure Sport Skill Performance for Futsal

Sadiq Jafar Sadiq

Department of Basic Education & Sport Science, Faculty of Basic Education, Al-Mustansiriya University, Baghdad, Iraq

ABSTRACT

The problem of the study was that futsal suffers from some obstacles including the adoption of non-scientific means in performance evaluation depending completely on personal experience of the evaluator. This makes it lack accurate tests to determine levels of skill performance through measurements and tests. Accordingly, the problem of the study shows that there is no specific test to measure skill performance. Thus, there are no standard levels of this performance being an important means to determine the level of learners' performance. This is to evaluate the extent of advance of learners or players in addition to evaluating weakness and strength points in the set educational or training courses. The researcher aimed to design for the test designed to evaluate skill performance level in futsal for students of the third stage of the Department of Physical Education and Sports Science in Faculty of Basic Education and to identify standard levels of the test designed for skill performance of students in futsal subject. The researcher used the descriptive survey method on a sample of the third stage students in the Department of Physical Education and Sport Sciences, morning period at the Faculty of Basic Education - Mustansiriya University, for the academic year (2014-2015 AD), totaling 87 students and formed a percentage of (72.5%) of the original research population. The researcher has reached several conclusions including the fact that the test designed by the researcher has proved its validity for measuring performance skills of futsal player. The researcher also recommended the use of the test designed to measure the skill performance of futsal players and adoption of grades and standard levels reached by the researcher during evaluating skill performance of third stage students in the futsal subject.

Keywords: Test design, skill performance, futsal

INTRODUCTION

Significance of the Study

Skill performance for futsal players, whether students or players, is the main and significant role to make good preparation which ensures persistent performance with high efficiency and accuracy along competition period. Correct and good building of learners and players forms a great significance in the preparation process. It ensures proper functioning of skills and movements during the match in all circumstances with high efficiency through which they can confront difficult conditions and situations during a competitive performance. They can be reached using correct scientific methods that serve both training and teaching processes. This is to enhance and refine their performance skills and stay away from wrong behavior in performance. This only comes through the adoption of scientific methods which enable the teacher and the coach to know the error with his students or his players and treating them during educational or training units. Skill performance measurement process and determining its levels is one of the main factors to focus on at the basis of being a real indicator to determine degrees of continuous development along application of the course taken, whether educational or training one.

Address for correspondence:
Sadiq Jafar Sadiq, Department of Basic Education & Sport Science, Faculty of Basic Education, Al-Mustansiriya University, Baghdad, Iraq. E-mail: alsadiq_jafar@yahoo.com

Evaluation of skill performance of the learner or the player is one of the key factors by which the learner is prepared and provided with the main expertise and skills of futsal and being able to adapt to conditions of competition in the future. This is because the process of "evaluation must not be subjective depending on views of evaluators, but it must be an objective evaluation by relying on test and measurement, as tests and measurements give reliable objective results in accuracy and validity of if they are based on scientific foundations (Abduljabbar et al., 1987: p. 11)."

When it comes to the need to use evaluation continuously on skill performance level for learners in futsal, the researcher sought to design a test to measure the skill performance of the futsal players, and thus, determine the degree of standard levels of skill performance to identify current levels of learners and evaluate them accurately through the use of standards, which are the best types of levels as "the feature that is used as a benchmark to judge the importance or the value of something (Hatab et al., 1986: p. 118)." The significance of the study lies in setting a test that measures the skill performance as well as finding grades and standard levels of performance skills to students through which they can identify their level of performance after the end of the semester to learn the effectiveness of the educational curriculum in teaching futsal subject.

Problem of the Study

The process of designing, a special test to find standard degrees to assess the level of skill performance will help teachers and coaches alike in identifying levels of learners and players accurately, showing what can be achieved from attempts to improve the level of their performance and trying to interpret, diagnosing the strengths and weaknesses, and working to treat them. The futsal game suffers from some constraints, which include the adoption of non-scientific means in performance evaluation and completely depend on the personal experience of evaluators, which makes it lack an elaborate battery to determine skill performance levels through measurements and tests. Accordingly, the problem of the was identified by the non-existence of special test to measure the skill performance of the athletes in this game as an important means to know the level of performance of the learners, evaluate the progress that a player or learner as well as evaluate strengths and weaknesses in educational or training curricula.

Objectives of the Study

1. To design a test to measure sport skill performance in futsal game.
2. To find a standard degree of the test design to evaluate the level of skill performance in futsal game for the third stage students in the Department of Physical Education and Sport Sciences at the Faculty of Basic Education - Mustansiriya University.
3. To determine standard levels of the test designed for skill performance of students in futsal game.

METHODOLOGY

The researcher used the descriptive survey method as it is appropriate to nature of the study.

Population and Sample of the Study

Population of the study consists of third stage students in the Department of Physical Education and Sport Sciences at the Faculty of Basic Education - Mustansiriya University (120 students). As for the sample, it consists of 87 students after eliminating the failed students, delayed students, and students in whom both exploratory trials were applied. This sample on which the test was applied represented a percentage of 72.5% of gross total of the study population.

Proposed Test

Skill performance validity test (Sadek, 2013: p. 22)

The proposed test was written on questionnaire forms and presented to a group of experts and specialists to determine its validity. After collecting forms, the test was finally written after collecting views of specialists who agreed that the test is valid after legalization.

Exploratory trial

Two exploratory trials were conducted before starting to implement final trial as follows:
- First exploratory trial: This trial was conducted on Wednesday 18/03/2015 on a sample consisting of 5 students selected randomly from the population of the study from a population of the study. The goal of this study was:
  1. To determine problems and difficulties that face researchers at applying trials
  2. To determine how appropriate the devices and tools are
  3. Determine suitable number to manage the

test and train the work team

4. Determine the necessary time to perform the test.

- Second exploratory trial: This trial was applied on Wednesday 25/03/2015 on a sample of 7 students selected randomly from the population of the study. The purpose of this trial was to find validity, reliability, and objectivity coefficients for the test.

Scientific Basics of the Test

Test validity
Validity coefficient of the test was determined using differential validity. The test was applied on a sample of 7 first class players (players of Talaba Sporting Club) and a sample of 7 students. The significance of differences between both samples was counted using the (T) test for small samples and found that there are statistically significant differences and for first class players as shown in Table 1.

Test reliability
The researcher used the retesting method to determine reliability coefficient by reapplying the test on the randomly selected sample of the population of the study (7 students). After a single week of the first test, the correlation coefficient was determined to be 0.904. This shows that the test was conducted with a high-reliability degree. The test should be reliable if the correlation coefficient was 0.90 or more (Al Fartousyet al., 2015: p. 220) as shown in Table 2.

Test objectivity
Subjectivity is defined as "the degree of agreement between two judges who tested the same sample in performing a certain skill (Magid et al., 1992: p. 153)." Test objectivity was determined by counting simple correlation between first and second judges in counting total performance duration of skill validity test. Correlation coefficient between both judges was 0.985 that is a very high coefficient which refers to test objectivity. References assert test objectivity as the correlation coefficient between judge results was 0.85 and more 141:11 as shown in Table 3.

Final implementation of the test
After ensuring test validity by results of both exploratory trials and provided its scientific properties, it was applied on the sample of the study (87 students) on 31/03/2015 with consideration of all procedures in the exploratory trial during the final implementation of the test.

PRESENTING AND DISCUSSING RESULTS

Results of Normal Distribution of the Study Sample

Normal distribution and test consistency of the study sample were ensured (third stage students in the Department of Physical Education and Sport Sciences, morning period at the Faculty of Basic Education - Mustansiriya University) using the Kolmogorov-Smirnov (K-S) test for normal distribution using the Statistical Package for the Social Sciences (SPSS) as follows in Table 4.

Table 5 shows the standard grades of crude and the corresponding grades and levels of standard and number of testers and the proportion in the honest test of the performance of the skill.

Discussing Results of Normal Distribution

Through Table 4, concerning the (K-S) test, we find that the significance value equals to 0.200, which is bigger than 0.005 representing standard significance level for the significance degree. This reduces the zero possibility, which says that data follow a normal distribution (Gouda, 2008: p. 143). At drawing data using SPSS, we find that the sample position on normal distribution curve as in Figure 1 and sample distribution around the inclined line, which represents the standard level of normal distribution. The more points are gathered around this line; this signifies that the sample follows normal distribution (Gouda, 2008: p. 144) as in Figure 2.

Determining Standard Levels of Sadek Test for Skill Performance

There is no difficulty in obtaining raw degrees extracted from the test under study such as difficulty of comparing

Table 1: Arithmetic mean, SD counted and tabulated (T) values for the skill validity test

Skill validity test	Players		Students		Counted T value	Tabulated T value	Significance
	Mean–	SD±	Mean–	SD±			
	38.23	2.88	57.32	3.95	19.005	2.44	Significant

Freedom degree is 6 and significance level is 0.05. SD: Standard deviation

Table 2: Statistical parameters of first and second tests for reliability sample and their correlation coefficient

Skill reliability test	First-test		Second-test		Correlation coefficient value
	Mean–	SD±	Mean–	SD±	
	46.58	4.79	46.52	4.88	0.904

SD: Standard deviation

Table 3: Statistical parameters of first and second judge results and their correlation coefficient

Sadek skill test	First-judge		Second-judge		Correlation coefficient value
	Mean–	SD±	Mean–	SD±	
	41.98	0.613	41.92	0.619	0.985

SD: Standard deviation

Table 4: Statistical parameters of normal distribution using the (K-S) test

Test	K-S[a]			Shapiro-Wilk		
	Statistic	Df	Significance	Statistic	Df	Significance
	0.067	87	0.200*	0.978	87	0.144

[a]Lilliefors significance correction. *This is a lower bound of the true significance. K-S: Kolmogorov-Smirnov, Df: Degrees of freedom

Table 5: Standard degrees, raw degrees, standard levels, number of respondents and their percentage in Sadek skill performance test

Standard degree	Raw degree	Level	Respondent (n)	Percentage
2-3	<84	Very good	0	0
1-1, 99	92.85-87.6	Good	16	18.39
0-0.99	98.17-92.84	Average	28	32.18
−1--0.1	103.47-98.18	Acceptable	30	34.48
−2--1.1	108.99-104.03	Weak	9	10.34
−3--2.1	>109	Very weak	4	4.59
Total			87	100

Figure 1: Normal distribution of the study sample

Figure 2: Collection of observed values for results of the study sample around inclined line of normal distribution

these degrees together as they, as degrees, do not have significance unless does not transform into standard degrees that are considered "means to determine relative condition of raw degrees, thus these degrees can be explained and their results can be evaluated (Allawi et al., 1988: p. 179)." Since Sadek Skill Performance Test contains many stages measured by different units, these degrees must be accurately described as raw degrees obtained by applying the test on students are "of a limited benefit without transforming into standards or levels (Abdulhamid et al., 1973: p. 302)."

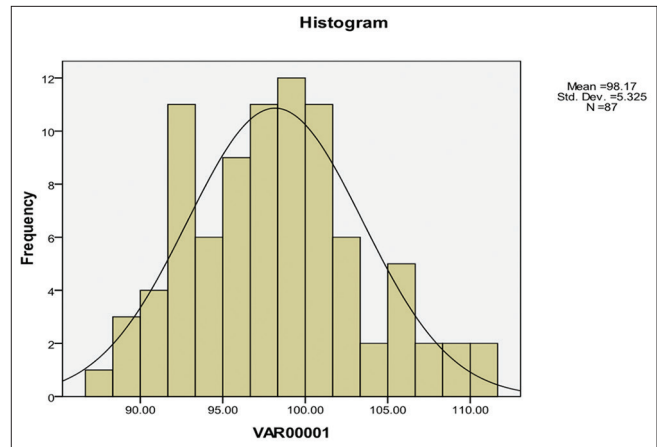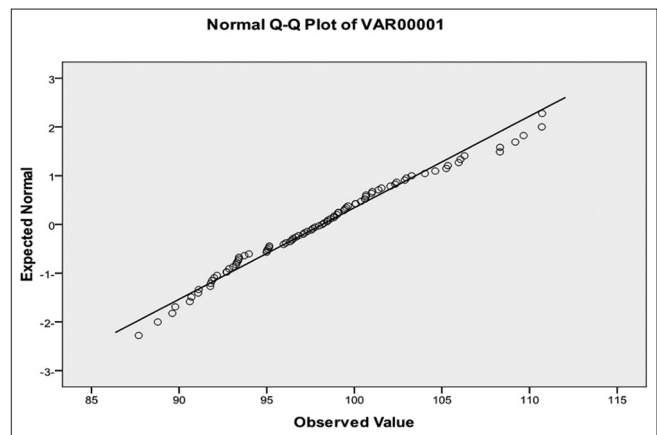Hence, the researcher transformed raw degrees of the sample in the test under study into standard degrees and modified standard degrees using the SPSS as shown in Annex 3.

Discussing Findings of the Study Sample in Sadek Skill Performance Test

After viewing results of the test, it was shown that the level (very good) did not achieve any percentage. This means that no one of respondents reached this level while performing the test, while respondents achieved a percentage up to more than half the number of respondents in the levels (good and average), while they achieved more than a third of their total in the level (acceptable). The number respondents who have achieved results to put them at levels (weak and very weak) did not reach quarter of the number of respondents. The researcher attributes the cause of inability of respondents to achieve any proportion of the level (very good) as they are students and not belonging to futsal clubs as they are practitioners of the game, amateurs, and not professionals by any who are not

athletes in the high levels, so they did not achieve the results at this level while we find that they have achieved a high rate in the levels (good and average). If we add the percentage in the level (acceptable), we find that the ratio rises much further to reach (85.05%), which is a very large proportion attributed by the researcher that they are not beginners, but they are students of the third stage. This means that they had engaged in this game for four courses scattered between three football courses and a futsal course. In general, students at this stage have acquired and perfected the skills of many sports they had studied for six courses, so their results in these sports and games are distributed between levels (good - acceptable) and their lineage could rise and may decrease in the levels (weak and very weak). This corresponds with findings of the (Tamimi) study by saying that "most of the research sample students were at level (average), and if we add their lineage in the good and acceptable levels, it will form a rate of up to more than 88% of the sample (Tamimi, 2007)." Finally, the researcher asserts that these standards, as well as levels that resulted it, are non-permanent since they are subject to change and are not fixed, "using criteria tables for a specific period because individuals' capabilities vary from time to time and must be renewed every few years to fit with the individuals (Farahat, 2007: p. 182, 183)."

CONCLUSIONS

1. The test designed by the researcher proved its validity to measure skill performance of futsal players
2. The study concluded standard levels of the designed test
3. It was found that most students of the study sample were at average and acceptable levels with almost equal percentages
4. It was found that the percentage of students at good level is higher than the percentage of those at weak and very weak levels altogether.

RECOMMENDATIONS

1. Using the test designed in measuring skill performance for futsal players
2. Using standard degrees and levels that have emerged through research findings in the evaluation of results of the third stage students (males) in the Department of Physical Education and Sports Science of the Faculty of Basic Education - Al-Mustansiriya University in futsal subject
3. Finding standard degrees and levels of male and female players of the national futsal team
4. Finding standard degrees for the third stage students of the Department of Physical Education and Sports Science of the Faculty of Basic Education - Al-Mustansiriya University.
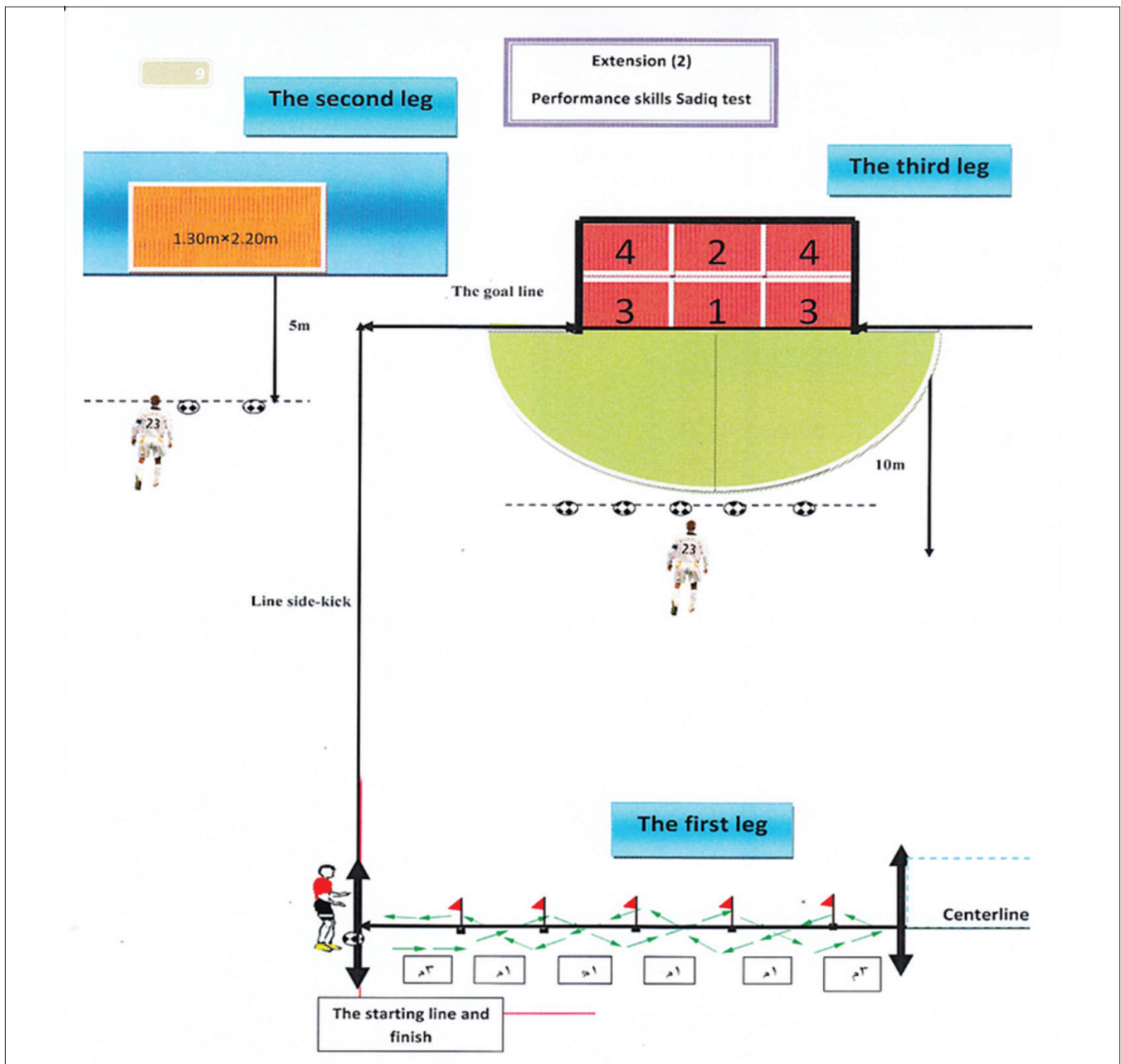
REFERENCES

Abdulhamid, J. (1973), Research Methodologies in Education & Psychology. 1st ed. Cairo: Dar Al Fikr El Arabi.

Abduljabbar, Q.N. (1987), Testing, Measurement & Principles of Statistics in Sports. 2nd ed. Baghdad: Higher Education Press.

Al Fartousy, A.S. (2015), Testing, Measurement & Evaluation in Sports. 1st ed. Baghdad: Al Mohaimen Press.

Al Taleb, N.M., et al. (1981), Principles of Statistics, Physical & Sport Tests. Baghdad, Iraq: Al Mawsel University, Dar Al Kotob Press.

Allawi, M.H., et al. (1988), Measurement in Physical Education. 2nd ed. Cairo: Dar Al Fikr El Arabi.

Farahat, L.E. (2007), Measurement & Testing in Physical Education. 4th ed. Cairo: The Book Center Press.

Gouda, M. (2008), Statistical Analysis Using the SPSS. 1st ed. Amman: Dar Wael Press.

Hatab, F.A. (1986), Psychological Evaluation. 1st ed. Cairo: The Anglo-Egyptian Library.

Magid, R.K. (1992), Methods of Designing Testing & Measurements in Physical Education. Basra: Dar Al Hekma Press.

Sadek, S.J. (2013), Determining Standard Levels to Test Skill Performance Testing for Futsal Athletes. Baghdad: Published Thesis in the 15th Scientific Conference in the Faculty of Basic Education – Mustansiriya University. p412.

Tamimi, A.H. (2007), Designing a test to measure agility in fencing. Published Thesis, Sport Science Journal, 1. p237.

ANNEX 1

Registration Form

S. No.	Name	Dribble duration	Number of passes (5 attempts)	Number of scoring points (5 attempts)	Total duration	Final duration after discount
1						
2						
3						
4						
5						
6						

ANNEX 2

Raw degrees, standard degrees, and modifying standard degrees of results of Sadek skill performance test

Modified standard degrees	Standard degrees	Raw degrees	Modified standard degrees	Standard degrees	Raw degrees
48.7	−0.13	98.85	69.68	1.97	87.69
48.4	−0.16	99.01	67.63	1.76	88.78
48.25	−0.17	99.09	66.07	1.61	89.61
48.25	−0.17	99.09	65.75	1.58	89.78
47.65	−0.23	99.41	64.19	1.42	90.61
47.54	−0.25	99.47	64.02	1.4	90.7
47.41	−0.26	99.54	63.29	1.33	91.09
47.22	−0.28	99.64	63.23	1.32	91.12
46.41	−0.36	100.07	61.99	1.2	91.78
46.41	−0.36	100.07	61.95	1.2	91.8
45.83	−0.42	100.38	61.8	1.18	91.88
45.39	−0.46	100.61	61.58	1.16	92
45.39	−0.46	100.61	61.28	1.13	92.16
45.3	−0.47	100.66	60.24	1.02	92.71
45.28	−0.47	100.67	60.24	1.02	92.71
44.7	−0.53	100.98	59.98	1	92.85
44.61	−0.54	101.03	59.53	0.95	93.09
43.95	−0.61	101.38	59.23	0.92	93.25
43.63	−0.64	101.55	59.15	0.92	93.29
42.67	−0.73	102.06	59.02	0.9	93.36
42.16	−0.78	102.33	58.95	0.89	93.4
42.01	−0.80	102.41	58.93	0.89	93.41
41.13	−0.89	102.88	58.33	0.83	93.73
40.94	−0.91	102.98	57.86	0.79	93.98
40.39	−0.96	103.27	55.96	0.6	94.99
38.97	−1.10	104.03	55.92	0.59	95.01
37.86	−1.21	104.62	55.83	0.58	95.06
36.67	−1.33	105.25	55.7	0.57	95.13
36.5	−1.35	105.34	55.66	0.57	95.15
35.34	−1.47	105.96	54.14	0.41	95.96
35.15	−1.48	106.06	53.89	0.39	96.09
34.72	−1.53	106.29	53.42	0.34	96.34
30.92	−1.91	108.31	53.21	0.32	96.45
30.9	−1.91	108.32	53.1	0.31	96.51
29.27	−2.07	109.19	52.8	0.28	96.67
28.38	−2.16	109.66	52.52	0.25	96.82
26.43	−2.36	110.7	52.03	0.2	97.08
26.39	−2.36	110.72	51.88	0.19	97.16
			51.58	0.16	97.32

(Contd...)

Continued..

Modified standard degrees	Standard degrees	Raw degrees	Modified standard degrees	Standard degrees	Raw degrees
			51.15	0.11	97.55
			51	0.1	97.63
			50.77	0.08	97.75
			50.34	0.03	97.98
			49.98	0	98.17
			49.79	−0.02	98.27
			49.45	−0.05	98.45
			49.38	−0.06	98.49
			49.1	−0.09	98.64
			48.72	−0.13	98.84
			48.7	−0.13	98.85