The pentathlon at Hurlingham on August 27 was the best so far with 2 over 2000 p., Bob Phillips snatching victory from Pat Mackenzie who had led up to the 1500m. Full results appear elsewhere in this issue. Despite a sinister attempt to exclude guests of honour two very attractive

pieces of contraband were smuggled into the dinner in the shapes of Lillian Board and Elizabeth Cowan. With 400m legs of 52.8 and 57.8 they could beat almost any NUTS pair comfortably!

FROM THE SECRETARY by Peter Hopkins Shaun Adair has had a very poor (in fact, almost negligible) reponse from members to supply information for the proposed directory of tracks. We want to get this particular book out by next April and I ask ALL members to let Shaun have the details previously requested as soon as possible. With the track season now over, I ask you to get down to this job as a matter of urgency! I was one of the culprits, and I accept Shaun's rap over the knuckles. Will you accept mine.

Will all those members who obtained copies of British Ataletics 1967 from Harry Hitchcock please return unsold copies and cash received as soon as possible, and in any event not later than October 28th.

* A.A.D.(Pat) Brown and David P.Dallman both contribute their first articles to this issue of NUTS NOTES. The former is chief research scientist and statistician with the Salter Group of Companies; he has a B.Sc(Eng) degree. The latter obtained a BA(Physics)at Cambridge Unix. in 1964 and is currently a Research Assistant in High Energy Nuclear Physics at Imperial College of Science and Technology at Univ. of London, and is at present working on his Ph.D thesis.

* Seen at the close of the GB&NI v USA match: Cliff Temple

solemnly removing his Carnaby Street Union Jack tie!

Anecdote from the dinner told by LBB:

Dick Bank : Are you the British Board?

Lillian Board : No.... Are you the Bank of America (Stanned silence).

* Gordon Pirie defeated Ron Clarke twice; tnue or false? True. Adelaide 7 Dec 56,1500m 3:45.6 (Clarke 2nd 3:58.2). Melbourne 9 Dec 56, 2 miles 8:44.6 (Clarke 3rd 9:06.0).

Would members please note Len Gebbett's new address -49 Tarnwood Park, Eltham, S.E.9. Tel no ELTham 4564.

BIG FISH IN A LITTLE POND by Pat Brown

It is the usual custom when assessing the ability of our home athletes to compare them with the best performers in the world, ignoring the fact that certain events are handicapped in this country by the conditions under which the athlete competes, the lack of training fcilities and the unwillingness of certain promoters to include "unfashionable" events ih their programmes. The inevitable result is that the athlete who overcomes all these difficulties and forces himself to the top in this country finds that by world standards he is a poor performer and has to put up with the jibes of the fortunate ones who can always find "hot" competition in their own event and are within a small margin of world class and yet in truth cannot hold aplace in our domestic top six.

There is, however, a cold blooded mathematical method of assessing the value of anyone's performance against the pool of athletes from which

he is drawn and against whom he would normally compete.

If the first 100 performances are taken from "British Athletics" and arranged in a histogram it will be found that they form half of a normal distribution. If the other half of the distribution is inserted by drawing the "mirror image" of the first half a complete "Poisson" curve is obtained which may be checked for normality. In approximately five years and one hundred analyses I have never found a non-normal distribution.

From this curve the standard deviation (sigma) of the population

may be calculated where

$$\sigma = \left(\frac{\sum x^2}{N} - \left(\frac{\sum x}{N}\right)^2\right)^{\frac{1}{2}}$$

If the differences between the average (norm) of the curve and the best performance is divided by the resultant figure gives a direct rating of the best performances compared with the "top 100" and is a measure of howwell the athlete has coped with the prevailing conditions during his active life.

From the size of sample taken one would expect a general performance figure of 2.85, anything above that indicating an outstanding performer.

Once again it must be stressed that this figure is purely domestic and in way rakes the perforances outside our own population.

Analysis of our "Top 100" for 1966 gives the following interesting and, no doubt to most people, unexpected rankings.

1.	Long Jump	Lynn Davies	4.326
	Triple Jump	Fred Alsop	3.507
	Javelin	John Fitzsimons	3.277
4.	1 Mile	Neill Duggan	2.925
5.	High Jump	Gordon Miller	2.850
6.	880 yards	Chris Carter	2.840
7.	Hammer '	Howard Payne	2.817
8.	100 yards	Pat Morrison	2.814
9.	220 yards	Pat Morrison	2.795
10.	Marathon	Alistair Wood	2.791
11.	Discus	Bill Tancred	2.726
	Pole Vault	Mike Bull	2.673
	440 yards	Tim Graham	2.652
	Shot	Martyn Lucking	2.580
	3000m SC .	Maurice Herriott	2.548
16.	440 hirdles	John Sherwood	2.476
	120 hurdles	David Hemery	2.451
	6 miles	Bruce Tulloh	2.400
19.	3 miles	allan Rushmer	2.288
20.	2 miles	Allan Rushmer	2.043

This list immediately shows that Lynn Davies is a British "freak" who is world class despite an almost non-existent competition at home, while Allan Rushmer is world class because of the huge pack of 2 and 3 milers waiting to pounce and deprive him of his titles.

Those at the top of the list should look around outside our shores (as Neill Duggan has done) if they wish to improve, while those at the bottom can still find adequate competition here for the time being?

Provided we always remembers the limits of our analysis we may use this method to obtain various other comparisons. For insatnce :- In this country and among this year's (1966) crop of athletes what would we consider to be a first class performance?

We obtain this by adding 2.85 6 to our norm for each event thus:-100 yards 220 yards 9.59 21.18 440 yards 380 yards 46.8 1:47.0 1 mile 2 miles 3:56.5 8:26.9 3 miles 12:55.0 6 miles 26:58.0 120y Hurdles 440y Hurdles 13.60 49.92 Marathon 2:13:28.0 3000m SC 8:24.4 Long Jump 25132 High Jump 51'01 Triple Jump Pole Vault 1516 Shot 571114 Discus 18510 Hammer 20812 Javelin

This of course could be continued at any level and with the aid of a computer could yield such things as rational point awards for interclub or county competitions as well as pentathlon and decathlon tables.

Finally it indicates that timing sprints to 0.1 sec is no longer "on".

POSSIBLE BASIS FOR A COMPARISON BETWEEN EVENTS by David Dallman

This analysis is based on the top 100 world performers in the 8 standard field events for each of the years 1956 - 66.

No attempt has been made here to investigate the progress from year to year. Such an analysis (though based on only the top 10 performers) has been done by Richard Szreter in the 1963 ATFS Annual. What is investigated here is how fast the distances achieved fall off down the lists.

The overall conclusion is that in the throws the distances decrease more rapidly (on the average 0.9% for every 10 performers) than

in the jumps where the rate is significantly lower (about 0.4% per 10 performers).

Each list was divided into 10 "bins" of 10 performers and the average dis tance in each bin was calculated. Below about the 30th performer the percentage decreases are fairly constant, but in the top 30 they increase considerably. This behaviour was remarkably similar in every one of the lists examained.

The figures in the table are the average percentage decrease per 10 performers for each list, ignoring the top 30 performers. The last column is the average for the whole period with an error corresponding to the tear-to-year fluctuation (for the statistically minded this error is plus or minus one standard deviation). There is a clear separation between jumps and throws in this last column. The differences among the jumps are not much larger than the errors and cannot be considered significant with the present data.

These figures could hopefully be used in a quantitative comparison of different events; if one performance in each event was taken as a srandard (and this of course is a problem in itself!) these rates of difference could be used to calculate all other equivalent performances.

The 1952 IAAF Scoring Tables were apparently constructed along similar lines, but jumps and throws were considered independently as far as I can make out. The approach touched on in this article might enable the two to be compared and presumably (though this has yet to be done) could be extended to track events. As time goes on and we have better and better statistica, the accuracy of such comparisons should improve.

		56	57	58	59	60	61	62	63	61:	65	66	Ave
0.79(HJ	0.35	0.25	0.30	0.32	0.39	0.32	0.25	0.25	0.25	0.32	0.26	0.30
0.38(\$:14(ΒΛ	0.55	0.39	0.44	0.51	0.30	0.39	0.53	0.60	0.60	0.39	0.65	0.49 11
	LJ	0.32	0.37	0.32	0.35	0.32	0.23	0.35	0.32	0.37	0.25	0.38	0.38
(TJ	0.53	0.35	0.48	0.44	0.39	0.46	0.39	0.37	0.42	0.42	0.41	0.42
0.86(SP	0.62	0.65	0.58	0.78	0,67	0.74	0.95	0.88	0.95	0.88	0.98	Q.79 14
+.24(DT	0075	0.75	0.75	(Co'		زره	0.75	0.76	0,80	0.78	0.92	9.81
(HT	0.05	1.14	0.95	0,95	0.93	0.88	1,00	0.88	0.14	0.76	0.72	Q.95 13
	JT	1.02	1.09	0,87	0.98	0.81	0.90	0.76	0.75	0.75	0.98	1.00	Q.90 -,12

All entries in the table are percentage decreases per 10 performers. They are not valid for the top 30 performers in any of the lists.

INTERVIEW NITH BOB PHILLIPS - No.7 in a series

AH: From your position as assistant aditor of 'World Sports' would you think that the NUTS could significantly inclosed the penetration of its information services in the local and national press?

DKRP: Frankly, no. Despite their steadily increasing awareness over the years I believe that members of the National and Local press are still basically suspicious of statistics - even though these are of such vital significance in athletics. Without trying to be whimsical, I think I can say that the reason for this suspicion, above all else, is that anyone who commits himself to basing his newspaper copy on figures - no matter how reliable the source is setting himself up to be shot down in flames. As it is, there is already something of a love-hate relationship between press-men and statisticians, and I feel that the NUTS will never be accepted by the majority of the specialist press as anything more than a necessary evil. Most of the athletics writers in this country do not have the same background of dedicated enthusiasm as NUTS members, and often for very good reasons. A certain amount of detachment is essential for the professional and for the most part they have reached their present situation in a round-about fashion. Athletics gerts a lot of publicity because most athletes are characters and good talkers - and what's more, they talk for nothing, which is more than can be said of their professional colleagues in other sports. I seem to have strayed a bit from the original point, but I think it is

still fairly relevant. The NUTS can sit back smugly and reassure themselves that they are professional amateurs dealing with (for the most part) with

Not so long ago the NUTS were talking more than half-jokingly about appointing a full-time officer, primarily to provide such information as is mentioned in the original question. For various reasons, not least financial, this is obviously now impractical, and I feel that as a body we must remain content to continue to occupy our unique role in the dissemination of information on the sport. Any closer contact with other institutions - i.e. official representation on selection committees, reliance on income from

the Press - would interfere with our independence.

Perhaps it is invidious of me, as one who is professionally interested in sport, to say this, but we all came into the NUTS simply because we enjoy the collation and discussion of statistics, and I think we fulfil our role admirably by providing an excellent service to other interested parties, on both a formal and an informal level. Quieta non movere! (My dictionary says "let sleeping dogs lie"! - Ed)

AH: You are also assistant editor of the ATFS (International Athletics)
Annual published by World Sports and have indicated that you do not think
it quite measures up to the standard of our own annual. On the other hand
it does contain some non-statistical material - occasionally of quite
considerable interest: have you any ideas for features which could be included
in future editions of "British Athletics"?

DKRP: Any remarks which I make about the IAA do not reflect in any way on Roberto Quercetani, who undertakes the main task of editing the World List, without whom the annual would not exist, and whose tireless work and researshes over the years have been a constant source of inspiration to anyone interested in athletics statistics. But because it has perhaps become a somewhat unwieldy organisation (156 members at the last count), the ATFS does not make as concerted a contribution to the production of its own annual as I feel it should, and the scope of the material included each year - particularly in the National Records and Championships section - is not as broad as it should be. Of necessity, the work has to be delegated and only now have I learnt the lesson the NUTS preach of duplicating jobs to cover inadequacies. Messrs Dibrowolny, Gluszek, Pliskiewicz, Samulski and Skinder between them failed to produce any information on the 1966 Polish national championships - which could quite easily have been collated at the time had one known they would not make any contribution. Still enough of my troubles.

not make any comtribution. Still, enough of my troubles.

So far as "British Athletics" is concerned, budget and space-restrictions must necessarily militate against anything too adventurous in the way of features, but I feel that a resume of the season, both domestic and international so far as it affects Britain, would provide welcome additional information. I hope, too, that the photographic section will become a permenent feature - and whilst on that subject I must add that I feel that a photo on the cover, perhaps representing the NUTS idea of the British athlete of the year, would, I am sure, sell more copies. And slaes, should, after all, be our primary objective after accuracy.

A number of items which have appeared in this Newsletter deserve a much wider audience, but I would doubt whether they would necessarily receive the seal of approval from the Board!

AH: Members may have seen references to the Croxley Striders; could you satisfy their curiosity and reveal when it was started, how many members it has the outstanding moments in its illustrious history etc.

has, the outstanding moments in its illustrious history etc.

DKRP: The whole thing started as a joke and has really remained that way ever since. John Bale, Les Crouch and myself were the founder-members some two years ago, and I think that the club, if it can be called such, can be said to date from September 3rd 1965 - the day a supply of one dozen suitably emblazoned vests arrived from Stan Eldon's and were promptly put into service. "Croxley" because Les and I both live there and our Welsh member used to make regular visits there to train with us, and "Striders" because that's about the limit of the speed we manage to raise on any of the sessions that we had to-gether. Now that John Bale(NUTS member 1958-63, and recently reelected) has succeded in obtaining his B.Sc(Econ), we are assured that he is contemplating a sermous comeback - insofar, of course, as he can be said to ever gone anywhere at any time in his running career.

At the time that the idea was first mooted, we agreed that certain athletes

At the time that the idea was first mooted, we agreed that certain athletes of somewh at greater repute would receive honorary membership - not necessarily on the grounds of achieving anything in particular but because they possesed that aura which has perhaps best been put into words by the French writer (Ithink it was Gaston Neyer) who first coined the phrase "Les Dieux du Stade". Ron Clarke is to me the greatest thing on two legs

since Lily Langtry, and Les and John both share my opinion - substituting the names of Jane Powell and Marghanita Laski instead - so he was an obvious first choice. He was duly sent his vest, and so far as I know has been proudly wearing it up and down Royal Drive, Heathmont, Victoria, ever since. Next on the list was Mike Wiggs - not because he is the only outstanding physical specimen produced by Croxley Green (There's a rather charming strawberry blonde who lives on our five mile road course) - but because to me, despite all his failures, he is still one of the most exciting athletes Britain has produced in recent years. The only other athletes to receive our accolade have been Siegfried Herrmann from Erfurt and Nobby Clarke from Erdington - and for rather different reasons. Herrmann has been a favourite of ours ever since he ran that mile at White City 11 years or so ago. Those who saw it will know what I mean. Nobby gets in because he trains with us when he comes down to the smoke, and for a Brummy he's not a bad sort of bloke. The curuinus common denominator that you might have observed is that even our world-famed numbers have been great losers.

So there are still five vests gathering moths and dust. I think Brightwell would have probably got one had he kept going. Ryun and Tommie Smith make it all look too easy to ever stand a chance of getting in. My efforts to persuade my fellow-members to mmke suitable overtures to Ann Wilson have so far met with little success, though I'm prepared to amake all the necessary contact. We may not be the most successful athletics club in the world, but we sure are the most exclusive.

AH : Finally, as recently elected Chairman perhaps you would state how you should like to see the organisation develop over the next few years? DKRP: At the risk of being regarded as either retrogessive or reactionary I would say that I am quite happy to see the NUTS maintain its present status in the foreseeable future without making any conscious efforts to expand its size or its activities. I believe that the most important single issue at present concerns co-ordination of our activities in the publications field, and once a rationalised system has been worked out for the presentation and promotion of our various booklets I think we will have taken another major step forward in our development and organisation. Obviously the primary reason for our existence - the collation of marks - has not yet reached the optimum, and personally I hope it never will. The art of athletics statistics lies in overcoming the difficulties of confirming or even learning in the first place of performances, and if it was made too easy - i.e. by official registration of performances, as I believe occurs in Finland - there would not be much scope left for original research. I suppose that the work of the NUTS on the annual is a science insofar as it can be measured in ultimate terms of listing every performance that qualifies, but the interpretation of many of these marks is still an art. I said that the question of pub; ications was the major issue, but equally vital, I am sure, is the matter of delegation of duties within the organisation We have reached a stage where the pioneers are understandably anxious to be relieved of some of their duties. Our future depends on our ability to find worthy successors, and I thnink this entails - so far as is practicable - a reassessment on national rather than London lines.

MEMBERS' PENTATHLON, Hurlingham 27 Aug 67

One can only echo Peter's remarks made last year: it was a disappointment so few members from outside the London area took part. To indicate those members feeling the effects of old age we have shown last years scores in parentheses.

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69163
 1. Bob Phillips
                    1618
                           83:11
                                   23.6
                                                  4:13.4 = 2286 (2118)
 2. Pat Mackenzie
                    19173 13110
                                         10216-
                                   26.9
                                                  6:16.6
                                                           = 2076 (1794)
                           7315
 3. Nobby Clarke
                    1617
                                          57:9
                                   25.8
                                                  4:44.8
                                                           = 1712 (1638)
 4. Mike Hayes
                    1513
                                   27.9
                                                  5:18.7 = 1513 (1251)
                    1715
 5. Bob Sparks
                                          79 4
                           86163
                                   27.6
                                                           = 1472 (1477)
                                                  5:45.5
                   16:53 97:93
 6. Stan Greenberg
                                   29.2
                                                          = 1287 (1341)
= 1189
                                                   d.n.f
                    1513
 7. Peter Matthews
                           3 fouls 26.9
                                          51173
                                                  5:01.5
 8. Cliff Temple
                                                 4:37.3 5:03.8
                           58103
                                   28.3
                                          43110
                                                           = 1165
9. Dave Cocksedge
10. Mel Watman
                   14'11½ 3 fouls 28.8
                                          40183
                                                             938
                                                           =
                    14'10 52'6
                                          5715
                                                 1.5:56.0
                                                           = '874
                                   28.9
11. Les Crouch
                    10'17 3 fouls 29.1
                                          481114
                                                 4:58.7
                                                             756 ( 970)
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Les Crouch joined the exclusive 10ft LJ Club with the following great series 9'01;9'9;10'14. He should, however, have been disqualified for wearing feathers (a la winged Mercury). Pat Mackenzie surprised himself by setting a PB javelin with a series: F; 127'9;131'0.

Results of various heats were as follows: - 200 metres Heat 1. Clarke 25.8; Sparks 27.6; Greenberg 29.2: Heat 2. Phillips 23.6; Nackenzie 26.9; Temple 28.3; Crouch 29.1: Heat 3. Matthews 26.9; Hayes 27.9; Cocksedge 28.8; Watman 28.9: 1500 metres Heat 1. Phillips 4:13.4; Clarke 4:44.8; Crouch 4:58.7; Matthews 5:01.5; Cocksedge 5:03.8; Heat 2. Temple 4:37.3; Hayes 5:18.7; Sparkes 5:45.5; Watman 5:56.0; Mackenzie 6:16.6; Greenberg dnf.

THINKPIECE by Peter Pozzoli (concluded)

A big mistake being made in British sport to-day is the crazy idea that it is important and necessary to throw teenage youngsters into international combat. What foolishness. The ONLY sensible policy anywhere at any time for picking internationals is simply that they be the BEST available, which means the best in the country currently performing. Time enough when youngsters succeed in beating these aces regularly for them to in turn become automatic choices for their country. This imbecile policy of choosing schoolkids to represent Britain nearly cost us dear last year when, save for the French dropping the baton we would have lost to France for the first time in 40 years. Don't blame the girls, they did their best, but what could you expect from a selection half of whom, on season merit and ranking had no right to be in the team at all? Once upon a time the award of an international vest set the seal of merit upon an athlete, the wearer was looked up to, people made way for them. Nowadays vests are awarded two-a-penny and it seems to be on the democratic principle of "lets share them round as much as possible" instead of the virile autocratic system of "honours to those only who prove their superiority. Who makes way for an international now, and indeed why should one for half of them are little better than the pack. Linda Knowles made history at the 1962 European championships when she became the first women picked for an international without having previously placed in the first 6 in the National championships. In a team of mature athletes it paid off, but now we are indulging in wholesale selections of similarly nationally immature and unproven athletes. When half a team is early teenage schoolgirls the fighting spirit maturity brings is lost. The upshot, as in the French match is clark instead of a serious business. I am quite sure athletes like Kavanagh, Birch, Inkpen, Weil and others will have themr time, and a good one it will be, but on seasonal merit none had any right to be at Lille. The French agve them the honours due to them - they were entertained in a school-hall instead of at the traditional Folies Bergere type of dinner. We must not complain if when we send children to represent us they are treated like children. No-one should be considered for international honours until they are in the top three in the country. And what an inducement to an athlete to climb to that position to find somebody well below them in the rankings getting the honours anyway. I want to see the best two in Britain in all events giving their utmost for the honour of their place of birth.

This year's Birds Eye Trophy lists reaches a veritable nightmare of surrealistic comparison. Windsor and Eton 10 places above Selsonia; Hereford more poweful than Ilford; Bournemouth way above Essex Ladies; all six of them way below Welwyn who are so effective that they have not even been able to run their own trophy meet. Norfolk Olympiades above Derby Ladies and Enfield and other clubs who beat them regularly. Enfield below Gloucester and Southampton and other clubs they beat repeatedly without loss throughout the season. And wonder of pristine wonders - Bognor Regis (whoever they may be) a greater side than Bury & Radcliffe or Bristol (unchallenged champions of the Worth and South-West). Come off it, Middlesex Ladies who had their poorest season in 10 years are the first to admit they were outclassed by such as Cambridge H., Derby, Aldershot and Southend at every outing. Even Maeve Kyle would not claim Ballymena would beat any of the following ten clubs. Hickleton Main won the Yorks Championships and were edged out of the NCWAAA Champs by Bury by a whisker, yet the Birds Eye people do not mention them in the top 50. App arently this one sided order of things is approved by Athletics Weekly since tables based on ACTUAL CLUB RASULTS were completely ignored and the public were denied the opportunity of comparing the two systems for themselves. Whilst the system of ranking on results achieved is not claimed as 100% infallible it is claimed to be, and figures obtained last season prove it to be a much superior and fairer method of assessing club strength than the system favoured by Hessrs Birds-Eye. Rather than this farrago of unrealism give me the official WAAA Club Championships, that is the George French Trophy based solely on WAAA champs results.

This article has had to be slightly edited owing to shortage of space. I would also like to point out that the Birds Lye trophy is a MUTS award and is not worked out by Birds Eye, who gave the trophy. PJH