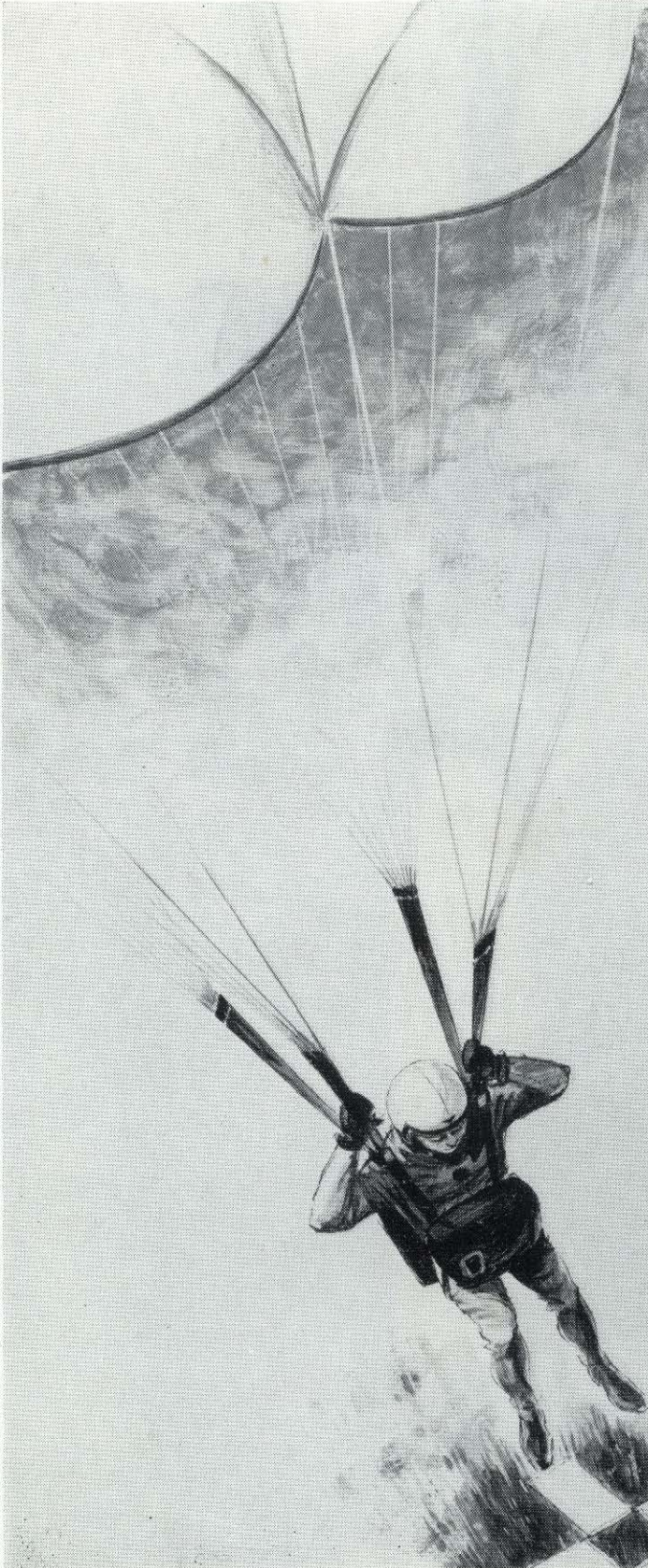


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THE JOURNAL
OF THE BRITISH
PARACHUTE
ASSOCIATION

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Sport

Vol. 8 No. 2

Parachutist

The British Parachute Association Ltd,
Artillery Mansions,
75 Victoria Street,
London, SW3
Phone 01-799 3760

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EDITORIAL

The BPA have decided to send a team to compete at the 1971 Adriatic Cup Competition in Yugoslavia.

The final selection was made over the weekend of the 7/8th August at Wilstead and the scores from this weekend were added to the individual accuracy results from the Nationals. The team will be, Hiatt, King, May, Savage, and Standing. This year's Nationals, held away from Netheravon for the first time since 1964, produced a low entry and by comparison with other years, a lower standard. Conditions for the style event were abysmal, with some unlucky competitors spending circuit after circuit in the aircraft searching for a hole. Several, after releasing in desperation, found themselves in shouting matches with irate local farmers after landing off the airfield and in crops. One or two had to be rescued by police after things turned ugly. The best thing about the Nationals was the splendid 'LYTAG' pit specially installed for the event, and providing an injury-free meet with one exception. 'Sooty' Standing, in finest cherry beret tradition, leapt to the top of a human pyramid formed during one of the halts for wind, rain, and cloud, and promptly fell off on his head. The resultant cut needed seven stitches.

Members busy selling subscriptions of *Sport Parachute*, are requested to redouble their efforts. The competition is still open. Members not selling subscriptions are politely requested to please try, otherwise the next issue is likely to be a four page folder with photographs, OF ME.

J.M.

STOP PRESS

The new British Star Record stands at a ten man put together at Halfpenny Green over the August holiday. Story and pictures (I hope) next issue.

Cover: Chief Judge Griffiths eyes Bob Hiatt's strike of five centimetres. in the Individual Accuracy event at the Nationals. Bob was jumping the Mark I Para Commander with 36 inches off the lines. These canopies and their like are apparently doomed to extinction by the advent of the new, special, super, Wingthingmachine and its cousin the Spoilfoilplane. We will see.

Front cover and centre spread photographs by Dave Waterman.

Revised Instructors/Clubs Lists

LIST OF BRITISH PARACHUTE ASSOCIATION APPROVED INSTRUCTORS

Name	Club	BPA No.	Name	Club	BPA No.
Acraman, R. S. *	R.A.P.A.	(P) 444	MacIellen, W. M.	Scottish Parachute Club	4060
Addison, N. F.	R.A.F.S.P.A.	2566	Mapplebeck, K. *	R.A.F.S.P.A.	(P) 1035
Anderson, B. *	S.A.S.		Martin, M. A. *	A.P.A.	(P) 1444
Anderson, T. R.	R.G.J.	4590	May, C.	South Staffs.	2643
Andreau, M.	A.P.A.	1645	McCarthy, D.	R.A.P.A.	949
Armour, A. M.	A.P.A.	5649	McGill, J. A.	Parachute Regiment	2586
Aveling, M. F.	Parachute Regiment	7450	McLoughlin, J. E. *	R.A.F.S.P.A.	(P) 175
Beard, J. A.	Green Jackets P.C.	2050	McNaughton, D.	Parachute Regiment	417
Birch, D. T.	R.A.P.A.	3036	McQueen, A. S.	A.P.A.	4318
Boot, W. G.	T/Valley	3930	Meacock, W. J. *	Peterborough Para Centre (P)	578
Born, A. R.	R.A.F.S.P.A.	2661	Melville, L. W.	7 Parachute Regiment R.H.A.	1016
Bowles, J. A.	R.A.P.A.	1237	Miller, I. G.	Lincoln Pathfinders P.C.	772
Buxton, L. W.	R.M.	5698	Mitchell, G. E.	I.●W.	407
Cameron, K.	A.P.A.	7372	Morrison, A.	A.P.A.	4848
Card, R. G. *	A.P.A.	1927	Noble, K.	Northern Parachute Centre	4298
Carr, G.	A.P.A.	494	Noble-Nesbitt, R.	Northern Parachute Centre	6461
Castree, C. J.	R.A.P.A.	978	O'Brien, M. J.	B.P.C.	(P) 332
Cathro, G.	P.R.F.F.T.	1547	O'Brien, R. L. *	Lancs. Parachute Centre	3550
Catt, W. *	P.R.F.F.C.	415	Oliver, A. R.	R.A.F.S.P.A.	2518
Cavannah, P.	Lancs. Parachute Centre	2817	Oxley, T. E.	A.P.A.	1442
Charlton, A. F. *	R.A.F.S.P.A.	(P) 110	Parker, A. H.	R.A.P.A.	3138
Cockburn, A. M.	R.A.P.A.	2749	Parkinson, H. E.	R.A.F.S.P.A.	3276
Cole, A. J. N.	B.P.C.	(P) 346	Parry, R.	Lancs. Parachute Centre	2735
Cooper, A. E.	Manchester F.F.C.	3026	Payne, D. C.	Golden Lions	2370
Crawley, T.	Green Jackets PC	543	Peacock, D. *	R.A.F.S.P.A.	(P) 125
Crocker, J. T. *	Green Jackets PC	(P) 2066	Perkins, R. G.	Martlesham Heath	4804
Dale, A. J.	R.A.F.S.P.A.	845	Price, A. J.	R.M.	5489
Daubney, J. E.	22 S.A.S.	2290	Prince, D.	Lancs. Parachute Centre	1880
David, B. A.	Independent	(P) 822	Raine, G. P. *	A.P.A.	2229
Day, T. J. W.	Metro Police Club	1705	Reddick, J.	A.P.A.	349
Deakin, M. D.	R.A.F.S.P.A.	4239	Reed, M.	Yorks. Parachute Club (P)	596
Dickson, T. G.	Scottish Parachute Club (P)	472	Rees, B.	7 Parachute Regiment	874
Dineen, K. J.	R.A.F.S.P.A.	3507	Reeves, M. R. *	Independent	126
Dixon, A. C.	R.E.M.E.	6174	Reid, M.	Scottish Parachute Club	1859
Elliott, W. E.	A.P.A.	4064	Reiter, R.	Sport Parachute Centre	4931
Ellis, G.	A.P.A.	3432	Robertson, R. J.	Parachute Regiment	4059
English, J.	Northern Parachute Centre	3767	Robinson, J.	R.A.F.S.P.A.	938
Forsdyke, J. K.	South Staffs.	3027	Runacres, R. J. *	R.A.P.A.	(P) 338
Forster, N. J.	Metroparas	5783	Ryan, R.	Independent	2400
Francis, R.	Sport Parachute Centre	3437	Rymer, D.	7 R.H.A.	5967
Gardener, E. A. J. *	Parachute Regiment (P)	178	Savage, D.	Nomad	1671
Griffiths, R.	R.G.T.	(P) 115	Scarratt, W. T.	J.S.S.P.A.	1428
Hackett, D.	A.P.A.	878	Schofield, B. S.	Parachute Regiment	2332
Hagan, T.	Peterborough Para Centre	1930	Scott, R. S.	S.A.S.	2899
Hall, F. M.	Scottish Parachute Club	662	Seeger, R. A. M.	J.S.S.P.C.	495
Harbaugh, J. R.	N. Ireland	6688	Seeger (Mrs.)	J.S.S.P.C.	496
Harper, I.	R.A.F.S.P.A.	5543	Shea-Simonds, G. C. P. *	Sport Parachute Centre (P)	475
Harrison, J.	Green Jackets P.C.	2734	Sherman, P. *	Independent (P)	4757
Henry, T.	S.A.S.	3110	Shone, G. B.	R.A.P.A.	2245
Herbert, G.	J.S.S.P.A.	1866	Silander, S.	Ravens	3377
Hewitt, B. N.	Northern Parachute Club	6023	Slattery, W. P. *	Nomads (P)	258
Hill, A. V.	B.P.C.	193	Smith, E. H.	S.A.S.	759
Hughes, D. *	A.P.A.	(P) 116	Smith, J. F.	●ld Warden	3847
Hogg, J. E.	B.P.C.	187	Souter, R. F.	R.A.F.S.P.A.	5594
Holt, A. C.	Northern Parachute Club	2224	Standring, B. R.	Parachute Regiment	2191
Hounscome, N. G.	T/Valley	1598	Stephenson, E. W. *	A.P.A.	7699
Jackson, M. L.	R.E.	(P) 343	St. John, L. N. E.	B.P.C.	(P) 257
Jacobs, K. E.	R.A.F.S.P.A.	471	Thomson, C.	Innl. Skydivers. Swansea	3198
Jarratt, R. G.	Parachute Regiment	8370	Turner, W. P. *	Army Peregrines (P)	220
Jerstice, B.	Lancs. Parachute Centre	2101	Walmsley, J.	Parachute Regiment	930
Jickells, T. J. *	S.A.S. Regiment	198	Ward, R. L.	R.M.	5741
Johnson, A. T.	R.A.F.S.P.A.	898	West, M.	South Staffs.	133
Jones, A.	Parachute Regiment	1886	Whitney, D. M	Para. Regt. F.F.T.	2163
Jones, D. J.	R.A.F.S.P.A.	6979	Willis, R. J.	R.A.F.S.P.A.	5542
Kelly, G. A.	N. Ireland	1226	Wilson, J. W.	R.A.P.A.	2900
Kirkham, R. N.	R.A.F.S.P.A.	6498	Winwood, M. J.	A.P.A.	2319
Laing, J.	7 R.H.A.	1323	Wiseman, J. M.	S.A.S.	2183
Lewington, E.	3 Parachute Regiment	5382	Wright, J.	Para. Regt. F.F.T.	1298
Lindsay, D. C.	N. Ireland	2317			
Lonsdale, M. C.	A.P.A.	1151			
Louttit, I. A.	Hereford Parachute Club	4001			

(P) denotes member of Panel of Examiners.

* denotes Advanced Parachute Instructor.

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Swansea, Glamorgan.

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Cockerham, Nr. Lancaster,
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Twenlows Hall Farm,
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Sunderland, Co. Durham.

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Parachute Group**

‡Peterborough Para. Centre
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Peterborough.

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Bobbington, Worcs.

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Bridlington 77603

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**Parachute Regiment
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**R.E.M.E. Freefall Para.
Club** Major R. I. C. Macpherson,
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**Rhine Army Parachute
Association** Sgt. R. S. Acraman,
RAPA Centre, c/o 26 Eng. Regt.,
Allanbrooke Barracks, BFPO 16.

**Royal Air Force Sport
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‡Denotes 'Full-time' Training Centre

LIST OF BRITISH PARACHUTE ASSOCIATION APPROVED ASCENDING PARACHUTE INSTRUCTORS

The following are full B.P.A. members and have been approved to hold Ascending Parachute Instructor Ratings as quoted :

Name	BPA No.	Name	BPA No.
O. W. Neumark	923	W. G. Boot	3930
Capt F. E. Thewles	6794	Lt. A. J. Price	5489
Capt B. C. A. Lee	5929	I. G. Henderson	6129
Major R. Conningham	4497	Major R. H. Ker	1064
J. Birkett	2364	Capt. R. H. Fox	5646
M. de Cartier	3207	M. K. Wilson	5911
D. Burns	5509	Major J. A. Green	7875
H. J. W. Fletcher	6881	Lt. J. N. P. Walsh	7878
R. K. Walker	6904	Lt. J. A. Darnley	7880
Major I. G. Graham	631	Sgt. M. P. Moore	7877
Lt. J. Clark	1584	S. Sgt. J. O'Brien	7876
Major B. S. Schofield	2332	Lt. D. J. M. Daniels	7879
W.O. E. E. Bedford	5067	J. R. Ellington	6590

The above ratings are only valid whilst full BPA membership is held. If an Instructor Rating Card has not been received please notify Secretary General BPA

SHAPES OF THINGS TO COME

by

Peter Schofield, with extracts from Ed Francis (U.S.D—1785) (Parachutist Aug '70)

Just over a year ago, I wrote an article on the Irvin Delta II Parawing, thinking that it would be useful to a new generation of UK jumpers all zipping around on their new found (and UK manufactured) Delta IIs. I have frankly been surprised, disappointed and a little depressed at the conservative, suspicious, and sceptical attitude shown towards it. It may be that this was brought about by a poor initial, if not downright dangerous, sales demonstration effort in the UK.

The lack of response towards this canopy is a great pity for two reasons; firstly the missed opportunity of experiencing its fabulous flight characteristics. It has to be flown, it has to be mastered, it has to be respected, but it will repay careful handling and an acceptance of a possible malfunction rate of just under 1% with some of the most enjoyable and thrilling flights imaginable. Secondly, it's a pity that this potentially valuable experience has not been gained in readiness for the introduction of the 'self inflating glider' type canopies—of which more anon. To round off my comments on the Delta II, I will cite two cases of confidence in the beast. Gus Martin (137 descents—malfunction free) and Stew Cook (100 plus—malfunction free) jumped theirs into the centre of Hong Kong several times, AT NIGHT, in the winter, of '69—a story still to be told, and Kiwi Sanson, the team's 'budding' photographer, chose the Wing in preference to the PC for demo/photo work. (Our wings and foils have shown the most consistent demonstration accuracy throughout the '70 show season.) The success of the wing-jumper partnership depends on the jumper's self-confidence and is directly proportional to this understanding of the construction and flight characteristics of the wing, and to the standard of his initial instruction. The Red Devils will respond to requests for instruction from anyone qualified to jump the wing, Para Foil and Para Plane.

TRIANGLES TO RECTANGLES

The Red Devils Wing program was designed to give an experienced base from which to move onto the 'foil' type canopies. Unfortunately, there was potential choice of four types of foil to choose from early in 1970, which confused the issue. This is already resolving itself, and should be settled by the end of the '71 season.

Originally conceived by Domina Jalbert, the 'Ram Air Multicell Configuration Parachute' principle, has undergone extensive research and development, including wind tunnel tests, by Notre Dame University, Indiana, as well as NASA (not Nasser as reported by some British Journalist) and US Military Evaluation. Early days exposed great problems concerning safe and controlled deployment—the problem not being to

make it open, but to stop it from doing so! An extremely simple yet effective retardation system, which allows precisely controlled deployment, has been developed and tested by Steve Snyder Enterprises. This deployment system is called 'Pilotchute Controlled Reefing' (PCR). It is extremely reliable and the opening shock at terminal velocity is similar to that of a Para Commander. Unfortunately, the US development scene in this field seems bedevilled with personality clashes, and high finance issues which confuse the picture considerably, as will be seen later.

I will deal with each type of foil in general terms, in the chronological order in which we took delivery.

THE SPORT '200' PARA FOIL

(As I understand the situation). A limited number of these canopies were produced, under licence, by Steve Snyder Enterprises. They were the first viable foils on the open market—due to Snyder's reefing system (PCR)—but his licence was withdrawn due to pressure from another quarter, who, though they could not successfully control the opening of their own foil, had other interest at stake.

These foils proved reliable in every respect, though they have taken their toll in injuries. As soon as we received them, Gus Martin opened the batting on his very first jump by deciding that there must be something wrong with the canopy—a misappreciation of the forward speed/rate of descent and gave the runway at Blackbushe a battering, putting himself out of the game for some time. He soon had his hilarious revenge on me when in May I returned from Belfast, after having broken my leg for the entertainment of 25,000 Paddies at the Royal Ulster Show, by trying a hook turn too low.

Bob Harman and Stew Cook kept the foils flying for the rest of the season (though Stew packed himself three malfunctions on the trot at the start of his conversion) and Bob attempted a journey to the centre of the earth by trying to make a 360° turn into the arena from about 60 feet. He has now (I hope) firmly learnt that 360° spiral takes about 200 quick vertical feet. Fortunately, he has a tough head and a good helmet (Everoak Grand Prix which undoubtedly saved his life). Joking apart, I was very sorry to see Taffy Rees put out of the game through a Para Foil accident and will dwell on the cautions and causes later.

THE NOTRE DAME PARA FOIL

After negotiating through, and with the assistance of Walter Neumark I set off, in March, to the fount of all foil knowledge Notre Dame University, Indiana, just in time for the Kent University shootings and

student strikes. As the Notre Dame students threatened to burn down the Department of Aero Space building, the incumbants moved out to pastures green and DZs wide to jump Notre Dame Foils. I distinguished myself by getting lost on my second hop and pop at 7,500 feet and literally disappearing into the twilight towards 'my' (reciprocal) lake, Be warned high foil hop and poppers—know your ground or take a compass!

Though a superb and gentle glider, the problem with the Notre Dame Para Foil proved to be a totally inadequate reefing device, and in fairness to Walter, he had warned me of this. I found the academic side of the visit useful and stimulating, but did not like the atmosphere of political and commercial intrigue there.

During this visit, I was lucky enough to attend two major parachute meets. At Tecumseh I saw a run through of the new U.S. relative competition for a place or places at the Nationals. This is to be seen to be believed by a Brit—even our super (star) men have a hell of a long way to go . . .

A big money meet at Mason in Michigan, jumping with the Notre Dame Para Foil Team, rounded off my visit. It was a *windy* weekend and Lowell Bachman, chief judge, kept the only available wind metre firmly in his pocket. Though there were several major injuries, the lean and hungry ones kept battering in for the considerable cash prizes. I was appalled by the mercenary attitude of the various ambulance crews who called by, and advise anyone jumping in the States to have a good accident insurance or have their dollars ready in their sticky paws. The alternative is walking to the hospital and hoping . . . or hopping there and getting nothing!

Regrettably, I brought one Notre Dame Foil back to the U.K. and though Gus, fit again by this time, persevered throughout the season, he found the openings consistently too hard even at three seconds (and after 27 jumps the canopy was showing considerable signs of wear also). This canopy is a dead loss as far as free fall is concerned and though I attempted to return it whence it came the idea did not seem a good one to the vendor's agent, even though I have signed a document purporting it to be a TSO on the ND Foil.

3 THE PARA PLANE

During the above wanderings I also had a preview of the Para Plane. This is the brainchild of Steve Snyder and Dick Morgan. Conceived and delivered in a remarkably short time as a result of the quick withdrawal of the licence to produce Sport 200 Foil. However, there is nothing illegitimate about this offspring—it's pure thoroughbred. I placed an order for one after a secretive preview and jumps far away from prying eyes. I was very impressed with every aspect of this flying machine and was almost convinced that it sounded the death knoll of the PC as the world's top accuracy canopy.

Surprising as it may seem to some of you, the Red Devils do not have unlimited funds, and so a final choice of advanced canopy was still not possible, even armed with such firm convictions, as there was still another contender for consideration.

This article was written over a year ago and some information is now outdated. E.F.A. has since bought the world rights to the Para Plane.

4 THE VOL-PLANE

Pioneers have been playing with this design for some time, and it seems to have been off and on the shelf too often to be convincing. Just before the World Championships, Chuck Embury, PI Vice-president of Sales with Walter Neumark trailing in his wake, called at Netheravon, to demonstrate the Vol-Plane. Unfortunately, I was unable to be present. Reports from team members were generally favourable, but there was a feeling of unease over the mechanical reefer employed in the inflation control system. (Again the problem of controlling the opening). I intended to take delivery of the Vol-Plane, and as usual get instruction and background information at or as near the source as possible. I duly presented myself at Lakewood to do just that, but met with so many dead ends that the final result of my visit was no parachute and a growing conviction that 'they' (the faceless ones—I always blame them) didn't want me too close to their product or people who knew anything about it, as it wasn't likely to stand up to close scrutiny. During the visit I heard plenty, but nothing to recommend the Vol-Plane. I still did not dare to cancel the order in case my appreciation was incorrect, and we would miss something worthwhile. By strange coincidence the canopy—of which I had been trying to take delivery for the whole period of my visit—was despatched to the UK the same day I left the US!

No sooner had we received our new toy—which has not yet been out of its box—than ominous little warnings about, and amendments to the reefer began to arrive. I also talked to Bill Boot, who had been jumping one, and decided that the best place for ours was in its box. Shortly after this decision the reefer was recalled by PI! There are several lessons to learn from this saga.

1. Never make a decision on a prototype, at first sight. It is fairly obvious that a demonstration model is going to be 'hand made' and trimmed to perfection. A very different proposition to the finished article from a production line.

2. The responsibility for the testing of a parachute lies with the manufacturers and in the final analysis with their agents. Anyone selling parachutes should not only be able to jump and handle them themselves, but be able to teach others to do so. Who'd buy a car from a car salesman lauding the praises of his wares and then admitting he could not drive? Theory and practice are very different things!

3. The idea of a cheap and simple mechanical reefing device of this type is all very well, but assuming perfection, no leakage (the Vol-Plane uses an oil filled piston system), no change in viscosity due to temperature changes, no introduction of foreign bodies such as grit, and no simple mechanical failure, the other problems to be faced are; possibly excessive opening height as a built-in safety factor and consequently the impossibility of taking a low show or hop and pop fun jump due to the time of activation. The difficulty of packing and setting the reefer some time prior to the next jump—if a long delay is intended or expected and it turns out to be a hop and pop, the pack would have to be reopened and the reefer

reset and vice versa. Tough if the weather actually changes whilst climbing to height, especially if No. 1 in the Tri-pacer is wearing a Vol-Plane!

All in all it has been a long hard job narrowing the field down, and making a final selection, especially when one was pretty sure one had the answer all along, but had to be ultra fair and unbiased. The only answer left was the PARA PLANE.

THE PARA PLANE

Shown in figures 1, 2 and 3 are approximate profile views of the Para Foil, Vol-Plane and Para Plane. As one might expect, all of these designs are of the gliding type with desirable characteristics far exceeding any other know parachute. They are simply cloth air foils with tremendous gliding and wind holding capabilities.

Originally the Para Foil had bulk problems, but the Para Plane however, by eliminating the unnecessary load supporting flairs from the bottom of the canopy, has been greatly reduced in pack size. Consequently, it will fit into any standard backpack including the smallest of the new style packs.

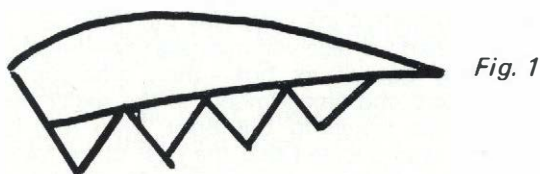


Fig. 1



Fig. 2

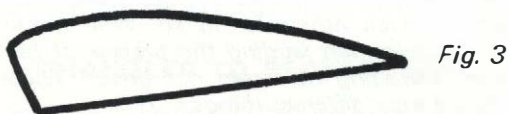


Fig. 3

The Para Foil and Para Plane have lift over drag (L/D) ratios of approximately 3-1. In comparison, the Delta II Parawing has an L/D of approximately 2-1 and the PC 95-1. What all this means is that from an altitude from one mile (no wind) the Para Commander would glide somewhat less than a mile. The Delta II Parawing would glide about two miles whilst the Para Foil and the Para Plane would glide about three miles.

Of the four Ram-air parachutes described, the Para Plane is the only viable one in production and ready for mass distribution.

The production model Para Plane is constructed of 1.6 oz calendered and treated ripstop nylon with a porosity of 1-3 cubic feet per minute. Construction consists of 15 *airfoil* shaped ribs sown between upper and lower surfaces forming a true *airfoil*. Eight of the ribs have special internal reinforcements for line attachment directly to the lower surface of the canopy. This arrangement provides a very even load distribution along the lower surface which completely eliminates distortion of the *airfoil*. For those who are sceptical, all I can say is that 'seeing is believing'. The lower surface *is* flat. Removal of the flares leads to a fair reduction in drag and bulk.

The leading edge of the Ram-air parachutes is open or physically missing. However, internal air pressure causes a small amount of stagnant air to be pushed ahead of the open cells. The focal point of this stagnant air acts as a true leading edge which deflects the relative air above and below the *airfoil* surfaces.

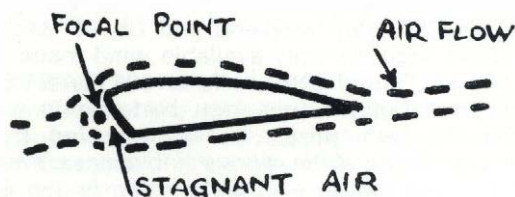


Fig. 4

Rates of descent and forward speed vary with the suspended weight, and of course, the size of the canopy is a factor to be considered. Both the Para Foil and the Para Plane canopies have been or are being made with an area of approximately 200 square feet (10' x 20'). Most of the Foil (Sport 200s) have an average sink rate of about 17 feet per second with a 175 pound suspended weight. For the same suspended weight, the Para Plane sinks about 15-16 fps. As brakes are applied, both the Foil and the Para Plane sink rates increase approximately 15-20%. With a 175 pound suspended weight, these canopies can easily hold a 25-30 mph wind. On one Foil jump in 15-18 mph winds I had to apply nearly half brakes for a vertical descent while making an upwind approach. I am still trying to work out nil wind landings!

The brakes on the Foil and the Para Plane are similar to flaps of an aircraft wing. Application of 10-20% brakes will actually improve the L/D somewhat, resulting in a flatter or longer glide. Further application of brakes will smoothly reduce forward speed to something less than 5 mph. Landing the Para Plane with full brakes would bring one in with about the same impact as landing a TU-5. The Foils would be just a little harder.

Since the application of brakes on the Foil involves deflecting nearly the entire trailing edge, the controls are a little stiff. As additional braking is applied, the pull tension required decreases somewhat. The Para Plane, with the absence of load-supporting flares has a control load of approximately 12 pounds at full brakes. This is just a little heavier than PC controls.

As brakes are applied to the Foil and the Para Plane, the rushing wind noise begins to diminish and at full brakes, acceleration and deceleration are both smooth and steady.

Canopy and directional stability are as steady as a rock when flying with any amount of brakes applied although directional stability decreases rather quickly at the edge of stall or zero (O) airspeed. These canopies will vary hardly a single degree off course nor will they oscillate unless the jumper causes it. Across the wind they expose only just over 5 square feet of surface area!

Foil turns are a bit slow at first, but are accomplished from the half brake position. This gives a more responsive turn with less effort required. Because of the slow turn and the high forward speed, a wide arc will be covered. Para Plane turns are more responsive and easier to accomplish, however, turns from full glide will still cover a lot of ground.

From half brakes the Para Plane turns are quite fast. From full brakes or nearly full brakes, the Para Plane can make 'differential' turns which are excellent for making heading corrections without swinging from under the canopy. This is really an extremely stable pivoting turn which one might consider more of a flanking movement than a turn.

Spiral turns can be very fast and can cause a pull of several G's on the jumper while banking at an angle of 65-70°. After two or three revolutions the jumper picks up to a speed of 50-60 mph. This manoeuvre also causes a very rapid rate of descent which is in the range of 2000 feet per minute. It should not be done below 1000 feet.

Depressing the controls beyond full brakes will cause both gliding canopies to stall. At full brakes the Foil and the Para Plane continue to push forward at approximately 4-5 mph. Both the Foil and the Para Plane can safely be ridden at full brakes, even during approaches. However, when turbulent conditions exist, this is not recommended.

Steady state stalls on the Foil and the Para Plane are accomplished by applying full brakes, then slowly depressing the toggles even further. At zero wind speed, the canopy simply stops flying, it becomes extremely sensitive, and is operating as a simple vertical drag device. Stall recovery is critical and should be practised often while at high altitudes. Recovery for a steady state stall is accomplished by easing the toggles up a few inches. **RELEASING** the toggles abruptly to the keepers will cause the canopy to lurch forward and dive towards the ground while the jumper follows on slack lines. Stall recovery seems to be more critical on the Foil than the Para Plane. Experiencing slack line is a most uncomfortable feeling . . . almost terrifying. Obviously, because of gravity, the jumper will swing back under the canopy as it continues to fly. If this were done near the ground, serious injury could result. Uneven stall control or stall recovery should be accomplished by raising the toggles just 3-4 inches at the most. The violent type of stall and/or stall recovery should definitely be avoided since *all control* of the Foil or Para Plane *is lost* for several seconds during the period of recovery.

Target approaches are similar to those flown by air-

craft. A downwind approach, a base leg, and a final approach will bring a paraglider pilot in upwind. The final turn from the base leg should be accomplished at an altitude of approximately 500 feet. Now, a smooth application of brakes will allow the jumper to hover slightly behind the target while setting up a slow upwind approach toward the target. See the table below.

For light winds	
turn final at 500'	approx. 1000' downwind
For medium winds	
turn final at 500'	approx. 600' downwind
For heavy winds	
turn final at 500'	approx. 200' downwind

(These are slightly optimistic figures, but include a good safety margin.)

LANDINGS

When near the ground in turbulent air, the gliding canopies should not be flown at or near full brakes since an unexpected gust might induce a stall. Foil and Para Plane landings into pea gravel with full brakes applied are safe.

Super light, one foot flared landings are easy with a little practise and can usually be accomplished in nearly any wind condition. At first, paraglider landings in low winds will be almost terrifying since the ground will be streaking by as much as 25-30 mph. That's *real* ground rush. It should be noted that flared landings cannot be made from full brakes. These landings are accomplished by trading off forward speed for instantaneous lift. Following is the procedure for making such a landing:—

- 1. When nearing the ground on the final approach, be sure of having sufficient air speed—no more than quarter brakes.**
- 2. At an altitude of 10-20 feet, depress the toggles to arm's length.**
- 3. Step down—with one foot first, then the other and keep walking.**

PACKING

These 'parachutes' may seem a little involved at first, but, as with anything else a little experience and practise make it a lot easier. The key to it all is a thorough understanding of the design, construction, and rigging. I can easily pack a Foil or Para Plane in the same time as the average jumper packs a PC.

ACCURACY

Though I presently have only a small basis for judgement on accuracy, I believe the Para Plane has definite advantages over all types of other canopy. For demonstration purposes it is without doubt unbeatable. No canopy malfunctions have been recorded on the Para Plane to date.

QUALIFICATIONS

Many suggestions have been made as to who should or should not jump these canopies; what experience they should or should not have etc. The loudest shouters are often the least informed . . .

I have, as usual, a radical, and at present purely personal theory that if a jumper is qualified to jump a PC, he is qualified to jump a Para Plane. This conclusion is reached after consideration of the following factors.

Progression to the PC is accomplished on reaching a certain standard of ability and performance (GP). It is assumed that a jumper at this stage is of sound mind and body, capable of looking where he is going in free fall and under the canopy, and eventually (though some of us never do) learning to arrive at his intended point of arrival! It is also assumed, after instruction in the technique, that faced with an emergency situation our jumper will make the right decision 'to cutaway or not to cutaway . . .' and having made his decision, act in such a way as to achieve a clean reserve deployment. A jumper should never get to the PC stage let alone a Para Plane unless his instructor is satisfied on this point. However, the decision having been taken the jumper is on his own once he leaves the aircraft on his first 'high performance canopy' descent. There is very little difference between the first PC and Para Plane jump. The main points are that the Para Plane is faster, will fly further and requires a slightly different landing technique i.e., flaring for landing. In either case our intrepid flyer should have watched many descents previously, have been fully briefed before the jump, and should be watched by, and be watching for, his instructor throughout the descent. For a Para Plane first jump instructor-student radio or loud hailer communications may be an added bonus.

It is my contention that the less PC experience a jumper has, the easier he will be to train on the Para Plane and the less likely to injure himself in the future. The more experienced he is the more difficult will be his transition, and greater will be his liability to injure himself.

I say this because *ALL* the Para Plane injuries and fatalities, I know of were a *DIRECT* result of reverting to PC handling techniques, usually in strain situations. The more deeply ingrained these techniques the more likely to revert to old habits, i.e. US fatality—jumper (who didn't know that he had a Para Plane in his back pack—hence the warning now displayed on the risers) initiated a stall close to the ground, 'over braking as if on a PC' and 'let go of the toggles'. The canopy dived and hit the ground before his did! Assuming proper instruction it is most unlikely that an *ab initio* Para Plane jumper would have (a) hit the stall in the first place, and (b) have reacted as above if he had done so.

I have witnessed all UK Foil and Para Plane accidents, but one. Every one of them including my own was the result of reflex PC technique reaction. Para Plane technique is in no way similar to PC technique. The only common factor or requirement is to know which way the wind is blowing. Time spent *under* a PC canopy is time wasted for a potential Para Plane jumper—after all kids of 16 are successfully landing ascended PCs!

THE FUTURE

I do not expect everyone to rush out and buy a Para Plane. The import price is pretty prohibitive (we may

see them manufactured here in the fairly near future) and as usual, the conservative element will suck their teeth. Understandably, the kings of the midden will be loathe to lose their many hundreds of jumps PC experience and start again from scratch—but just watch which canopies are competition winners in the States already and during the forthcoming season! *The Para Plane is here to stay.*

SAFETY

Below is a list of basic safety precautions and recommendations for the Para Foil and the Para Plane. Everyone who jumps ram-air parachutes should be especially familiar with these basic safety measures.

1. No downwind landings.
2. No hook turns into the target
3. Never move controls erratically when near the ground. Be deliberate and smooth.
4. Never release toggles rapidly more than half of the full braking range during any approach.
5. Never make approaches at or near full brakes when turbulent conditions exist since gusts may cause an inadvertent stall. Be ready to react quickly but gentle and move out of stall range if stall buffet is noticed.
6. Be observant of all other parachutes in the air since high speed collisions would create a hazardous situation.
7. Do not practise stalls when other parachutes are nearby.
8. Do not initiate flared landings higher than 10–20 feet. Flaring the canopy too high will cause a dynamic stall and the jumper will fall on his back.
9. Be absolutely certain of having sufficient clearance (horizontal) prior to pulling the ripcord. Should the lines come out twisted, it will be several seconds before control of the canopy is obtained.

RECOMMENDATIONS

1. Broken steering lines are of no consequence since steering can easily be accomplished with the rear risers.
2. Front tucks are corrected by pulling *both* toggles down to the full brake condition for a few seconds.
3. It is recommended that stalls, stall recovery and flight at or near full brakes be practised on every jump. This would provide a sensitivity conditioning which is a definite advantage in safety as well as effective canopy control.

Acknowledgement: Credit is given to Paraflyt, Inc. and Steve Snyder Enterprises, Inc. for technical data concerning the Para Foil and the Para Plane and the PCR deployment system.

Finally, it is highly recommended that the instruction manuals be followed closely. Behind these instructions are extensive research and development.



The Sport 200 Parafoil

The Paraplane



Notre Dame Parafoil



Sport 200 Parafoil

1971 NATIONAL CHAMPIONSHIPS - HALFPENNY GREEN

INDIVIDUAL ACCURACY CHAMPIONSHIP

No.	Name	Club	1	2	Jumps 3	4	Total	Position
1	M. D. Deakin	RAFSPA	248.3	217.4	249.0	212.1	926.8	5
2	A. J. Dale	"	185.7	192.0	217.8	225.1	820.6	12
3	K. J. Dinneen	"	221.0	235.1	239.0	217.2	912.3	9
4	H. E. Parkinson	"	Z	86.3	232.7	—	319.0	31
5	I. Harper	"	Z	195.0	190.3	188.5	573.8	26
8	L. Melville	7 RHA	138.5	245.3	231.9	246.8	862.5	11
9	E. E. Gregory	"	Z	132.1	240.2	134.3	506.5	28
10	L. A. McGill	"	196.3	179.2	227.7	186.7	789.9	15
11	C. J. May	Nomad	246.5	244.9	201.1	131.1	923.6	7
12	J. F. Smith	"	225.1	248.8	243.9	250.0	967.8	3rd
13	D. I. Waugh	"	246.2	232.7	248.4	198.6	925.9	6
14	D. Moody	"	240.6	214.1	198.8	Z	653.5	23
19	P. W. Sherman	Old Warden	171.5	219.9	249.2	Z	640.6	24
20	J. Kemley	"	Z	240.2	246.0	Z	486.2	29
21	B. Standring	"	131.1	215.0	246.9	211.5	806.5	14
22	J. English	"	160.9	221.6	250.0	235.3	867.8	10
17	S. Gardner	Ladies	141.4	126.3	142.9	250.0	660.6	21
23	T. Rixon	"	Z	205.1	240.8	244.4	690.3	18
24	G. Vatnsdal	"	206.3	237.3	214.2	Z	657.8	22
25	N. Abisch	"	51.6	193.2	127.7	208.0	580.5	25
26	P. V. Bass	"	176.1	144.2	190.7	Z	511.0	27
35	W. J. Meacock	Peterborough	248.9	250.0	248.8	249.5	997.2	1st
36	W. P. Slattery	"	236.3	215.0	250.0	213.7	915.0	8
37	R. Hiatt	"	238.0	249.7	249.5	200.9	938.1	4
38	R. O. King	"	249.3	243.7	249.4	243.8	986.2	2nd
39	D. Savage	"	234.3	224.9	193.1	161.4	813.7	13
40	A. E. Rose	RMSPC	218.3	215.1	246.1	—	679.5	19
41	G. Sutton	Peterborough	Z	244.5	Z	—	244.5	32
42(N)	C. P. Thorn	RAFSPA	Z	197.4	Z	Z	197.4	34
43	P. R. Dickerson	Peterborough	Z	162.1	221.3	Z	383.4	30
44(N)	R. T. Skeldon	S/Staffs	165.0	189.6	209.5	195.3	759.4	17
45	J. F. Harrison	"	217.9	224.1	229.9	—	671.9	20
46(N)	L. D. Melhuish	S/Staffs	Z	207.2	Z	Z	207.2	33
47	W. Ford	"	204.7	192.4	166.9	202.5	766.5	16

**Winner of Novice Championship—The Swan Trophy*

OVERALL TEAM CHAMPIONSHIP

Team	Total Points	Position
Peterborough Para Centre	7760.6	Winners
RAF Sport Para Association	6383.5	2nd
Nomad Skydivers	6325.4	3rd
Old Warden Flying/Para Gp.	5516.6	4th
Ladies Team	4915.6	5th

INDIVIDUAL STYLE CHAMPIONSHIP

No.	Name	Club	Jumps			Total	Position
			1	2	3		
1	M. D. Deakin	RAFSPA	257.0	267.0		524.0	2nd
2	A. J. Dale	"	242.0	244.0		486.0	7
3	K. J. Dinneen	"	257.0	254.0		511.0	5
5	I. Harper	"	187.0	Z		187.0	23
6	J. M. Patrick	7 RHA	226.0	233.0		459.0	11
7	A. McQueen	"	215.0	235.0		250.0	13
8	L. Melville	"	206.0	182.0		388.0	17
10	J. A. McGill	"	231.0	230.0		461.0	10
11	C. J. May	Nomad	231.0	218.0		449.0	14
12	J. F. Smith	"	Z	214.0		214.0	20
13	D. I. Waugh	"	220.0	220.0		440.0	16
17	S. Gardner	Ladies	Z	192.0		192.0	22
19	P. W. Sherman	Old Warden	Z	Z		—	—
20	J. Kemley	"	266.0	261.0		527.0	1st
21	B. Standring	"	240.0	245.0		485.0	9
22	J. English	"	Z	222.0		222.0	19
23	T. Rixon	Ladies	228.0	218.0		446.0	15
24	G. Vatnsdal	"	Z	Z		—	—
25	N. Abisch	"	211.0	Z		211.0	21
26	P. V. Bass	"	Z	233.0		233.0	18
35	W. J. Meacock	Peterborough	270.0	251.0		521.0	4
36	W. P. Slattery	"	224.0	233.0		457.0	12
37	R. Hiatt	"	263.0	259.0		522.0	3rd
38	R. O. King	"	248.0	238.0		486.0	7
39	D. Savage	"	252.0	257.0		509.0	6
40	A. E. Rose	RMSPC	Z	Z		—	—
47	W. Ford	"	Z	—		—	—

**Winner of Best First Year Style Performance—The Woolgar Trophy*

LADIES' OVERALL CHAMPIONSHIP

The Lady Quilter Cup

Name	Club	Total Score	Position
T. Rixon	Ladies	1136.3	Winner
S. Gardner	"	852.6	2nd
N. Abisch	"	791.5	3rd
P. V. Bass	"	744.0	4th
G. Vatnsdal	"	657.8	5th



John English. Dead Centre.



Army Accuracy Champion 'Sooty' Standring reaches to the right for 31 centimetres.



Dave Waugh, short by 16 centimetres and still on brakes.



Veteran Competition jumper Pete 'The Teeth' Sherman stamps a dead centre on the company Pathfinder.



Mike Deakin of the R.A.F. short and to the left for 17 centimetres.



Bob King showing standard form with his PTCH8 for a 7 centimetre.



John Kemley, 1970 National Champion and current Rhine Army Champion with a good reach to score 34 centimetres.

MEN'S OVERALL CHAMPIONSHIP

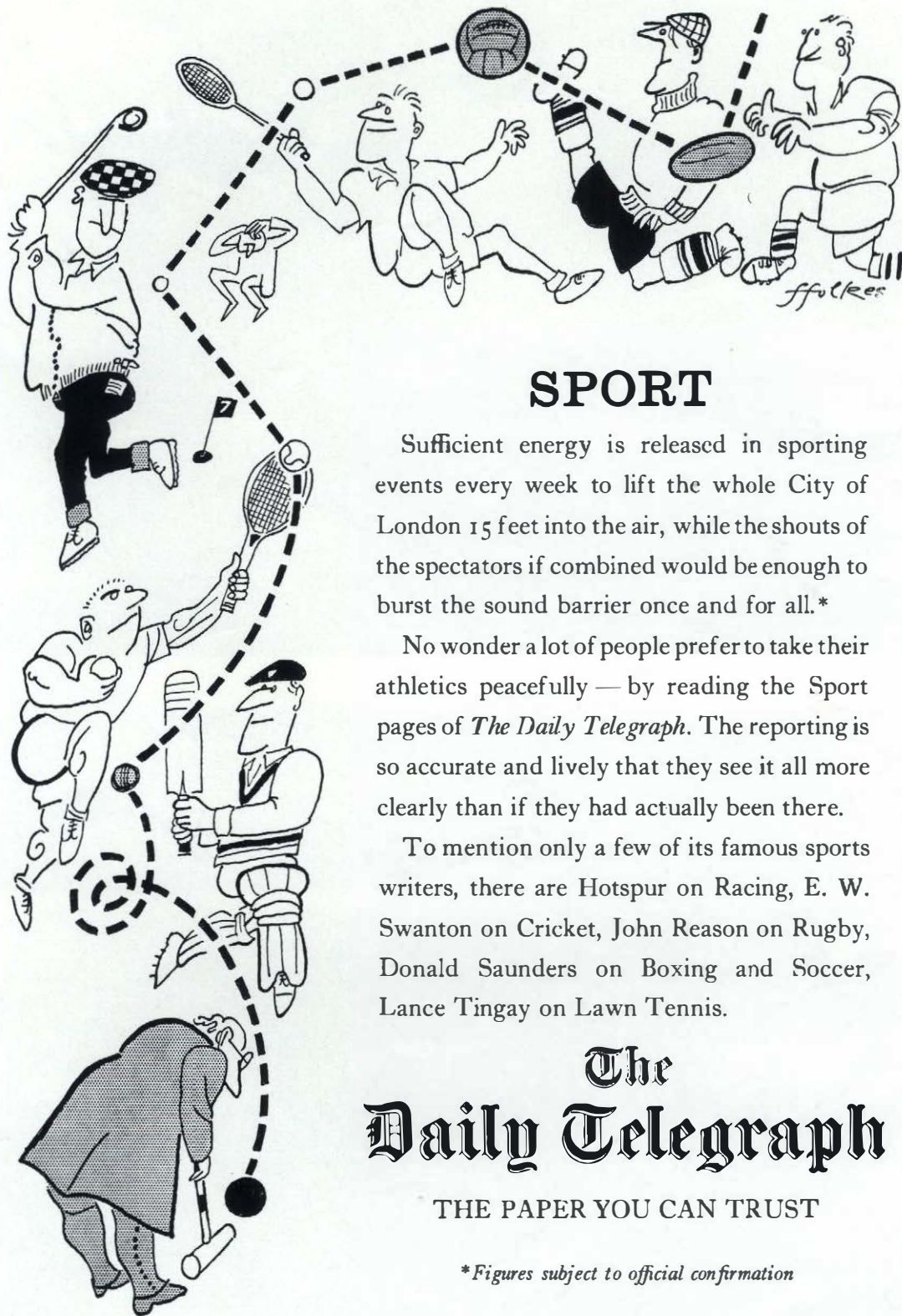
Name	Club	Total Score	Position
*W. J. Meacock	Peterborough	1518.2	*National Champion
R. O. King	"	1472.2	2
R. Hiatt	"	1460.1	3
M. D. Deakin	RAFSPA	1450.8	4
K. J. Dinneen	"	1423.3	5
† C. J. May	Nomad	1372.6	6†
W. P. Slattery	Peterborough	1372.0	7
D. I. Waugh	Nomad	1365.9	8
D. Savage	Peterborough	1322.0	9
A. J. Dale	RAFSPA	1306.6	10
B. Standring	Old Warden/Para Regt	1291.5	11
J. A. McGill	7 RHA	1250.9	12
L. Melville	"	1250.5	13
J. F. Smith	Nomad	1181.8	14
J. English	Old Warden	1089.8	15
J. Kemley	" /RA	1013.2	16
I. Harper	RAFSPA	760.8	17

*Also winner of the Best Civilian Performance Award—The Daily Telegraph Cup

†Winner of the Best Performance by Scottish Member Award—The Scottish Parachute Club Chandy Trophy

TEAM ACCURACY CHAMPIONSHIP

Name	Team	Individual Points			Team Total	Position
		1	2	Total		
W. J. Meacock	Peterborough	250.0	243.2	493.2	1940.9	Winners
W. P. Slattery		246.2	210.7	456.9		
R. Hiatt		242.2	248.6	490.8		
R. O. King		250.0	250.0	500.0		
M. D. Deakin	RAFSPA	249.3	227.4	476.7	1883.8	2nd
A. J. Dale		250.0	249.2	499.2		
K. J. Dinneen		226.1	244.9	471.0		
H. E. Parkinson		236.3	200.6	436.9		
C. J. May	Nomad	238.2	247.8	286.0	1751.6	3rd
J. F. Smith		243.2	235.2	478.4		
D. I. Waugh		233.2	185.2	418.4		
D. Moody		120.6	248.2	368.8		
S. Gardner	Ladies	249.0	19.2	268.2	1524.9	4th
T. Rixon		232.0	172.0	404.0		
G. Vatnsdal		220.5	227.3	447.8		
P. V. Bass		236.1	168.8	404.9		
P. W. Sherman	Old Warden	250.0	248.9	498.9	1481.5	5th
J. Kemley		250.0	Z	250.0		
B. Standring		247.3	Z	247.3		
J. English		235.3	250.0	485.3		



SPORT

Sufficient energy is released in sporting events every week to lift the whole City of London 15 feet into the air, while the shouts of the spectators if combined would be enough to burst the sound barrier once and for all.*

No wonder a lot of people prefer to take their athletics peacefully — by reading the Sport pages of *The Daily Telegraph*. The reporting is so accurate and lively that they see it all more clearly than if they had actually been there.

To mention only a few of its famous sports writers, there are Hotspur on Racing, E. W. Swanton on Cricket, John Reason on Rugby, Donald Saunders on Boxing and Soccer, Lance Tingay on Lawn Tennis.

The Daily Telegraph

THE PAPER YOU CAN TRUST

** Figures subject to official confirmation*



1



2



3



4



5

Opposite page and above. More Dave Waterman photographs. This time of the 3/4th. July 'Skyvan' weekend at R.N.A.S. Yeovilton. It looks like the group was broken by the jumper entering from the right in photo 4. This same weekend produced a nine man star.

BRITISH PARACHUTE ASSOCIATION LTD.

INSTRUCTOR QUALIFICATIONS

1. The new system of qualifying Instructors and Advanced Instructors which was drawn up by The Safety and Training Committee and subsequently approved by the BPA Council at its meeting on 20th May, 1971, and is detailed below.

2. POTENTIAL INSTRUCTORS

A. Required Qualifications:

- (i) 100 sport parachute descents.
- (ii) Two years involved in sport parachuting.
- (iii) Category X.
- (iv) Club Chief Instructor's recommendation.

B. Will be required to attend a one-week Potential Instructors' Course to be given instruction in:

- (i) Methods of instruction.
- (ii) Use of training aids.
- (iii) Basic ground training periods such as introduction to equipment, aircraft drills, emergency procedures, and parachute landing falls.
- (iv) Practical periods on such as stick inspection, pilot briefing, student briefing and debriefing, and aircraft drills.
- (v) Lectures on such subjects as training progression, safety regulations, etc.

C. (i) Will spend six months working under the supervision of one Club Chief Instructor during which time he will be involved in the training of students up to category VIII.
(ii) At the end of the six months' period, the Club Chief Instructor will be required to write a report and recommendation on the work of the Potential Instructor on an official BPA Report Form which will be devised for this purpose.

D. The Potential Instructor will then be required to carry out a nine-day examination period (two weekends and the five days in between) during which time his work (with a normal course of *ab initio* students) would be observed and supervised by the resident Club Chief Instructor of the Centre where the examination is being held. A second examiner (Advanced Instructor) will be present for a minimum of four days observing the work of the Potential Instructor. During this nine-day period, a written examination will be undertaken by the Potential Instructor using one of the six test papers (to be reviewed annually) with a minimum pass mark to be achieved. This examination paper would be on such subjects as:

- Basic parachute maintenance (recognition of faults, bad assembly and material damage, and contamination).
- Student problems/situations.
- Aircraft problems/situations.

Documentation.

Displays—Legal requirements, etc.

Basic meteorology.

Basic first aid (fractures, concussion, shock, etc.).

Accidents/Fatalities—Action to be taken.

On satisfactory completion of all three sections, the two examiners will sign the qualification of the Potential Instructor. He will then be qualified to instruct parachutists up to Category VIII standards.

Should the Potential Instructor fail to qualify, he must carry out all three sections again.

3. ADVANCED INSTRUCTORS

A. Function:

To be able to instruct all categories of parachutists and instruct in and supervise, competition, night, water and relative work jumping.

B. Qualifications:

An Advanced Instructor must be a reliable, mature individual who has the following qualifications:

- (i) Two years as a practicing Instructor.
- (ii) 500 sport parachute descents.
- (iii) D licence qualified.
- (iv) Must have done:
 - An intentional water jump
 - A night free fall descent
 - An intentional cutaway jump.

C. Method of Qualification:

A potential Advanced Instructor must submit proof of the above qualifications during a personal appearance before the Safety and Training Committee. The Safety and Training Committee will decide, by a vote, whether the person should be accepted as an Advanced Instructor.

D. Special Endorsements:

Special endorsements to an Advanced Instructor's rating will be introduced to cover such subjects as, high altitude jumping, use of flexible wings and ram air parachutes, etc.

E. Examiners:

The Panel of Examiners will cease to exist and all Advanced Instructors will be classed as Examiners.

F. Time Scale:

With effect from now, no more Instructors will be qualified under the old system. All recommendations will be valid from 1st January, 1973.

INSTRUCTOR QUALIFICATIONS—*Continued*

With effect from 1st January, 1973, all Club Chief Instructors must be Advanced Instructors. With effect from 1st January, 1972, all current Advanced Instructors will become Examiners and the Panel of Examiners will cease to exist.

The first Potential Instructors' one-week course to be organised and held in September, 1971 (this means that the first batch of new Instructors could qualify in March, 1972).

Both ratings to be renewed over two years.

To maintain an Instructor Rating, an Instructor must have a recommendation from his Club Chief

Instructor which will state that he has been engaged in student training regularly during the previous two years and that he is suitable for renewal.

Advanced Instructor Ratings will be reviewed over two years by the Safety and Training Committee.

W. PAUL

Secretary-General for BPA Council

30th July, 1971

(Amends BPA Regulations 1967)

COMPLETE MALFUNCTION!!

This photograph tells the story of a complete malfunction which happened to me on a Wednesday evening drop from 7000ft. over Cockerham DZ.



Three of us climbed aboard a Cessna 182 to try a three-man link from 7000ft. I was to be last man out with Graham Kirkman base and Dave Prince pin man. When it came my turn to leave I caught my backpack on the top of the door frame (blast!)—a bit of choice language and I was through the door chasing after the lads. We broke from our attempt (No, we didn't get the link) at 3500ft. and I went in for the pull at 2200; the ripcord was 'solid'—another hard pull but still nothing doing—just one more REALLY hard pull; no chance!! I pulled my reserve and just after saying goodbye to one of Lofty's kicker plates came to a tooth-shattering stop under my twenty-four footer. The landing was as good as could be expected and then came the time for the post-mortem.

When I hit the door frame of the aircraft my top plate had been torn from the stitching and bent over at a sharp angle. This, of course, prevented my ripcord from clearing. It may appear from the photograph that it should have cleared but believe me there was no possibility of this happening. 'Daz' Jackson, who kindly took the photograph, had no more film left to take a side shot which would have shown the full extent of the damage from another angle.

The lesson here, of course, is quite clear; always make sure that any exit you make is a clean one, especially if you are doing relative work and eager to get out quickly. Also, I would recommend that all top plates have some protective flap which would guard against the sharp protruding corners of the top plate snagging with the aircraft door frame. Needless to say our top plates are now covered with flaps off spare B4 packs.

Anyway, I went up again immediately for another drop (to get the old nerve back don't you know) and I can assure you that my dive exit was as clean as a whistle; my opening position was superb and my ripcord pull was immaculate! Don't forget lads, WATCH THOSE TOP PLATES!!!

Brian Jerstice

MALFUNCTION REPORT

P. SHERMAN, *Chairman Safety & Training Committee.*

Cutting away from a malfunctioned canopy has now become an accepted method of dealing with the problem and is hardly worthy of comment. However, when you elect to 'cut away' and then have a malfunction of one of your capewell releases so that you are left with a streamer, you could be excused for deciding that it really was not your day and that you would have been better off in bed!

This double malfunction recently happened to Ted Lewington of 'The Red Devils' display team. The cause was a distortion of the 'ring pull' portion of the operating mechanism of the capewell canopy release. This part of the mechanism has a triangular slot in it which when the wire ring is pulled forwards, squeezes the two lugs inwards out of engagement with the male portion the canopy release.

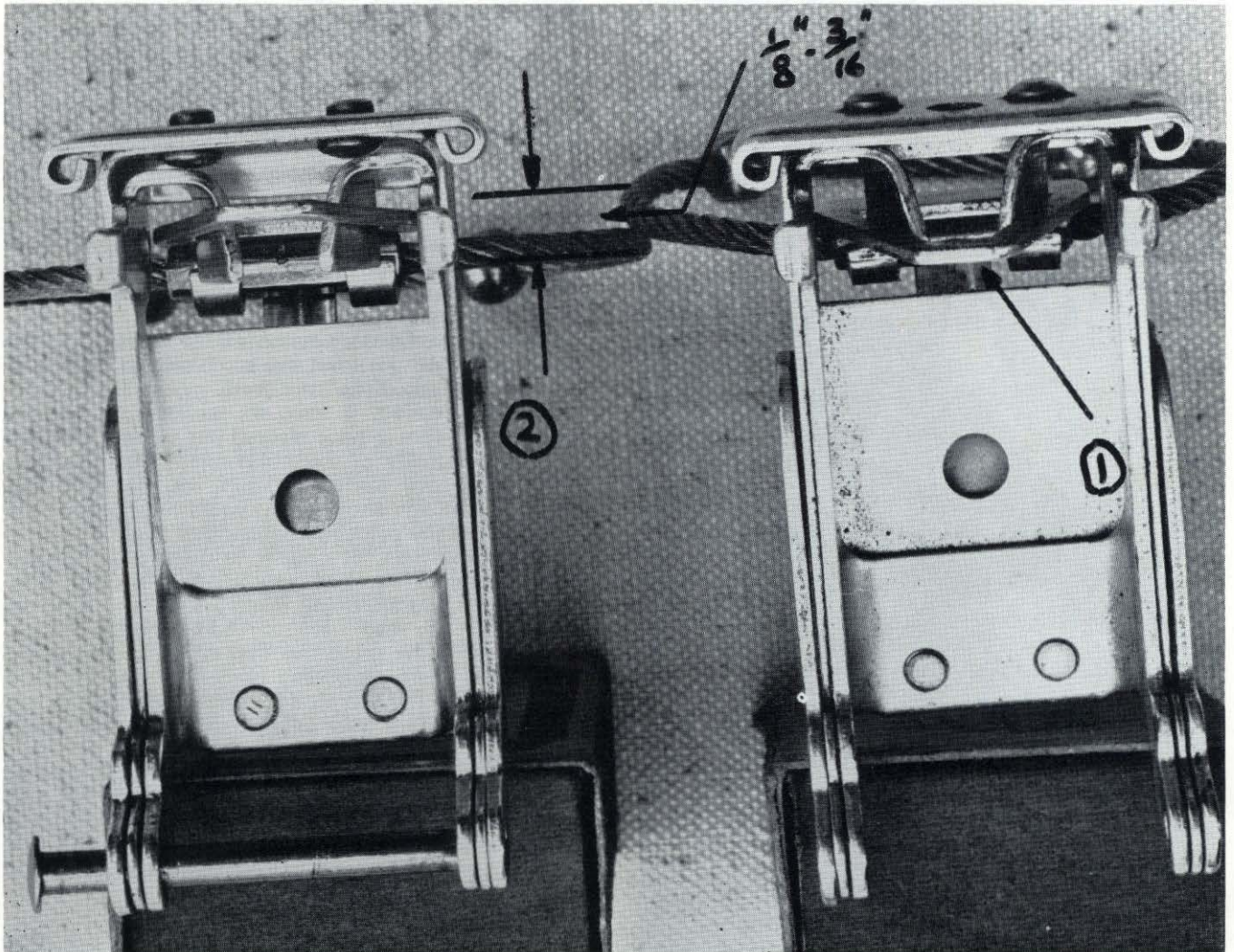
The extension with the triangular slot on this particular release had been bent so that it was barely in engagement with the two lugs inside the triangular slot (photo no. 1). These two lugs have a chamfer

on their points which would help to aggravate the situation, add to this a tendency to pull the wire rings downwards which makes the triangular slot move to the edge of the lugs even more so, the slot rides over the ends of the two lugs without disengaging them from the canopy release male and you are left with a locked canopy release which is impossible to undo in the circumstances.

Recommendation

That all ring pull canopy releases are inspected at regular intervals to ensure that the extension with the triangular slot is about $\frac{1}{8}$ " to $\frac{3}{16}$ " from the end of the locking lugs as in photo no. 2.

Note: This measurement is sufficient; resist the temptation to bend the extension piece around unnecessarily, a hairline crack caused by overzealous or nervous readjustment could cause a fracture on the narrow 'neck' behind the wire ring and leave you in the same position as Ted Lewington.



MANCHESTER FREE FALL CLUB

by Rod McLoughlin

THIS has been a year of consolidation for Manchester. Under a new name and a largely new committee the club has become strengthened in experience. Non-active members have reduced in number and a higher percentage of students are remaining in the club with a genuine desire to go on to free fall. The new club badge (oh vanity!) has been widely admired and why not? Certainly you can't ignore it! But the chief event of the season has surely been the reopening of the club DZ at Tilstock, near Whitchurch, original home of the old Manchester Skydivers. Mr Matson, the farmer owner, has been consistently helpful and enthusiastic about the whole venture and it is largely owing to his encouragement that we have finally got the thing reopened at all. Once Ministry approval had been finally and duly conferred our club CCI Albert Cooper jumped in late last year with John ('Tommo') Thomasson and Derek ('Drongo') Preston a rather hairy day of blustery winds, this officially reopening what is without doubt a first-class DZ.

But the real gala day took place there on March 28 when nearly 50 parachutists, invited from all over the north of England (some southerners too!), assembled for a weekend's parachuting from Alan Taylor's Cessna 206. Manchester club members (some of them) had put in the hours on odd Saturdays during the previous months to get the main runway clear and improve sleeping accommodation from 'SAS survival course' to 'primitive but dimly lit and waterproof'. Now all we needed was the weather and sure enough Saturday morning arrived in a blaze of summer sun with not even a breeze for the students to practise their canopy handling.

Nine o'clock p.m.: parachutists are pouring on to the airfield from all points of the compass: Bentleys, Jaguars, old vans, donkey carts, the halt, the lame,

magic ones, aces and whuffoes alike, no less than six real, live instructors and plenty of students in their white boiler suits, looking for all the world like the Mother's Pride formation team. All documents checked, all kit manifests checked, and off goes the first lift, blasting along that big runway that took us so many hours to sweep and mend. In no time at all the first free fallers are booming in and the air is loud with the muffled thunderclaps of PCs jumping directly overhead. Even the cows are impressed. The airfield is filled with activity. Rigs are stretched all over the place, students are kitting up and trying to remember what comes after 'thousand three' and instructors are here there and everywhere, getting in everybody's way and chatting up the local dollies. Many of the northern jumpers have brought family and friends with them and these make a truly colourful sight as they walk to-and-fro in the packing area, the men in their traditional clogs and cloth caps and the women folk in clogs and brightly coloured knitted shawls, many accompanied by a whippet on a lead. A mobile black-pudding vendor plies his trade behind the perimeter track.

Before we know where we are, it seems, we have clocked up nearly 100 descents in a short day of brisk parachuting without rush or fuss. Mal Reid, over from Yorkshire, has brought no less than 14 first-time students with him and every one of them has been kitted out and jumped at least once. There has been relative work from ten grand. Everybody seems happy. 'Same again tomorrow' is the general reaction and off to 'The Raven' for a quiet nightcap or two.

Tilstock DZ will be open for parachuting this year but *not* every weekend. Any parachutists who would like to visit us should write to Rod McLoughlin so he can let them know when a weekend is being laid on.

re Parachuting at Blackpool Airport

Blackpool Corporation have given permission for the 'Black Knights Sky-diving Team' to use Blackpool Airport as a Restricted parachuting DZ. This, of course, is subject to limitations and conditions three of which are as follows:

- (1) The Black Knights Team pay an additional insurance premium to cover Third Party claims to the amount of £100,000.
- (2) Only GP holders are allowed to use the DZ.
- (3) Only parachutists named by the Black Knights are insured to use the DZ within the agreement laid down by the owners (this is a private insurance to cover Blackpool Corporation against any damage caused by parachutists). The list comprises of fifteen men to begin with but provides places for a few 'guest jumpers' who may visit the airport.

It is essential that we gain the confidence of the ATC, especially in the early stages, if we are to establish parachuting on a permanent basis at

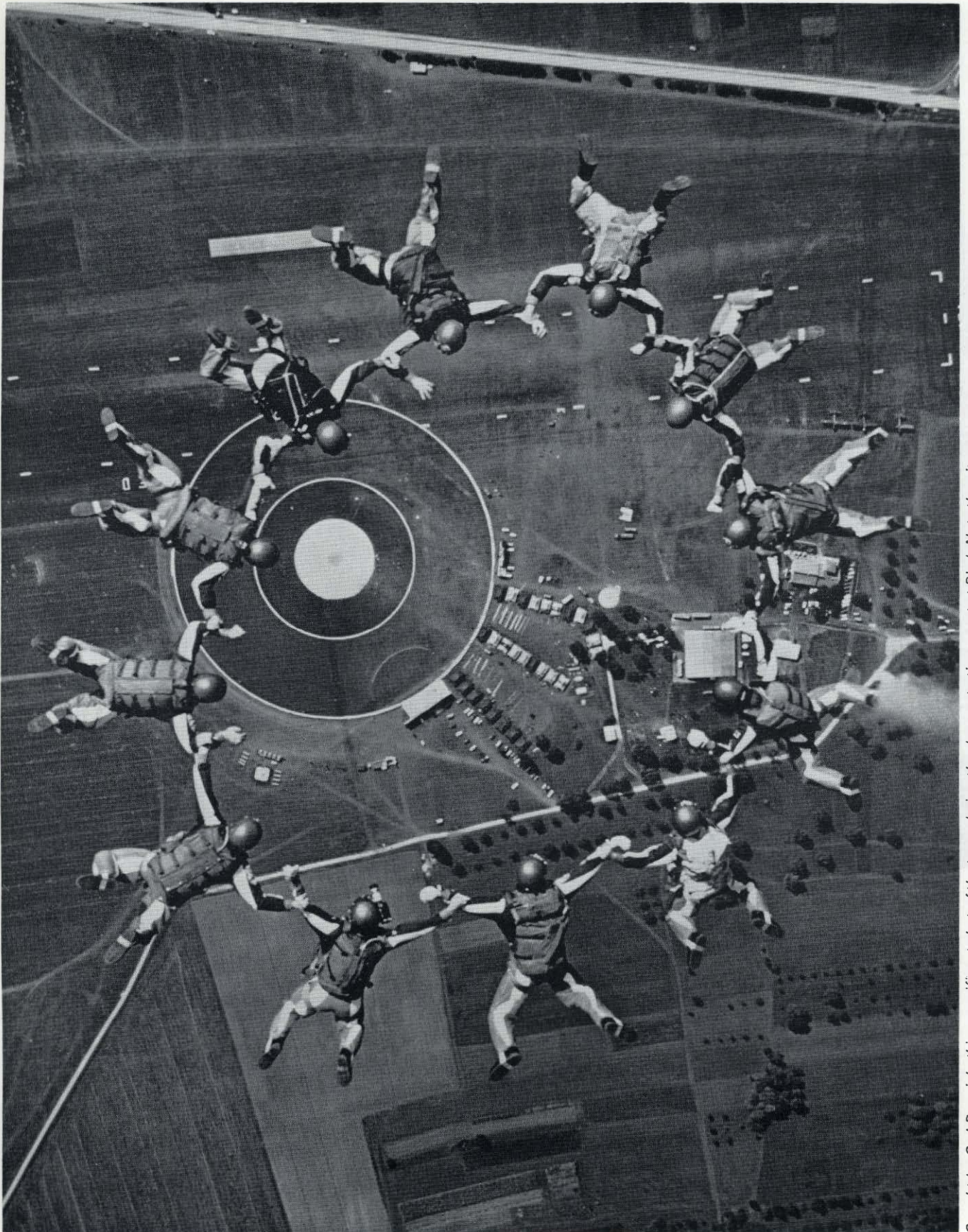
Blackpool Airport. For this reason, I must insist that ANY parachutist wishing to jump at Blackpool Airport contacts myself or some other instructor in the Black Knights Team (P. Cavanagh, R. Parry, D. Prince) before using the DZ. I hope everyone concerned will co-operate in this matter otherwise we will have no chance in securing Blackpool Airport as a permanent DZ. I also hope that within a short period of time we may be able to establish an unrestricted DZ on the airfield (it's big enough!) so that students may also parachute there. However, before this can be achieved we must prove to the ATC that parachuting is safe. This can only be done by maintaining strict control of all parachuting activities on the airfield and the airport authorities have agreed that the Black Knights Team should be the organising body. Once again, may I appeal to all parachutists concerned to operate through the Black Knights Team and NOT to parachute independently at the airport.

Brian Jerstice

p.p. Black Knights Sky-diving Team



The 1970 United States Relative Demonstration Team, practising at Elsinore before joining the U.S. competition team for the World meet at Bled. Photo - Carl Boenish.



Caught by Carl Boenish, this magnificent shot of the team during the demonstration event at Bled. Note the pit, the fifty and hundred metre circles, and the packing mats laid out between the tents.



Official photograph taken on the British Western Front in France.

L513.

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Photo supplied by Jeff Orchard.

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Canopy

Manufactured of nil porosity heat sealed 1.6 oz. nylon fabric, the canopy has 24 gores and 30 shaped apertures to provide drive, lift and turning.

The canopy is extremely stable and recovery after stall is immediate with minimum surge.

Harness

Nylon webbing with a breaking strain of 4,000 lbs. (1820 kg), with conventional American ejector snaphooks and 1½ shot Capewell canopy releases. The harness is instantly adjustable at main suspension and backstrap points. A full length backpad and comfort pads are provided.

Pack

Available in either three pin 'style' configuration or the more conventional four pin assembly. Both packs are designed for use with the Irvin Hitefinder and other automatic openers.

Sleeve & Auxilliary

The sleeve is of heavy duty 4½ oz./sq. yd. cotton fabric with conventional line stowage and mouthlock.

The 36" diameter auxiliary is manufactured from low porosity nylon.

also 'PROTECTOR' 17ft (5.2m) Steerable Reserve

Flight Data

Terminal velocity opening time—1.5 secs. Normal rate of descent with 220 lbs.—17.5 ft./sec. Rate of turn—360° in 7-8 secs.

Canopy

The canopy is manufactured from 1 oz. ripstop weave, heat sealed, nil porosity nylon. There are 20 gores, two of these have blank portions to provide drive and steerability. The blank gores are covered with nylon net for additional safety during deployment. Stable in flight, the canopy will provide adequate manoeuvrability coupled with a low descent rate.

Liftwebs

Manufactured from 4,000 lbs. (1820 kg) nylon webbing the liftwebs are connected by a strop for additional safety. American snaphooks with 5,000 lbs. rating are used. The Protector can be adjusted to any of four positions on the wearer.

Pack

Of synthetic materials and shaped to fit the body. The ripcord position can be either right hand side or top pull. The tie downs are integral with the pack.



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