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## Sport **Parachutist**

#### **IOURNAL OF THE** BRITISH PARACHUTE ASSOCIATION

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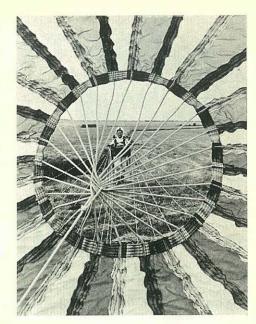
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(Cover photo by Tony Evans By courtesy of "The Tatler".)

No. 2 AUTUMN 1964

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There will be a B.P.A. Information Pavilion at Farnborough Air Show dealing with all aspects of parachuting and featuring a display of Daily Telegraph photographs of recent Parachute Championships and events.





## EDITORIALLY...

NOT surprisingly, the weather interfered with the programme for the Finals of the British National Championships. Early arrivals at Blackbushe found to their dismay that many of the tents and marquees had been flattened by wind and rain, and the jumping tower of the Parachute Regiment had received a direct hit by

lightning, which scattered it over a large area.

Having recovered from the initial shock, everyone set to and straightened the place out as quickly as they were able. The B.P.A. tent, loaned by the Daily Telegraph, was one of the worst hit. Quickly reorganised, the Magazine Staff went to work on sales. Thanks to boys from the Parachute Regt. Depot at Aldershot and some young Greenjackets, the magazine sold as well as could be expected, but the hoped-for crowd did not materialise as quickly as had been thought, kept away by the still doubtful weather.

Comments on the first issue were favourable generally. Bearing in mind that the first edition was to be sold to the public, your editorial sub-committee tried to find a balance of interest, both to the initiated and uninitiated, without being too technical. Really good parachuting photos are difficult to find, so members' contributions are much required here. At the foot of this page, details are given of a competition which may be of interest to readers.

This second edition, the September issue, attempts to interest members from a more technical viewpoint. Experts have taken a lot of trouble to produce articles which should be of value to both beginners and experienced sport parachutists. Articles from members for future editions are most welcome, and if anyone would like to suggest that one of the experts should write on a specified subject, we will do our best to please.

The B.P.A. having started but a year or two ago, is making considerable headway in all it undertakes. A great deal of discussion goes on behind the scenes about sport parachuting in all its aspects, and as is often the way, the benefit is very much there for the individual jumper, but it is often not at all-apparent to him. It is difficult to persuade anyone to join such an Association if he takes only the narrow minded and selfish view of 'what's in it for me'. With a limited financial position, and great deal of work to be done for the good of the

sport as a whole, Committee members devote much of their spare time to parachuting affairs, the results of which may never reach the average jumper directly, because they need never do so, but he will receive most certainly the benefit indirectly. Parachuting as a sport, is as complicated as any other. If only keen parachutists would realise the work that has to be done behind the scenes, and lend a hand with this, as well as indulging solely in the sport, so much more could be accomplished, and so much more quickly. We need ideas, new members, and more enthusiastic help, so why not give this side of the picture some constructive thought. Anyone wishing to state their views will be most welcome to have their letter published, with a reply from the Chairman.

The Annual General Meeting is to be held at the H.Q. of the Twenty-first S.A.S., Dukes Road, Euston, on November 28th. Make a note of it in your Diary. It will be followed by a party later in the evening, and will be a good opportunity for discussion.

#### **COVER PHOTOGRAPHIC COMPETITION**

Any photograph—coloured or black and white provided it is actually taken by the member, and suitable in the Editor's opinion for the front cover of Sport Parachutist—one prize only—£5.

Note: Photos not returnable. Open only to paid-up members of B.P.A. Closing date—November 1st. Take care to post in unbendable package, to Editor at Association's address, as above.

#### URGENT, URGENT, URGENT

Members are requested to assist in increasing the circulation of the magazine—so please fill in the order form attached, and send a copy to a friend.

## CANOPY CONTROL

#### How To Improve Your Precision Landings

By MICK TURNER

IN 1962, at Orange, Mass., U.S.A., 1 purchased a Pioneer Low Porosity 1.6 material Illiptical cut 7 Gore TU canopy. In fact all the male members of the Irish Parachute team did likewise. Loy Brydon happened to be in our team tent at the time of delivery, as it was he who designed this famous parachute I asked him what advice he could offer me, being a newcomer to the Low Po school. He shrugged in the usual Brydon fashion and replied with a dead pan expression "I ain't gona tell ya much, Mike, except that its gona take ya 100 jumps just to get to know that thing," with that off he walked. Frankly, I didn't believe him. After all I had just come out from England where most of my jumps had been on C9 canopies. We (the Irish team) were using Low Po Hustlers (Double T) belonging to Parachutes Inc. of Orange. I felt for a 79-jump wonder I hadn't done at all badly, with three 5 metre, two 1.5 metre and a 40 centimetre landings; the rest I won't mention. Well, that was two years and almost 300 jumps ago. My only comment is "Brydon, how right you were". I learned the hard way, trial and error, with the emphasis on the error. I guess I have bought more expert parachutists more beer, hoping that whilst under the effects of alcohol that vital know-how would be released to me. Not a chance. Always I came up against that brick wall of secrecy. Well, at last I have gotten what I have been looking for. Now I wish for all parachutists to receive this information so that they can train properly, quickly and, most important, less expensively. Now let me begin-

I think the most important aid I found towards good precision was the use of metres in place of yards, with reference to distance; metres per second in place of feet per second with reference to rate of descent, and metres per second with reference to wind speed and aircraft speed instead of miles and knots per hour. I am afraid our unit of measure is like our British weather. So from now on you must always think and calculate in metres. To assist you in this use the following table is only

approximate, but sufficiently accurate:--

METRES PER SECOND		MILES PER HOUR
1	=	$2\frac{1}{4}$
2	=	$4\frac{1}{2}$
3	=	$6\frac{3}{4}$
4	=	9
5	=	114
6	=	$13\frac{7}{2}$
7	=	153

Let me now deal with the best type of canopies for good precision. At the present time there is in the U.S.A. the Pioneer 9 gore TU Silk as used by the U.S. Army parachute team, also Pioneer Nylon 7 gore TU. Now, thanks to Irvins, we have a 9 gore Ultra low porosity TU which I believe to be a match for the finest canopies in existence today. Turning to the Continent we have the French 7 gore TU 656 which is a 24 gore parachute. Then in Russia we have the Soviet opposing gore 28 gore para-

chute as used in the 1962 World meet. We haven't seen the last of this theory yet, I can assure you; the French now have developed it into a 656 type parachute and if I know the French, they are not wasting their time. All the above-mentioned parachutes are of the low porosity type of material. They give a rate of descent with a 100 kilo load of less than 6.5 metres per second. If you are thinking of taking competitive parachuting seriously, then I strongly advise you to quit fooling around with C9 type canopies and spend some money on a good low porosity canopy with a TU of not less than 7 gores. Let us now deal with the modification. In my Pioneer I have an elliptical cut between the blank gores. The blank gores begin 42 inches from the apex; this is important from the point of view of breaking—anything lower than this will mean less effective brakes.

#### VITAL STATISTICS OF THE PARACHUTE

There are two things we must know about the parachute. First, you must know the RATE OF DESCENT IN METRES PER SECOND. Secondly, we must know what the forward speed of the canopy is in a no wind condition. The manufactures should be able to provide you with this information although they sometimes tend to overexaggerate. I believe my own canopy is between 3 and 4. metres per second. You can easily work out your vertical rate of descent. This is best done in the following manner: I suggest you do a clear pull from 1,000 metres using a sensitive altimeter and stop watch. Turn your canopy down wind and apply half brakes by pulling down both steering lines slowly about 18 inches. Now time yourself over a vertical distance of 100 metres (345 feet), this can be repeated several times in the same descent. At the end of one jump you should have a good average rate of descent over a vertical distance of 100 metres. You should have an answer of about 15 to 20 seconds if you are of average size.

#### HOW TO BEGIN THE ATTACK

You should find yourself approaching the attack point on a final zig-zag. Remember that half-way through each zig or zag you will in theory cross the wind line. It's at the point of half-way between the edge of the wind cone and the wind line that your attack will begin (providing you are on or near the 100 metre altitude line) by applying very slowly half brakes. The sole purpose of this move is to slow down the canopy so that, first, you will get a quick stable turn towards the target and, secondly, you will reduce the tendency of the canopy to rush at the target as soon as you turn her home. The turn is achieved by pulling down further on the line in which direction you wish to turn. To stop the turn, let up on the line until both hands are level, thereby still keeping applied half brakes. Now watch the centre of the target (not just the target, but that dead centre button, because that's where you want to hit). From now on you are on your

own; remember the whole thing now lasts only 15 seconds. If you think you are going to drop short, ease off the brakes a little. BE VERY GENTLE WHEN USING THESE BRAKES. If you think you will overshoot apply further brakes, again be gentle. A word of warning about brakes. If at any time whilst you are attacking using maximum brakes and you feel a sinking feeling, then you have overapplied your brakes. Do NOT let the brakes off too quickly but ease them up a little quicker than normal, otherwise you will cause a bad swing which will hurt on landing. A most useful advantage about this method of calculation is that if there is a change in wind speed it is such a simple matter to re-calculate. For every metre the wind rises or falls, multiply this by the number of seconds it takes you from 100 metres and deduct or add this to or from the original distance. Example: using a 6 m.p.s. wind I needed 135 distance from the target, if during my descent I notice a drop of 2 m.p.s. in the wind all I do is knock off 30 metres and I now attack from 105 metres out at 100 metres altitude. When you are attacking in very light winds, 0 to 1½ m.p.s.; when you turn to make the attack do so without using any brakes. Remember your brakes are extremely effective in these winds and to stall your canopy in these conditions would prove a drop short of around 20 metres. Try this system and see how relaxing it is. Don't expect a big improvement right away, but after a while I think you will find you can guarantee 10 metres. After that it is only a matter of time before you get that illusive D.C.

#### THE METHOD

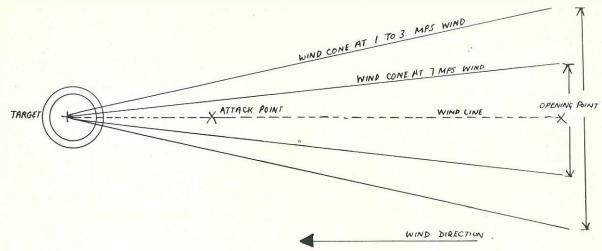
Using this method the jump is now broken down into

three completely separate stages:-

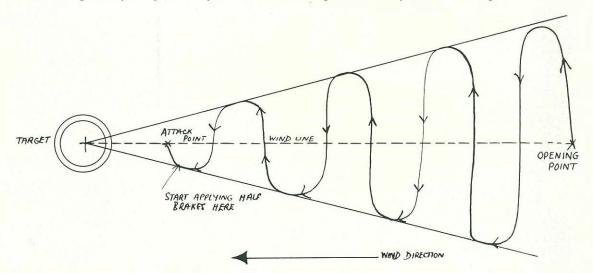
Stage I. The delay fall. All that happens here is that the jumper exits over his pre-determined point, starts his stop watch, completes a 180 degree turn to face the target, checking that he is in fact over the opening point. After the required number of seconds the parachute is activated. Immediately following the opening is usually a very busy time for the jumper. First, double check where your



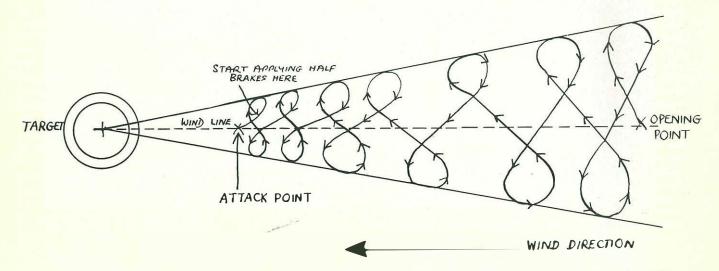
This photo shows the rewarding results of fine canopy control demonstrated here by Sgt. Loy Brydon of the United States Army Parachute Team. Reserve is hanging and chest strap is undone, note shoulder buckles off the shoulders. Here Loy shows the use of risers at the last moment to steady the feet on to the button. Photo by courtesy of SFC. Joe M. Gonzales, U.S. Army.



Sketch No. 1. Showing the layout of the DZ from the O.P. Through the attack point to the Target.



Sketch No. 2. Shows zig-zag approach to target under light to moderate; wind conditions where all turns are made towards the target. You should never loose sight of the target using this method.



Sketch No. 3. Shows zig-zag approach to target under High wind conditions where all turns are made away from the target. The target is only out of veiw for 2 to 3 seconds during each turn. Particular care must be taken as the cone becomes narrow to avoid slipping out of the cone.

position is in relation to the opening point. It is vital for the jumper to be in the wind cone on opening. Turn your canopy into wind and proceed as follows: undo your reserve, tie down and unclip one side of your reserve (I prefer to drop the right side) and undo yourchest strap. (if you are not prepared to do this then slacken if off as much as possible). By doing this you allow the harness to spread at the shoulder buckle. This does tend to slightly increase the performance of the canopy. I can assure you there is no danger of falling out. You will find now that you have an unobstructed view downwards (this is important because you can now see the exact spot on the ground of which you are above and this is extremely difficult when looking over or around a reserve). Next remove your goggles; nothing should impede your skill at judging distances and goggles tend to do this. So you can see immediately after opening you are in for a busy time. It is most important that while you are carrying out these tasks at all times keep checking your position

in relation to the ground. Stage II. The approach from the opening point to the attacking point (see sketch No. 1). If you imagine a line drawn from the opening point to the target, this line will be known as the wind line. If you imagine a cone with its point on the centre of the target and the wind line passing through its centre, this is known as the Wind Cone. The distance from the open end of the cone to the wind line will vary according to the strength of the wind. In a light wind the distance will be as much as 75 metres, giving you a distance from one side of the cone to the other of 150 metres. Whereas in a 7 metre wind it can be as narrow as 60 metres. The most important thing during your approach is never allow yourself to slip out of this wind cone; if you do you may not get back into it and you will end up slipping down one side of the target. Approach the attack point using the zig-zag method, using the full width of the cone at first and getting the feel of the wind. If the winds are between 1 to 3 metres per second then make all your turns towards the target. Whilst on the subject of turns, let me stress that the need for a fast canopy turn is gone for good. So please forget all about fast turns. The absolute maximum you ever want to pull down on a steering line is 6 inches. You will find that you will have to continually remind yourself of this, especially if you have been used to the old heave-ho. Relax yourself in the harness, try even talking to yourself; this part of the jump should be relaxing. Remember your task now is to arrive at the attack point at a pre-determined height. This is really quite simple. If the winds are between 4 and 5 metres per second during the zig-zag, make some turns towards the target and others away from the target. Remember that this strength of wind you can only just hold with your canopy. Where the wind is between 5½ to 7 metres per second I strongly recommend that all turns made during the zig-zag be made away from the target. You will be quite amazed at the distance your canopy covers across the ground in a 7-metre wind, even though the canopy is only pointing down wind for 2 to 3 seconds. Of course you will sometimes misjudge the wind and approach the attack point too soon. In this case you have no alternative but to turn your back to the target and sweat it out hoping that you won't get blown too far back. The whole object of the zig-zag approach is too ensure that practically all the time under the canopy is spent facing the target with a front or side view. It is only when you make your zigzag away from the target that you turn your back towards the target and this is only for a few seconds. This, I believe, to be the most important factor using this method.

Stage III. The attack from the attacking point to the

centre of the target.

The ideal height from which to attack depends mostly on the individual. Many top class jumpers prefer to attack from as low as 50 metres (8 secs.). I will suggest you start your attack at first from a maximum of 100 metres. This gives you between 15 and 20 seconds over which the attack will last. I consider this to be just about right, it isn't too short and neither is it too long, which would tend to make you too jumpy. The most important factor about the direct approach attack (down wind approach) is that it is vital that you are directly over the wind line when you make that final turn towards the target. Use the 25 and 50 metre circles around the target as fixed units of measure to gauge the distance out from the centre of the target to your attack point. Use your altimeter to help you judge the predetermined 100 metres in height from which you are going to attack. To help you judge this 100 metres more accurately, during your next training jump whilst you are climbing up to jump height, check against the aircraft's altimeter and mark your altimeter when the aircraft's reads 345 feet. This will give you an accurate 100 metre line. After you have confirmed this a few times, place this mark on the inside face of your altimeter, where it will read more accurately. Be sure to re-check it against the aircraft's altimeter.

Let us now recap on the necessary information we need to make the attack. First, I know that my canopy forward speed is around 4 metres per second. If I apply half brakes this speed is reduced to 2 metres per second, and if I further increase it to full brakes I will go backwards at a speed of 1 metre per second. I also know that it takes me 15 seconds to land from a height of 100 metres. Now all I need to know is the wind speed—in metres per second, of course. Let us first of all take a no wind condition. In 15 seconds I know that I can travel 4 metres for each one of those seconds, giving me a total of 60 metres. This is the absolute maximum I must be away from the target at 100 metres altitude. If I apply full brakes I go backwards at 1 metre per second. So the absolute minimum I must attack at is 15 metres the other side of the target, again with an altitude of 100 metres. Ideally you should select the half-way point. So here we have two sets of figures: 60 metres up and 15 metres down the halfway mark is 37½ metres. If we attack with NO brakes we will of course overshoot by 30 metres, and if we attack with full brakes we will undershoot by 45 metres. So what's the answer? We ATTACK USING HALF BRAKES. This way we can ease ourselves down on to the target by easing off the brakes, thereby allowing the canopy to travel further; or applying more brakes thereby shortening the distance the canopy can travel. The great secret here is when you have to apply or ease off the brakes, doit ever so gently, about THREE INCHES at a time and give the canopy time to respond. In a dead wind your canopy will respond quickly, whereas in a strong wind you will hardly notice the difference at first. This tends to make you overdo your corrections on the brakes. The other thing about selecting to attack with half brakes is that it gives you a reserve of both speed and brakes. This you will



This photo shows the Soviet parachute as used in the 1962 World meet at Orange USA. This canopy has all the answers to a jumpers dream. That is always being able to remain facing the target. This canopy could be pushed left or right across the sky still with the jumper facing the target. He could also drive or back from the target without having to turn away from the target. In the photo you will see that this is a 28 gore chute and there are 15 gores forward of the modification and 13 behind the modification. The gores themselves are not in fact true gores but a type of large Derry slot. The canopy in this picture is being backed off the target, the photo having been taken from the side. The French have now developed this technique into a 656 type canopy and called it the 658

#### **GANOPY CONTROL**—Continued.



This photo shows the French 656 parachute being used with maximum brakes. If you don't understand the theory of the backing up principle then study this canopy. Note that the front edge of the canopy which is usually bent inwards is now fully shaped. Look closely at the photo and you will find the jumper has passed over the target but he has no alternative but to stay on the brakes and back onto the target. To try to make a turn at this point would end up in a wide swing off the target. Photo by courtesy of Delhorbe, Biscarrosse, France.

find most useful if during your descent the wind decides to drop or increase slightly. Let us now plan an attack when the wind speed is 6 m.p.s. Here is where I change my figures slightly. When the wind speed is between 4 and 7 m.p.s. I prefer to allow 3 m.p.s. for the speed of my canopy using half brakes. The reason for this is simple: when the winds are in this range this type of canopy gives a very fast forward speed. This is something I discovered during my trial and error period and I found I was always finishing my attack using the fullest of brakes. So the answer seemed to be attack from further out. We have for wind 6 m.p.s. and canopy at half brakes 3 m.p.s. total 9 m.p.s. for a period of 15 seconds. The time it takes to land from 100 metres altitude:  $9 \times 15 = 135$  metres. Therefore I have to select my attack point 135 metres up wind of the target and I must commence my attack from a height of 100 metres. I hope some of you will benefit from this.

# Profile DUMBO WILLANS



IN the fifties, Dumbo Willans was 'Mr. British Parachuting.' When parachutists from this country visited any European centre or contest one of the first questions that they would be asked was the whereabouts and well-

being of 'my good friend Dumbo.'

One reason for Dumbo's international fame was his undoubted skill as a performer in those years of plain unsteerable canopies. In 1951, the first World Parachuting Championships took place at Bled, Yugoslavia, and Dumbo and one companion formed the British team, together with their pilot. The French, the Czechs, the Italians and the Yugoslavs themselves were well represented, and about thirty jumpers in all competed. Dumbo jumped to such good effect on the timed delay and accuracy events, that when he came to the finalwater jump he had built upan unassailable points lead over his nearest rival. The First World Championship appeared to be firmly in his grasp. Alas, although he landed within a few feet of the floating target, an official mistakenly retrieved the parachute with Dumbo entangled in it before he could swim the few strokes needed to win. The result was no marks for that event (no appeal to the jury in those days) and 4th place instead of 1st. Even so it was a relatively better position in a World Championship than any British entrant has achieved since.

Dumbo Willans' bubbling enthusiasm for seemingly any job that he undertakes, and a knack of getting the maximum fun and enjoyment out of whatever he is doing, steered British Parachuting happily through its early formative years. He coaxed and encouraged his pupils each week-end at Denham and Fairoaks, and unobtrusively ensured that the most scrupulous safety procedures were adhered to. As the only approved freefall instructor in the country, he also built up a small corps of future instructors. His own safety record as an instructor was 100 per cent, and allowing for the fact that all first descents were rip-cord, the techniques that he evolved are as right today as they proved to be then. Above all, his pupils enjoyed themselves. The moment after the first descent, when the pupil was driven off the D.Z. riding in triumph on the crash wagon, was made so enjoyable that the obligation of buying the Sunday evening beer for the others seemed almost an honour. And if Dumbo could be persuaded to play his guitar, the whole affair became positively memorable.

Dumbo was instructor to the British Parachute Club until 1960. When in 1956 it was officially formed from the original Denham pupils he had put over his enthusiasm to such good effect to the G.Q. Parachute Company, that they set the Club on its feet by donating complete sets of equipment. In the nine years that had passed since he dispatched his first pupil over Denham in June '51, he had truly built the Sport Parachuting move-

ment in this country.

He had also brought his sound commonsense and good humour to the F.A.I. annual Parachute Committee meeting in Paris, which he usually attended at his own expense as Great Britain's representative. The Royal Aero Club award to him of their Silver medal in 1960 was particu-

larly well merited.

However, that silver medal has hardly marked a retirement from the parachuting scene. Dumbo is at present the British Parachute Association's technical adviser and our link with the two parachute manufacturers. Together with our Chairman he has been largely responsible in arranging for the joint Irwin/G.Q. parachute assembly to be supplied to the 1964 British team. There is also the very vital part he plays as an air display commentator whenever British Parachuting is put before the public. A good many of us have heard him in recent years at Goodwood, Sywell and Blackbushe, and admired the professional aplomb with which he fills in the inevitable

gaps in a parachuting display.

This however was nothing to the difficulties over which he has triumphed in the past. Once he was coerced into commentating at a widely publicised air display in South Wales that promised the local populace a Jet Acrobatic Team, Parachuting, and a positive galaxy of aeronautical talent. The day of the Display had come, and it was dark, wet, and very windy. The crowds poured in, but the participating aircraft, grounded at their bases, did not. Conditions ruled out the parachutists contribution. The organisers of the show, sensing possible resentment from the dissapointed masses who had already paid their entrance fee, took refuge in the bar. They first however dispatched their chairman to tell Dumbo that the show was 'all his', and that he, the chairman, was now going off (to get quickly drunk). By this time the show was half an hour overdue in starting, and the crowd of thousands was beginning to mutter ominously. The tale, told in commentary circles, that Dumbo then entertained them for three hours with a display consisting of one sick Tiger Moth, some non-jumping parachutists and his own enthusiastic patter is admittedly apocryphal. Some other display aircraft did limp in during the afternoon at uncertain and irregular intervals. It is however a fact that the thousands went home to the Welsh valleys satisfied, and without wrecking the Muni-'Willans the Voice' is certainly an asset cipal airport. to any organisation.

Talking to Dumbo reveals some interesting details of techniques and equipment used in the early 50's, when the first world championships were being held. He explained that steerable parachutes of the open gore variety were unknown at the contest at Bled in '51. Most of the canopies were circular, some square, but none boasted any openings except an apex vent. Steering was by lift-web, and physical strength played an important part-much to the disadvantage of the few girl competitors. The Italians, using Lise canopies, had a collapsing system employing block and tackle. With this they could furl up the canopy and drop at 50 feet per sec. to counteract excessive wind drift. Although collapsing canopies below 300 feet was discouraged with a loss of 50 points, the Italians frequently did not reinflate until within a few feet of the ground if there was a risk of

overshooting.

Accuracy was not impressive by present day standards, but with plain canopies and variable winds the scores represented pretty skilful performances. The best score

was by an Italian with 35 metres. Dumbo made 52 metres

There was no style event as we know it now. For the long delay event competitors had to drop from 6,650 feet and have their canopies open between 2,200 feet and 1,000 feet to score full marks. The opening height was accurately measured by Telemeters. The French team could stabilise, and were the only competitors to carry altimeters, which they mounted on play panels on their reserves. The remainder counted, judged visually, or used palm and wrist-mounted stop watches. Some of the Italians could stabilise head down, arms folded and legs apart, and the rest, including Dumbo, tumbled. Opening height under such conditions naturally varied, but few lost marks by opening too high. A Yugoslav was the lowest with an estimated 150 feet.

The accuracy events were jumped from 1,600 feet over land, and 1,000 feet over the water (in the latter case reserves were not worn). An Italian competitor, well ahead of his time, exited for the 3-4 sec. delay in a forward facing 'starfish' position, approximating to a modern stable position. He was however universally condemned for this dangerous practice! As Dumbo points out, they hadn't heard then of stable openings

either.

There were of course many fine British parachutists before Dumbo Willans, but he was the first to visualise parachuting as part of the British sporting scene, to start a club, and to organise things for the benefit of others.

We can only hope that Dumbo has got half as much pleasure out of those early parachuting years as he gave to his many friends and pupils. Somehow we think he has.

P.L.

#### R.A.F. CANDID CANOPIES

Quote from the captain of one of the U.S. display teams:—

"Yeah, we sometimes do a two-man show. Exit from 12,000 feet, max tracks in opposite directions and open chutes four miles apart."

Comment:—"Remarkable! Descending at an angle of

more than 45° from the vertical? Amazing!'

Team Captain:—"That's nothing to what we do some days."

Comment:—"Do you both leave the aircraft at the same time or does Max leave first?"

The Chairman of the R.A.F. (Abingdon) Sport Parachute Club, Squadron Leader 'Doc.' Johnson, takes his duties seriously. When Pathe News came to film the Display Team he drifted to check wind conditions — and drifted — and drifted. Manfully he went drifter for the second descent too — with a determined look on his face that said he was going to master this wind. The wind dropped right out and he dropped right short. What bids for a fit, cross-country walking doctor?

Sergeant Francombe is the Parachute School's Candid Camera Carrier. If you roll off a back loop while he is around, then for goodness sake admit it at once. Otherwise you will find in the days to come that your performance is on the screen as an object of scorn and derision to your comrades. Your crime is not the bad back loop (after all, we do have our 'off' days). No! yours is the crime of pride, perjury and downright dishonesty.

#### BRITISH PARACHUTE CHAMPIONSHIPS, 1964

## EVENT 6 — MENS TEAM ACCURACY 1000 m FINAL RESULTS

Team	Jump One			Jump Two			Canan	Total	Grand	Final
	Distance	Points	Total	Distance	Points	Total	Score	B/Fwd.	Total	Placings
R.A.F. Sport Parachute Club CHARLTON HOFFMAN MOLONEY CLARKE-SUTTON	6·83 5·81 10·24 7·72	172·68 176·76 159·04 169·12	677.6	13·49 6·90 29·20 4·22	146·04 172·40 83·30 183·12	584.76	677.60	1183-0	1860-60	1
S.A.S. Skydivers Anderson Gray Rees Sherman	19·37 8·10 8·86 10·68	122·52 167·60 164·56 157·28	611-96	9·89 5·39 30·39 7·41	160·44 178·44 78·44 170·24	587·56	611-96	1136-60	1748.56	2
Cyprus Combined Services Free Fall Club McArdle Peacock Pagnanelli Reid	Z 2·78 28·75 11·79	Z 188·88 85·0 152·84	426.72	2·45 10·15 1·57 22·80	190·20 159·40 193·72 108·80	652.12	652·12	1092.04	1744-16	3
British Parachute Club BASNETT COLE DON JOHNSTON	11·77 5·08 18·36 4·02	152·92 179·68 126·56 183·20	642.36	3·96 34·96 12·01 8·63	184·16 60·16 151·96 165·48	561.76	642.36	1011-04	1653-40	4

#### BRITISH PARACHUTE CHAMPIONSHIPS, 1964

#### FINAL INDIVIDUAL RESULTS

Name	Club	Jump	One	Jump	Two	Doot	Points	Cuand	Final
Name	Club	Distance	Points	Distance	Points	Best Jump	B/Fwd.	Grand Total	Placings
CHARLTON	R.A.F. S.P.C.	6.02	175.92	14.43	142.28	175.92	1201.92	1377.84	1
SHERMAN	S.A.S. Skydivers	2.07	191.72	6.08	175.68	191.72	1166.04	1357.76	2
Turner	Sapper Sky Divers	2.45	190-20	6.89	172-44	190-20	1148.32	1338-52	3
GRIFFITHS	Green Jackets P.C.	14.95	140-20	6.70	173.20	173-20	1153-52	1326.72	4
CLARKE-SUTTON	R.A.F. S.P.C.	7.13	171.48	6.48	174.08	174.08	1065-24	1239-32	5
REID	Cyprus C.S.F.F.C.	Z	Z	Z	Z	Z	1083.80	1083.80	6

#### BRITISH PARACHUTE CHAMPIONSHIPS, 1964 — Continued

Serial No.	Name	Club	Event I (Style)	EVENT III (1000 m)	EVENT IV (1500 m)	Grand Total	Place
			Best Two	Best Two	Best Two		
1.	Don, W. J.	B.P.C.	155	292.24	297.68	744-92	15
2.	BASNETT, J. T.	B.P.C.		_		_	_
3.	TURNER, P. W.	Sapper SID.	408	382-08	358-24	1148.32	4
4.	Griffiths, M.	S.O.S.P. 2 G.J.P.C.	434	361.64	351.88	1153.52	3
5.	SEEGER, F. (Mrs.)	B.S.D.C.	412	243.12	344.04	999.16	2
							Ladies
6.	Cole, A. J. N.	B.P.C.	_	364.80		364.80	34
7.	WITHDRAWN	WITHDRAWN			_	-	_
8.	Friel, S. P.	B.P.C. 10 Para Regt.	336	310.12	255-36	901.48	12
9.	Unwin, A. J.	B.P.C. 10 Para Regt.	Z	345	390.72	736.52	16
10.	Pearce, J. H.	L.S.M.	Z	288-16	202.28	490.44	27
11.	Hughes, D.	22 S.A.S.	449	176-48	283-12	908.60	11
12.	Gray, C. H.	22 S.A.S.	358	362.36	287.36	1007.72	10
13.	REES, B.	22 S.A.S.	Z	211.90	373.08	635.68	19
14.	Anderson, B.	22 S.A.S.	Z	106.12	371.68	477.80	28
15.	SHERMAN, P.	22 S.A.S.	448	330.68	377.36	1166.04	2
16.	ROWBERRY, F. J.	Para Regt. 'B' 1 Bn	_	381.60	154.84	536.44	23
17.	Gowens, P. J.	Para Regt. 'A' 1 Bn.	Z	324	322-48	647	18
18.	JONES, K. R.	Para Regt. 'B' 1 Bn.	_	119.60	141.20	257.80	39
19.	Jackson, M.	Sapper S.D.	358	320	328-84	1011.16	9
20.	FLAMBERT, H. V. (Miss)	B.S.D.C.	408	275.28	325-20	1008.48	1
							Ladies
21.	Runacres, R. J.	Sapper S. D.		207	240.64	447.64	29
22.	Maxfield, P.	Para Regt. 'B' 1Bn.	_	60.64	277-68	338.32	35
23.	REDDICK, J. M.	Para Regt. 'A' 3Bn.	_	321.72	175.92	497.64	25
24.	MOLONEY, T. F.	R.A.F. S.P.C.	177	378.64	344.84	900.48	13
25.	CLARK-SUTTON, B. J.	R.A.F. S.P.C.	397	308.52	359-72	1065-24	6
26.	JONES, F. S.	R.A.F. S.P.C.	Z	252.84	267.80	520.64	24
27.	HOFFMAN, J. H.	R.A.F. S.P.C.	297	366.08	381.80	1044.88	8
28.	Francombe, D.	R.A.F. S.P.C.	Z	337.84	347.16	684-96	17
29.	CHARLTON, A. F.	R.A.F. S.P.C.	452	389.52	368.40	1201.92	1
30.	Reid, R.	Cyrpus F.F.C.	438	330.24	315.56	1083.80	5
31.	PEACOCK, D.	Cyrpus F.F.C.	331	338.64	377.00	1046-64	7
32.	PICKWORTH, L.	Cyrpus F.F.C.	_		143.76	143.76	41
33.	Pagnanelli, P.	Cyprus F.F.C.	Z	312-24	55;28	367.52	33
34.	McArdle, L.	Cyrpus F.F.C.	_	183.80	384.24	568.04	21
35.	RIDGEWAY	Cyprus F.F.C.	_	101.36	305.52	406.88	32
36.	Howe, L. G.	B.P.C.	Z	21.76		21.76	42
37.	Macnaughton, D. E.	Para Regt. 2 Bn.	_	223.88	325.00	548.88	22
38.	VATNSDAL, S. A.	Para Regt. 'A' 1 Bn.	Z	371-44	381-56	753.00	14
39.	KNIPE, D. (Mrs.)	S.O.S.P.	Z	240.56	175.60	416-16	3
40		5050					Ladies
40.	WALLACE, R.	B.S.D.C.					

The first 40 places only shown.

	TEAM		INTERIN PLACIN		Team Members.	1. B.P.C.	6, 36, 43, 2.
1. B.P.C		•••	1011.04	4th	Serial Numbers.	2. Sappers	3, 19, 21.
	r Skydivers		970.64	6th		3. Para 'B'	22, 41, 16, 18.
3. Para l	Regt. 'B'		129-28	8th		4. R.A.F.	29, 27, 24, 25.
4. R.A.F			1183.00	1st		5. 22 S.A.S.	15, 12, 13, 14.
5. 22 S.A	A.S		1136.60	2nd		6. S. of S.P.	8, 9, 4, 44.
6. S. of	Sport P.		1003.48	5th		7. Para 'A'	38, 17, 23, 37.
	Doct (A)		952.92	7th		8. Cyprus	31, 33, 34, 30.
8. Cypru	ČC		1092.04	3rd		, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,

## Model on the D.Z.

#### By Veronica Tewkesbury



FULLY admit that my companion's invitation more than a little astonished me. Would I like to accompany him to some airfield the following Sunday to the skydiving centre of which he was a member? My immediate reaction was along the lines of, 'Who, me?'. For what possible interest could lie in watching a handful of daredevils jumping from an aeroplane? However, I told myself that at least it would mean a day out in the country and thus reconciled myself to the idea. Smiling politely I accepted Eric's invitation with an effort to meet his enthusiasm.

When Sunday came I was ready to face the unknown rigours that lay before me, suitably clad in jeans, sweater and sandals. But I took with me a dress and high-heels in the event that the day might end with a civilized pleasure

—such as dinner out. Eric arrived punctually and we set off through the hot mid-morning. It was a fine day; we could not have asked for better. There seemed to be very little wind and the sun dappled through the trees of the Hampshire lanes. As we drove, my thoughts were totally occupied with the beauty the Spring countrysied had to offer. However, my reverie did not last for long. Eric was telling me of some of the things I would see and the people I would meet. He seemed to be bubbling with an eagerness I could not comprehend. Perhaps—he was saying—I would like to take part myself to some extent. Would I like to go up in one of the planes? Perhaps one day I would jump myself? Tentatively I told him that I might try a plane ride—but silently vowing that no one would get me up in one of those tinny, miniature planes! And as for actually jumping from one—never! That I thought, is strictly for the insane or the extrovert element of humanity.

We arrived in the village of Thruxton at about 1.30 p.m. and paused for a beer at the local pub. There was a handful of customers in the lounge bar who all appeared to be members of the skydiving club. I was introduced to the publican, who was a charming Polish ex-airforce officer with 6,000 hours 'in'. He seemed to take great interest in the sky-diving club. I was introduced to the group of club members around me-which included two girls. To my pleasure I was welcomed and brought into the conversation immediately. Even though I was an 'outsider' and knew nothing of the sport, my naïve questions were answered patiently and I was made to feel one of them. But their enthusiasm for their sport completely overwhelmed me. The talk revolved entirely around the various facets of parachuting. I was totally at a loss to comprehend how such enthusiasm could be whipped up about jumping from the sky. One of the girls, Helen, I was staggered to discover, was herself an expert sky-diver and had recently succeeded in winning the British Championship. Turning to her I asked what one actually felt when falling through sheer space. She bubbled enthusiastically on her topic and the main answer to my question seemed to lie in the word 'freedom' -freedom of movement, freedom of feeling, and freedom from everything mundane. One man joined in—when you are in the sky, he said, completely alone, you feel such a tremendous power and elation in this one supreme moment when all else is trivial. Somehow I was getting caught up in the spirit of these people. My imagination had been sparked off by the terrific eagerness of my new friends. (I knew I could call them friends even so soon after meeting.) With Eric, I set off for the airfield filled with a newly-acquired eagerness.

I was keen to see the club's living quarters so we drove round the airfield and pulled up outside some rather dilapidated buildings and Nissen huts. After having seen the 'office', which was a tiny room crammed with papers and odds and ends of equipment, we proceeded to the main 'bedroom' where camp beds and mattresses were laid out over every available inch of space. The bedroom, no doubt, would accommodate about 20 enthusiastic members at a weekend, prepared to live it rough for the love of their sport. Several of the 'windows' were but gaping holes and it was doubtless rather chilly at night! In long Nissen huts near the living quarters were laid on the floor several parachutes at full length, ready for packing. One parachute was in the process of being packed. I was amazed at the meticulous care with which each separate panel of delicate nylon was placed in position and patted and smoothed and finally folded into the parachute pack . . . especially as this was being done by great powerful men. I then left the buildings to see what was happening outside.

Thruxton Airfield is one of those wide-open aerodromes where stretches of green grass are criss-crossed by grey runways and bordered by distant trees and hills.

Across the wide sweep of the airfield I could see small clusters of people and cars. I have said earlier that there appeared to be little wind that day, but up there on the broad expanse of the airfield an exhilarating breeze blew strong and fresh. Most of the men were standing with shirts off and broad backs were bared to the sun. And what men they were! I tried to remember seeing such a spelendid array of bronzed muscular manhood before. But I couldn't. We met several of the men, and then lying on the warm grass we listened to the drone of an engine far above. The engine cut abruptly and, looking up, two specks were seen falling quickly one above the other for several seconds. It seemed that, although nothing was said, everyone felt a certain relief when the coloured cones of the parachutes billowed above the divers. Then it became possible to discern the figures of the two prachutists, and, at what seemed to me to be a terrific speed in spite of their parachutes, each landed, rolling onto their sides and jumping up to run round to position their parachutes against the wind. With a couple of members, I ran across the stubbly grass to watch the intricate business of folding the parachute provisionally so that it could be taken back to the proper folding hut without fear of it tangling.

I caught sight of Helen, and walked across the grass to ask her if she would be jumping. Answering that she would, Helen also promised to lay on a special demonstration for me. Another member, John Meacock, was going up with Helen and he agreed to show me a special

jump.

We watched some more jumping until it was time for Helen and John to go up. As we saw them into the plane I wondered at Helen's courage—here was a girl, barely 20, who was not only happy to but eager to fly to a height of more than 5,000 feet and step from the wings into the sky. The plane bumped across the grass and, gathering speed, took off. Through binoculars I watched it circle, climbing higher, until the crucial moment was reached when the engine cut over the dropping zone. A speck appeared on one wing; and then another—and then both descended. Helen's particular aim was to 'track' across the sky, and we watched her move expertly above us at a speed of 200 miles an hour. Meanwhile

John had executed two back loops and two 360 degree turns: it was all terrific stuff! Quite involuntarily I held my breath until the white parachutes blossomed above the dots I knew to be Helen and John. Helen landed about 300 yards from me and John a little nearer. We raced across the long grass to congratulate them and thank them for such a magnificent demonstration.

I was enjoying myself immensely, but there was even more excitement to come. Eric asked if I would like to go up in one of the larger planes and watch the jumping from the wings. With a strange thrill fluttering inside me I agreed. Although I had flown in airliners before without worry, these smaller planes seemed to me quite unsafe. And what pleasure, I wondered, could a plane of this size offer. I was soon to know. The larger plane, a Dragon, was brought over and I clambered inside and sat in the only passenger seat. All the other seats had been removed to accommodate the six strapping men with their parachuting equipment. The pilot was a woman, and the knowledge of this from my female point of view was rather comforting! The six men who were to jump packed themselves in on the floor and the engines revved up. I had said earlier that I would never go up in one of those 'tinny' planes—but here I was, ready to take off, and eagerly excited at that! As the plane moved forward and gathered speed I looked beseechingly at a couple of the parachutists for reassurance. For, I confess, I did feel an element of fear. But the easy, confident smiles of the men almost dispelled my qualms. When we got to the runway we waited for a moment, then with a roar the brakes were off and we surged forward, gaining speed. Past the hangars and huts and the group of onlookers; with a few jolts we gained buoyancy and were in the air. I began to relax and to give myself to the utter pleasure of that very special view of the earth which I have since discovered only a small plane can offer. 1 also discovered that only a small plane can give such a real and vivid sensation of flying. The cluster of parked aircraft and the sheets of corrugated iron roofs of the hangars glinted brightly in the sun. Fields below grew smaller and cars along the network of lanes were as ants. The panorama was as a patchwork quilt worked in fresh greens and rich browns. The whole lay peaceful in the bright sunlight with shadows etched small and sharp.

At a height of about 5,000 feet we moved over the D.Z. One of the parachutists pressed a switch as a signal to the pilot. The men grouped themselves ready by the door space. One by one they stepped out onto the wing and jumped. This, I thought, must be the greatest courage in parachuting; that one step from the wing into sheer space below. I had a splendid view of their descent as the plane continued in slow circles downwards. As we levelled off for the approach to the runway I could see where one or two of them had landed. Then, tyres touched tarmac, the plane shuddered and we were grounded. Once out of the plane I dashed over to Eric and breathlessly gave him an account of my feelings on that first flight. He listened quietly with a knowing smile. When I had finished, he asked me if I would like to go up again with some of the expert sky-divers. I readily agreed; this time I felt confident and happy. The men who were to jump now were more experienced and as we took off I was told that we would fly to a height of 8,000 feet. Two jumped at 3,000 feet and we continued the ascent until we reached 8,000 feet. This particular jump was to be more spectacular, and I had a clear view

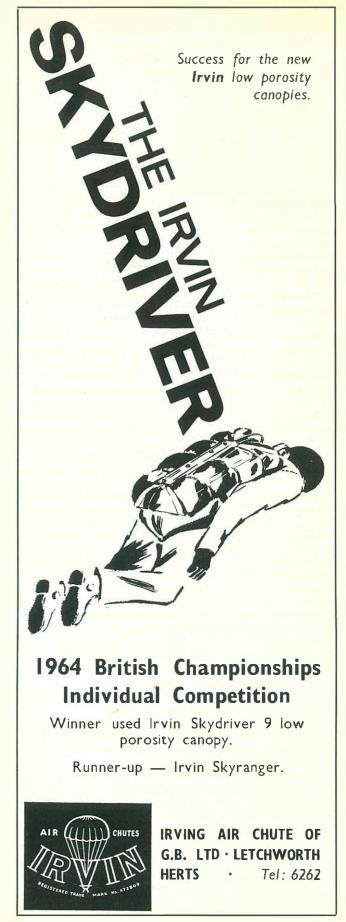
for the 'performance'. The first man jumped with hands and legs outstretched to slow his descent. The next dropped with hands and legs partially spread to attain a fall of medium speed, and the third jumped like an arrow with feet together and arms pressed to his sides. This manner of leaving the plane seemed to enable them to control the speed of their descents so that they reached a uniform height and were able to clasp hands briefly before working their way apart and continuing their descents individually. This was a brilliant display of teamwork and, despite the obvious hazards, went off magnificently. I felt very proud to have witnessed such a feat from the ideal position I was in. I spent the remainder of the journey sitting down gazing through the open exit space with far more confidence than on my first trip. And 1 had come much closer to understanding why these people enthused so much over their sport. I now knew the sort of sense of achievement each must feel in his own personal triumph over the inevitable hazards which accompany this sport. And, casting my mind back to that question I had asked earlier in the pub, I could grasp what was meant when the members had talked about that feeling of complete freedom. It occurred to me, as the plane swung towards the earth below us, that what they experienced alone in the sky was, perhaps, one of the greatest feelings of freedom man can achieve.

After witnessing those 50 or 60 parachute descents I knew that I had gained knowledge of another world.

I slid slowly into the car and after a short call at the Club buildings we left the airfield.

On our return to the 'George', the landlord offered us the use of his private rooms to change from our casual jeans into clothes suitable for evening. Arriving back in the bar we found most of the sky-diving crowd already drinking pints of bitter and consuming quantities of 'rolls'—a 'roll' consisting of half a french loaf crammed with meat and salad! After having a drink with the crowd we decided that some of us should have a meal at a Chinese restaurant in Andover. So, packing ourselves in the members' various cars we drove into the nearest town. The Chinese waiter looked a little shocked at the prospect of feeding fourteen at one table—but he soon rallied round and led us to a special room at the back where he arranged one long table surrounded by 14 chairs. After seating ourselves around we ordered one complete meal, multiplied by 14, and 6 bottles of wine. Were we hungry! Even those who had already downed beer and rolls at the pub made a pretty thorough job of finishing off the huge meal. For myself, I ate more heartily than I had done for a long time. The talk throughout the meal was mainly on the group's favourite topic-sky-diving. But the whole affair was conducted with great hilarity and there wasn't a single person present who did not abandon himself wholeheartedly to the spirit of the proceedings! It was with great reluctance that the party broke up to go home.

I was quiet on the journey home. My mind was filled with the day's experiences and although I was tired I felt a strange mixture of contentment and exhilaration. Round and round in my mind went the question: would I ever jump—could I ever jump? Strangely I wanted the answer to be yes. One day, perhaps, that extra bit of courage would come to me. As I closed my eyes, the motion of the car was as the drone of a plane. I stood on the wing—and with one step I was in the sky, alone, free, falling, surging towards the D.Z. below me.



## THE DAY IT RAINED

#### being an account of a Parachute Display

By J.S.W.

DRIVING through Aldershot the other day I looked at the open grass expanse of Queen's Parade, and thought how our ideas on D.Z.s have changed in a very few years. I could clearly recall the time when it seemed all too small for free fallers to land on it, and indeed it proved to be so. But to go back to the beginning . . .

My Battalion had started the first Army Parachute Club ever to be formed. This was early in 1960, and the Club had limped along throughout that year in the usual way of clubs in those days. We had two rigs, no instructor, no money, and lots of enthusiasm. The winter of 60/61 saw the club drawing a deep breath, and 1961 was positively assaulted by a vigorous and active collection of parachutists. A recruiting drive had swept many more into the net, including myself, and the higher levels of Command were beginning to show a flicker of interest. We were getting somewhere, but it was very slow work. What we needed was a big, colourful, and successful demonstration to the largest possible number of senior officers. Only then would we get money, en-

couragement, and concrete assistance.

It didn't take much thought for us to pick on Airborne Forces Day for our demonstration. Airborne Forces Day is an annual gathering of all who have served in the various airborne units in the past. It is a day of reunions, parties, and a large parade. There used to be an athletics match in the afternoon, and if anyone has anything to show off, this is the day to do it. It is a day when a fair proportion of the Army's leading Generals are in one place and all feeling in an amiable and friendly mood. We decided to put on a more or less continuous display of free-falling during the afternoon, and the obvious place for the D.Z. was Queen's Parade. Obvious though it may have been, we weren't exactly happy about it, and with good reason as it turned out. It is eight hundred by four hundred yards of level grass, surrounded by trees, and with a hut in the middle. To our R.A.F.trained eyes it was far too small, and we looked very hard at the trees and the other hazards that seemed all too close. Along one side of the D.Z. was the athletics stadium, and we hoped to lure some of the crowd away from the match to watch us. We didn't know how successful we were going to be.

Because of the obvious dangers (?) of the D.Z., and the inexperience of the parachutists, we insisted on some practice jumps. To our surprise we were given one Auster every evening for the week before. The weather was atrocious, but every afternoon we solemnly loaded up a Landrover and drove fifty miles to Old Sarum,

getting back near enough at midnight. It was July, and twice we ploughed through thunderstorms and flooded roads, only to find that all had cleared at Old Sarum, and we could jump after all. We were a happy bunch, cheerfully optimistic, and woefully inexperienced. Our instructor was Keith, an R.A.F. Sergeant. He had about 400 descents to his credit, and was quite the best and most competent instructor that I have ever met. We had the Colonel in our team. He had trained with the American Army, and was about the only member who could look after himself in the air. He confessed to being a bit shaky on more than fifteen seconds delays, but that was good enough for what we had in mind. Next was Corporal R—, he had just gained his General Permit. Following the experts came the rest of us—the ruck. Privates Owens, Coke and Williams were just short of their G.P., and Lieutenants Briant and Alisdair had about six jumps each. Finally there was myself, with one terrifying uncontrolled three second fall off a Tripacer. It wasn't really a foundation on which to base a display to a high powered audience.

All that week that we pounded down the A30 to Old Sarum, we only got three jumps each. Our accuracy was appalling. We had an interesting mixture of equipment, the 'hottest' one being my own canopy with a Czechoslovakian triple blank gore modification. I still jump this dreadful 'chute, but now I have filled in the centre gore. In its 1961 form it turned very rapidly, scarcely gave any forward drive, and dropped like a stone. A further complication was that the gores were over the right shoulder. I managed to bruise my heel so badly that I could hardly walk. The Colonel blew up a canopy on his first jump, and we had to give him our only spare. But no other disasters happened, and by Friday night we still had a demonstration team, and cach one still had a parachute. Keith had been marvellous during those four days. After every jump he took the parachutist carefully and slowly through every detail of the descent, generally ending up with a rousing 'rocket'. It was an excellent grounding for the future, but we hadn't time to get up to demonstration standard.

By Saturday, D-Day, I had clocked four jumps. I was at five second delays and roughly stable. The others were all right, and whilst none of us could spot we could get to within shouting distance of the target if put off at the right place. We reckoned we could make it all right, all that was needed was a reasonably light wind. The programme was due to start at half past two and ought

to last about one and a half hours. We had two Austers, which could take off from the D.Z., and we planned to keep up a fairly continuous flow of descents. Each man would re-pack in front of the crowd. We had asked our R.A.F. section for their help with D.Z. control, but they politely declined to haveany connection with us, although they lent us equipment. In fact R.A.F. disapproval went so far as to insist that Keith must not wear uniform when

assisting us.

By lunch time the weather wasn't looking too good. Rain and thunder were forecast with a maximum ceiling of 3,000 feet. Lunch was very hurried, and we moved to the D.Z. in some excitement. We soon had the target out, the smoke candles ready, and the velometer and radio set up. Keith went off in one of the Austers to drop the streamers. Looking back on it I am appalled at our blissful optimism. The system for dropping the jumpers was simple, untried, and open to unbelievable errors. Keith timed the run from target to opening point using a stop watch. Before the jumper was due to jump he radiod to the pilot the one word "GO". The pilot cut the throttle and thumped the jumper. All this was estimated to take five seconds. It did . . . sometimes. Sometimes it took more. But we didn't know that as we hadn't tried it before. We had also happily disregarded such obvious difficulties as radio failures and variations in run-in speed and direction. More significant, we had failed to consider changes in the wind speed!

The streamer-run brought the crowds in their hundreds. Full of confidence the first plane took off carrying Alistair and Coke. Alistair made a perfect landing about thirty yards from the target, and on the next run Coke was a bit nearer. I could scarcely contain myself, I was commentating to the crowd and at this point there was no doubt in my mind that they were the privileged witnesses of the next World Champions. I all but told them so. Off then with the next Auster! Who cares if there is a black thundery cloud just over the trees! Always reinforce success as the old military phrase goes! And away goes Owens. Only he lands in the trees over a quarter of a mile away. This is not so good, and the tone of the commentary drops by a few decibels. Owens wasn't hurt, but that wasn't the point, we were meant to be putting on a SUCCESSFUL demonstration. I spent some minutes talking about small D.Z.s and tricky winds. On the next run Williams came out and plonked in quite nicely near the target. Honour was saved, and with a few uplifting words to the crowd about the safety, simplicity, and universal appeal of free falling I handed over the microphone and got my chutes on.

The whole of the Aldershot area was now covered with low cumulus. Black thunder clouds hung in the West, and trails of rain draped below them. One or two bystanders pointed out the obvious dangers of parachuting in such ominous weather, but we would have none of it. I had the Colonel in my Auster, me in front. In the second plane was Lieutenant Brian with Corporal R—— in the back seat. We were all still using an exit

point signalled from the ground.

As we ran in, the black rain clouds almost scraped the cabin roof. It was like flying just below the ceiling of some vast Albert Hall, all gloom and dark vaulting. I looked out of the door and miserably watched the rain drops sliding backwards across the strut. I wasn't really keen at this point. It was cold and wet outside the plane and patches of mist were appearing below us. A

few seconds of this and my morale was rock-bottom. Then came the signal to get out on to the strut. I climbed out and balanced as well as I could, trying to keep my goggles dry. Almost immediately a furious gloved hand with outstretched thumb was beating at my grow and List as and floored off backwards.

arm and I let go and flopped off backwards.

A desperate count of five, a blurred vision of sky, houses, clouds, boots, more houses, and I pulled.

O Blessed Peace of floating canopy! What Heavenly relief! No noise, no movement, no fuss—and no D.Z. There wasn't a sign of Queen's Parade. I frantically twisted and turned in my harness. Suddenly I saw it, a tiny rectangle of green already apparently miles away and rapidly receding further. In a panic I looked down at the ground. I was drifting at an appalling rate at more than 90° to my intended line of flight. In fact I was having an impressive practical lesson in the wind variations which immediately precede a thunderstorm, but I was in no frame of mind to take an objective view of my instruction. I was a very worried parachutist. The barracks and roads of Aldershot were streaming underneath my feet at what I estimated to be a good 30 knots, or even more. I turned my futile blank gores out of wind and noted in a disinterested way that they made not the least difference. I had the whole town downwind of me and it seemed to be coming up at a hell of a pace. After the initial alarm I began to resign myself to my obvious fate, and thought how sad it was that such a promising free-fall career should end so soon. For some half a minute or so there wasn't a lot for me to do beyond mentally toss up whether I was in for a broken back, or just legs and pelvis. I found I couldn't make up my mind which sounded worse.

When viewed from the air the Aldershot barracks appear horribly sharp and spiky. I watched the spire of a church pass at safe distance, and then stirred myself to make a landing somewhere. A patch of grass appeared and I drove for it, but after what seemed like ages I found that I'd never make it. I swung round and there right in my path was a barrack square. True it had high buildings all round, and chimneys, and telegraph poles, and all manner of other hazards, but to me it was the Promised Land. I drove for it as well as I could. The asphalt wasn't going to be very funny with my bruised heel, but in I went. The buildings shut off the wind for the last thirty feet and I touched down as light as any feather with a sigh of relief that almost demolished the Guard Room. Shaking a bit, I rolled up my precious

parachute while the rain pattered round me.

Some newspaper reporters picked me up in their car and took me back to Queen's Parade, getting at the same time a fairly dramatic first-hand account of my adventure. It wasn't until I got out of the car that I remembered Brian. He hadn't yet been found, and some highly coloured stories were passing round the D.Z. about his probable fate. In actual fact he had had a far more harrowing descent than I. He was on a flat circular canopy and found himself quite helpless in the gale. My curious modification must have had more effect than I imagined because Brian could clearly see me throughout my flight, and he positively zoomed past me to make a highly exciting landing outside a Nurses Home over half a mile downwind from my touchdown. Not a nurse appeared to succour the intrepid Brian, and he hitched a lift back to the D.Z.

While all this was going on my wife was standing in

the pouring rain by the airstrip, quietly having kittens, and listening to the well-meant words of comfort offered by other bystanders. Such cheering phrases as 'Well, he's missed the spire anyway' aren't as encouraging as the speaker might think. I got back and had a few uplifting words with the crowd (usual stuff . . . 'safest sport in the calendar' . . . 'no harm if you keep your head' . . . 'tricky winds, small D.Z.' etc. etc.) over the P.A. system, and was just finishing when to my amazement the Austers appeared above me in line ahead, obviously on a run in. They had kept airborne throughout our little drama, and were now calmly completing their part of the programme by throwing out the Colonel and Corporal R——. At least it wasn't raining, but it was still windy, and I watched helplessly as two canopies cracked open above the trees. The Colonel made the D.Z., and landed in front of the crowd to tumultuous applause.

Corporal R—— added further distinction to an already epic day. He was coming in well for the grass, but at two hundred feet he turned off, shot across the road, and landed in the athletics stadium, bang in front of the Generals, and just as the 440 yards relay was finishing. He was mobbed, he was cheered, he was photographed. He was practically carried out of the stadium as the crowd poured across the road to see what

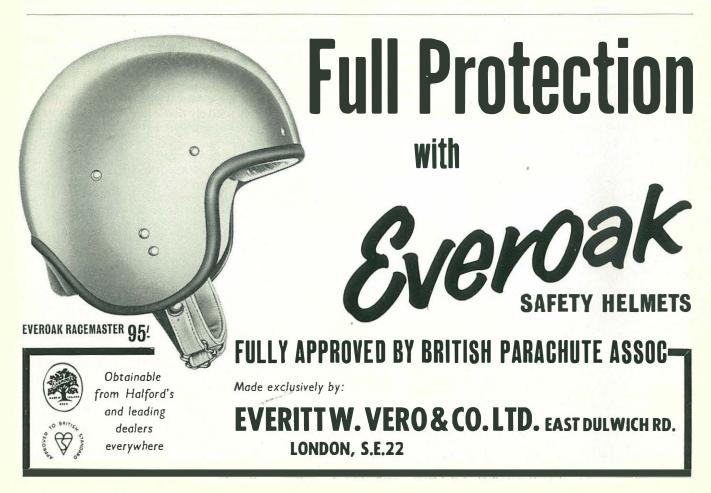
all this parachuting was about.

We were now in a bit of a fix. The audience had doubled, all our clutes were wet, and in any case

nobody really felt like risking his neck a second time. Then I remembered Mac. Mac was a Territorial who was staying with us. He was wildly keen and had borrowed a chute in case of the chance of a jump. We had never seen Mac perform, but he had a General Permit, and any port in a storm. It was raining again, but I shoved Mac into an Auster, put a photographer in the second, and off they went. It was another disaster, Mac opened at the wrong spot, drifted over the main road, and landed in the tallest trees that he could find. Worse, he hung between two trees about twenty feet above the ground and so could be photographed and interviewed by the numerous reporters who had now gathered.

We got Mac down with difficulty and called it a day. Talking it over with the Colonel afterwards, it was hard to decide whether we had failed or succeeded. The Press was full of statements such as 'the fearless Red Devils': but the audience was equally full of remarks like 'suicidal bloody maniacs'. We reckoned it at quits. We'd done what we said we would, we'd parachuted, and we hadn't hurt anyone. We had a monster celebration party.

From such small beginnings . . . We still demonstrate free falling on Airborne Forces Day. Nowadays we put a single stick out from our own Regimental aeroplane. Every man has a competition canopy, every man trails smoke, and every man hits the target (well almost!). I stay on the ground and give the commentary. It's safer that way, and anyway I seem to be a bad influence on this particular display.



### R.A.F. INTRODUCTION

#### by Group Captain F. B. Sowrey A.F.C.

I WAS asked if I would write a few lines to introduce the Royal Air Force section of the Magazine and I can think of no more worth while project. Sport Parachutist fills a long felt want in giving news to everyone in this country who is connected or interested in this expanding sport. I hope that its appeal will be such that the circulation will spread

beyond BPA members, and reach an even wider public, particularly through sales by Service units.

The Royal Air Force has an especial responsibility here, because the vast majority of all military parachutists have, at some time, passed through No. 1 Parachute Training School at RAF Abingdon. We do our best to encourage free fall parachuting as a sport, and the Royal Air Force (Abingdon) Sport Parachute Club has been successful in introducing parachuting to a number of people who would not otherwise have had the chance. However, our main task is static line training of military parachutists and the effort that can be devoted to free fall training has to be fully justified. At the present, the Service does not run an "official" competition team, and the success of F/S Maloney and Sgts Charlton, Hoffman and Clark Sutton in the National Championships is all the more commendable as they have reached this standard largely through their own enthusiasm and efforts. However, the climate is changing, and this year the Royal Air Force members of the British Team in the World Championships go with official blessing and a measure of support.

This section of Sport Parachutist will include articles of interest, hints borne of experience, and news of those in the parachuting world. If anyone in the Service has anything to offer, then write to Flt Lt J. Thirtle, No 1 Parachute Training School, Royal Air Force Abingdon, Berkshire — in this way we can keep in touch and spread the circulation

still further.

### NEWS FROM THE PARACHUTE TRAINING SCHOOL

THE past year has left little time for contemplation with instructors working long hours to complete courses on time. Wing Commander G. F. Turnbull, O.B.E., A.F.C., took over command of the School from Wing Commander B. F. Stannard, A.F.C. in the thick of it. By this time Wing Commander Stannard should have girdled the earth and settled down to a well earned retirement. We wish him luck and thank him for the picture postcards from exotic places; The Royal Tournament and Free Fall Displays all over Europe drew instructors away from the school leaving the work of training Military Parachutists to a comparatively small band of stalwarts.

Flight Lieutenant J. Thirtle returned to the school from Bahrein in time to join the Free Fall Demonstration Team in training for the display season. They have been most successful, under the leadership of Flight Lieutenant P. D. Williams, giving displays in France, Norway, Denmark and Holland. Numerous displays have also been staged in England. The team was really well established this year in having an Argosy Aircraft at their disposal. This enabled them to take a D.Z. Landrover with them wherever they went, causing some surprise when "disgorging" at foreign airfields. Shortly two fortunate P.T.S. Officers are going to the French School, at Pau, to do a free fall course. This should place them well for membership of the Free Fall Team next year.

From Europe a sudden switch to the Far East, where Squadron Leader M. C. Stamford has recently been posted. Finding himself surrounded by eminent parachutists, in the shape of Flight Lieutenant P. Hearn, Sergeants McLoughlin, Sweeney and Robertson he quickly put in hand the organisation of a Far East Air

Force Free Fall Team, which has already scored a notable success by doing a first-class drop in the centre of the Athletics Stadium at the R.A.F. Changi Sports Day!

As if this in itself was not exciting and original enough, Sergeant Robertson quickly divested his harness, reported to the starter and promptly ran and won the 440 yards! Squadron Leader Stamford claims this as a Malaysian first, if not a World one. We agree with him that it is extremely unlikely that a free fall parachutist has previously reported to the start of a race from 5,000 feet and won.

Flight Sergeant T. Moloney is to be congratulated on completing his 1,000 jumps. P.T.S. now boast a trio of Instructors who have achieved this total. Group Captain J. R. W. Blythe (Retd), formerly C.O. of the School, is one, and the other is Flight Sergeant A. Card (retd), who is now living at Crewe and working for the G.P.O. We expect Flight Sergeant Robertson to join these exalted ranks in the not too distant future.

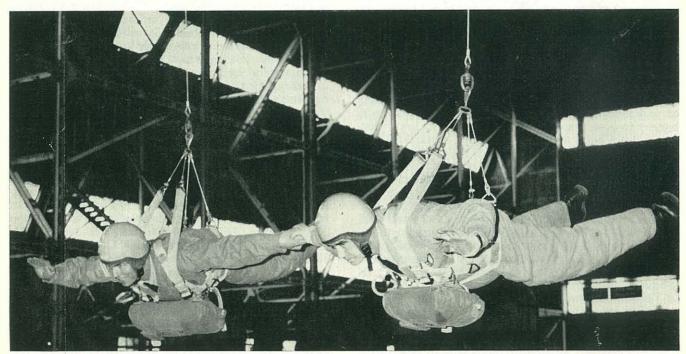
The R.A.F. Sport Parachute Club, based at Weston-on-the-Green, continues to flourish under the Chairman-ship of Squadron Leader A. T. Johnson, who succeeded Squadron Leader M. C. Stamford in March this year. The Club has now some 70 members who have made 600 descents to date. The Club's Rapide aircraft is now a familiar sight flying back to Abingdon, where it is based, on the still evenings after a successful day's parachuting. The Club meet at week-ends and on Wednesday afternoons when no military parachuting is programmed. Members come from all branches of the R.A.F. and include Aircrew from the "V" Force, Air Quartermasters and several Cranwell cadets. The Club also spoil the two W.R.A.F. members who, it is learned, are

progressing satisfactorily. The instructor-strength has recently been depleted with the absence of Sergeants Charlton and Clark-Sutton, of the British Team, and Flight Sergeant Moloney and Sergeant Hoffman, of the Irish team, at the International Championships in Germany. This situation should be avoided in the future by training selected parachutists, not from P.T.S., up to B.P.A. Instructors Standard. Squadron Leader A. T. Johnson hopes to lower his 200 lbs. on a 32 foot, 9 gore separation T.U. in the future. From here on he may well grace the sand-pit, with the double "L." As the sand-pit at Weston-on-the-Green is being increased in size to comply with International Dimensions there should be many more club members who can proudly boast of "sand in their boots."

Many of the Competitors at the British Championships will be glad to learn that their able marshaller on this occasion, Sergeant K. Mapplebeck, is making a rapid recovery from the injury he sustained there. He expects to be jumping again soon. Although Sergeant Peacock is stationed in Cyprus he managed to get home to compete at Netheravon and is to be congratulated on a good showing.

The main Royal Air Force item for the 1964 Royal Tournament was a presentation of parachute training by No. 1 P.T.S. under the production of Squadron Leader Norman Johnson. Many of the training techniques performed in previous displays were again illustrated. However as the last para display was in 1959 there were many new aspects to introduce especially in the field of Free Fall Parachuting. Clearly the Earls Court Building was not the ideal place for skydiving activities but with the use of suspended equipment, film, music, sound effects and imagination, a reasonable picture of free fall parachuting was given to the audience. In the training

phase two stabilizer harnesses on 120 ft. cables proved most effective as means by which free flight and its associated techniques could be illustrated. The parachutists were winched sufficiently far above ground level to make their long slow pendulum swings most impressive. Wearing full equipment, and spotlighted in movement, the Commentator Flight Lieutenant Brian White had merely to make a few points to the audience to complete the picture. After an emplaning scene, in which a halfscale Argosy model was used, there followed a coloured film sequence which included some fine free fall shots of Flight Lieutenant Peter Hearn and members of the Royal Air Force Free Fall Display Team. It covered all phases of a descent from exit to landing, and on the massive Earls Court Cinema Screen was most impressive. The commentator then pointed out the snags in parachuting at night and set the screen for the finale as the parachutists again emplaned. At this time the Argosy's full navigation lights were in operation and created the necessary atmosphere. A take-off noise then provided the link for the next sequence which was an Argosy silhouette with lights blinking on a high inclined wire (120 ft.) moving forward with suitable overflying sound effects. Two free fall parachutists then whistled down a further two inclined wires, some 115 ft. up in the roof. They came from cover of darkness, were illuminated fleetingly whilst in full flight down the wires, and disappeared again into darkness. Immediately following was a "mass" parachute descent from the roof by nine personnel. Included in these flying canopies of course were meant to be free fallers. The use of Producer's licence, whereby static line and free fall parachutists jumped together was considered acceptable under the circumstances. There will be, doubtless, further displays with emphasis on free falling parachutists, however the 1964 display "broke the ice" for experiments in this direction and we hope set the minds thinking on how bigger and better methods can be used to catch the public eye.



Free Fall Stabilizers. (Detail showing Harness and attachment). Sgt. McGartland and Sgt. Way on the 'way up'.

## FREE FALL AIR TO AIR PHOTOGRAPHY

#### by Squadron Leader M. G. Stamford

UNTIL very recently the title of this article would have conveyed very little to anyone outside the sport parachuting fraternity in the U.K. but with the recent introduction of the American T.V. programme, "RIPCORD" the British viewing public have had a real opportunity to appreciate the end product of this wonderful art.

Whilst engrossed in the antics of these professional skydivers, it is doubtful if many pause to wonder at the combined skill of the free falling cameraman. We in the parachuting world never cease to be amazed by the high standard of cine work produced by Bob Sinclair, Lew Sanborn and Bob Buquor and the still camera work by Joe Gonzalles to mention only a few of the experts in the U.S.A. Enthusiasts will haveread the splendid contribution on 'Relative Work and Air to Air Photography' written by Leigh Hunt which appeared in the April 1963 issue of "Parachutist". We all admire these performers and envy their weather, wisdom and wealth—but what have we done in this field in the U.K.?

Doubtless there are others throughout the country who are experimenting with photography in free fall without the blessing of the three "W's" of our U.S. Friends but the writer was invited to make a small contribution on the efforts of No. 1 Parachute Training School at R.A.F. Abingdon. This commenced in September 1963 when the Air Ministry generously provided two 8mm "Fujica"

cine cameras for experimental purposes.

The aim of the project was to evaluate the techniques of photography in free fall and ultimately produce a film of particular interest to pupil parachutists and general interest to a wide audience. All parachutists know that to achieve a good standard in free fall requires patient and progressive training, determined and skilful applica-tion of technique and plenty of practice. The most difficult part of learning is to absorb the criticism of the experts in any corrective phase without recourse to personal observation other than a fleeting glimpse through binoculars at experienced men performing. To take this a stage further and reach an exhibition standard requires a mental approach borne only from self-confidence, aptitude and experience. To demonstrate the skill of aerobatic movements in close proximity to another free fall body demands superb judgement and confidence in fellow jumpers more especially when one of them has the additional encumbrance of a camera. Enormous progress in this field was known to have been made in the U.S.A. and France but the technical information of the type required was so limited that the start was made from scratch.

The responsibility for the task was delegated to Sergeants David Francombe and Paul Hewitt who had amassed some 400 odd free fall descents between them, which constitutes considerable experience by U.K. standards.

The early problem was to establish the best techniques for hand-held and helmet-mounted devices and then decide between the two. With the latter the difficulties of weight, security, balance and sighting were many. After several mountings and two helmets had been abandoned, Sgt. Francombe produced an alloy hand-grip on to which a camera could be mounted. On September 12th he jumped with it over Weston-on-the-Green with Sgt. Clark-Sutton as the subject. Both exited simultaneously at 10,000 feet from opposite doors and within seconds Francombe closed the gap to within 10 feet. At this distance the pair fell together for 30 seconds with the subject slightly below the photographer. At 3,000 feet, Francombe increased the horizontal separation to a safe distance to film the pull and deployment. The quality of the processed film exceeded expectations and the accurate positioning and steadiness of the photographer was highly creditable and encouraging for a first attempt. The appreciation, criticism and discussion of the subject's aerial movements made an immediate impact as to the future value of this type of film as a training aid.

Francombe made several more descents, each time improving his technique and making a useful contribution to the length of film. Meanwhile Hewitt continued with work on a head-set assembly and completed the first one in early October. The camera was mounted on the right of the helmet encased in a light metal box and counter balanced by a lead weight on the left. Directly in front of the right eye was fitted an adjustable sight, the total assembly weighing 10 lbs. The weight and size were extreme and the problems of head position on pulling and clearance of the lift webs on deployment had to be fully resolved before the first live descent was made on 22nd October. This time, Hewitt was the photographer and Francombe the subject, both making their exit at 10,000 feet. The photographer left first to film the approach of the subject from above, but the camera angle was such that the photographer had to adopt a "sit up and beg" position in order to keep the subject in view. This caused him to slide backwards at high speed. The solution was to remount the camera at a higher angle. The physical strain experienced during opening and again on landing was less than anticipated although some deviation from standard technique was necessary.



Sgt. Hewitt

The ensuring descents ironed out many of the snags of angle and sighting and an improved head-set was produced in early November. The weather permitted only two further descents in 1963, each of which produced good films. It was feared that continuity of effort might be prevented by the English climate.

To overcome this a team led by Flight Lieutenant R. Wiltshier was sent on a two weeks detachment to Idris in Libya. The first week proved abortive with similar weather to the U.K. but when the weather changed in the second week the team experienced photographic and parachuting conditions "Par excellence". Twenty-four live sorties were completed in four days. The progression and continuity produced results which it would be difficult to equate in the commensurate number of months in U.K.

After three descents, Francombe decided to abandon his hand-held camera in favour of the head-set. The extra control with full use of arms and hands was the major reason and the subsequent results proved the decision fully justified. It is only fair to state that a number of sorties were not successful, and results varied with the subjects used. The team was boosted by the inclusion of Sgt. Tony Charlton (the present British Champion). His very high standard of relative work provided excellent close range photographic material on each descent he made. On one such occasion from 12,000 feet, the subject and photographer worked together within 10 feet for 50 seconds, during which time they grasped each other's wrists bringing the subject's face to within inches of the camera lens.

It became obvious that two parachutists making descents of this nature become attuned to one another and to their environment by complete concentration, relaxation and mutual anticipation of relative movement.



Sgt. Francombe

The conditions were so ideal that release and opening points were little problem and the elimination of such worry enabled much greater application of free fall technique.

The importance of the correct opening point, however, was hammered home on the final descent which was non-photographic but made as a demonstration for the personnel at R.A.F. Idris. The plan was for Francombe and Charlton to link and spiral whilst the other four tracked in opposite directions. All went according to plan except F/Sgt. George Hill who had the most difficult track over the camp area. He overshot his turn and undershot his opening point and at 2,000 feet found himself directly above the M.T. Section. He put up a brave but losing fight to make the DZ and with considerable skill landed adjacent to the flag-pole outside S.H.Q.

He landed safely within 10 feet of the Station Commander who was watching from his office window. "A good demonstration Flight Sergeant" said the Group Captain. From F/Sgt. Hill, standing strictly to attention (the surrounding obstacles permitted little else) came the reply with complete dignity "And a very good morning to you, Sir".

The project is being further developed at No. 1 Parachute Training School but obviously not at the excellent rate afforded by the African weather. The results so far have been most encouraging and although we have an enormous amount of ground to cover to catch up with our U.S. friends, the gap is being narrowed. The P.T.S. effort is one of team work but much of the credit for the early ingenuity and endeavour goes to Sergents Francombe and Hewitt. The writer is especially indebted to Sgt. Hewitt for an excellent record of events and supply of material for this article.

### FROM THE LEFT HAND SEAT

## ADELE PARK

To those who enjoy the ins and outs of parachuting the art of getting out will always be better understood than the art of staying in, an altogether different exhibition of skill as shown by the captain of the aircraft. It might be useful, for a moment, if the enthusiastic parachutist were to place himself in the left-hand seat and see how the pilot does his best to make the 'perfect platform' for an exit. The pilot himself must be a bit of a conjuror to blend the parachutist's requirements with the demands of safe flying. At parachute clubs which use singleengined light aircraft for weekend jumping (Austers or Tri-Pacers, for example) pilots are often used who are experienced in flying the type of aircraft, but not always experienced in dropping sky-divers. To comply with the law, the pilot is required to drop an experienced parachutist three times, usually an instructor, before he can drop beginners. Most parachute instructors are excellent in telling the pilot what they require, but because they cannot fly an aircraft themselves they cannot completely teach the pilot how to drop them. The pilot, therefore, has to learn by experience and compromise—a compromise that never relinquishes essential flying safety while co-operating fully with the parachutist's injunctions. Here, then, is one flyer's comment for the parachutist and pilot's consideration.

Let us look at the problem stage by stage. The aircraft will probably be loaded up to its maximum weight, as parachutists plus equipment are heavy. The pilot may not be used to flying the aircraft at such weights. Because the aircraft is climbing for the major part of the flight the engine will be running at maximum climbing power and the fuel consumption will be relatively high. Except for low lifts, therefore, weight cannot be reduced by carrying less fuel. On a low lift when this can be done, care has to be taken that the centre of gravity of the aircraft is not subsequently put outside the limits laid down. At the heavier weight both the take-off run and the climb will be longer than normal. The climb may further be affected by the removal of the aircraft's doors, which interrupts the smooth airflow along the aircraft's fuselage and causes extra drag.

The next stage could be called initial positioning, lasting from the time the aircraft leaves the ground to the beginning of the run-in at the pre-selected height. This positioning is left to the pilot to arrange, but if it is not carefully planned time can be wasted. It depends on height required and wind strength. An aircraft will show maximum rate of climb when headed into wind, and minimum rate of climb when headed downwind. aim is therefore to climb as much as possible into wind, yet arrive at the downwind end of the run-in at the top of the climb i.e. at the pre-selected height. For a low lift, say 2,500 feet, it would be best to climb straight ahead into wind from the runway to 2,000 feet, then turn and climb the remaining 500 feet downwind to arrive at the downwind end of the run-in. For a high lift, the fact that the wind veers with increasing height must be used



to extract the maximum rate of climb from the aircraft. A rough guide is to turn gradually to the right as the climb progresses. Again the aircraft must be brought round to arrive over the correct place at the top of the climb, the downwind part of the climb to be as short as possible.

The third stage is the run-in, when the parachutist is doing the spotting and guiding the pilot, and for this stage I would give the novice parachute-dropper some tips. First of all, be careful to hold height accurately, using a constant power setting (cruising power). Secondly, make turns using rudder in the direction in which the turn is required, with opposite aileron to prevent bank developing. Accurate spotting is impossible with normal, banked turns. If the spotter wishes to climb outside for a better view, he must put up with the conditions he finds!

I have found from experience that the best run-in is made by flying almost entirely on instruments. At the beginning of the run-in have a good look round for other aircraft and synchronise the directional gyro with the compass. The spotter will ask you to head towards some object he can see ahead on the ground, or will merely guide you in a direction in which to fly, leaving you to pick a point ahead for aiming at. The trick here is to turn the aircraft as required, ascertain that the nose is pointing where the spotter wants it, then steer the

"From the left-hand seat"—(continued).

heading on the directional gyro. By doing this you give the spotter a chance to assess the drift, and therefore assess the wind direction and strength. If you fly towards a point ahead of you, as the aircraft drifts you will automatically turn the nose to remain heading towards the point, and will eventually arrive over it heading into wind. And you run the risk of losing sight of the point as you advance towards it. If you maintain a heading on the gyro the spotter alone is responsible for assessing and correcting drift; you are not confusing his task with your own corrections. The three factors for the run-in are, therefore, constant heading, constant height, constant power setting.

The exit comes next. This is tricky when the exit is awkward and the jumper inexperienced. For an easy exit, the parachutist requires three conditions of flight which are incompatible—low power setting; slow speed; constant height. These conditions can be obtained together for a brief moment, so if the parachutist is experienced and quick he can take advantage of this moment for an easy, accurate exit. If this period of time is prolonged, for example in the case of the beginner who takes a long time to get out, this will happen: at a low power setting and slow speed the aircraft will lose height, and some aircraft sink remarkably fast. The low speed and constant height can be maintained at the price of a high power setting and correspondingly forceful slipstream. Obviously a compromise has to be reached, and it generally works best to be too high at the exit point to allow for the height that will be lost. If the jumper is still climbing out when the aircraft has sunk to his pre-selected exit height, the pilot can only increase power to maintain that height, or pull the parachutist back inside and try again.

In small aircraft, such as Austers, immediately preceding and during the exit the pilot has to make himself as small as possible to be out of the way of the exiting parachutist. He has simultaneously to fly the aircraft accurately and prevent the jumper from knocking the throttle open or the switches off while he scrambles out. As the pilot is inevitably involved in these upheavals in the cockpit his outside view is limited. So again it is better to fly on instruments, keeping the attitude correct on the artificial horizon, constantly checking speed and height, noting rate of descent on the V.S.I. If the height drops below the minimum the pilot should say so at once, and should also keep straight for a while after the parachutists have gone, before doing any fancy

manoeuvres down on to the airfield.

A factor that spoils an exit for everyone is poor spotting. Nothing maddens a pilot more than the parachutist who gives the O.K. to close the throttle, climbs outside then decides to hang on for a time before jumping. Power has to be used to maintain height, which is uncomfortable for the parachutist. The wing to which he is attached has to be held up, and he noticeably increases the drag on the aircraft. The pilot always want the parachutist to get out and go quickly, so that his conjuring abilities with the aircraft are not stretched to the maximum.

To all those who jump, I wish the best of luck and will just add that it is a cosy feeling to sit securely harnessed into an aircraft and watch other people leaping into all that space.

that space.

## THE THRUXTON LETTER

## by ERIC GREAVES

WE now have our own aircraft: a Jackaroo. A.P.A.M. could never have known the amount of work it was in for when we bought it from Sheila Scott, but it grinds away on its take-off's and landings, hour after hour, day after day willingly and faithfully. From the day, some couple of years ago when the three or four enthusiasts formed the British Sky-Diving Centre here, we have wanted an aircraft of our very own and in acquiring it, it seems that a special milestone has been reached. On a fine week-end our daily attendance reaches about one hundred and many members camp around the buildings or make themselves comfortable inside so they may jump until dark on one day and be up and ready to continue at first light on the next. The list of members taking their initial instruction and making their first jumps with us grows week by week but what is most encouraging is the gradual and steady increase in the number of enquirers. To handle these enquiries and to deal with documentation we have now opened a Loridon office: this has proved a great success and is appreciated by everyone. We must add that a great deal of atmosphere is added by the growing practice of members bringing their wives and girl friends down to see what we do and how we do it; many of these charming ladies become so interested that some of them have joined the Centre and have become active members.

Our airfield is some three miles in circumference and is situated amongst Hampshire's fields and apart from being an excellent D.Z. makes a wonderful Headquarters which is most appreciated by those of us who work in the

Cities

We now have nine qualified Instructors two of whom are resident on the airfield and an additional four always available at week-ends to assist not only beginners but those wishing further to develop their skill and knowledge of the sport. Given reasonable conditions upwards of fifty descents are made daily during holidays and at weekends but how we envy our fellow enthusiasts in California and their weather and how much more we could do, given their sunny climate! Amongst our members are numbers of serving soldiers, many from the Parachute Regiment but we are most delighted that over 8 per cent. of active members are ladies and by some happy coincidence all of them are young and attractive.

Of our active members more than a dozen have made more than 150 descents and very many more have made over 50 and this number is fast increasing: all of these were of course free-falls, apart from the few static line drops that all undertake initially. The minimum height at which we despatch is 2,200 feet and our more experienced members jump from any height up to 12,000 feet, but our records show that most descents are made from

5,000 to 8,000 feet.

Students joining are first given thorough training in landing technique and groundwork generally, then move



"These girls all going up for their first free falls having completed 5 static line descents". Ages left to right 17 years 2 months, 19 years 5 months, 17 years 6 months.

to reserve throwing and exit instruction not only from our own Jackaroo but from Rapides and Dragons which we sometimes use. All beginners, whatever their previous experience must complete at least five static line descents, the last three with dummy rip cords: from then on, progress varies from member to member but everyone can be taken through all phases of sport parachuting from knowing absolutely nothing to relative work, baton passing and competition jumping. All parachutes used by us are sleeved and have a single extractor and the student starting with a seven gore LL or a seven gore TU progresses through the Bulgarian triple gore; the Greenflyer, which is a seven gore separation LL with a three gore drive bar; five gore and seven gore TU to a seven TU LO-PO. Beginners can learn and progress as far as they wish. We are fortunate in having on the airfield the Wiltshire School of Flying and we receive the utmost co-operation from Squadron Leader Doran-Webb and his pilots who cheerfully and indefatigably drone up and down for us hour after hour whenever the weather permits, starting very early and finishing only when it is too late to make more descents.

During the summer two competitions were held with engraved tankards as prizes: the first to be competed for by those having more than ten jumps to their credit and from a height from or above 3,000 feet and the second competition open to those with less than 10 descents and from a height of 2,500 feet. Each competitor was allowed two nominated jumps and practically everybody participated. The senior competition was won by

Ray Etchell and in the junior competition McBowen proved the winner.

Amongst our members we are proud to have Helen Flambert the 1964 British Woman Sky-Diving Champion as well as Penny Seeger who took second place only nine points behind the Champion. Owing to her being abroad so much Penny cannot come to Thruxton as much as we would like but Helen attends the Centre regularly and has now become a qualified Instructor... and all that at the age of 20! At the moment of writing both Helen and Penny are in Germany training for the World Sky-Diving Championships so we wish them both the best of luck against the finest and most experienced jumpers the world can produce.

It is our wish and endeavour soon to have a true home of our own and negotiations are now in progress with the authorities at Thruxton so that we may obtain a lease and build our own permanent Headquarters in a structure suitable to our needs. We are certain that it will not be too long before we can complete the necessary formalities and thus arrive at our second milestone.

Although our main and indeed our only object is Parachuting and Sky-Diving, the club, in furthering the main objects, has grown into a cheerful, close and friendly community where every member is a close and personal friend of every other member and where all newcomers are welcomed into the community as soon as they arrive. We hope all will wish us well, as we go from strength to strength in the friendliness of our chosen sport.

E.J.G.

## The Army Parachute Association

Forward by its President,

Lieutenant General Sir John Hackett, K.C.B., C.B.E., D.S.O., M.C.

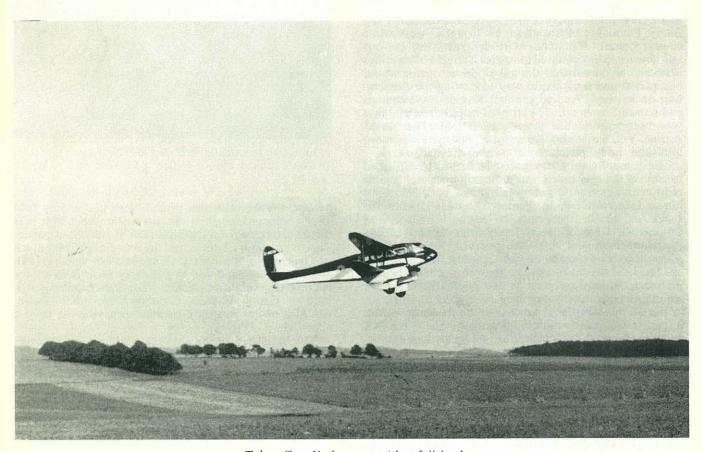
I WISH to thank the British Parachute Association most warmly for providing the Army Parachute Association with an opportunity to describe its activities through the medium of their new journal the *Sport Parachutist*. In the successive numbers of an attractive publication interested readers will thus be kept informed of Army Parachuting Affairs, which I am

sure will strengthen the already strong ties between the two Associations.

As will be gathered from the following contribution, the Army Parachute Association also owes much to Rothmans of Pall Mall, who have done more than any other organisation to support the cause of Sport Parachuting within the Army. The generous assistance provided by this progressive firm has earned the gratitude of all Army Free Fallers. It is no exaggeration to say that without it this exciting and challenging sport, so well suited to the need of the modern Army, could not have achieved anything like so rapid a spread in so short a time.

Let me wish Sport Parachutist every success. I trust that it will receive the unreserved support of all free fallers within

the Army.



Take-off at Netheravan with a full load.

THE blue and white RAPIDES of the Army Parachute Association have been a familiar sight at airfields and air displays up and down the country and in B.A.O.R. during this summer, and it will probably be of interest to those who are not military free fallers to know just what the A.P.A. is, and how it comes to run these machines.

In mid 1962 a small band of enthusiastic officers under Lt. Col. J. K. Woodhouse, of the Special Air Service Regiment, met in a hot and stuffy room on the upper floor of the War Office, and decided to band together the increasing number of Regimental Parachute Clubs into a loose Association. The idea was to charge no fees, but by exercising a little control and pooling knowledge and

resources, to help new and struggling clubs. This of course was just what the B.P.A. was also doing, but for a number of reasons, one financial, it was advantageous to work on a purely military basis for purely military clubs. Furthermore it was easier for an Army body, even an unofficial one, to exercise some control and restraint over the more light-hearted members who appear in any sport.

Not a great deal came of that first meeting. Autumn came round, some of the original officers found themselves posted abroad, and while the secretary kept his end up with a typewriter, it looked very much as though the whole thing would have to be started over again before the 1963 season got under way. The response from Army Clubs wasn't inspiring, after all, nobody likes being told what to do; and worst of all there was no money. The only conrete achievement was an instructors' course, which was run under great difficulties with no

aircraft for jumping.

Then shortly after Christmas came the turning point. Messrs. Rotlimans of Pall Mall, the well known cigarette manufacturers, approached the Army Sports Control Board with a view to helping financially any needy Army sport. To the everlasting credit of the Board, they immediately offered Rothmans the struggling Army Parachute Association as being a worthwhile cause to assist. Rothmans were delighted, but curious to know how they could help. After a couple of meetings it became apparent that the gift of an aeroplane would be the best and most useful way of starting the Association on its way. And so the first Rapide was acquired and named SIEGFRIED. The story of its purchase and first year of operation has already been told (The Khaki Airline, Vol. 1 of Sport Parachutist), but there was more to it than the simple matter of owning the machine.

The committee of the Association had to be reformed to control the new assets and responsibilities and also to ensure that everyone got a fair share of the benefit. Major General G. P. L. Weston, the then Director of Land Air Warfare consented to be the President, and Colonel G. C. A. Gilbert, Regimental Colonel of the Parachute Regiment, the Chairman. A Branch of the Association was soon started in Germany, and throughout the 1963 season the Committee worked hard behind the scenes to improve, enlarge and popularize the sport among soldiers. Courses of instruction were run for both novice and instructors at no cost to the students beyond hire of the Rapide for jumping, and amongst a hundred and one othertasks a Constitution and Safety Regulations were drafted approved and brought into operation.

It had long been apparent that the needs of the parachutists in Germany could only be met by their having their own aeroplane, and early in 1964 Messrs Rothmans again came to the rescue this time with a generous loan, which, together with a grant from the ever helpful Nuffield Trust, made possible the purchase of a second aircraft. This time the machine was bought in the Middle East, but the full story must wait for another time. It came safely back to England, was christened Rhinegold, and is now permanently based at Detmold, where it flies regularly for the increasing numbers of free fallers in Rhine Army.

In England, the Association had spent the 1963 winter searching for a suitable location for a Parachute Centre which was becoming a vital requirement if the ever increasing commitments of the Association were to be met. The choice finally fell on Netheravon, mainly



The moment of opening.

because the Secretary was posted there, and in July 1964 after prolonged negotiations permission to use it was finally extracted from the multitude of interested parties. This was a major advance, and the Association owes much to General Sir Kenneth Darling, and his staff at H.Q. Southern Command and to Salisbury Plain District, for making this venture possible. The understanding attitude of Group Captain Giddings, Boscombe Down, was also of the greatest assistance in having the project approved.

And so in the space of eighteen crammed and exhausting months the Army Parachute Association has risen from a faintly despairing band of enthusiasts, with neither resources nor finances, to a recognised, authoritative body controlling its own two aeroplanes, with its own Centre comprising a D.Z., airstrip, hangar accom-

modation and a full time instructor.

The Association Courses are now larger and better managed. Instruction is still free, and there is now a limited amount of equipment for hire. More and more soldiers are learning to parachute, the first Army Parachute Championships will be held at Netheravon between 21–29 August, and affiliated membership has been extended to the Royal Marines and the Canadian infantry Brigade in B.A.O.R. In the near future it is hoped to start branches in the Near, Middle and Far East and there is every hope that if this rate of progress can be maintained, parachuting will soon become a leading sport within the Army.

### STREAMERS AND FLASHING LIGHTS

by O. V. C. DEAN

STREAMERS and flashing lights. To my uninitiated mind these terms inferred days and nights of gaiety— Mardi Gras—Coney Island—Blackpool. These romantic thoughts were somewhat shattered early in the year, when I found that they could have a very different meaning. I was invited to fly the Army Parachute Association Rapide for the Special Air Service Regiment at Hereford, and moved into a world where a gentleman called the Jumpmaster guided my mind and reflexes in the air, so that six of his colleagues might leave the aircraft at heights from 2,200 feet (unbelievable) up to 12,000 feet with a reasonable chance of landing in the centre of a large cross of brightly coloured panels, which became more remote to me as the altimeter wound its way clockwise. The fact that these gentlemen invariably landed on the cross, in spite of my inexperienced efforts in this type of operation, makes it more creditable to them and incredulous to me. Since then, under the expert guidance of various Jumpmasters, my knowledge and experience has increased somewhat and although I would never wish to teach my grandmother to boil eggs, the points brought out in this article may result in an even better understanding between the chap 'up front' and his chums in the rear.

As in any other form of flying it is essential that the pilot and the Jumpmaster should discuss the planned programme in detail before each sortie, so that there is no risk of confusion or misunderstanding in the air. Once airborne, any discussion between parachutist and pilot is difficult. The following points should be discussed in detail:—

(a) Number of parachutists in lift.

(b) Whether Wind Drift Indicator (Streamer) is to be dropped.

(c) Heights of dropping runs and number dropping on each.

(d) Direction of run in.

(e) Ground signals displayed on Dropping Zone (D.Z.).

(1) Signal system between Jumpmaster and pilot.

(g) Emergency procedures.

After the briefing, the parachutists are clear to enter the aircraft, taking care to use the footrest. Remember, the Rapide is of wood and fabric construction and does not take kindly to a size twelve boot being planted through the mainplane. Engine nacelles can, and have been, dented in this fashion. Repairs are expensive and would inevitably result in higher operating costs. Because of loading limitations, no more than six parachutists should ever be carried, regardless of space available. To save wear and tear on the engines, and these are costly items, no more than four parachutists should ever be carried above 10,000 feet.

For take-off, the parachutists are seated on the floor facing the rear of the aircraft. The privileged customers occupying seats will, of course, strap themselves in. Should an emergency develop below 400 feet, such as engine failure on take-off, parachutists are to remain in the aircraft. Discipline or that 'cheerful spirit of obedience' so evidence in all branches of Her Majesty's Services was fully illustrated in a recent incident whilst one of the Rapides was in Germany. The experienced

Squadron Leader flying the aircraft had the misfortune to lose an engine on take-off and at full load. He managed to avoid trees and other obstacles which automatically pop out of the ground and present themselves during situations of this kind, and climbed slowly to a reasonable height circuit. Pulse rate having reduced to normal he completed his circuit and made a successful landing. Muttering quietly to himself (pilots tend to do this under a given set of circumstances) the aircraft rolled to a standstill and a voice from behind said:— 'What shall we do now, Sir?' The Squadron Leader inferred that it was now safe to leave the aircraft!

The Rapide aircraft of the Army Parachute Association and The Parachute Regiment operate entirely at the expense of the parachutists who jump from them. It is essential, therefore, that the flying time for each sortie be kept to a minimum, consistent with safety considerations and care of the aircraft. Accurate flying is essential and good team work between pilot and Jumpmaster is a contributory factor in saving flying time. Circuits should be kept as small as possible and pilots should aim to reach the required dropping height as they start the run-in. Once having lined up over the wind drift indicator towards the target the pilot will be controlled by the Jumpmaster using the flashing lights. The lights should not be used until the aircraft is lined up since they can be distracting to the pilot, especially if he is having to maintain V.H.F. contact with the ground as well.

Methods of exit vary to some degree and are usually fairly rapid in execution. Linked and simultaneous exits are forbidden. When a man is standing on the wing, severe buffeting will be felt due to the disturbance of the airflow over the tailplane. Bearing in mind that at the time of exit the pilot is holding the aircraft at a speed of approximately six-ten knots above the stall, it is helpful if exits are made as rapidly as possible. A slight but rapid change in the Centre of Gravity of the aircraft also takes place. This is further illustrated on a certain occasion when a parachutist, before abandoning the aircraft, told his girl friend who was having a ride in the aircraft, to move to one of the rear seats so as not to disturb the trim. The Centre of Gravity although critical is not as bad as this reasoning implies. Maybe the parachutist concerned just did not trust the pilot in close proximity to his girl friend!

Although the pilot will always know the number of parachutists carried in the aircraft and the number of runs to be made, it is extremely helpful if the Jumpmaster shouts O.K. when the last man on each run has left the aircraft. This means that the aircraft can be put into another circuit or taken down for the next lift with the minimum of delay. Where a team is operating and there is no Jumpmaster, then the last man to leave the aircraft should shout accordingly, but nothing rude please, the chances are that you will meet up with one another on the ground later! I recall the National Championships at Netheravon when all three aircraft were operating at maximum intensity just in case we ran out of the very good weather prevailing at the time. It was late afternoon and I was doing my umpteenth lift of the day. Half way round what I thought was my final dropping circuit

I felt a tap on my shoulder and I was informed by a Sergeant Major of the Parachute Regiment who was up for the ride that all my erstwhile passengers had left me on the previous circuit! The converse to this concerns an attractive female pilot who often joins in our activities. It was the same afternoon and having started her descent from the dropping height she heard an aggrieved voice shouting out way back in the aircraft, 'Well, what about me then?' The moral would seem to be, please give us a shout as you go out otherwise you are likely to be left without.

Some incidents will always remain fixtures in the mind whatever the function or activity. The one word that used to make me reach for the nearest bottle or wake up in the night screaming was 'GRENADE'. Once again during the National Championships at Netheravon, I was battling up to a great height with an intrepid team of Skydivers who were to give a demonstration of free-fall. Having levelled out, or should I say staggered out at 11,500 feet, I was petrified to hear a series of Chinese fire crackers going off behind me. I was then enveloped in smoke reminiscent of the more convivial parties in various Officers' Messes on 5th November. The smoke having cleared I was about to enquire the reason for this celebration when I realised that 'Jack' was alone. My 'friends' were on their way earthwards leaving a spectacular trail behind them. After landing, I made tentative enquiries as to whether this was normal. Unfortunately, the reply given by the Secretary of the Army Parachute Association was unprintable, especially when he found a scorch mark by the exit door on the Rapide. The official order now reads: Smoke Grenades for display purposes never to be ignited until clear of the aircraft and extreme caution will be exercised to ensure that grenades are not detonated inside the cabin. We live and we learn -usually. For my own part I would merely say, that

whilst parachutists are well provided for in finding their own way down to the ground, remember the chap up front has not got *one*, let alone *two*.

Care and maintenance of any aircraft is highly important. Regular checks by qualified engineers are mandatory, but ground handling and pre-flight checks when away from the main base are also important. It will often be necessary to manhandle the aircraft when there is insufficient room for the pilot to manoeuvre. Normally the minimum number of men required to move the aircraft is five. These consist of a controller, one on each wing tip and one on each side pushing on the base of inboard struts. Other points to be watched are that vehicles should not be parked near the aircraft or on a taxi-track. No one should smoke within 100 feet of the aircraft or during refuelling operations. Whenever possible, the aircraft should be refuelled at the end of the day's flying to prevent condensation in the tanks. Oil and foreign objects should be removed from nacelles, fuselage and all exterior surfaces. Because of early arisings, the pilot sometimes forgets his handkerchief and it helps a great deal to find a clean windscreen. A clean rag is always useful too.

Sport parachuting is now firmly established in many countries and will continue to expand internationally. It follows that an increasing number of calls will be made for Service and Civilian Clubs to give displays throughout the country and overseas. The Rothman Rapides will, no doubt, increase their flying hours accordingly and it is a well known fact in the flying world that the more an aircraft is utilised the less likely it is to become unserviceable. In short, increasing utilisation of aircraft resulting in greater proficiency in the sport. Speaking personally, I will play my role in coping with the first part leaving

you readers to look after the second part!!

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