

LET'S TRY A FLEXIRACE

By Wally Wallington, Australia

Presented at the XVII OSTIV Congress, Hobbs, N.M. U.S.A. (1983)

Once upon a time in far Northern Lands there were three tasks: "Free Distance" - for men to venture far; "Distance along a Line" - seemingly to keep the wayward either along a path of flightlessness or not far from home; and "Pilot Selected Goal" - to introduce or practice the grown-ups' concept of soaring To Somewhere. The door had been opened to "Race along a Set Course," but this newcomer was still an innocent stranger who had not yet revealed her take-over intentions.

"Free Distance" was usually set when thermal conditions were adequate for soaring but winds too strong (more than 15 knots) for racing. Fears of long, all-night retrieves were often allayed by the promise that the morrow would be a rest day if any pilot achieved an incredible distance - 300 km or more. "Distance along a Line" was often set when mostly foul frustrating conditions might harbour isolated thermals or even a carefully concealed convective cloud. Great distances along the Line were not expected. But there was a risk that the odd pilot chuntering through the sog* may perhaps blunder into lift reaching down from a wandering Cunim also lost in the haze. In those days many a Cunim was kindly disposed towards the fledgling glider pilot; so after some mandatory minimum of melodrama it would spew the glider, with pilot, out at some frigid height from which a glorious glide could be made. Victory would have been in sight but for an iced-up canopy and the fact that the pilot was now so far from the Line (deliberately set across wind) that he wished he hadn't been so lucky.

Between these extremes came the "Pilot Selected Goal" - set by Task Setters whose faces, aglow with knowing wisdom, belied the fact that they had not the foggiest idea what else to set. After the task was announced, the Met. man would be inundated by the pilot horde, each pilot wanting his own personalized forecast tailored to the performances of his glider and himself - and sometimes to the events of the night before and the night to come (the long retrieve problem, of course). Being in the same disguised dilemma as the Task Setters, the Met. man could usually find plausible (but not, of course, guaranteed) prospects for a wide scattering of personal goals. In this task each pilot's score comprised points for distance achieved towards a goal plus bonus points for reaching his goal. A goal was the pilot's secret, its name to be deposited in a sealed envelope with the Orga-

nisers - not to be opened until the pilot had landed. Mooted goals were whispered, mentioned obliquely, or furtively flashed on scraps of paper in an atmosphere of speculation and rumour: "You know that cold front the Met. man thought would stay to the west. Well, I just heard that . . ." "You'll have to cross the Channel to beat Philip!" No wonder outlandings were scattered across the countryside - some of them at the selected goals.

All great fun - and immensely valuable in forcing the growth of soaring science. But, as competitive soaring techniques and standards improved, the selection of a winning goal became too chancy for serious competition between experienced pilots. Experience, care and common sense could enable the Met. man and pilots to maintain appreciable consistency and reliability, but then - and now - even impeccably sensible predictions and decisions on the available data could turn out to be wrong. The winner and the losers were not necessarily those who made the wisest or the rash decisions. So the task faded into history.

Some years later, as pilot and glider performance continued to improve, the competition pilot again had to choose between optional courses in the "Cat's Cradle" task, which was developed primarily to enable competition pilots to achieve long flight distances without landing our far from base. In one or two countries, limited options are now permitted in the "Race around a Set Course" task. Where there is a risk of a turning point being unpredictably blotted out by capricious local weather, an alternative optional turning point is set to avoid a fruitless mass landing at an impassible point. Such options have been created not so much from a philosophy of giving more weight to the pilot's skill in assessing conditions and making decisions, as from the need to enhance the feasibility or success of a task.

As pilot and glider performance extended competition horizons even further, "Free Distance" became virtually another speed task on a fair thermal day, and a risky lottery in poorer conditions. From 1978 it ceased to be a compulsory task in World Championships. Perhaps it was no coincidence that at a competition pilots meeting at the 1978 World Championships in France a number of pilots voiced dissatisfaction with the day-after-day gaggle hopping routine racing that had prevailed in that, and other, competitions.

At the same time, the recently changed central committee of the C.I.V.V. were now seeking to encourage cautious exper-

imentation in competition flying. Soon, experimental modifications to long standing concepts, and even a new task or two were being tried in some countries. In at least one country bonus points are awarded to Cat's Cradle pilots who land back at base. In West Germany pilot selected turning points for out and return racing is one of the innovations, the pilot having to decide formally on his turning point before he takes off.

At Waikerie in 1973 one race was set with an optional alternative turning point, but the two effective courses were about the same length (there being no provision for bonuses for longer courses) so it was not surprising that everyone chose the same point.

THE "FLEXIRACE" CONCEPT

I suggest we try a "Flexirace". To describe this task let's consider a basic example: a triangle on which:

- (a) The first Turning Point is mandatory
- (b) The second Turning Point is the individual pilot's choice of one of three points (as shown in Fig. 1) which are at various

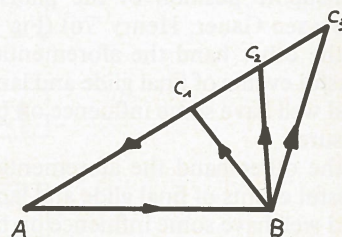


Fig. 1 Optional courses: A - B - C2 or C2 or C3 - A (3 courses)

distances from base but all within a final leg sector which is narrow enough to ensure that final approaches to the finish line are not dangerously conflicting. Let us consider the middle length course as the "Set" course, and the other two as optional alternatives.

Determining distances along and speeds around courses would be by the current methods, but converting those scoring distances and speeds into points would include a speed bonus for pilots who completed the long course and a speed reduction for those who completed the short alternative. The maximum distance for distance scoring purposes would be taken as the greatest scoring distance achieved (completely or partially) around any of the courses.

An essential feature of the task is that the pilot does not have to decide on options

* Acknowledgments to John Fielden for this apt description of competitive soaring when he became a national Champion in 1964.

until he has sampled soaring conditions in the air. As all pilots have to fly to the same first Turning Point they have equal opportunities of assessing the conditions they experience and making decisions appropriate to their own capabilities and aims. And they would have more information than they could possibly have had before take-off.

The simple course just described can be elaborated a little without undue complication; for example, both the first and second Turning Points could have an alternative, as sketched in Fig. 2. In this example one of the four optional courses indicated by the arrows would be specified by the Task Setters as the "Set" course.

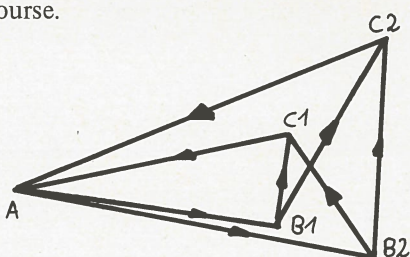


Fig 2 Optional courses: A - B1 or B2 - C1 or C2 - A (4 courses)

SETTING BONUSES

A bonus used to give weight to the pilot's choice of options should be simple; it does not need to be some value calculated from a cunningly devised formula to umpteen decimal places. The number of optimal courses envisaged in a Flexirace would be between 2 and about 6. One of these would be designated the "Set" course, with zero bonus; the others would have bonuses in the form of either bonus speeds or percentages of actual speeds; in the three-option illustration of Fig. 1, speed bonuses may be declared in one of two simple forms; for example:

Short Course	-5 km/hr
Set Course	0
Long Course	+8 km/hr

or

Short Course	-4%
Set Course	0
Long Course	+5%

Given such bonus data it would be for pilots to choose their options, tentatively before take-off and finally on route. Bonuses would be related to the difference between the length of the Set course and the length of the course completed in a simple, not necessarily precise, way. Task speeds achieved around courses now-a-days suggest that speed bonuses should be between about 5% per 100 km difference between lengths of courses, for high standard contests and 10% per 100 km differences in lengths of courses for less competitive classes of gliders or pilots. A contest day would not be ruined if the bonuses were not well set; if they were set too low the task would virtually become a race around the shortest course; if they were too high the pressure would be on to complete the longest feasible course.

PRE-COMPETITION PLANNING

There is considerable merit in planning potential tasks well before a competition, particularly so for "Flexirace" tasks. Such tasks should be carefully considered by task setters with up-to-date competition flying and organisational experience. Possible groups of optional turning points and courses should be planned to fit operational, safety and competitive factors for a few broad categories of wind and soaring conditions. Bonuses should be assigned and the potential tasks made known to competitors well before the tasks are liable to be set. When, and if, a "Flexirace" is then set during a competition the task setting problem would be that of selecting a "Flexirace" to suit the broad wind and soaring category. The fine detail would be less important. Pilots themselves would have more opportunity to get the best competition value out of the actual conditions that eventuate.

ADVANTAGES

The advantages of the "Flexirace" are:

- (1) If a turning point happens to be inaccessible due to bad weather a Flexirace contest day will not be utterly ruined by almost everyone landing out at the blotted-out turning point or the edge of the bad weather. (With our superior soaring weather the risk is low, but it is not negligible. It could happen, far, far from base, with almost everyone getting a useless 1000 points, and a long, expensive retrieve.)
- (2) It would provide wider opportunities for exercising the essential soaring skills of assessing conditions and choosing options in the air. (Only a narrow range of such skills are used in gaggle hopping races.)
- (3) It would make the success of a task less sensitive to non-flying organizational judgements or faults.
- (4) It would add a new element of excitement and interest for both pilots and ground personnel at a competition.
- (5) It would add another avenue to the pilot's means of proving his competitive skill.
- (6) It would contribute to a reduction in gaggle flying or tailing particular pilots.
- (7) It would be useful to complement handicap events where some tasks either excessively restrict the scope for high performance gliders or are inordinately long for the low performance aircraft.
- (8) It would increase the opportunities for pilots to attempt F.A.I. courses within a competition. (An F.A.I. course which may not be considered as suitable for a single mandatory set course on a particular day could well be included as an option in a Flexirace.)

Let's try the Flexirace concept - as soon as we can. If you want any help or have any comments, please let me know. (My address is: 15 Fitzgerald Street, Yarralumla, A.C.T. 2600.)