New concept for 'traditional' championships

A discussion paper for the CIMA Plenary meeting, by Richard Meredith-Hardy. 12 Oct 2005

This document was originally written in April 2005 as a precursor to the 2005 UK National Paramotor championships where this new idea was tried out. Generally it was considered to be a success, it was certainly very much easier to manage than a traditional style of championship and 'near real time scoring' was achieved throughout the championship. There were nevertheless some faults with the method of scoring which created a severe disincentive to do more tasks, notably precision tasks. This document incorporates changes to the format which attempt to rectify these faults.

All documents associated with the running of the 2005 UK National championships can be found at www.flymicro.com/footnat05 In particular, Bulletin 2 describes quite a few Important operational aspects of the championship.

Introduction

The 'traditional' method of running championships means competitors flying tasks at a set time, either with a 'takeoff window', typically two hours, or in a set order as used for many precision tasks.

This method has many problems, notably when the weather is changeable of marginal.

- It is difficult and cumbersome to brief changes to the scheduling of tasks.
- The weather can often change during a task with set takeoff order making it unfair.
- The 'latest' time a task with set takeoff order can start at all is defined by local sunset time. With large numbers of competitors, sometimes it is impossible to run a task even when there may be two hours of good evening flying time available.
- Things often happen 'all at once' which is difficult for the organization to manage; fuelling control and checking takeoff times are two such examples, but there is also a 'rush' for the flight evaluation and scoring staff immediately after a task which in practice makes the concept of 'real-time' scoring an impossibility.

With the advent of GPS flight recorders it is proposed to change all this by radically altering the way the championship is run. Instead of pilots doing tasks all together in a set order at set times, the entire championship period will be an 'open window' and pilots can do the tasks in any order they like, when they like.

This introduces:

- An element of longer-term weather evaluation which is an important pilot skill absent from 'traditional' championships.
- An interesting element of both individual and team tactics.
- The possibility of real-time scoring as flight information will be coming back in a much more 'continuous stream' rather than in sudden rushes which will have the overall effect of reducing the burden on the flight evaluation and scoring staff.
- The possibility that pilots will get to do more flying than was possible in a 'traditional' championships because they can choose to fly when they want rather than when the Director says.
- A reduction in perceived nuisance from local residents. Occasional overflights are much less noticeable than a huge 'fleet' of aircraft all coming at once which is a significant problem with many 'traditional' style navigation tasks.
- The possibility of a reduction in stress on the championship staff as the pressure on them to do several things all at once will be reduced with the consequence that less errors will be made and it will be a more enjoyable experience for everyone.

How will this be managed so it is fair?

Briefings

All tasks will be briefed on the internet well before the event. Important details of some tasks may not be available until shortly before a pilot starts a task, such as turnpoint locations, but all pilots are expected to be familiar with all the tasks before they arrive on site.

There will be one major briefing for all tasks before the championship starts. After that, any alterations or amendments allowed within the rules will be posted on the official notice board.

Task managers

There will be a *task manager* on duty at all times for each task. This official is responsible for the overall management of the task and will maintain a takeoff timetable set at minimum intervals which let him easily manage the task.

Task tokens & task declaration

At registration, each competitor will be issued with a *token* which is used to declare a task. Each pilot wishing to fly a task must present himself to the task manager, hand over his token and declare when he will takeoff for the task. On a first-come first-served basis the task manager will fit the pilot into his timetable as near as possible to the time the pilot wants. This time determines when the task countdown starts. Once a task is declared by handing over the token a pilot cannot normally retract the declaration.

Task countdown

A *task countdown* period will be set for each task (Normally 1 hour). Once a task's countdown has begun the pilot can obtain any documentation necessary for the task from the task manager such as turnpoint information and flight declaration forms. A penalty will be applied if the pilot deviates from the agreed takeoff time.

Flying the task

The pilot flies the task according to the brief. Each task may only be flown once.

Flight dossier

A flight *dossier* is the full record of the pilot's performance and will vary with the task. It may consist of the pilot's flight recorder and/or various forms issued by the task manager which may need to be completed by the pilot or the task manager before, during or after the flight.

At the end of the flight the pilot reports to the task manager and they assemble between them the flight dossier. It is entirely the pilot's responsibility to ensure the dossier is complete and delivered to the flight evaluation and scoring control office within the required time. A checklist of required items will be provided in the brief, a penalty will be applied for incomplete dossiers.

Finishing the task

Each task will have a *maximum allowed time* set in the brief which is the time beyond the declared takeoff time in which the pilot must complete the task *and* present their dossier to the flight evaluation and scoring control office.

If a complete dossier is not received within the maximum allowed time then the pilot gets a zero score for that task.

If a pilot lands out, then the pilot must at least still telephone the flight evaluation and scoring control office before the expiry of the maximum allowed time for that task. The pilot will then be granted an extension sufficient to return to the airfield, assemble and present their dossier to the flight evaluation and scoring control office.

The pilot is deemed to have finished the task once he has presented his dossier or has exceeded the maximum allowed time for that task, whichever is first.

Once a pilot has finished a task the pilot's token is returned to him so he can start another task.

Championship window

This is the period in which pilots must start and finish all tasks. Pilots may fly tasks whenever the green flag is hoisted which will be between specific times (essentially daylight hours between the start and end of the whole championship).

Fixed periods

These will be declared in advance of the championships. These are reserved times for 'spectacular' tasks which are interesting to spectators when flown en-masse. A pilot may choose to be absent from the site on another task of his choice but it is only possible to fly each fixed period task in the defined period.

Weather

Although pilots may in principle fly tasks when they wish within the championship window, the Director retains the right to hoist yellow or red flags at any time if he considers the weather conditions unsuitable or unsafe. A yellow flag indicates that pilots may continue tasks if they are already airborne, but no pilot may take off and task countdowns are suspended. If a red flag is hoisted, task countdowns are suspended and all pilots must land immediately. Pilots who land out while the red flag is flying will be permitted to re-start the task; pilots who return from a task while the red flag is flying have the choice of re-starting the task or finishing the task by handing in their flight dossier.

If the weather forces the abandonment of a fixed period task, then the director may reschedule it (but to a time not less than 12h in advance of the original planned time). Pilots who have already made a task declaration which is likely to conflict with the rescheduled fixed period task may retract their declaration, or, if the countdown has begun and task specific documents have been issued, they may only ask the Task Manager to revise their takeoff time.

No-fly-zones (NFZ's)

A master map of NFZ's will be maintained on the official notice board. In principle, pilots who fly in any notified NFZ, at any height will be penalized.

If, for example, there is a complaint, then it may be necessary for the Director to introduce a new NFZ on the master map. All NFZ's will all have a date and time attached to them and they become valid for each pilot at the moment their next task countdown starts.

Scoring method

The scoring concept is **not** to reward the pilot who flies the most tasks in the championships but to reward the pilot who flies consistently the best.

Task count

Tasks are scored in the order of best pilot score in each task. To equalize the incentive to fly tasks which score a maximum of 500 points and those which score 1000, the pilot scores in tasks which score 1000 will be divided by half equally into two task scores. This way, every task scores max 500 points, but a 1000 point task counts as 2 tasks with equal scores.

A *Task count*, the running median of tasks finished by all competitors in class will be continuously maintained and this number will be prominently displayed at the flight evaluation and scoring centre. (The median is the number in the middle of a set of numbers; that is, half the numbers have values that are greater than the median, and half have values have less, rounded up to the nearest integer). In other words if the median is five then everybody's best five task scores are counted in the overall scoring. If a pilot has finished 6 tasks, then the sixth is not counted, but may be counted later when and if the median rises, and so on. Equally, if a pilot has only finished four tasks, then only those tasks will be scored and he had better get on and catch up.

Valid results of disqualified competitors or those that have permanently withdrawn from the championship will still be used to calculate the Task count.

The task count will be fixed at its current setting four hours before the end of the championship window. This prevents an unexpected rise in the task count whilst permitting pilots with a personal task count less than the overall task count to catch up. Pilots may also continue to fly tasks in the hope that they may achieve a better score than one or more of the tasks already included in their total.

Task balance

The total number of tasks available will be approximately the number which could be expected to be achieved in a 'traditional' championship which did not suffer weather delays.

The 'traditional' balance of 1/3 precision, 1/3 navigation and 1/3 economy will be maintained across all possible tasks, but it is entirely the pilot's choice which tasks he flies and in which order.

Pilot performance

Because all task scores will remain fluid until the end of the championship there is a clear distinction between *pilot performance data* and the *score* a pilot eventually receives. The scores remain fluid and are not final until the complaints and protests deadline for the whole championship is reached. On the other hand, pilot performance data entered into the scoring system will automatically become final 12 hours after the moment a pilot's provisional scores are first published, this time is shown in the scoring system. This deadline becomes 2 hours once the end of the championship window is reached.

Complaints & Protests

Complaints and protests may only be made against pilot performance data. Whilst there are still provisional scores in the system the organization welcomes complaints and observations at any time about the method in which pilot performance data is resolved to a score but complaints or protests about the scores themselves will not be accepted.

So long as a written complaint about pilot performance data was received whilst it was still provisional, then a protest may be made within 12 hours of the same pilot performance data becoming final. (or 2 hours once the end of the championship window is reached.)

All scores automatically become final at the moment at which all pilot performance data is final.

Conclusion

Despite the flaws in the method of calculation (rectified here), the 2005 UK Nationals were generally considered a success. The single biggest complaint was "I miss not flying against my competitors in tasks at the same time". This is indeed a disadvantage, but as this very thing is the primary source of so many difficulties associated with the 'traditional' format it is considered to be an acceptable loss. It does remain possible for pilots to make private arrangements to fly tasks at the same time if they really want to, but there is a suspicion that this complaint is really a façade for an objection against the increased pilot load involved with having to make longer-term weather decisions to their own advantage. As an important pilot skill this is of course actually an entirely legitimate new element to championships.

As the entire championship was briefed on the Internet two weeks in advance, questions could be answered and errors could be corrected in good time. This meant there was only one pilot briefing on site at the very beginning of the championship, and this lasted no more than about 10 minutes. Most pilots had already printed out all their task sheets Etc. so the normal huge work producing all this stuff was almost completely avoided.

As scores remain fluid throughout the championship it is vitally important to have sufficiently well developed computer systems that pilots can inspect their performance and scores at any time and also to get reasonable weather information. This we easily achieved on an intranet, with the added benefit that no scores needed to actually be printed at any time during the entire championship. The main problem was the management of weather induced start time delays which can get a little complicated. Ideally each task manager should have a wirelessly connected palm computer where this sort of thing could be managed centrally. It would also speed flight data collection.

Many pilots liked the idea that they may not have to fly some kinds of tasks they or their machine is not good at. This is likely to be the case if there is poor weather and the task count is depressed as a result, but in most cases there will be no difference, especially if there is a good incentive to complete more tasks, which there now is in this revised method of scoring.

Before we tried it, many people made the observation that it will require a lot more staff to manage. This was not in fact the case, about the same number as usual are required but the format places much less pressure on marshals which in turn generates less errors and happier people all round. Perhaps most important of all, the marshals who helped run the event seemed to enjoy themselves, which is never usually the case. If these events can be made enjoyable for the people who run them, then we stand a chance of developing a corps of more and more experienced marshals which in turn will be good for the sport as a whole.

Many people pointed out before we tried it that this format will not be so good for spectators. In fact the opposite was true. First, the system provides for fixed period tasks at times scheduled much longer in advance than is normal, second, In traditional championships it all happens in short bursts with nothing the rest of the time, whereas with this format there is always something happening on the airfield for spectators to see.

The format forces the director to be much more organized. No more making up tasks and publishing them 5 minutes before briefing, and no more interminable briefings which are misunderstood because of language. Instead all tasks must all be designed and published well in advance, which allows the scoring to be fully set up and tested in advance. This in turn all reduces delays in scoring and the chance of error once the championship has started and gives the Director more time to attend properly to unavoidable on-site issues such as complaints.

The future

It is entirely reasonable to suppose that CIMA may choose to introduce this new format into FAI Section 10. It is not suggested it should be a replacement for the 'traditional format', but an option which could be used by future championship organizers instead of the 'traditional format'. As the rules are quite different in some respects, it is suggested that an entirely new alternative version of S10 Annex 3 is written to incorporate this new format.