YURREBILLA TRAIL 56KM ULTRA - 2012

DETAILED ESTIMATION OF RACE SPLITS by Ian Hill

For the first time the six year old Yurrebilla 56km trail ultra marathon had intermediate split times recorded at some places along the course. The intention was to provide *live* split times at the Cleland Reserve car park food stop, Norton Summit road crossing, the start of the King/Queen of Mountain climb just inside the quarry track off Montacute Road, the top of Black Hill and the finish at Athelstone.

All but the first of these were successful for most of the field, but mobile phone reception problems at Cleland prevented this split from being accurate, the data being entered later to show only the *order* of arrival, itself an important item. However, hand recorded times of arrival at Cleland, albeit time of day in hours and minutes only, still enabled competitor splits to be calculated accurate to within one minute. For those several people who did not have a split recorded for them after Cleland, a fairly good estimate was made based on other runners around them at the time. In fact, many missing times were for people obviously running together, so it was simply a matter of giving them their partner's time, but this was not always the case.

In addition, photographs taken at other parts of the course enabled more split times to be estimated, although only one of these, Brownhill Creek, ended up being used for this purpose. This method relies on knowing the accurate time for at least one competitor at a given spot and then estimating the time in seconds it would take for people seen in the background to arrive at the same spot. When there was no-one in the background, the time interval to the person in the next photo needed to be "guessed". At Brownhill Creek, with the rising sun, some assistance was available from shadows cast by the trees on to the track and other places and also when a cloud passed over, as this gave a clue that the interval was of the order of a minute or two.

Other photos of the *entire* field were taken on the trail near Greenhill Road and Fox's Dam. There wasn't much point working out times for the Fox's Dam location because it is not far, less than ten minutes for most competitors, from the quarry track recording site for the start of the Black Hill climb. The location near Greenhill Road, at the top of a short hill, did not allow for most competitors to be seen in the background and most photos were close ups anyway. However, the relative positions of all competitors, can still be worked out from these two locations and provide an interesting description of how the event unfolded for each person. Even in the ten minutes from the Fox's Dam to the quarry track there were significant changes.

More photos have now emerged and although they do not cover the entire field, they have been useful for adjusting the Norton Summit splits of five competitors who were missed by the official time recorders and were not running with someone else.

Apart from times, the other advantage of the Brownhill Creek photos was to enable the positive identification of people whose race numbers could not be seen, either there or later. This is because the three groups, starting at hourly intervals, had not yet had a chance to become "mixed up" at this early stage, just before the 10km mark. This was the most time consuming aspect of the analysis, identifying competitors whose numbers were hidden by a jacket, on their back or otherwise obscured. Also, the photographer wasn't always able to shoot everyone clearly where there were bunches of people.

Despite these obstacles, a useable set of times has been calculated for Brownhill Creek. The reference point is actually at the start of the climb to McElligott's quarry which corresponds to the lowest point of the entire course apart from the finish. The photos were taken about 600m before of this point, opposite the southern end of the caravan park. An underlying assumption is that no-one changed position along this 600m part of the course, which is unlikely but also unimportant given that it is all an estimate anyway.

BROWNHILL CREEK

Group C (6:30am start, blue numbers)

As no actual time is available for anyone yet, the reference person chosen was the leader at this stage, Olivia Oliver-Thorne, who also ended up finishing first in this group. The estimated time for Olivia at the start of the quarry climb, 59:00, is based on her finishing time and later splits, *relative to* my own (Group B) splits at these points. My times were ahead of hers until the vicinity of the Deep View lookout at Morialta, after which I slowed markedly and at the finish conceded just over 10 minutes to her. As I reached Brownhill Creek in 57:46, it is reasonable to allocate 59 minutes for Olivia.

This time may still prove to be too fast because no-one else in this group finished under 7 hours, the next finisher being Edel Silke in 7:02:45, over 20 minutes behind Olivia. A time of 62 minutes may be more relevant.

Of the 87 runners identified here, only 15 were not in the background of a previous photo and therefore had to have the time interval guessed. At this stage the sun had not emerged behind the hills and/or clouds for all but the last few photos.

Group B (7:30am start, yellow numbers)

As I was the 27th competitor from this group to reach the photographer I was able to recall roughly where the half dozen or so ahead whom I could see were and calculate a time for them. Therefore, although I was not in the background of the photo of the 26th person, David McLean, he would have been only about 30 seconds ahead of me then. Only two others ahead of me were not in the background of a photo, Gregory Jenkins and Guy Webber, and the estimated gap to the person in the next photo from them was 40 and 210 seconds respectively. Working towards the front from there, this meant that the leader Gary McLean ended up with a time of 51:17 at the start of the quarry climb. Like the leader of the earlier group, Gary ended up finishing first of his group and 15th overall. For comparison, the12th, 13th, 14th and 16th placegetters, all of Group A, were running nearly three minutes faster here.

Behind me, nearly every one of *another* 90 people were in the background of a previous photo and therefore have reasonably accurate times. Apart from a few at the end, there were only four people whose gap needed to be guessed and there was some assistance from changing shadows.

Group A (8:30am start, white numbers)

For the first estimates released the only available clue for this group was James Duffy's GPS file from *last year's* event, but seeing as he was running again and finished in almost exactly the same time (only seven seconds faster), it seemed a reasonable source. Last year James took around 44:53 to reach the quarry climb, so a time of 44 minutes flat was allocated to this year's early leader Mark Bloomfield.

Since then I received a GPS file from Lachlan Miller and was also able to access the "movescount" files of overall winner Grant Guise and Sean Sweetman. These show that Grant and Sean's time at this point (running together) was 44:09, which means Mark's time was even faster and is estimated at 42:40 from reports he had an early lead of 90 seconds.

Lachlan's time was adjusted from 51:47 to 56:07 and the times of many runners in between adjusted downwards (ie more slowly) accordingly. This shows that the fast group was spread out much more than I would have thought, and also meant that their Brownhill to Cleland leg splits were that much faster than first estimated.

For this group only slightly more than half of the competitors were in the background of a previous photo which is not surprising given it contained only about 50 runners who were well spread out, so the estimated times relative to each are still fairly subjective.

One further aspect of the Brownhill Creek photos for all groups was that it also included about 20 competitors who did not make it to the finish. These were all identified and their recorded times (or positions) at Cleland and later points were omitted from the analysis. Of the twenty DNFs identified, five were from from Group A, six from Group B and nine from Group C.

CLELAND

This was a challenge, knowing that the published times were not correct. However, the order of runners seemed to be correct judging by their previous order at Brownhill Creek and then again at Norton Summit and later places. Going on this assumption, and the fact that Cleland is about a third of the way into the event, time-wise, it was possible to at least make some rough first estimates. What I did have was times from last year from James Duffy and myself and my time from this year.

I could also estimate likely arrival times for a few competitors in my Group whom I knew and these were helpful in making adjustments to the "one-third-of-finish-time" estimate. Although they didn't know it, Paul Rugless, Piet Crosby and Steve Guy made a useful contribution to this estimate. Another thing I could do was work backwards from some people from Group C whom I passed, namely David Close on the Pillbox Track climb and Guy Schubert on the descent to Lobethal Road. Then there was Grant Guise who passed me not long after on the downhill run into Norton Summit. From all these and further adjustments to ensure the legs before and after looked feasible (or at least not ridiculous), a set of Cleland splits was obtained for each person.

Later I received an email from Doug Kewley after he became aware I'd been doing this. It had the actual recording sheets made on the day and confirmed that my assumption about the order of arrival still being correct was indeed correct! More importantly it had the time of day written down in hours and minutes, so that reduced the estimation error to less than a minute.

To further reduce the likely error, the following algorithm was used:

If only one participant arrived in a given minute of real time, they were assumed to be at 30 seconds past the minute;

Two at a given minute: allocated 0 and 30 seconds respectively;

Three: allocated 0, 20 and 40 seconds;

Four: allocated 0, 15, 30 and 45 seconds;

Five, allocated 0, 10, 20, 40 and 50 seconds;

Six, allocated to 0, 10, 20, 30, 40 and 50 seconds.

Any minutes with more than six arrivals were spread out as evenly as possible, while keeping the seconds to a multiple of 5 at least. The largest number was 11 arrivals at 9:57am who were all given times five seconds apart.

People known to be running together were identified prior to this process and given the same seconds and counted as one "unit" for the purposes of allocation to other competitors.

This system probably reduces the average error to around 30 seconds. In these sorts of events runners tend to cluster together in the short term, especially when making a big climb which occurs just before the Cleland arrival. Therefore some people's times would be up to 55 seconds out, but others would be correct to within 10 seconds.

Finally, an adjustment of 40 seconds was made for everyone, using my own exact-known time to allow for the fact that the recorder's watch was slightly fast. This assumes that all three groups were started *exactly* an hour apart.

YURREBILLA 2012 SPREADSHEET

Yurrebilla-2012-analysis-V4.xls (Version 4) or later versions if they are posted.

This consists of four sheets, "Data", "Rankings – overall", "Rank – within group" and "Lists". Look for the tabs at the bottom.

Data

Columns 1-40 fit nicely across my screen but may not to others.

Columns 16-27 are hidden and merely contain all the times converted to seconds.

Columns 8-14 contain each person's relative position within their starting group at seven locations along the course. All these are footnoted to give more detailed information. There are three lists intertwined, each colour coded according to race number colour. Note column 14 is the same as column 2.

Columns 28-33 contain the estimated (blue) and recorded times (black) for each competitor at six locations. There are no times for Fox's dam because it is not far from the Quarry track climb of Black Hill.

All times in Column 29 (Cleland) appear to the nearest 10 seconds for most people but to the nearest 5 seconds for some. This doesn't mean those latter times are more accurate, instead merely reflecting the "seconds" distribution algorithm given above.

The estimates of the Brownhill Creek times in column 28 are given in actual seconds but again that doesn't mean they are accurate to that level. Instead, it reflects the fact that the photos permitted a fairly accurate estimate of the interval between competitors, so the spacing between most people (of the same group) is correct even if their actual time may be out by a minute or two.

The "section times" are the times taken to run each of the six legs defined by the split locations. They add up to the finish time. Again, while they look accurate, and the latter three are, the first three are estimates only. The Cleland to Norton Summit times (col 37) should be accurate to within 30 seconds, but the first two legs will be further out for some people.

Rankings - overall

Columns 8-13 show the ranking of the entire field at each split.

While these could be considered to show what would have happened if everyone started together, it would not have worked out that way of course. Nevertheless they do show how the faster competitors from the early groups compared to the group(s) later than them. The front runner of the middle group, Gary McLean ran a great race and finished in 6:01:05. It's likely he would have broken six hours if he had run with Group A. At least Gary had company for the event, with Tim Swalling staying with him for a fair while, and then the Group C competitors. He managed to pass them all except the leader of that group, Olivia Oliver-Thorne. Olivia had a lonely race indeed after Brownhill Creek, not seeing another competitor and being the only person to beat Grant Guise to the finish line.

These also show who ran smart races and who were overly ambitious at the start. Joanna Kruk started slowly and finished on strongly, as she did last year although curiously this time she was half an hour slower. Many Group B competitors improved their positions markedly, including Simon Ellis-Steinborner and Travis Saunders who told me early on that they were aiming for eight and a half hours and ended up beating that by two hours! So did the girls, Louise Nickson, Kate Furness and Bridget Roder who all worked their way through the field after Norton Summit. Then there were Philippa Miner, Melanie Zeppel and Dianne Bichard who also came through to run well under seven hours.

This also applied to Group C runners other than the leader, Edel Silke and Lee Hosgood who improved from 97th to 67th and 117th to 69th respectively after Norton Summit. In a different group they may have run under seven hours.

The opposite also happened to a few runners who started fast and then drifted backwards through the field, therefore doing it tough, but they all finished.

It also looks like a couple of runners simply missed the start as they came through and settled into their rightful place.

Columns 15-22 show overall rankings for individual legs and these tell the real story of how the event unfolded for every single competitor.

Clearly everyone has sections of the course they can cover with relative ease and others they need to work on. Either that or they had a mishap somewhere. What happened to Dion Byas after scaling Black Hill in 6th place, only to rank 62nd for the downhill run to home? Perhaps it was simply a matter of safety first, as the Amber's Gully descent is no place to be if you are feeling faint, as I learnt from last year.

What surprised me this year was the number of competitors who had to walk *downhill*. Now that's doing the event the hard way. For instance Steve Guy, probably the fastest marathoner in the entire field (in his day), who was the fastest of Group B up Black Hill but 85th in the run home (overall 15th and 158th respectively), was at a big disadvantage downhill. No doubt Steve would have broken seven hours otherwise. Piers Gatenby and I were near each other for most of the second half, but he would get away on the uphill parts and yet had to walk down that steep black metal road stretch not long before Fox's Sam. Then Piers scaled Black Hill much quicker than me but kindly let me pass him a few hundred meters from the finish on one of the last downhill rocky bits to finish about 20 seconds after me.

Others could fly downhill with reckless abandon, so it seemed. I won't forget competitor #10, in black whom I later identified as Sally Roffey, running very quickly past me down the long descent after the tanks and *from that point* put exactly four minutes between herself and me – all that in the last two point something kilometres!! I wasn't exactly hanging around either! Mark Bloomfield was the absolute tearaway though – I'd like to see a video of him doing that final bit.

These legs also tell some other amazing stories, like Kerrie Bremner who stormed home from Norton Summit to rank 49th, 27th and 46th in the final three legs after running the first three legs in 167th, 190th and 142nd places respectively. Kerrie's time at Norton Summit was 64.98% of her finish time whereas the average was 58.87%. In fact Kerrie was more than three standard deviations (SD=2.087%) from the norm.

Lee Hosgood at 64.43% also had a spectacular finish, being 16th, 52nd and 18th after early legs of 134th, 163rd and 76th.

Only sweeper John Glowik got anywhere near these figures, with 63.27%, and for sweepers that would be normal. To put this in perspective, Joanna Kruk's percentage was 61.60 and Grant Guise 59.26. Kerrie, at 7hrs 43 minutes, would be a candidate to improve by an hour next year, as her Norton Summit to finish run put her on a par with the sub 6:30 group.

Column 22 was added to tell the entire story of Black Hill and last year's winner James Duffy simply stormed over it a minute faster than anyone else, narrowly missing breaking 40 minutes. Nineteen runners broke 50 minutes and 94 did it within an hour. Father and daughter Bronte Gabb (aged 74) and Sonya Conrad took more than two hours but had run a well judged race up to that point but clearly the descent needed extra care.

<u>Rank – within group</u>

This looks at the event as how three separate races would have unfolded and mainly serves as a checking point for the overall rankings, but is also of interest in its own right. For instance, Steve Guy's (7hr 14 min) first placing for his Black Hill climb, only to fall to 85th (of 113) for the descent. This was matched by Zac Ronayne (6hr 54min), who must have missed the start, with 2nd and 78th respectively.

<u>Lists</u>

These show the overall rankings for each leg and the time each competitor took. This enables everyone to compare their time with the leaders and to identify which legs they need to work on. For instance, fourth placegetter (always the hardest to accept) Dion Byas ran very well until Norton Summit, only a few minutes from the leading pace in each leg, but then was nearly 20 minutes behind from Norton Summit to the Quarry track, but ran well again up Black Hill to be only three minutes behind leader Joanna Kruk's time. This must have absolutely exhausted him as he took so long to cover the relatively easy last leg.

Twenty year old Thomas Johnson, fifth overall, had a similar bad patch after Norton Summit but was able to conquer Black Hill with apparent ease and nearly catch Dion after giving him a nine minute start on the hill. On the other hand Sally Roffey blitzed the Morialta section, being third ranked and nearly a minute faster than Joanna Kruk. But at the end of the day the real story of the event was the class of the top three men, Grant Guise, James Duffy and Mark Bloomfield, who were always in the top six in every leg and ended up putting twenty minutes between themselves and the rest of the field. The women's race was equally impressive with Jo Kruk, Sally Roffey and Stephanie Gaskell finishing within nine minutes of each other and establishing a 25 minute gap to fourth placed Sharnyn Macgowan.

Finally, in events of this nature people tend to cluster together for a while and then become separated by a drink stop, minor mishap or some other reason. It just happens that many people run the entire event in a similar fashion and these leg splits would show that. However, my own run was quite erratic and I hadn't expected to find someone else who did almost the same, but I noticed that Joshua Smith and I were never separated by more than a few minutes over the entire course. The overall finish time interval between us was only 20 seconds. At the time I didn't know it of course, but I was jogging with Josh after scaling Black Hill and looking at the welcome sight of those water tanks heralding the long downhill and he told me to go ahead.

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The spreadsheet and analysis was made possible by:

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