Duckworth-Lewis-Stern information and calculation

What is the Duckworth-Lewis-Stern Method?

- The Duckworth–Lewis–Stern method (DLS) is a mathematical formulation designed to calculate the target score for the team batting second in a limited overs cricket match interrupted by weather or other circumstances.
- It is generally accepted to be the most accurate method of setting a target score.
- When overs are lost, setting an adjusted target for the team batting second is not as simple as reducing the run target proportionally to the loss in overs, because a team with ten wickets in hand and 25 overs to bat can play more aggressively than if they had ten wickets and a full 50 overs, for example, and can consequently achieve a higher run rate.
- The DLS method is an attempt to set a statistically fair target for the second team's innings, which is the same difficulty as the original target. The basic principle is that each team in a limited-overs match has two resources available with which to score runs (overs to play and wickets remaining), and the target is adjusted proportionally to the change in the combination of these two resources.

What is the difference between Par Score and Target Score?

- **Par score** is the total that a chasing team should have reached - when they are 'X' wickets down - at the time of an interruption while **target score** is the revised score that a team is required to get after an interruption.
- In a nutshell, par scores are calculated ***before*** an interruption, while targets are calculated ***after*** an interruption. The target is one fixed number, while the par score changes according to the number of wickets lost.

G50

G50 is the average score expected from the team batting first in an uninterrupted 50 overs-per-innings match.

Duckworth and Lewis write, 'We accept that the value of G50, perhaps, should be different for each country, or even for each ground, and there is no reason why any cricket authority may not choose the value it believes to be the most appropriate. In fact, it would be possible for the two captains to agree a value of G50 before the start of each match, taking account of all relevant factors. However, we do not believe that something that is only invoked if rain interferes with the game should impose itself on every game in this way. In any case, it should be realised that the value of G50 usually has very little effect on the revised target. If 250 were used, for instance, instead of 235, it is unlikely that the target would be more than two or three runs different.'

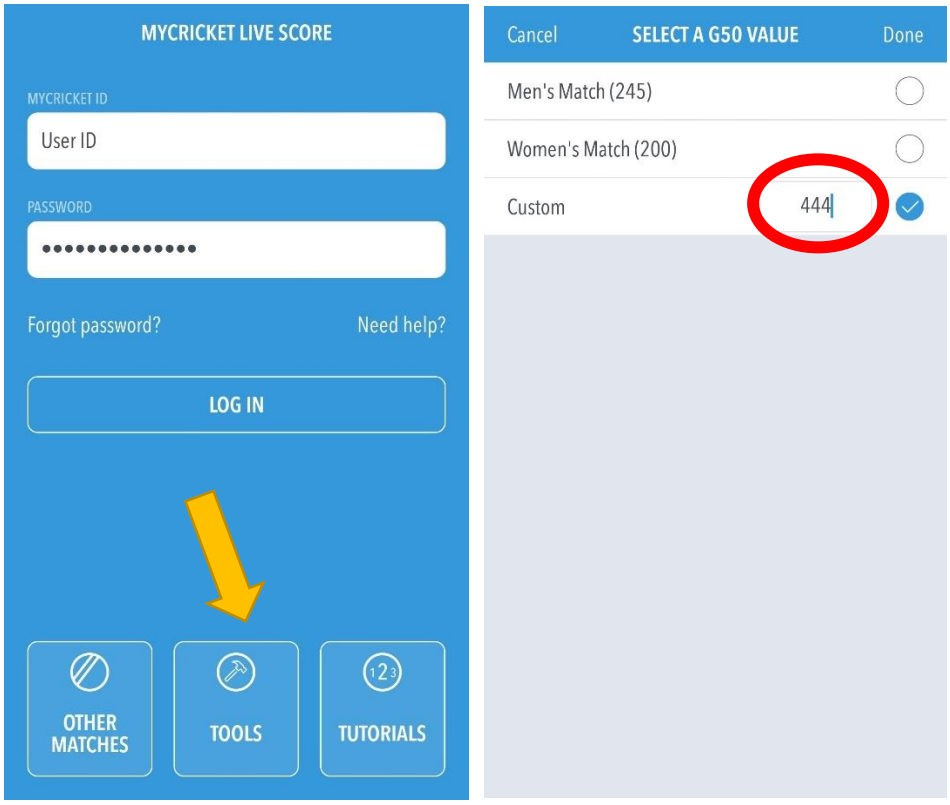
BCA 'G50' application

The following G50 calculations for BCA senior matches have been considered from analysis of the average 1st innings scores from teams completing 98% of their overs across each grade in season 2020/2021. While only the 1st XI competition play 50 over matches, all other grades can still enter a 'G50' score relevant to their overs per side matches. The following scores shall be entered relevant to each grade as follows: -

Grade	'G50' Value	
	Overs	Par Score
1st XI	50	200
2nd XI	45	195
3rd XI	40	190
4th XI	40	190
5th XI	40	190

The following lists instructions on how to enter the 'G50' score prior to entering all other relevant data.
NOTE – DLS calculations are only to be used upon completion of the first innings. Delays or suspensions in play during the first innings will see overs reduced for both teams as per BCA Rule 26.5.3.

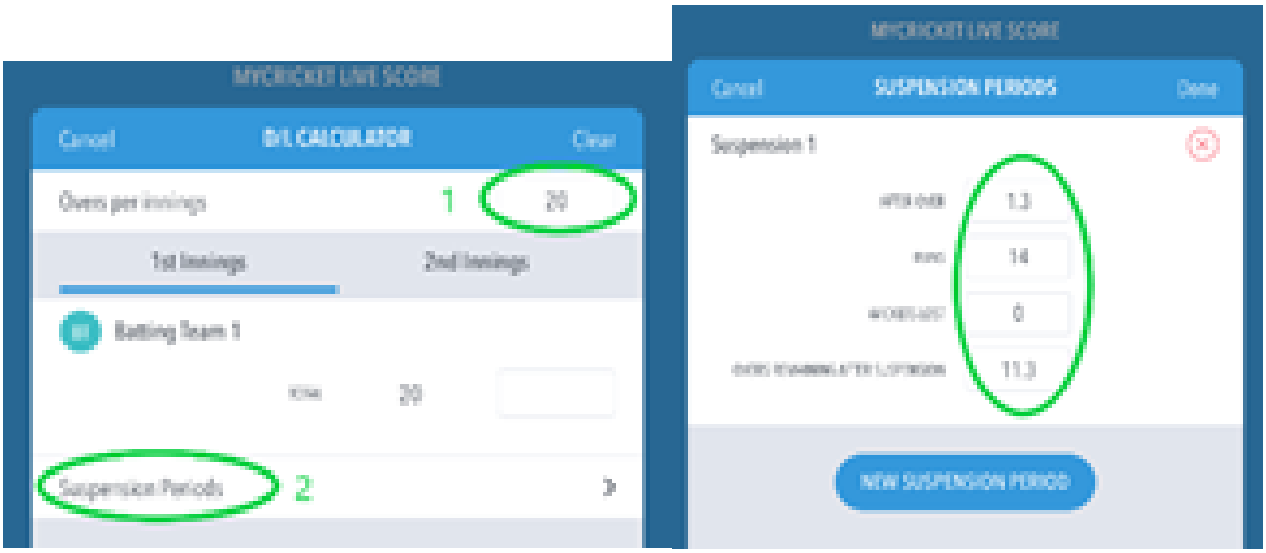
1. Click on the 'TOOLS' icon, then enter the relevant 'G50' par score



2. In the D/L Calculator, ensure that;

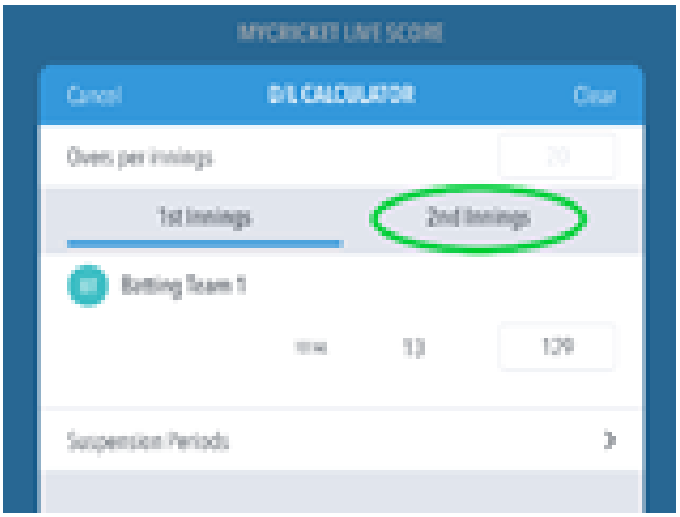
- Overs per innings **before** any rain delay is added (i.e. 50, 40 or 20 Overs) **then**;
- Select Suspension Periods and add in match data for 'After Over', 'Runs', 'Wickets Lost' and Overs Remaining after Suspension then;
- Click 'done'

As per the Example: if 1.3 overs have been bowled before play is interrupted and the match is reduced to 13 overs per side, **11.3 overs remain in the innings.**



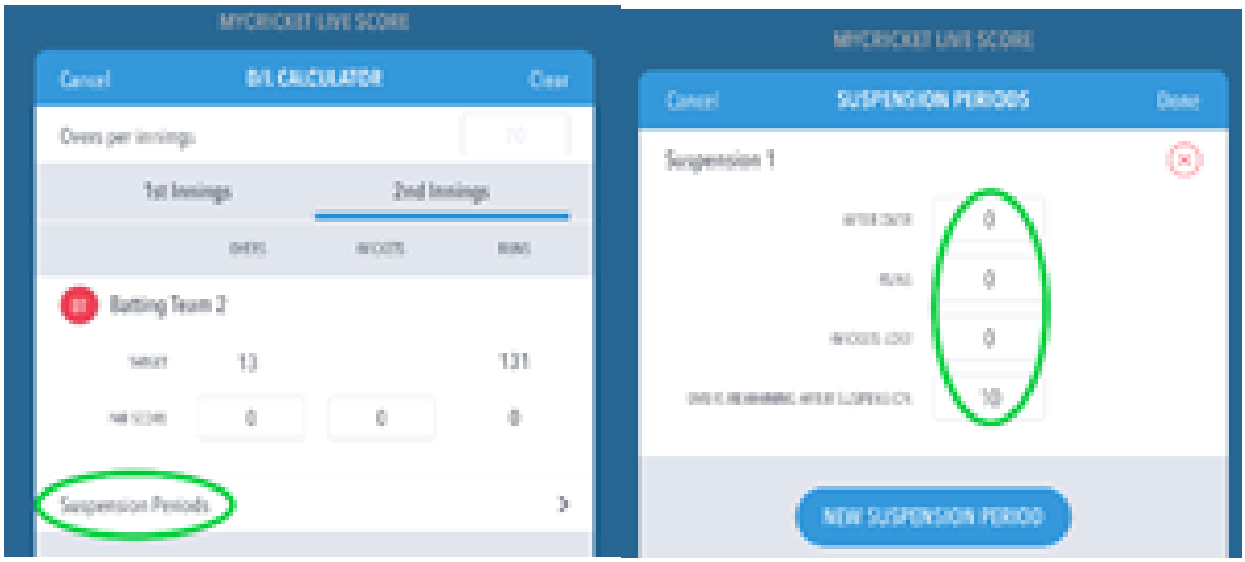
3. Once the first innings is complete;

- Add in the runs scored by the team batting first. Note that the overs per innings will change automatically when 'After Over' and 'Overs Remaining After Suspension' is entered in the previous step.
- Once completed, select '2nd Innings'



4. If there are any other rain delays/breaks during the match, add in suspension period as per Step 2.

As per the Example: During the innings break, rain has interrupted play and the match is reduced to 10 overs per side. Use the D/L calculator to add in another suspension period and amend 'Overs Remaining After Suspension' to 10 overs.



5. The target score is then automatically recalculated as per the adjusted suspension periods. As the match progresses, the PAR score will change with every ball bowled and wicket taken entered in the 'overs' and 'wickets' column (see below).

As per the Example: When the match is reduced to 10 overs, the target score is 105. As the match progresses, the PAR score updates after each ball bowled and wicket taken.

After 6.3 overs, if the team has lost 4 wickets, the PAR score would be 66.

After 6.5 overs, if the team loses another wicket (to 5 wickets lost), the PAR score would once again be adjusted to 70.