



2020 UEFA European Football Championship England v Croatia - Sunday 13 June 2021

Quantitative Analysis - Match Review

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Strictly Private and Confidential

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Notes to this Report

Key terms are defined in the Glossary

Terms highlighted in yellow in this Report are key terms related to the proprietary quantitative analysis utilised by Carteret Analytics to produce the various insights on the players. Each key term will be highlighted in yellow when it is first used in the Report, and each is defined in more detail in the **Glossary** at *Section 2* of this Report (Page 4).

Report ‘Headlines’

- The aim of this report is to analyse the performance of every player in the England v Croatia match played on Sunday 13 June 2021. It has been completed using quantitative data analysis to calculate the **Carteret Match Impact (CMI %)**, a proprietary and objective measure of each player’s contribution to the overall team performance in each individual match.
- Based on our objective data analysis, England’s **Raheem Sterling (CMI 13.3%)** was the most influential player. **Sterling** scored the winning goal, successfully converting one of his three attempted shots on target.
- **Kalvin Phillips** was widely reported in the media as England’s *Man of the Match*, but with a **CMI of 9.2%**, the data suggests **Phillips** was England’s fourth most influential player, behind **Sterling** and the defensive partnership of **Tyrone Mings (CMI 11.0%)** and **John Stones (9.6%)**. **Phillips** demonstrated an impressive passing accuracy of **94%**, second only to **Phil Foden (95%)**, indicating a high level of game control. However, **Phillips** committed the highest number of fouls of any England player (three) indicating a lack of discipline.
- Centre forward **Harry Kane (CMI 5.6%)** was ranked as England’s tenth most influential player, only ahead of **Phil Foden (CMI 5.3%)**. Insights provided by the quantitative data analysis, suggest that both players struggled to make an impact in the match. **Kane** attempted **16** passes (**63%** accuracy), the lowest of any England player, and **Foden** attempted **22** passes (**95%** accuracy). The England player who attempted the most passes was **Kieran Trippier**, who attempted **66** passes (**85%** accuracy). This is a significant contribution considering **Trippier** played as a left-back but is considered to be a more natural right-back.
- In the absence of **Harry Maguire**, **Tyrone Mings** was selected to play in central defence alongside **John Stones**. **Mings (CMI 11%)** justified his selection by making a total of four interceptions and three clearances, which was more than any other England player.
- Croatia’s captain **Luka Modric** was their most influential player with a **CMI of 11.8%**. **Modric** attempted **70** passes (**93%** accuracy) which is more than any player from either team. This indicates that **Modric** has a high level of game control.

1. Team Performance Rankings

1.1 Team Performance Rankings Table

Exhibit 1: Table outlining the objective performance levels of every England and Croatia player: England v Croatia on Sunday 13 June 2021

| England | | | | Croatia | | | |
|------------------------------|----------------------|---------------|------------|--------------------------|----------------------|---------------|------------|
| Player | Position | CMI % | CMI % Rank | Player | Position | CMI % | CMI % Rank |
| Raheem Sterling | Attacking Midfielder | 13.30% | 1 | Luka Modric | Midfielder | 11.80% | 1 |
| Tyrone Mings | Defender Centre | 11.00% | 2 | Duje Caleta-Car | Defender Centre | 8.80% | 2 |
| John Stones | Defender Centre | 9.60% | 3 | Mateo Kovacic | Midfielder | 8.70% | 3 |
| Kalvin Phillips | Midfielder | 9.20% | 4 | Sime Vrsaljko | Defender Right | 8.60% | 4 |
| Kieran Trippier | Defender Left | 8.80% | 5 | Dominik Livakovic | Goalkeeper | 8.40% | 5 |
| Declan Rice | Midfielder | 8.20% | 6 | Josko Gvardiol | Defender Left | 8.30% | 6 |
| Mason Mount | Midfielder | 7.80% | 7 | Domagoj Vida | Defender Centre | 8.00% | 7 |
| Jordan Pickford | Goalkeeper | 7.60% | 8 | Ivan Perisic | Attacking Midfielder | 7.30% | 8 |
| Kyle Walker | Defender Right | 6.60% | 9 | Marcelo Brozovic | Midfielder | 6.70% | 9 |
| Harry Kane | Centre Forward | 5.60% | 10 | Andrej Kramaric | Attacking Midfielder | 6.60% | 10 |
| Phil Foden | Attacking Midfielder | 5.30% | 11 | Ante Rebic | Centre Forward | 4.80% | 11 |
| Jude Bellingham | Midfielder | 3.10% | 12 | Mario Pasalic | Midfielder | 4.00% | 12 |
| Marcus Rashford | Attacking Midfielder | 2.20% | 13 | Josip Brekalo | Attacking Midfielder | 3.00% | 13 |
| Dominic Calvert-Lewin | Centre Forward | 1.70% | 14 | Nikola Vlasic | Midfielder | 2.90% | 14 |
| | | | | Bruno Petkovic | Centre Forward | 1.80% | 15 |

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2. Glossary

This Report contains references to key terms, highlighted in yellow when they are first used, that are defined in full in this Glossary.

Carteret Match Impact (“CMI”)

The Carteret Match Impact (CMI) is a proprietary and objective measure of each player’s contribution to the overall team performance in each individual match. It is particularly instructive in helping us understand the objective contribution each player has made, in a specific match, to the team achieving the match outcome.

Carteret Rating

This is a proprietary and objective method of determining how good a football player really is (and aims to accurately predict future performance in various scenarios set by the football club). It is based on a series of leading-edge algorithms that have been developed by Carteret Analytics. These algorithms have evolved from the quantitative analysis utilised in investment banking by its sister company, Carteret Capital, for, inter alia, asset and equities trading strategies, pricing and hedging of derivatives, portfolio optimisation and risk management. The algorithmic methodology assesses each player by identifying every match in which he/she has been involved (for which we have data) and then identifying and isolating the Key Match Events (“KMEs”) in each and every one of those matches. Then, for each and every KME, in each and every single match, we analyse that player’s contribution to each of those KMEs. This is a substantial piece of analysis, and one which produces a unique *Carteret Rating* for the player.

It is a dynamic rating, and it changes with each additional match played. Its ‘beauty’ is in its pure objectivity - ignoring characteristics such as age and nationality, and avoiding the ‘noise’ of subjective considerations that are frequently taken into account (often wrongly) in trying to determine the ability, attributes, characteristics and the ‘fit’ of a player into the club style or systems. It is an exceptionally accurate rating, with an *r-squared value* between 0.88-0.90 for Premier League players - demonstrating that it is very precise at predicting how good a player will be in the future. The dynamic nature of the Carteret Rating also enables Carteret Analytics to accurately predict the impact of the player in different clubs and different leagues.

Key Match Events (“KMEs”)

Key Match Events (“KMEs”) are events that we have identified (through constant quantitative testing) as having the greatest influence on the outcome of a football match. Our current quantitative modelling includes 42 KMEs, and in very general terms these are events that, to varying degrees, lead to a goal being scored; could lead to a goal being scored; lead to a goal being conceded; or could lead to a goal being conceded. The *Carteret Rating* - which is obviously the proprietary objective measure that permeates everything that we do - measures a player’s creation and contribution to each and every KME, in each and every match for which we have data on that player. This is a huge piece of data analysis, and is the reason why the *Carteret Rating* is so accurate and predictive.