

## APPENDIX J \ Timeline of Equipment-Related Events and Policies<sup>a</sup>

**Note:** Below we discuss the evolution and advances made in football equipment. Nevertheless, we generally do not know when, if at all, the newer equipment models were first used in the NFL.

### 1869:

- Rutgers University and Princeton University played the first game of what would become American football.<sup>1</sup>

### 1905:

- After 45 players died between 1890 and 1905, President Teddy Roosevelt summoned a meeting of college football coaches to broker changes in the rules that would make the game safer.<sup>2</sup> Among the changes were the introduction of the forward pass and the stoppage of play when the ball carrier was down.<sup>3</sup>

### 1920:

- The American Professional Football Conference begins play, changing its name to the National Football League in 1922.<sup>4</sup>

### 1920s:

- Players used a hardened leather helmet and shoulder pads made of felt wool and leather.<sup>5</sup>

### 1929:

- John T. Riddell, a high school football coach in Indiana, creates the equipment company bearing his name after inventing the removable football cleat.<sup>6</sup>
- Introduction of fibershell helmets, which would be used into the 1950s.<sup>7</sup>

### 1930s:

- Introduction of molded leather helmets, foam pads and facemasks.<sup>8</sup>

### 1940:

- Introduction of hardened leather shoulder pads, used into the 1960s.<sup>9</sup>
- Introduction of the plastic helmet.<sup>10</sup> The plastic was brittle and would tend to break upon impact.<sup>11</sup>
- Introduction of the leather chin strap to help hold the helmet in place.<sup>12</sup>

### 1943:

- Helmets become mandatory in the NFL.<sup>13</sup>

### 1950s:

- Introduction of fibershell shoulder pads, used into the 1960s, and a plastic helmet with pads on the interior.<sup>14</sup>

### 1963:

- Riddell<sup>15</sup> introduces first helmet that uses air inflation for fitting the helmet snug to the head.<sup>16</sup>

### 1969:

- National Operating Committee on Standards for Athletic Equipment (NOCSAE) is formed as a non-profit organization with the purpose of improving athletic equipment and reducing injuries through equipment standards.<sup>17</sup> NOCSAE was formed in response to more than 100 high school and college football players killed by skull fractures and acute brain bleeding.<sup>18</sup>

### 1973:

- NOSCAE introduces its first helmet testing standards. Today, “under NOCSAE’s standard, the football helmet is placed on a synthetic head model that is filled with glycerin and fitted with various measuring instruments. The head model fitted with the helmet is then dropped sixteen times onto a polymer anvil with two of the drops from a height of sixty inches onto six different locations of the helmet at varying temperatures determined by NOCSAE to simulate different potential game temperatures. After each drop a “Severity Index,” which measures the severity of the impact absorbed by the head model at the moment of impact, is determined. Helmets are graded on a pass-fail basis, and the helmets that pass are those meeting an acceptable Severity Index.”<sup>19</sup> For more information on NOCSAE, see Chapter 16: Equipment Manufacturers.

### 1970s:

- Introduction of plastic shoulder pads; facemasks expand beyond the single bar.<sup>20</sup>

<sup>a</sup> To create this timeline, we relied on a timeline included on an NFL website, see *NFL Evolution—Health & Safety*, NFL Evolution, <http://www.nflevolution.com/nfl-timeline/index.html> (last visited Aug. 7, 2015), archived at <http://perma.cc/PVP6-PA6C>, a timeline included on Riddell’s website, *See History*, Riddell, <http://www.riddell.com/history> (last visited Aug. 7, 2015), archived at <http://perma.cc/A9DF-MF5V>, and a variety of other news sources. It should not be considered an exhaustive list. More information and context is available in Chapter 16: Equipment Manufacturers.

**1979:**

- NFL mandates the use of thigh and knee pads. The rule is revoked in 1994, but reinstated in 2013.<sup>21</sup>

**1982:**

- Riddell introduces helmet with a combination of foam and liquid-filled cells used for padding.<sup>22</sup>

**1983:**

- All mandatory player equipment must be designed and made by a professional manufacturer and cannot be altered, except by the direction of the club doctor.<sup>23</sup>

**1988:**

- NFL and Riddell entered into agreement without duration whereby Riddell provides free helmets, pads and jerseys to all NFL clubs in exchange for Riddell receiving the exclusive right to display its logo on Riddell helmets used by NFL players. Competing helmet manufacturers could not display its logo on its helmets used by NFL players. Schutt Athletic, a Riddell competitor, lost its antitrust challenge to the agreement.<sup>24</sup>

**1992:**

- Riddell introduces the Variable Size Range (VSR) series, designed with additional inflation points for a more customized fit.<sup>25</sup> As a result of its agreement with the NFL, VSR helmets would come to be used by more than 60 percent of NFL players.<sup>26</sup>

**1994:**

- NFL removes rule requiring players to wear thigh and knee pads. Rule reinstated in 2013.<sup>27</sup>

**2001:**

- Minnesota Vikings Pro Bowl offensive tackle Korey Stringer died of complications from heat stroke after collapsing during training camp.<sup>28</sup> Stringer's family later sued the Vikings, Vikings coaches and affiliated doctors, the NFL, and Riddell. Stringer's family reached undisclosed settlements with one of the doctors involved,<sup>29</sup> the NFL<sup>30</sup> and Riddell.<sup>31</sup>

**2002:**

- Riddell introduces the Riddell Revolution helmet, designed with the intent of reducing concussion risk.<sup>32</sup>
- Riddell also funds research project led by two University of Pittsburgh Medical Center professors and a Riddell employee designed to compare the concussion rates and recovery times for athletes wearing Riddell's Revolution helmet compared to athletes wearing older model helmets manufactured by both Riddell and its competitors.<sup>33</sup> After tracking 2,141 Pennsylvania high school football players, the authors found 5.3 percent of players using Revolution helmets suffered concussions as compared to 7.6 percent of players using other helmets.<sup>34</sup> The authors described the difference as "statistically significant" and said the results "demonstrated a trend toward a lowered incidence of concussion" but that the

"limited sample size precludes a more conclusive statement of findings at this time."<sup>35</sup> The study also highlighted that there was a 31-percent decreased relative risk for athletes wearing the Revolution helmet, comparing the 5.3-percent and 7.6-percent concussion rates.<sup>36</sup> Riddell seized on that last statistic and began to advertise that the Revolution helmet reduced the risk of concussion by 31 percent.<sup>37</sup> Riddell's competitor, Schutt Sports, later lost a lawsuit alleging Riddell's advertisements were false and based on an unreliable study.<sup>38</sup> The study has nonetheless been controversial, as discussed in Chapter 16: Equipment Manufacturers.

**2008:**

- Introduction of shoulder pads which allow cold air to be pumped through them while on the sidelines.<sup>39</sup>

**2010:**

- NFL clubs test new girdles with built-in padding at the hip, thigh and tailbone during training camp and preseason with hope of encouraging more players to wear leg pads.<sup>40</sup>

**2011:**

- Chicago Bears become the first NFL club to adopt Riddell RipKord shoulder pads. According to Riddell, "[b]y pulling a single cord, shoulder pads outfitted with RipKord can be quickly and easily removed by two trained professionals without elevating a player," providing "more efficient and immediate access to an athlete's chest and airway in the event of a suspected head, spine or chest injury."<sup>41</sup>
- NFL begins relationship with the United States military aimed at preventing and treating head injuries.<sup>42</sup>
- NFL players begin to put Kevlar in their helmets, generating controversy.<sup>43</sup>
- Riddell introduces 360 Helmet, designed to disperse the energy of frontal impacts as a result of examining over 1.4 million impacts collected through Riddell's impact-tracking technology.<sup>44</sup>
- The first lawsuits against the NFL and Riddell concerning concussions are filed. Hundreds followed.<sup>45</sup>

**2012:**

- All cases concerning concussions are consolidated in the United States District Court for the Eastern District of Pennsylvania *In re National Football League Players' Concussion Injury Litigation*, 12-md-23-23 (E.D.Pa.). Claims generally allege that NFL knew of risk of concussions and intentionally and fraudulently concealed those risks from NFL players, and that Riddell made defective helmets while failing to inform players of the risks of using their helmets.<sup>46</sup>

**2013:**

- NFL sends memo to clubs reminding them that players must have the opportunity to see and try "a wide range of helmets from leading manufacturers," at no cost to the player. NFL locker

rooms include large posters with 18 helmets from six different brands including their ratings according to Virginia Tech's "STAR" evaluation system.<sup>47</sup>

- NFL institutes policy whereby teams playing games in "throw-back" uniforms must still use their current, regular helmets.<sup>48</sup>
- NFL reinstates rule requiring players to wear thigh and knee pads. The NFL estimated that, prior to reinstating the rule, 70 percent of players were not wearing thigh and knee pads.<sup>49</sup> Nevertheless, even with the existence of the rule, players have a long-standing practice of modifying and minimizing the required pads in favor of speed and mobility.<sup>50</sup>
- NFL's indefinite agreement with Riddell expired as a result of NFL negotiations. NFL states that there will no longer be an official helmet of the NFL.<sup>51</sup>
- NFL announces a \$40 million research and development program with General Electric and Under Armour to improve concussion diagnosis and treatment, including \$10 million incentive programs aimed at discovering new and improved technology.<sup>52</sup>

#### 2014:

- NFL and Riddell enter into five-year agreement by which Riddell would be the exclusive licensee for collectible helmets.<sup>53</sup>
- Riddell introduces SpeedFlex helmet, which includes a five-sided indentation on the crown of the helmet.<sup>54</sup> The helmets are adopted by several major college football programs.

#### 2015:

- United States District Court for the Eastern District of Pennsylvania approves settlement between NFL and plaintiffs *In re National Football League Players' Concussion Injury Litigation*, providing for compensation to qualifying former NFL players depending on the severity of their medical conditions. The settlement does not limit the total amount the NFL might eventually have to pay to satisfy its obligations under the settlement.<sup>55</sup> The lawsuit was not settled with Riddell.

#### 2016:

- United States Court of Appeals for the Third Circuit affirms the District Court's approval of the settlement between NFL and plaintiffs *In re National Football League Players' Concussion Injury Litigation*. Claims against Riddell remain in litigation.

## Endnotes

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