

Supplementary Table 2: Predicted average horse speed by year at 6, 10 and 17 furlongs in each subset. Predictions are made based on parameter estimates from Model 2 with year fitted as a multilevel factor.

Dataset	Year	Distance (furlongs)	Prediction (3d.p) ± SE (3d.p)	
2.1) Winning times of elite races 1850-2012	1850	6	16.295 ± 0.106	
	1851	6	15.950 ± 0.109	
	1853	6	15.939 ± 0.109	
		1855	6	16.055 ± 0.105
		1860	6	16.039 ± 0.109
		1861	6	16.365 ± 0.104
		1876	6	15.943 ± 0.138
		1880	6	16.485 ± 0.133
		1885	6	16.196 ± 0.111
		1895	6	16.822 ± 0.121
		1900	6	17.140 ± 0.105
		1903	6	16.904 ± 0.091
		1910	6	17.328 ± 0.091
		1919	6	17.429 ± 0.083
		1920	6	17.247 ± 0.116
		1930	6	17.443 ± 0.073
		1933	6	17.628 ± 0.074
		1935	6	17.539 ± 0.072
		1938	6	17.672 ± 0.074
		1940	6	17.305 ± 0.137
		1946	6	17.309 ± 0.073
		1947	6	17.630 ± 0.071
		1948	6	17.596 ± 0.070
		1949	6	17.663 ± 0.070
		1950	6	17.447 ± 0.069
		1951	6	17.551 ± 0.069
		1952	6	17.422 ± 0.071
		1953	6	17.666 ± 0.070
		1954	6	17.424 ± 0.067
		1955	6	17.520 ± 0.071
		1956	6	17.582 ± 0.067
		1959	6	17.589 ± 0.071
		1960	6	17.755 ± 0.068
	1962	6	17.701 ± 0.066	
	1963	6	17.651 ± 0.067	
	1964	6	17.710 ± 0.073	
	1966	6	17.738 ± 0.066	
	1967	6	17.689 ± 0.065	
	1969	6	17.545 ± 0.065	
	1970	6	17.774 ± 0.066	
	1971	6	17.832 ± 0.066	
	1975	6	17.836 ± 0.064	

	1980	6	17.966 ± 0.064
	1985	6	18.059 ± 0.064
	1990	6	18.253 ± 0.063
	1994	6	18.227 ± 0.061
	1996	6	18.290 ± 0.055
	1997	6	18.242 ± 0.055
	1998	6	18.237 ± 0.055
	1999	6	18.322 ± 0.056
	2000	6	18.200 ± 0.055
	2001	6	18.194 ± 0.054
	2002	6	18.305 ± 0.053
	2003	6	18.282 ± 0.051
	2004	6	18.261 ± 0.051
	2005	6	18.367 ± 0.050
	2006	6	18.376 ± 0.049
	2007	6	18.381 ± 0.051
	2008	6	18.346 ± 0.051
	2009	6	18.372 ± 0.050
	2010	6	18.427 ± 0.050
	2011	6	18.376 ± 0.050
	2012	6	18.408 ± 0.051
	1850	10	15.920 ± 0.105
	1851	10	15.573 ± 0.107
	1853	10	15.557 ± 0.107
	1855	10	15.668 ± 0.103
	1860	10	15.639 ± 0.109
	1861	10	15.962 ± 0.102
	1876	10	15.500 ± 0.139
	1880	10	16.031 ± 0.130
	1885	10	15.729 ± 0.110
	1895	10	16.328 ± 0.119
	1900	10	16.633 ± 0.104
	1903	10	16.390 ± 0.090
	1910	10	16.795 ± 0.090
	1919	10	16.872 ± 0.082
	1920	10	16.687 ± 0.116
	1930	10	16.857 ± 0.073
	1933	10	17.034 ± 0.074
	1935	10	16.940 ± 0.072
	1938	10	17.065 ± 0.074
	1940	10	16.693 ± 0.136
	1946	10	16.681 ± 0.073
	1947	10	16.999 ± 0.071
	1948	10	16.963 ± 0.070
	1949	10	17.027 ± 0.070
	1950	10	16.808 ± 0.069
	1951	10	16.910 ± 0.069
	1952	10	16.778 ± 0.071
	1953	10	17.020 ± 0.070
	1954	10	16.775 ± 0.067

	1955	10	16.868 ± 0.070
	1956	10	16.927 ± 0.067
	1959	10	16.926 ± 0.071
	1960	10	17.090 ± 0.067
	1962	10	17.030 ± 0.066
	1963	10	16.978 ± 0.067
	1964	10	17.035 ± 0.073
	1966	10	17.057 ± 0.066
	1967	10	17.006 ± 0.065
	1969	10	16.856 ± 0.065
	1970	10	17.083 ± 0.066
	1971	10	17.138 ± 0.066
	1975	10	17.131 ± 0.064
	1980	10	17.248 ± 0.064
	1985	10	17.328 ± 0.064
	1990	10	17.509 ± 0.063
	1994	10	17.473 ± 0.061
	1996	10	17.530 ± 0.055
	1997	10	17.479 ± 0.055
	1998	10	17.471 ± 0.055
	1999	10	17.554 ± 0.055
	2000	10	17.430 ± 0.054
	2001	10	17.421 ± 0.053
	2002	10	17.529 ± 0.052
	2003	10	17.504 ± 0.051
	2004	10	17.480 ± 0.050
	2005	10	17.583 ± 0.049
	2006	10	17.590 ± 0.048
	2007	10	17.591 ± 0.050
	2008	10	17.554 ± 0.050
	2009	10	17.578 ± 0.049
	2010	10	17.630 ± 0.050
	2011	10	17.576 ± 0.049
	2012	10	17.605 ± 0.050
	1850	17	15.415 ± 0.109
	1851	17	15.066 ± 0.111
	1853	17	15.048 ± 0.110
	1855	17	15.157 ± 0.106
	1860	17	15.122 ± 0.110
	1861	17	15.443 ± 0.105
	1876	17	14.964 ± 0.139
	1880	17	15.491 ± 0.131
	1885	17	15.183 ± 0.113
	1895	17	15.770 ± 0.121
	1900	17	16.069 ± 0.106
	1903	17	15.822 ± 0.092
	1910	17	16.218 ± 0.092
	1919	17	16.285 ± 0.083
	1920	17	16.099 ± 0.117
	1930	17	16.258 ± 0.074

	1933	17	16.431 ± 0.075
	1935	17	16.334 ± 0.073
	1938	17	16.456 ± 0.075
	1940	17	16.081 ± 0.136
	1946	17	16.062 ± 0.073
	1947	17	16.379 ± 0.072
	1948	17	16.342 ± 0.071
	1949	17	16.404 ± 0.070
	1950	17	16.185 ± 0.069
	1951	17	16.285 ± 0.069
	1952	17	16.152 ± 0.071
	1953	17	16.392 ± 0.070
	1954	17	16.146 ± 0.067
	1955	17	16.239 ± 0.071
	1956	17	16.296 ± 0.067
	1959	17	16.292 ± 0.071
	1960	17	16.455 ± 0.068
	1962	17	16.392 ± 0.066
	1963	17	16.339 ± 0.067
	1964	17	16.394 ± 0.073
	1966	17	16.414 ± 0.066
	1967	17	16.362 ± 0.065
	1969	17	16.210 ± 0.065
	1970	17	16.435 ± 0.066
	1971	17	16.489 ± 0.066
	1975	17	16.478 ± 0.064
	1980	17	16.589 ± 0.064
	1985	17	16.663 ± 0.064
	1990	17	16.838 ± 0.063
	1994	17	16.797 ± 0.062
	1996	17	16.852 ± 0.056
	1997	17	16.800 ± 0.056
	1998	17	16.791 ± 0.056
	1999	17	16.873 ± 0.057
	2000	17	16.747 ± 0.056
	2001	17	16.736 ± 0.055
	2002	17	16.844 ± 0.054
	2003	17	16.817 ± 0.053
	2004	17	16.792 ± 0.053
	2005	17	16.894 ± 0.052
	2006	17	16.900 ± 0.051
	2007	17	16.900 ± 0.053
	2008	17	16.862 ± 0.053
	2009	17	16.884 ± 0.053
	2010	17	16.935 ± 0.053
	2011	17	16.880 ± 0.052
	2012	17	16.908 ± 0.054
2.2) Winning times of elite races 1997-2012	1997	6	18.102 ± 0.080
	1998	6	18.114 ± 0.080
	1999	6	18.205 ± 0.079

	2000	6	18.091 ± 0.079
	2001	6	18.102 ± 0.077
	2002	6	18.228 ± 0.076
	2003	6	18.214 ± 0.079
	2004	6	18.187 ± 0.077
	2005	6	18.315 ± 0.077
	2006	6	18.322 ± 0.077
	2007	6	18.331 ± 0.077
	2008	6	18.297 ± 0.077
	2009	6	18.335 ± 0.077
	2010	6	18.403 ± 0.077
	2011	6	18.361 ± 0.077
	2012	6	18.400 ± 0.078
	1997	10	17.448 ± 0.079
	1998	10	17.443 ± 0.079
	1999	10	17.518 ± 0.078
	2000	10	17.388 ± 0.078
	2001	10	17.382 ± 0.077
	2002	10	17.492 ± 0.076
	2003	10	17.461 ± 0.078
	2004	10	17.418 ± 0.076
	2005	10	17.530 ± 0.077
	2006	10	17.521 ± 0.077
	2007	10	17.513 ± 0.077
	2008	10	17.463 ± 0.077
	2009	10	17.485 ± 0.077
	2010	10	17.536 ± 0.077
	2011	10	17.478 ± 0.077
	2012	10	17.501 ± 0.078
	1997	17	16.850 ± 0.095
	1998	17	16.840 ± 0.092
	1999	17	16.910 ± 0.089
	2000	17	16.775 ± 0.087
	2001	17	16.764 ± 0.084
	2002	17	16.869 ± 0.081
	2003	17	16.833 ± 0.082
	2004	17	16.785 ± 0.079
	2005	17	16.891 ± 0.079
	2006	17	16.877 ± 0.078
	2007	17	16.864 ± 0.079
	2008	17	16.810 ± 0.080
	2009	17	16.826 ± 0.080
	2010	17	16.873 ± 0.081
	2011	17	16.810 ± 0.083
	2012	17	16.827 ± 0.085
2.3) Times of all runners in elite races 1997-2012	1997	6	17.838 ± 0.05
	1998	6	17.861 ± 0.049
	1999	6	17.919 ± 0.049
	2000	6	17.837 ± 0.049
	2001	6	17.847 ± 0.049

	2002	6	17.980 ± 0.049
	2003	6	17.943 ± 0.049
	2004	6	17.929 ± 0.049
	2005	6	18.056 ± 0.049
	2006	6	18.048 ± 0.049
	2007	6	18.081 ± 0.048
	2008	6	18.080 ± 0.049
	2009	6	18.090 ± 0.048
	2010	6	18.157 ± 0.048
	2011	6	18.112 ± 0.049
	2012	6	18.170 ± 0.049
	1997	10	17.234 ± 0.049
	1998	10	17.239 ± 0.049
	1999	10	17.279 ± 0.049
	2000	10	17.178 ± 0.049
	2001	10	17.169 ± 0.049
	2002	10	17.284 ± 0.049
	2003	10	17.229 ± 0.049
	2004	10	17.197 ± 0.048
	2005	10	17.306 ± 0.048
	2006	10	17.279 ± 0.048
	2007	10	17.294 ± 0.048
	2008	10	17.274 ± 0.048
	2009	10	17.266 ± 0.048
	2010	10	17.315 ± 0.048
	2011	10	17.252 ± 0.048
	2012	10	17.291 ± 0.049
	1997	17	16.635 ± 0.052
	1998	17	16.639 ± 0.051
	1999	17	16.677 ± 0.051
	2000	17	16.576 ± 0.050
	2001	17	16.565 ± 0.050
	2002	17	16.679 ± 0.050
	2003	17	16.623 ± 0.049
	2004	17	16.590 ± 0.049
	2005	17	16.697 ± 0.049
	2006	17	16.669 ± 0.049
	2007	17	16.683 ± 0.049
	2008	17	16.662 ± 0.049
	2009	17	16.653 ± 0.049
	2010	17	16.700 ± 0.049
	2011	17	16.636 ± 0.050
	2012	17	16.675 ± 0.050
2.4) Times of winners in all races 1997-2012	1997	6	17.845 ± 0.032
	1998	6	17.849 ± 0.032
	1999	6	17.935 ± 0.032
	2000	6	17.911 ± 0.032
	2001	6	17.877 ± 0.032
	2002	6	17.910 ± 0.032
	2003	6	17.957 ± 0.032

	2004	6	17.913 ± 0.032
	2005	6	17.970 ± 0.032
	2006	6	18.017 ± 0.032
	2007	6	17.997 ± 0.032
	2008	6	17.973 ± 0.032
	2009	6	18.029 ± 0.032
	2010	6	18.020 ± 0.032
	2011	6	18.028 ± 0.032
	2012	6	18.010 ± 0.032
	1997	10	16.993 ± 0.032
	1998	10	16.992 ± 0.032
	1999	10	17.074 ± 0.032
	2000	10	17.045 ± 0.032
	2001	10	17.006 ± 0.032
	2002	10	17.035 ± 0.032
	2003	10	17.077 ± 0.032
	2004	10	17.028 ± 0.032
	2005	10	17.081 ± 0.032
	2006	10	17.123 ± 0.032
	2007	10	17.098 ± 0.032
	2008	10	17.070 ± 0.032
	2009	10	17.122 ± 0.032
	2010	10	17.107 ± 0.032
	2011	10	17.111 ± 0.032
	2012	10	17.088 ± 0.032
	1997	17	16.432 ± 0.034
	1998	17	16.429 ± 0.033
	1999	17	16.508 ± 0.033
	2000	17	16.476 ± 0.033
	2001	17	16.434 ± 0.033
	2002	17	16.461 ± 0.032
	2003	17	16.500 ± 0.032
	2004	17	16.449 ± 0.032
	2005	17	16.499 ± 0.032
	2006	17	16.538 ± 0.032
	2007	17	16.510 ± 0.032
	2008	17	16.480 ± 0.032
	2009	17	16.528 ± 0.033
	2010	17	16.511 ± 0.033
	2011	17	16.512 ± 0.033
	2012	17	16.487 ± 0.033
2.5) Times of all runners in all races 1997-2012	1997	6	17.200 ± 0.025
	1998	6	17.213 ± 0.025
	1999	6	17.298 ± 0.025
	2000	6	17.287 ± 0.025
	2001	6	17.226 ± 0.025
	2002	6	17.277 ± 0.025
	2003	6	17.320 ± 0.025
	2004	6	17.299 ± 0.025
	2005	6	17.348 ± 0.025

	2006	6	17.392 ± 0.025
	2007	6	17.390 ± 0.025
	2008	6	17.374 ± 0.025
	2009	6	17.426 ± 0.025
	2010	6	17.425 ± 0.025
	2011	6	17.444 ± 0.025
	2012	6	17.432 ± 0.025
	1997	10	16.433 ± 0.025
	1998	10	16.441 ± 0.025
	1999	10	16.521 ± 0.025
	2000	10	16.506 ± 0.025
	2001	10	16.440 ± 0.025
	2002	10	16.486 ± 0.025
	2003	10	16.524 ± 0.025
	2004	10	16.498 ± 0.025
	2005	10	16.543 ± 0.025
	2006	10	16.582 ± 0.025
	2007	10	16.575 ± 0.025
	2008	10	16.555 ± 0.025
	2009	10	16.601 ± 0.025
	2010	10	16.596 ± 0.025
	2011	10	16.610 ± 0.025
	2012	10	16.594 ± 0.025
	1997	17	15.952 ± 0.026
	1998	17	15.954 ± 0.025
	1999	17	16.029 ± 0.025
	2000	17	16.009 ± 0.025
	2001	17	15.937 ± 0.025
	2002	17	15.978 ± 0.025
	2003	17	16.012 ± 0.025
	2004	17	15.981 ± 0.025
	2005	17	16.020 ± 0.025
	2006	17	16.054 ± 0.025
	2007	17	16.042 ± 0.025
	2008	17	16.016 ± 0.025
	2009	17	16.058 ± 0.025
	2010	17	16.047 ± 0.025
	2011	17	16.056 ± 0.025
	2012	17	16.034 ± 0.025