

Supporting Information

Data of the individual flights

Behavioral traits of individual homing pigeons, *Columba livia f. domestica*, in their homing flights

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Data of the individual flights

Duration of the Initial Phase (s)

| 2009 | WAL | GH | KST | MT | HOF | SB | Median |
|-------------|------|-----|-----|-----|-----|-----|--------|
| 06-213 | 150 | 615 | 45 | 555 | 600 | 210 | 383 |
| 06-214 | 405 | 60 | 105 | 135 | 210 | 150 | 143 |
| 06-232 | 240 | 45 | 540 | 120 | 240 | 465 | 240 |
| 06-233 | 225 | 390 | 255 | 135 | 135 | 90 | 180 |
| 06-235 | 1410 | 120 | 150 | 585 | 180 | 405 | 293 |
| 06-243 | 180 | 120 | 75 | 60 | 105 | 135 | 113 |
| 06-249 | 60 | 120 | 165 | 60 | 255 | 45 | 90 |
| 06-254 | 150 | 285 | 150 | 60 | 870 | 45 | 150 |
| Median | 203 | 120 | 150 | 128 | 225 | 143 | |

| 2010 | KB | RB | NA | BGR | Median |
|-------------|------|-----|-----|-----|--------|
| 07-357 | 825 | 255 | 270 | 180 | 263 |
| 07-387 | 345 | 105 | 195 | 240 | 218 |
| 07-389 | 570 | 210 | 735 | 360 | 465 |
| 07-393 | 405 | 150 | 360 | 375 | 368 |
| 07-402 | 1515 | 390 | 675 | 240 | 533 |
| 07-405 | 45 | 165 | 405 | 255 | 210 |
| 08-755 | 75 | 630 | 585 | 105 | 345 |
| 08-779 | 60 | 60 | 90 | 150 | 75 |
| 08-797 | 45 | 90 | 120 | 315 | 105 |
| Median | 345 | 165 | 360 | 240 | |

Flying speed during the Initial Phase (km/h)

| 2009 | WAL | GH | KST | MT | HOF | SB | Median |
|-------------|-----|----|-----|----|-----|----|--------|
| 06-213 | 59 | 56 | 53 | 58 | 56 | 54 | 56 |
| 06-214 | 52 | 46 | 43 | 51 | 50 | 49 | 50 |
| 06-232 | 51 | 43 | 52 | 48 | 51 | 52 | 51 |
| 06-233 | 62 | 54 | 60 | 56 | 58 | 51 | 57 |
| 06-235 | 58 | 56 | 60 | 60 | 59 | 61 | 60 |
| 06-243 | 60 | 55 | 52 | 56 | 56 | 55 | 56 |
| 06-249 | 48 | 49 | 56 | 48 | 55 | 48 | 49 |
| 06-254 | 52 | 51 | 51 | 48 | 53 | 49 | 51 |
| Median | 55 | 53 | 53 | 54 | 56 | 52 | |

| 2010 | KB | RB | NA | BGR | Median |
|-------------|----|----|----|-----|--------|
| 07-357 | 51 | 54 | 53 | 52 | 53 |
| 07-387 | 62 | 47 | 52 | 56 | 54 |
| 07-389 | 61 | 52 | 54 | 56 | 55 |
| 07-393 | 45 | 43 | 51 | 45 | 45 |
| 07-402 | 54 | 57 | 61 | 58 | 58 |
| 07-405 | 45 | 50 | 54 | 49 | 50 |
| 08-755 | 57 | 64 | 63 | 53 | 60 |
| 08-779 | 54 | 49 | 48 | 51 | 50 |
| 08-797 | 50 | 57 | 60 | 54 | 56 |
| Median | 54 | 52 | 54 | 53 | |

Steadiness during the Initial Phase

| 2009 | WAL | GH | KST | MT | HOF2 | SB | Median |
|-------------|------|------|------|------|------|------|--------|
| 06-213 | 0.09 | 0.13 | 0.20 | 0.07 | 0.26 | 0.49 | 0.17 |
| 06-214 | 0.18 | 0.25 | 0.14 | 0.16 | 0.39 | 0.46 | 0.22 |
| 06-232 | 0.25 | 0.15 | 0.09 | 0.40 | 0.25 | 0.18 | 0.22 |
| 06-233 | 0.16 | 0.21 | 0.39 | 0.22 | 0.11 | 0.42 | 0.22 |
| 06-235 | 0.10 | 0.18 | 0.32 | 0.19 | 0.36 | 0.34 | 0.26 |
| 06-243 | 0.38 | 0.29 | 0.59 | 0.67 | 0.34 | 0.27 | 0.36 |
| 06-249 | 0.13 | 0.13 | 0.41 | 0.23 | 0.12 | 0.61 | 0.18 |
| 06-254 | 0.43 | 0.24 | 0.10 | 0.25 | 0.38 | 0.30 | 0.28 |
| Median | 0.17 | 0.20 | 0.26 | 0.23 | 0.30 | 0.38 | |

Steadiness during the Initial Phase (continued)

| 2010 | KB | RB | NA | BGR | Median |
|-------------|------|------|------|------|--------|
| 07-357 | 0.14 | 0.24 | 0.08 | 0.18 | 0.16 |
| 07-387 | 0.20 | 0.38 | 0.27 | 0.09 | 0.24 |
| 07-389 | 0.07 | 0.08 | 0.16 | 0.08 | 0.08 |
| 07-393 | 0.16 | 0.48 | 0.08 | 0.09 | 0.13 |
| 07-402 | 0.14 | 0.24 | 0.27 | 0.06 | 0.19 |
| 07-405 | 0.65 | 0.12 | 0.13 | 0.22 | 0.18 |
| 08-755 | 0.28 | 0.50 | 0.04 | 0.45 | 0.37 |
| 08-779 | 0.08 | 0.22 | 0.24 | 0.22 | 0.22 |
| 08-797 | 0.24 | 0.28 | 0.28 | 0.12 | 0.26 |
| Median | 0.16 | 0.24 | 0.16 | 0.12 | |

Flying speed during the Homing Phase (km/h)

| 2009 | WAL | GH | KST | MT | HOF | SB | Median |
|-------------|-----|----|-----|----|-----|----|--------|
| 06-213 | 57 | 57 | 60 | 68 | 63 | 55 | 59 |
| 06-214 | 48 | 51 | 60 | 69 | 59 | 55 | 57 |
| 06-232 | 52 | 53 | 56 | 64 | 57 | 60 | 57 |
| 06-233 | 59 | 55 | 62 | 64 | 57 | 62 | 61 |
| 06-235 | 60 | 54 | 65 | 65 | 64 | 62 | 63 |
| 06-243 | 52 | 54 | 62 | 70 | 58 | 56 | 57 |
| 06-249 | 55 | 54 | 57 | 59 | 63 | 62 | 58 |
| 06-254 | 53 | 54 | 55 | 61 | 64 | 55 | 55 |
| Median | 55 | 54 | 60 | 65 | 61 | 58 | |

| 2010 | KB | RB | NA | BGR | Median |
|-------------|----|----|----|-----|--------|
| 07-357 | 64 | 64 | 62 | 63 | 64 |
| 07-387 | 65 | 63 | 65 | 70 | 65 |
| 07-389 | 67 | 66 | 69 | 62 | 67 |
| 07-393 | 70 | 59 | 55 | 68 | 64 |
| 07-402 | 67 | 67 | 68 | 68 | 68 |
| 07-405 | 62 | 61 | 69 | 64 | 63 |
| 08-755 | 65 | 66 | 72 | 72 | 69 |
| 08-779 | 69 | 64 | 67 | 67 | 67 |
| 08-797 | 68 | 69 | 71 | 71 | 70 |
| Median | 67 | 64 | 68 | 68 | |

Steadiness during the Homing Phase

| 2009 | WAL | GH | KST | MT | HOF | SB | Median |
|--------|------|------|------|------|------|------|--------|
| 06-213 | 0.63 | 0.85 | 0.51 | 0.84 | 0.70 | 0.93 | 0.77 |
| 06-214 | 0.64 | 0.78 | 0.71 | 0.88 | 0.70 | 0.86 | 0.75 |
| 06-232 | 0.71 | 0.67 | 0.67 | 0.85 | 0.40 | 0.88 | 0.69 |
| 06-233 | 0.53 | 0.88 | 0.90 | 0.80 | 0.44 | 0.77 | 0.79 |
| 06-235 | 0.73 | 0.52 | 0.60 | 0.61 | 0.48 | 0.90 | 0.61 |
| 06-243 | 0.55 | 0.81 | 0.84 | 0.90 | 0.36 | 0.80 | 0.81 |
| 06-249 | 0.69 | 0.71 | 0.68 | 0.48 | 0.62 | 0.94 | 0.69 |
| 06-254 | 0.86 | 0.86 | 0.69 | 0.65 | 0.87 | 0.88 | 0.86 |
| Median | 0.67 | 0.80 | 0.69 | 0.82 | 0.55 | 0.88 | |

| 2010 | KB | RB | NA | BGR | Median |
|--------|------|------|------|------|--------|
| 07-357 | 0.84 | 0.84 | 0.46 | 0.86 | 0.84 |
| 07-387 | 0.39 | 0.60 | 0.55 | 0.72 | 0.58 |
| 07-389 | 0.62 | 0.75 | 0.90 | 0.71 | 0.73 |
| 07-393 | 0.87 | 0.94 | 0.50 | 0.88 | 0.875 |
| 07-402 | 0.70 | 0.74 | 0.76 | 0.79 | 0.75 |
| 07-405 | 0.84 | 0.64 | 0.49 | 0.55 | 0.60 |
| 08-755 | 0.77 | 0.67 | 0.61 | 0.85 | 0.72 |
| 08-779 | 0.89 | 0.80 | 0.74 | 0.85 | 0.825 |
| 08-797 | 0.69 | 0.91 | 0.61 | 0.78 | 0.74 |
| Median | 0.77 | 0.75 | 0.61 | 0.79 | |

Efficiency during the Homing Phase

| 2009 | WAL | GH | KST1 | MT | HOF | SB | Median |
|--------|------|------|------|------|------|------|--------|
| 06-213 | 0.57 | 0.85 | 0.47 | 0.86 | 0.75 | 0.92 | 0.80 |
| 06-214 | 0.60 | 0.77 | 0.73 | 0.89 | 0.74 | 0.86 | 0.76 |
| 06-232 | 0.66 | 0.64 | 0.68 | 0.86 | 0.46 | 0.88 | 0.67 |
| 06-233 | 0.49 | 0.88 | 0.90 | 0.80 | 0.46 | 0.77 | 0.79 |
| 06-235 | 0.72 | 0.47 | 0.60 | 0.65 | 0.52 | 0.90 | 0.63 |
| 06-243 | 0.51 | 0.81 | 0.85 | 0.90 | 0.41 | 0.79 | 0.80 |
| 06-249 | 0.65 | 0.67 | 0.68 | 0.52 | 0.65 | 0.94 | 0.66 |
| 06-254 | 0.86 | 0.86 | 0.70 | 0.69 | 0.88 | 0.88 | 0.86 |
| Median | 0.63 | 0.79 | 0.69 | 0.83 | 0.59 | 0.88 | |

Efficiency during the Homing Phase (continued)

| 2010 | KB | RB | NA | BGR | Median |
|-------------|------|------|------|------|--------|
| 07-357 | 0.85 | 0.85 | 0.48 | 0.86 | 0.85 |
| 07-387 | 0.40 | 0.62 | 0.56 | 0.74 | 0.59 |
| 07-389 | 0.63 | 0.77 | 0.91 | 0.73 | 0.75 |
| 07-393 | 0.89 | 0.94 | 0.52 | 0.89 | 0.89 |
| 07-402 | 0.72 | 0.76 | 0.76 | 0.80 | 0.76 |
| 07-405 | 0.85 | 0.66 | 0.56 | 0.61 | 0.64 |
| 08-755 | 0.78 | 0.69 | 0.61 | 0.86 | 0.74 |
| 08-779 | 0.90 | 0.84 | 0.74 | 0.86 | 0.85 |
| 08-797 | 0.72 | 0.92 | 0.61 | 0.79 | 0.76 |
| Median | 0.78 | 0.77 | 0.61 | 0.80 | |

Correlation dimension

| 2009 | WAL | GH | KST | MT | HOF | SB | Median |
|-------------|------|------|------|------|------|------|--------|
| 06-213 | 4.30 | 2.78 | 3.76 | 3.28 | 3.91 | 3.84 | 3.80 |
| 06-214 | 3.70 | 3.27 | 5.03 | 3.03 | 3.27 | 2.93 | 3.27 |
| 06-232 | 4.92 | 3.53 | 2.88 | 3.32 | 2.93 | 2.68 | 3.13 |
| 06-233 | 2.47 | 4.03 | 3.53 | 3.44 | 2.97 | 3.36 | 3.40 |
| 06-235 | 3.09 | 2.63 | 3.32 | 2.71 | 2.44 | 2.56 | 2.67 |
| 06-243 | 3.32 | 3.10 | 3.71 | 3.34 | 3.10 | 3.32 | 3.32 |
| 06-249 | 3.24 | 3.11 | 3.60 | 2.78 | 2.60 | 2.92 | 3.02 |
| 06-254 | 4.05 | 3.32 | 3.31 | 3.73 | 3.50 | 3.96 | 3.62 |
| Median | 3.51 | 3.19 | 3.57 | 3.30 | 3.04 | 3.13 | |

| 2010 | KB | RB | NA | BGR | Median |
|-------------|------|------|------|------|--------|
| 07-357 | 2.31 | 3.60 | 3.54 | 3.41 | 3.48 |
| 07-387 | 3.29 | 3.56 | 3.32 | 2.93 | 3.31 |
| 07-389 | 2.78 | 3.51 | 3.86 | 3.22 | 3.37 |
| 07-393 | 3.18 | 5.22 | 3.89 | 3.82 | 3.86 |
| 07-402 | 2.83 | 3.37 | 4.18 | 2.94 | 3.16 |
| 07-405 | 2.77 | 3.39 | 3.75 | 3.75 | 3.57 |
| 08-755 | 3.44 | 3.16 | 3.33 | 3.10 | 3.25 |
| 08-779 | 4.25 | 3.70 | 3.50 | 3.54 | 3.62 |
| 08-797 | 3.30 | 3.47 | 3.11 | 2.87 | 3.21 |
| Median | 3.15 | 3.54 | 3.57 | 3.25 | |