

Table S3. Aerodynamic inputs for simulation. Horizontal and vertical aerodynamic forces applied to brachial (B), antebrachial (A), and manual (M) wing segments for each model. Values are based on wing-assisted incline running on 65° inclines (data from (Heers et al., 2011)); colors match colors of wing segments in Figure 3.

Age		Total aerodynamic force		Coefficient of resultant force, 45° angle of attack (C_R)	Angle of force (deg from horizontal)	Surface area of wing segment (S ; m ²)	Distance btwn center of wing segment and shoulder jt (r ; m)	Angular velocity (Ω ; radians)	Translational velocity (V_T ; m/s)	Proportion of total force $\frac{F}{S[(\Omega r)^2 + V_T^2]}$	Total force (N)	Horizontal force (N)	Vertical force (N)
		2 wings, % body wt	1 wing, N										
Baby: 7-8 days	B					1.87E-04	7.30E-03			0.012	1.82E-04	5.63E-05	1.73E-04
	A	8.68	1.47E-02	1.69	72	7.10E-04	1.93E-02	68.80	0.62	0.158	2.33E-03	7.21E-04	2.22E-03
	M					7.27E-04	4.73E-02			0.829	1.22E-02	3.78E-03	1.16E-02
Juvenile: 18-20 days	B					9.50E-04	1.06E-02			0.013	1.63E-03	8.16E-04	1.41E-03
	A	31.15	1.30E-01	1.40	60	3.55E-03	3.93E-02	66.29	1.18	0.204	2.64E-02	1.32E-02	2.28E-02
	M					2.83E-03	9.30E-02			0.784	1.02E-01	5.08E-02	8.80E-02
Adult: >100 days	B					3.24E-03	2.39E-02			0.015	2.22E-02	1.21E-02	1.86E-02
	A	60.48	1.48E+00	1.97	57	8.23E-03	7.27E-02	60.95	1.57	0.182	2.71E-01	1.47E-01	2.27E-01
	M					9.63E-03	1.47E-01			0.803	1.19E+00	6.48E-01	9.98E-01