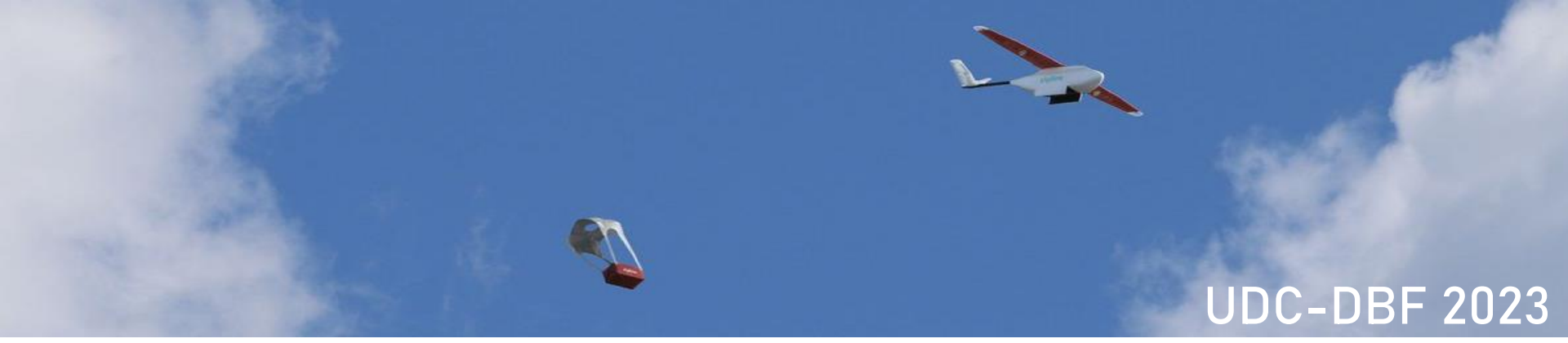

2nd Design Iteration

Team Name: GENEI RYODAN

Wing Information	
Airfoil	SG6042
Span	151
Root Chord	24.2
Tip Chord	24.2
Offset	0
AR	6.25
S_w	5200
Incidence Angle	0
Twist	0
Dihedral	0

Vertical Tail Information	
Airfoil	NACA0012
Semi Span (Total Length)	16.2
Root Chord	10.8
Tip Chord	10.8
Offset	0
S_v/S_w	0.0961
AR_v	3
V_v	0.045
Incidence Angle	0
Tail Arm	70.8
Shifted Length in Z-Direction	0

Horizontal Tail Information	
Airfoil	NACA0012
Span	47
Root Chord	15.8
Tip Chord	15.8
Offset	0
S_H/S_w	0.2050
AR_H	3
V_H	0.6
Incidence Angle	-2.5
Tail Arm	70.8
Shifted Length in Z-Direction	0

Propulsion System Information

Input					
Model Weight (Drive included or without)	Drive included				
Desired Flight speed	51.48 Km/s				
Brushless Motor	Manufacturer	Model	Voltage Constant [KV]	No Load Current [A]	Resistance [ohm]
	Turnigy	D3548-4(1100)	1100	3.1	0.023
Battery	Manufacturer	No. Of Cells	Voltage	Capacity [mAh]	C-Rating
	LiPo	4	3.7	2200	25/35C
Propeller Size (Diameter x Pitch)	10*4.7				
Speed Controller (Current Rating Value)	60A				

Output	
Load	18.4
Mixed flight Time	5 min
Max. Current	44.4
Max. Power	530.3
Static Thrust	2074
Available Thrust [at the desired flight speed]	1456
Drive Weight	500
All Up Weight	1700
(Power/Weight) Ratio [Watt/lb]	170
(Thrust/Weight) Ratio	1.3

Flight Phases

Phase 1 (payload isn't deployed)	
MTOW	1.7
X_{CG}	8.374

Static margin (%)	15
CL_{Cruise}	0.2558
V_{Stall}	7
V_{Cruise}	1430
α_{Trim}	2.15
Required Static Thrust	0.8061
Required Dynamic Thrust (at V_{Cruise})	0.1927

Phase 2 (payload is deployed)	
Mass	1.1
X_{CG}	8.374
Static margin (%)	15
CL_{Cruise}	0.25592
V_{Stall}	6
V_{Cruise}	1150
α_{Trim}	2.15
Required Static Thrust	0.67
Required Dynamic Thrust (at V_{Cruise})	0.11

- Note: lengths should be in (cm), angles in (deg).