

Team Member 1

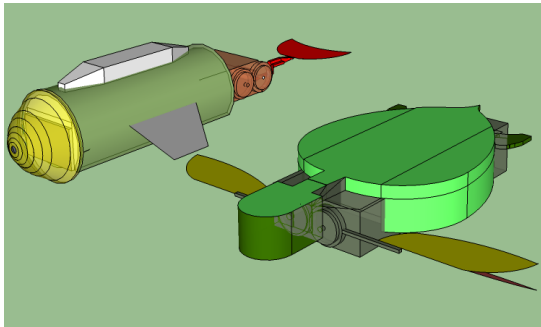


Fig. 1 The robots

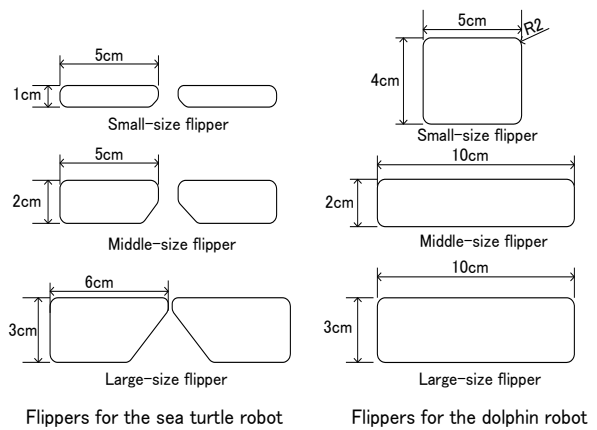


Fig. 2 The flippers

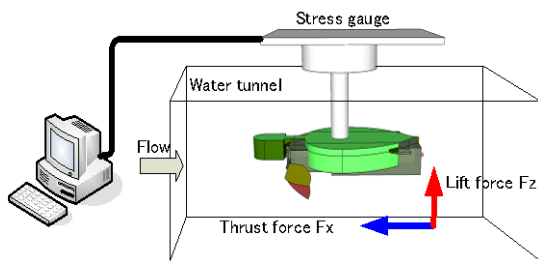


Fig. 3 Experimental apparatus

Table 1. Thrust forces (Unit: N)			
	Large flipper	Middle flipper	Small flipper
Sea turtle robot	0.20	0.07	0.06
Dolphin robot	0.20	0.18	0.10

Team Member 2

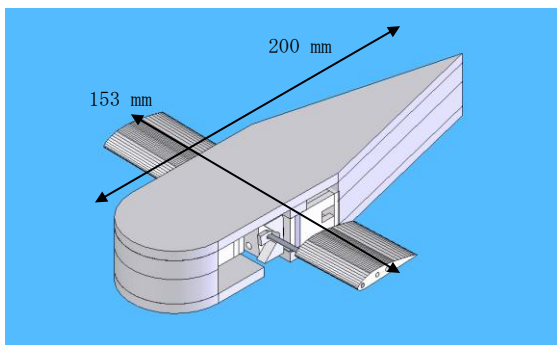


Fig. 1 The robot

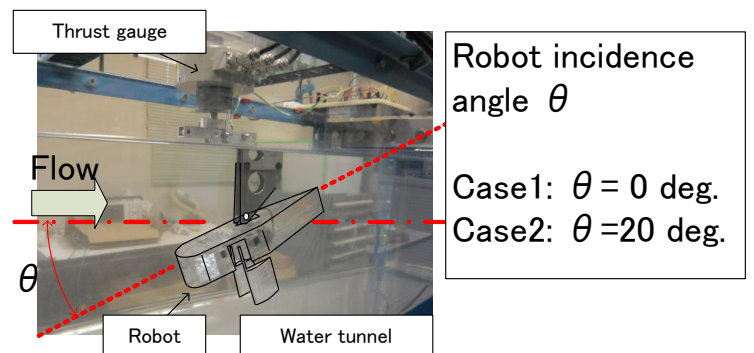
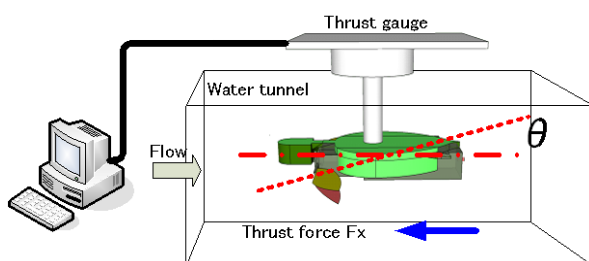


Fig. 2 Incidence angles



Flow speed: $U=0\text{cm/s}$, 10cm/s , 20cm/s

Fig. 3 Experimental apparatus

Table 1. Thrust forces (Unit: N)			
	$U=0\text{cm/s}$	$U=10\text{cm/s}$	$U=20\text{cm/s}$
$\theta = 0\text{deg.}$	0.23	0.15	0.10
$\theta = 20\text{deg.}$	0.25	0.14	0.07

Team Member 3



Fig. 1 The robot

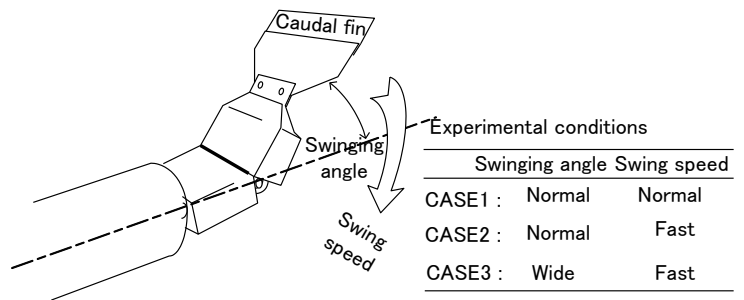


Fig. 2 Swinging angle and speed

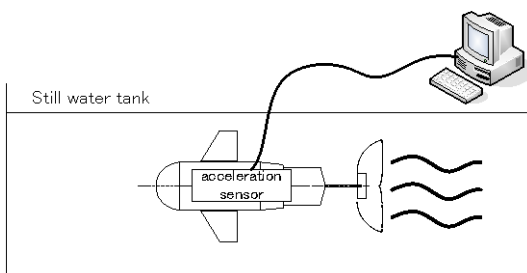


Fig. 3 Experimental apparatus

Table 1. Swimming speed (Unit: m/s)			
	Case-1	Case-2	Case-3
Speed	0.43	0.30	0.38

Team Member 4

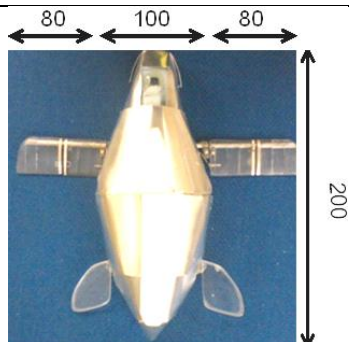


Fig. 1 The robot

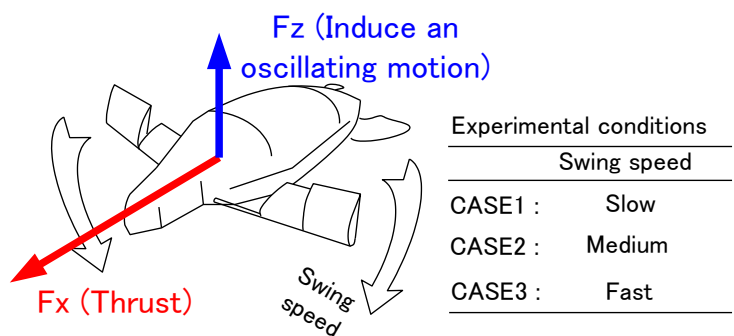


Fig. 2 Swing motion and forces

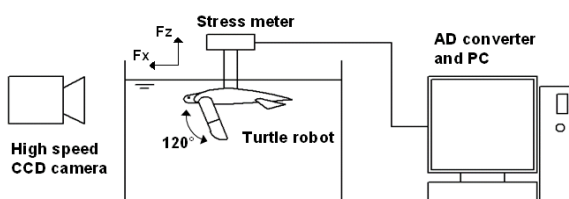


Fig. 3 Experimental apparatus

Table 1. Thrust and drag forces (Unit: N)			
	Case-1	Case-2	Case-3
Fx(Thrust)	0.013	0.036	0.450
Fz	0.180	0.180	0.160