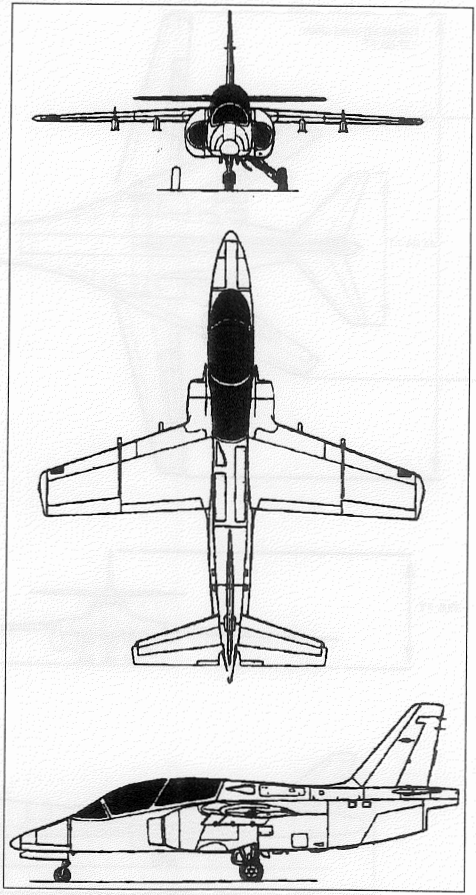


Figure C-A24.1 3D View of the SIAI Marchetti S211 Aircraft
(Source: www.aviastar.org/index2.html)

Geometric Parameters and Typical Flight Conditions (see Appendix B, Aircraft 8)

$Alt. = 25{,}000$ ft, $Mach = 0.6$
$V_{P_1} = 610$ ft/sec, $\overline{q}_1 = 198$ lbs/ft^2, $\alpha_1 = 0°$
$S = 136$ ft^2, $\overline{c} = 5.4$ ft, $b = 26.3$ ft
$\overline{x}_{CG} = 0.25$, $W = 4{,}000$ lb

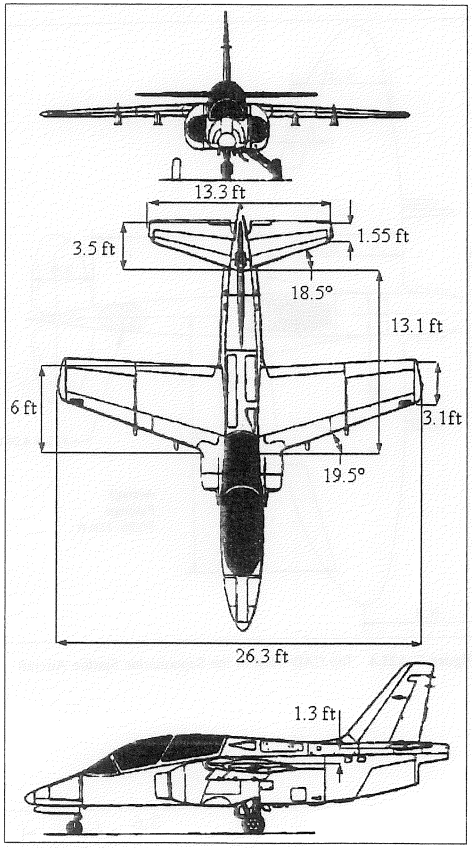


Figure C-A24.2 General Dimensions of the SIAI S-211 Aircraft

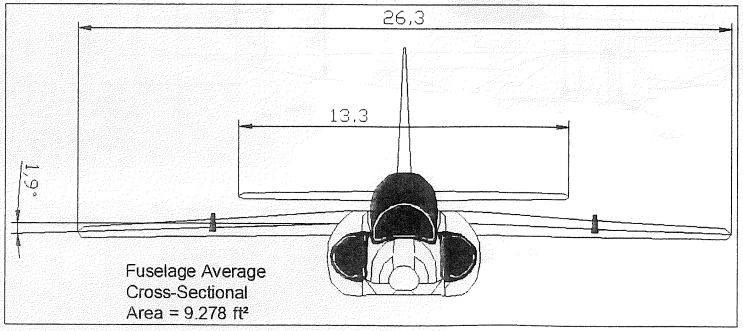


Figure C-A24.3 Front CAD View of the SIAI S-211 Aircraft

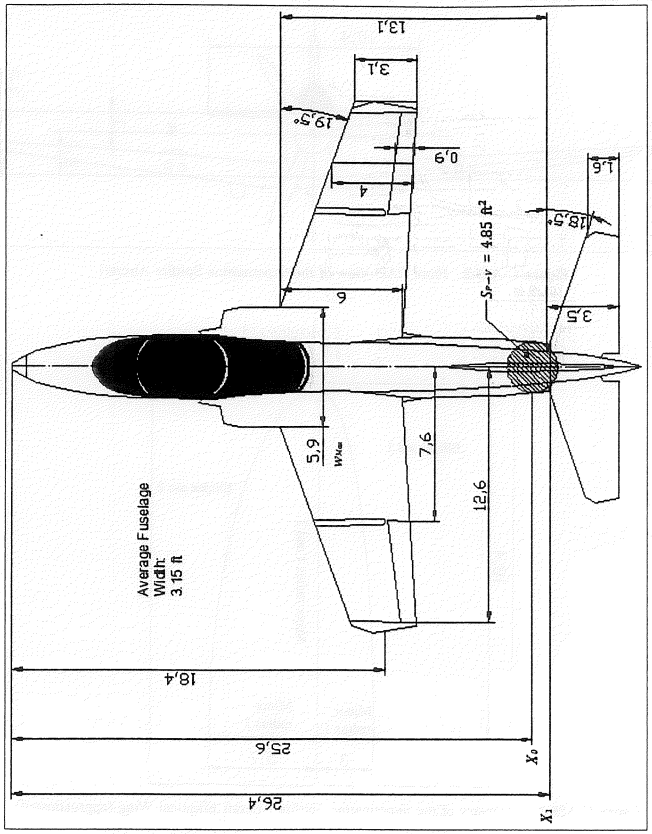


Figure C-A24.4 Top CAD View of the SIAI S-211 Aircraft

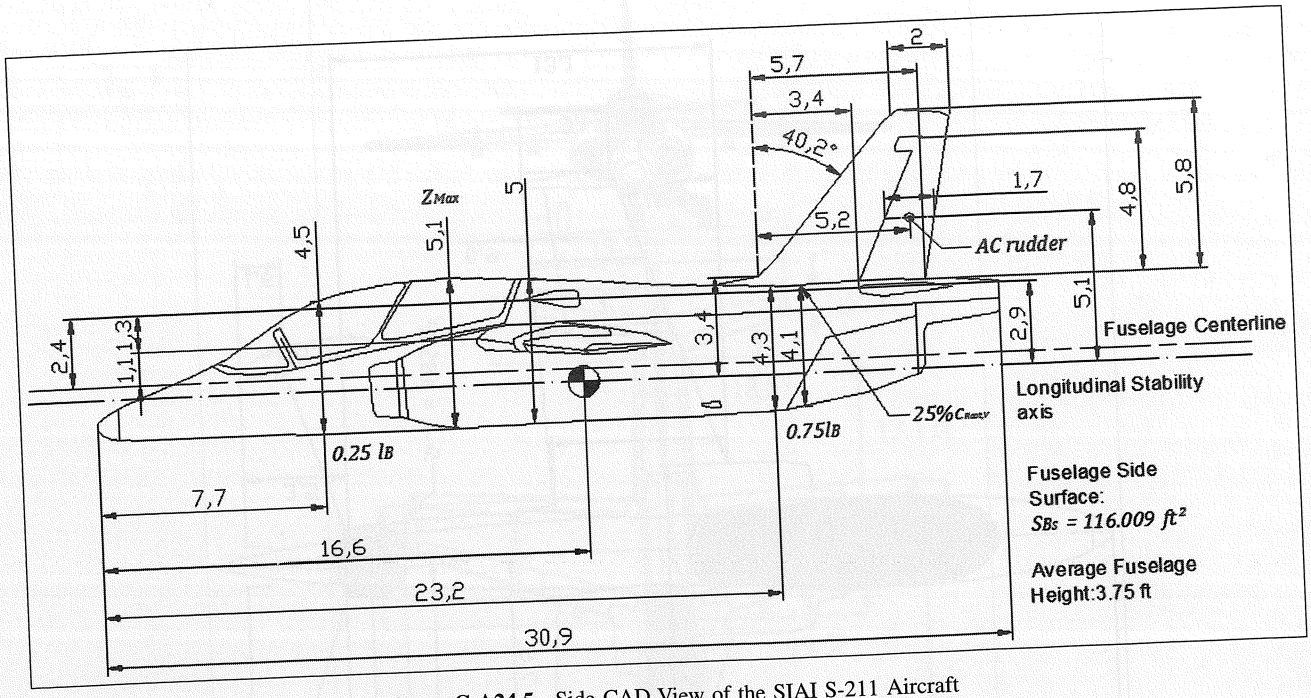
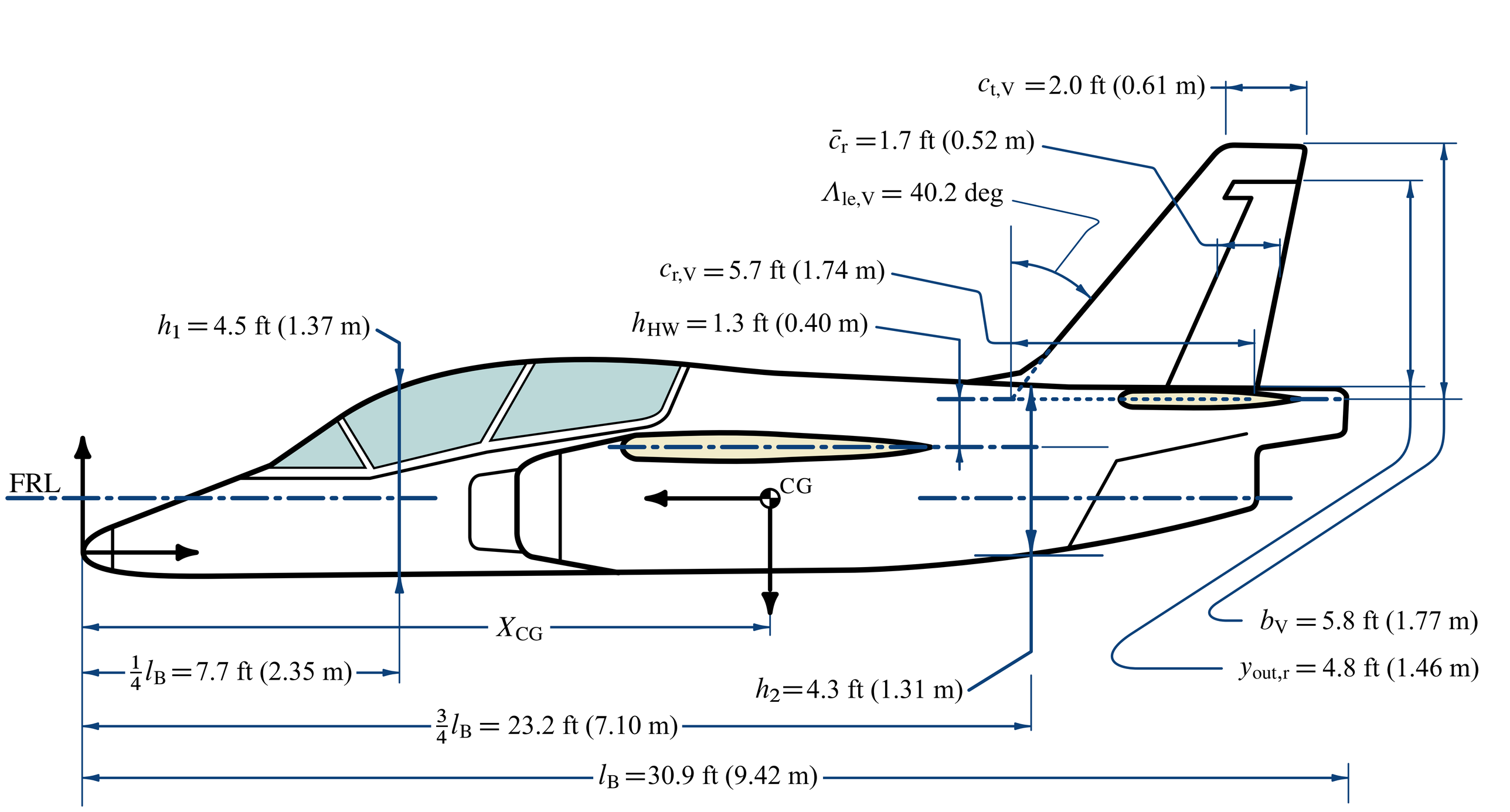
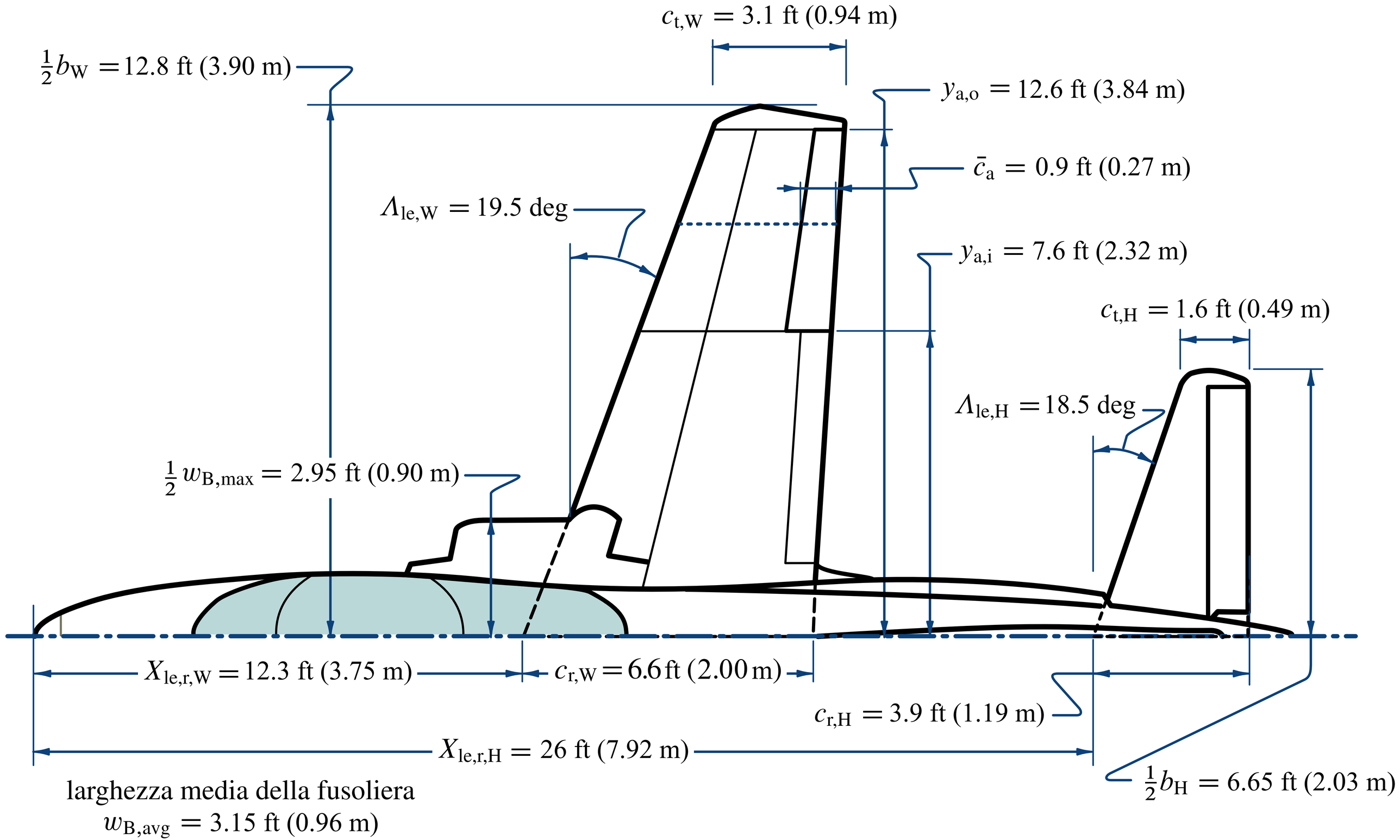


Figure C-A24.5 Side CAD View of the SIAI S-211 Aircraft

Table C-A24.1 Geometric Parameters for the Aerodynamic Modeling of the SIAI S-211 Aircraft

Geometric Parameters	S211 Aircraft	Geometric Parameters	S211 Aircraft
A[ft]	18.4	X_{HV}[ft]	3.4
b[ft]	26.3	X_{WH_r}[ft]	13.1
b_H[ft]	13.3	X_1[ft]	26.4
b_V[ft]	5.8	y_{A_I}[ft]	7.6
$\bar{c}$[ft]	5.4	y_{A_O}[ft]	12.6
$\bar{c}_{Aileron}$[ft]	0.9	y_{R_I}[ft]	0.0
$\bar{c}_R$[ft]	1.7	y_{R_F}[ft]	4.8
$\bar{c}_{Wing(atAileron)}$[ft]	4.0	y_V [ft]	3.0
c_r[ft]	6.0	Z_{R_S}[ft]	5.1
c_{r_H}[ft]	3.5	z_1[ft]	4.5
c_{r_V}[ft]	5.7	z_2[ft]	4.3
c_T[ft]	3.1	Z_H [ft]	2.4
c_{T_H}[ft]	1.55	Z_{H_S}[ft]	2.9
c_{T_V}[ft]	2.0	$z_{\max}$[ft]	5.1
d[ft]	5	Z_W[ft]	−1.1
l_b[ft]	30.9	Z_{WH_r}[ft]	1.3
l_{cg}[ft]	16.6	Γ_H[deg]	0
r_1[ft]	4.1	Γ_W [deg]	−1.9
S[ft^2]	136	ε_H[deg]	0
S_{B_S}[ft]	116.0	ε_W[deg] (assumed)	2
$S_{f_{AVG}}$[ft^2]	9.3	Λ_{LE}[deg]	19.5
S_{PV}[ft^2]	4.9	Λ_{LE_H}[deg]	18.5
$w_{\max}$[ft]	5.9	Λ_{LE_V}[deg]	40
X_{AC_R}[ft]	5.2		


$c_{t,V}$ = 2.0 ft (0.61 m)
$\bar{c}_r$ = 1.7 ft (0.52 m)
$\Lambda_{le,V}$ = 40.2 deg
$c_{r,V}$ = 5.7 ft (1.74 m)
h_1 = 4.5 ft (1.37 m)
h_{HW} = 1.3 ft (0.40 m)
FRL
CG
X_{CG}
$\frac{1}{4}l_B$ = 7.7 ft (2.35 m)
h_2 = 4.3 ft (1.31 m)
$\frac{3}{4}l_B$ = 23.2 ft (7.10 m)
l_B = 30.9 ft (9.42 m)
b_V = 5.8 ft (1.77 m)
$y_{out,r}$ = 4.8 ft (1.46 m)


$c_{t,W} = 3.1$ ft (0.94 m)
$\frac{1}{2}b_W = 12.8$ ft (3.90 m)
$y_{a,o} = 12.6$ ft (3.84 m)
$\bar{c}_a = 0.9$ ft (0.27 m)
$\Lambda_{le,W} = 19.5$ deg
$y_{a,i} = 7.6$ ft (2.32 m)
$c_{t,H} = 1.6$ ft (0.49 m)
$\Lambda_{le,H} = 18.5$ deg
$\frac{1}{2}w_{B,max} = 2.95$ ft (0.90 m)
$X_{le,r,W} = 12.3$ ft (3.75 m)
$c_{r,W} = 6.6$ ft (2.00 m)
$c_{r,H} = 3.9$ ft (1.19 m)
$X_{le,r,H} = 26$ ft (7.92 m)
$\frac{1}{2}b_H = 6.65$ ft (2.03 m)
larghezza media della fusoliera
$w_{B,avg} = 3.15$ ft (0.96 m)