Table 6.1 Homebuilt Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
PIK-21	0	0	3.8	0	1.0	NA	ctl/low
Duruble RD-03C	6.5	3/0	7.0	0	0.51	182	ctl/mid
PIEL CP-750	5.7	4.2	5.9	0	0.55	183	ctl/low
CP-90	5.7	3	5.4	0	0.44	171	ctl/low
POTTIER P-50R	4.4	NA	5.1	2	0.54	167	ctl/low
P-70S	0	2	4.8	0	1.0	129	ctl/mid
O-O Aerosport	2.5	NA	5.7	0	1.0	76	ctl/low
Aerocar Micro-Imp	0	4	4.7	0	1.0	260	ctl/high
Coats SA-III	4	1.5	5.6	0	1.0	165	ctl/low
Sequoia 300	3	3.5/1.5	6.9	0	0.55	243	ctl/low
Ord-Hume OH-4B	3	3	5	5.0	1.0	95	brcd/parasol
Procter Petrel	5	0	6.6	0	1.0	113	ctl/low
Bede BD-8	0	3	3.9	0	1.0	238	ctl/low

ctl = cantilever brcd = braced (strutted)

Table 6.2 Single Engine Propeller Driven Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
CESSNA Skywagon 207	1.7	1.5/-1.5	7.4	0	0.69	182	brcd/high
Cardinal RG	1.5	4.1/0.7	7.3	0	0.73	156	ctl/high
Skylane RG	1.7	0.8/-2.8	7.4	0	0.67	187	brcd/high
PIPER Cherokee Lance	7.0	2/-1	6.2	0	1.0	188	ctl/low
Cher. Warrior	7.0	2/-1	7.2	5	0.67	152	ctl/low
Turbo Sarat.SP	6.8	NA	7.3	0	0.68	195	ctl/low
Bellanca Skyrocket	2	2	6.7	0	0.57	287	ctl/low
Grumman Am. Tiger	5	1.4	7.1	0	1.0	148	ctl/low
Rockwell Commander 112A	7	2	7.0	-2.5	0.50	180	ctl/low
Trago Mills SAH-1	5	3/1	7.5	0	0.54	202	ctl/low
Scottish Aviation Bullfinch	6.5	1.2	8.4	0	0.57	150	ctl/low
Robin HR100/4	6.3	4.7	5.4	0	1.0	180	ctl/low
Socata Rallye 235E	7	4	7.6	0	1.0	148	ctl/low
Fuji FA-200	7	2.5	6.3	0	1.0	123	ctl/low
Gen Avia F15F	6	4	7.7	0	0.49	167	ctl/low

ctl = cantilever brcd = braced (strutted)

Table 6.3 Twin Engine Propeller Driven Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w, deg.	Incidence Angle, i_w, root/tip deg.	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$, deg.	Taper Ratio, λ_w	Max. Speed, V_{max}, kts	Wing Type
CESSNA							
310R	5	2.5/-.5	7.3	0	0.67	236	ctl/low
402B	5 (outer)	2/-.5	7.5	0 L.E.	0.67	227	ctl/low
414A	5	2.5/-.5	8.6	0 L.E.	0.60	232	ctl/low
T303	7	3/0	8.1	0 L.E.	0.71	216	ctl/low
PIPER							
PA-31P	6	1/-1.5	7.2	0	0.39	243	ctl/low
PA-44-180T	7.2	NA	8.1	0	0.63	196	ctl/low
Chieftain	5	1/-1.5	7.2	1.9	0.40	231	ctl/low
Cheyenne I	5	1.5/-1	7.4	0	0.37	249	ctl/low
Cheyenne III	5	1.5	7.8	0	0.31	296	ctl/low
BEECH							
Duchess 76	6.5	3/.6	8.0	0	0.80	194	ctl/low
Duke B60	6	4/0	7.2	0	0.32	246	ctl/low
Learfan 2100	4	1.5	9.5	0	0.45	369	ctl/low
Rockwell Commander 700	7	NA	9.0	0	0.43	231	ctl/low
Piaggio P166-DL3	21.5/2.5*	2.7	7.3	7.5	0.35	215	ctl/gull
EMB-121	7	3	7.2	0.33	0.61	316	ctl/low

ctl = cantilever brcd = braced (strutted)
*21.5 inboard, 2.5 outboard on this gull wing configuration

Table 6.4 Agricultural Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w, deg.	Incidence Angle, i_w, root/tip deg.	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$, deg.	Taper Ratio, λ_w	Max. Speed, V_{max}, kts	Wing Type
IAR-822	5 (outer)	5	6.3	0	1.0	92	ctl/low
UTVA-65	2	2.5	7.2	0	0.7	95	brcd/low
IA-53	7.5 (out)	4.3	6.3	0	0.7	116	ctl/low
EMB-200	7	3	7.0	0	1.0	116	ctl/low
Ag-cat	3	6	8.7	0	1.0	113	brcd/bipl
WSK M-15	NA	NA	NA	0	NA	146	brcd/bipl
PZL M-18A	1.3	3	7.8	0	1.0	128 138*	ctl/low
PZL 106A	4	6.5	7.8	4	1.0	114*	brcd/low
NDN-6	4.3	4.5	7.5	0	0.7	135	brcd/low
Cessna AgHusky	9	1.5/-1.5	8.5	0	0.7	106	brcd/low
Antonov AN-2M	2.5 both wings	NA	NA	0	1.0	136	brcd/bipl
HAL-31	6	0	6.0	0	1.0	108	ctl/low

*speed without spray equipment installed
ctl = cantilever brcd = braced (strutted) bipl = biplane

Table 6.5 Business Jets: Wing Geometric Data

Type	Dihedral Angle, Γ_w, deg.	Incidence Angle, i_w, root/tip deg.	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$, deg.	Taper Ratio, λ_w	Max. Speed, V_{max}, kts	Wing Type
DASSAULT/BREGUET							
Falcon 10	1.5	NA	7.1	27	0.36	492(25K)	ctl/low
Falcon 20F	2	1.5	6.4	30	0.31	465(25K)	ctl/low
Falcon 50	0	NA	7.6	24	0.32	475	ctl/low
CESSNA							
Citation I 500	4	2.5/-0.5	7.8	0	0.39	277(28K)	ctl/low
Citation II	4.7	NA	8.3	2	0.32	277(28K)	ctl/low
Citation III	2.8	NA	8.9	25	0.35	472(33K)	ctl/low
GATES LEARJET							
24	2.5	1	5.0	13	0.50	473(31K)	ctl/low
35A	2.5	1	5.7	13	0.50	464	ctl/low
55	2.9	NA	7.3	13	0.42	470(30K)	ctl/low
IAI							
1124 Westw. I	2	1/-1	6.5	5	0.33	471	ctl/mid
1125 Astra	2.6 (out)	NA	8.8	34/25 at LE	0.30	472(35K)	ctl/low
Canadair CL601	2.3	3	8.5	25	0.26	450	ctl/low
BAe 125-700	2	2.1/-0.3	6.3	20	0.28	436(28K)	ctl/low
GA Gulfst. III	3	3.5/-0.5	6.5	28	0.31	487	ctl/low
Mu Diamond I	2.7	3/-3.5	7.5	20	0.35	431(30K)	ctl/low
L. Jetstar II	2	1/-1	5.3	30	0.37	475(30K)	ctl/low

ctl = cantilever (30K) = 30,000 ft altitude

Table 6.6 Regional Turbopropeller Driven Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w, deg.	Incidence Angle, i_w, root/tip deg.	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$, deg.	Taper Ratio, λ_w	Max. Speed, V_{max}, kts	Wing Type
CASA C-212-200							
SHORTS							
330	3 (outer)	NA	12.3	0	1.0	190(10K)	brcd/high
360							
BEECH							
1900	6	3.5/-1.1	9.8	0	0.42	263(8K)	ctl/low
B99	7	4.8	7.5	0	0.5	247(12K)	ctl/low
CESSNA CONQUEST							
I							
II							
GA Gulfstr. Ic							
GAF N22B							
Fokker F27-200	2.5	3.5	12.0	0	0.41	259(20K)	ctl/high
DeHAVILLAND CANADA							
DHC-6-300							
DHC-7	4.5	3	10.0	0	0.44	231(8K)	ctl/high
DHC-8	2.5 (out)	NA	12.3	0	0.45	270(15K)	ctl/high
EMB 110	7	3	9.9	0	0.50	248(8K))	ctl/low
EMB 120	6.5	2	9.9	0	0.50	NA	ctl/low
BRITISH AEROSPACE							
Jetstream 31	7	2	10.0	0.5	0.37	263(20K)	ctl/low
748	7	3	12.7	2.9	0.36	244(15K)	ctl/low

ctl = cantilever (30K) = 30,000 ft altitude

Table 6.7 Jet Transports: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
BOEING							
727-200	3	2	7.1	32	0.30	549(22K)	ctl/low
737-200	6	1	8.8	25	0.34	462(33K)	ctl/low
737-300	6	1	8.0	25	0.28	462(33K)	ctl/low
747-200B	7	2	7.0	37.5	0.25	523(30K)	ctl/low
747SP	7	2	7.0	37.5	0.25	529(30K)	ctl/low
757-200	5	3.2	7.9	25	0.26		ctl/low
767-200	6	4.3	7.9	31.5	0.27		ctl/low
McDONNELL DOUGLAS							
DC-9 Super 80	3	1.3	9.6	24.5	0.16	500	ctl/low
DC-9-50	1.5	NA	8.7	24	0.18	537	ctl/low
DC-10-30	5.3/3	+/-	7.5	35	0.25	530(25K)	ctl/low
AIRBUS							
A300-B4	5	NA	7.7	28	0.35	492(25K)	ctl/low
A310	11.1/4.1	5.3	8.8	28	0.26	483(30K)	ctl/low
Lockh.1011-500	7.5/5.5	NA	7.0	35	0.30	525(30K)	ctl/low
Fkr F28-4000	2.5	NA	8.0	16	0.31	390	ctl/low
Rombac 111-495	2	2.5	8.5	20	0.32	470(21K)	ctl/low
BAe 146-200	-3	3.1/0	9.0	15	0.36	420(26K)	ctl/high
Tupolev Tu154	0	NA	7.0	35	0.27	526(31K)	ctl/low

ctl = cantilever (30K) = 30,000 ft altitude

Table 6.8 Military Trainers: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
Propeller Driven							
EMB-312 Tucano	5.5	1.4/-0.8	6.4	0.7	0.47	292	ctl/low
Pilatus PC-7	7 (outer)	NA	6.5	1	0.55	270	ctl/low
NDN-1	5 (outer)	3	5.4	0	0.79	247	ctl/low
Beech T-34C	7	4/1	6.2	0	0.41	280	ctl/low
Aerosp.Epsilon	5	2	7.0	0	0.63	281	ctl/low
SM SF-260M	6.3	2.8/0	6.3	0	0.49	235	ctl/low
Yak-52	2	2	5.8	0	0.54	194	ctl/low
Neiva T-25	6	2	7.1	0	0.54	269	ctl/low
Jet Driven							
Aero L-39C	2.5	2	4.4	2	0.52	491	ctl/low
Microjet 200B	5	3	8	0	0.39	300	ctl/low
DB/D Alphajet	-6	NA	4.8	28	0.36	495(33K)	ctl/shldr
Aermac. MB339A	2.6	NA	5.3	9	0.58	500	ctl/low
SM S-211	-2	2.2/-1.3	5.1	16	0.46	400	ctl/shldr
PZL TS-11	2.7	NA	5.7	7	0.51	404	ctl/mid
CASA C-1-1	5	1	5.6	2	0.60	428(25K)	ctl/low
Bae Hawk Mk1	2	NA	5.3	22	0.34	572	ctl/low
Tupolev Tu154	0	NA	7.0	35	0.27	526(31K)	ctl/low

ctl = cantilever shldr = shoulder (30K) = 30,000 ft altitude

Table 6.9 Fighters: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
DASSAULT BREGUET							
Mirage III-E	-1	0	1.9	61(LE)	0	1,268(39K)	ctl/low
Mirage F1-C	-4.5	NA	2.8	48(LE)	0.29	1,260	ctl/shldr
Mirage 2000	-1	NA	2.0	58(LE)	0	1,260	ctl/low
Super Etendard	-3.5	NA	3.2	45	0.50	573	ctl/mid
Fairch.R.A-10A	7 (outer)	-1	6.5	0	0.66	450	ctl/low
Grumman A-6E	0	NA	5.3	25	0.30	700	ctl/mid
Grumman F14A	-1.5(out)	NA	7.3*	20/68(LE)	0.40	M = 2.4	vsw/high
Northrop F-5E	0	0	3.8	24	0.19	710	ctl/low
Vought A-7E	-5	-1	4	35	0.25	595(5K)	ctl/high
McDONNELL DOUGLAS							
F-4E	0/12	NA	2.8	45(LE)	0.18	1,146	ctl/low
F-15	-1	0	3.0	39	0.25	M =2.5	ctl/high
AV-8B	-12	1.8	4.0	24	0.28	585(0K)	ctl/shldr
GD FB-111A	0	NA	7.6*	16/73(LE)	0.33	1,260	ctl/shldr
GD F-16	0	0	3.0	40(LE)	0.22	495(33K)	ctl/mid
Cessna A37B	3	3.6/1	6.2	0	0.68	455	ctl/low
Aerm. MB339K	2.6	NA	5.3	8.5	0.58	500	ctl/low
Sukhoi Su-7BMK	0	NA	2.6	62(LE)	0.26	730(0K)	ctl/mid

ctl = cantilever shldr = shoulder (30K) = 30,000 ft altitude
* taken at lowest sweep angle

Table 6.10 Military Patrol, Bomb and Transport Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
Turbopropeller Driven							
Lockh'd C130E	2.5	3/0	10.1	0	0.49	325	ctl/high
Lockheed P3C	6	0/0.5	7.5	0	0.40	411(15K)	ctl/low
Antonov 12BP	-3.8(out)	NA	11.9	7.4	0.34	419	ctl/high
Antonov 22	-3.5	NA	12.0	3	0.36	399	ctl/high
Antonov 26	-2(out)	3	11.7	7	0.34	NA	ctl/high
Grumman E2C	3.1	NA	9.3	5.3	0.34	325	ctl/high
DB Atlantic 2	6 (outer)	3	11.6	9 (LE)	0.39	348	ctl/low
Aerital.G222	2.5 (out)	NA	9.2	2.1	0.50	291	ctl/high
Transall C-160	3.5 (out)	NA	10.0	1.9	0.50	320	ctl/high
Jet Driven							
Lockheed S3A	0	3/-3.5	7.9	15	0.25	450	ctl/high
Lockh'd C-141B	-3.5	NA	7.5	25.5	0.41	492	ctl/high
Lockheed C-5A	-5.1	NA	7.8	25.6	0.34	496(25K)	ctl/high
BAe Nimrod Mk2	2.7	NA	6.2	20	0.23	500	ctl/low
Boeing YC-14	0	NA	9.4	4.6	0.30	438	ctl/high
McDD KC-10A	5/3	+/-	7.5	35	0.25	530(25K)	ctl/low
Tupolev Tu-16	-3.7	NA	6.6	43(LE)	0.44	535(6K)	ctl/high
Tupolev Tu-22	0	NA	4.0	51(LE)	0.31	800(40K)	ctl/mid
Ilyushin Il76T	-3.6	NA	11.7	25	0.37	459	ctl/high

ctl = cantilever shldr = shoulder (30K) = 30,000 ft altitude

Table 6.11 Flying Boats, Amphibious and Float Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
SHORTS							
Sandringham	2.1	NA	8.6	3.6	0.38	188	ctl/high
Shetland	4.1	NA	8.6	7.7	0.34	232(8K)	ctl/high
DORNIER							semi ctl
Do 24	0	NA	6.8	7	0.36	165	brcd/high
Do 24/72	0	NA	7.5	2	0.71	224	brcd/par.
Do Seastar	0	NA	9.1	0	1.0	220	brcd/par.
Grumman JRF-6B	2	NA	6.4	-1	0.46	175(5K)	ctl/high
Grumman J4F-1	NA	NA	6.5	0	0.48	133	ctl/high
SM S-700	2.1	NA	9.4	0	1.0	180(10K)	ctl/high
Canadair CL215	0	NA	8.2	0	1.0	158	ctl/high
BV-222	3.2	NA	8.0	0	0.72	183	ctl/high
Shin Meiwa US1	2.1	NA	8.0	2.1	0.50	260	ctl/high
Boeing 314-A	5.3	NA	7.7	7.9	0.23	183	ctl/high
Martin PBM-3	19/0	NA	10.1	-1.5	0.33	174	ctl/high
Beriev M-12	26/-2	NA	8.4	6.0	0.41	328	ctl/high
Partenav. P68B*	1	1.5	7.7	0	1.0	173	ctl/high
McKinnon G-21G	2.5	NA	6.1	0	0.50	211	ctl/high

ctl = cantilever shldr = shoulder (30K) = 30,000 ft altitude
par. = parasol * float airplane

Table 6.12 Supersonic Cruise Airplanes: Wing Geometric Data

Type	Dihedral Angle, Γ_w,	Incidence Angle, i_w,	Aspect Ratio, A	Sweep Angle, $\Lambda_{c/4}$,	Taper Ratio, λ_w	Max. Speed, V_{max},	Wing Type
	deg.	root/tip deg.		deg.		kts	
NORTH AMERICAN AVIATION (ROCKWELL)							
XB-70A	-3	NA	1.8	65.6(LE)	0.02	M = 2+	ctl/low
RA-5C	0	NA	4.0	37.5	0.19	1,204(40K)	ctl/high
B-1B	0	NA	??	??	0.32	M = 2+	ctl/low
BOEING							
SST	NA	NA	3.4*	30-72	0.21	1,565(75K)	ctl/low
AST-100	get data from NASA reports						
NASA							
SSXJet I	0	NA	1.84	72(LE)	0.08	M =	ctl/
SSXJet II	0	NA	1.84	72(LE)	0.08	M =	ctl/
SSXJet III	0	NA	1.84	72(LE)	0.08	M =	ctl/
TUPOLEV							
Tu-144	8.3 (out)	NA	1.9	76/57	0.13	1,350(50K)	ctl/low
Tu-22M	0	NA	8.0*	20-65	0.28	1,446	ctl/mid
Dassault MIVA	-1.5	NA	1.8	60(LE)	0.11	1,261(36K)	ctl/low
GD F-111A	0	NA	7.5*	16-72	0.33	1,432	ctl/high
GD B-58	0	NA	2.2	59(LE)	0	M = 2+	ctl/low
Aerospatiale/British Aerospace							
Concorde	0	NA	1.7	ogive	0.12	1,259(55K)	ctl/low

ctl = cantilever (30K) = 30,000 ft altitude
* taken at lowest sweep angle