

German Aircraft Data Table											
Aircraft	Type	Maneuver	Attack	Defense	AA Def	Forward Guns	Bombs, Torpedoes	Rockets, Bomblets	Move	Range	Date
Me-109E-1	F	9	4	6	0	2x 2, 2x 0			99		1/39
Me-109E-3	F/FB	9	6	6	0	3x 2, 2x 0			99		1/40
Me-109F	F/FB	10	3	6	0	1x 2, 2x 0			111		12/40
Me-109G	F	12	4	7	0	1x 2, 2x 1		2x 210mm	122		5/42
Me-110 C/F		8	4,1	8	+1	2x 2, 2x 0			105		4/39
Me-410A	F	8	10	8	+1	4x 2, 2x 1	2x 1100		108		1/43
Fw-190A-1	F	11	5	8	+1	2x 2, 4x 0			111		6/41
Fw-190A-2	F	11	8	8	+1	4x 2, 2x 0			111		9/42
Fw-190F,G,D	F	11	6	8	+1	2x 2, 2x 1	1x 1100	2x 210mm	121		6/43
Hs-129A0	FB	0	5	8	+1	2x 2, 2x 0			72		10/41
Hs-129B1	FB	0	8	8	+1	1x 3, 2x 2, 2x 0	770	96 bomblets	72		2/42
Hs-129B2	FB	0	5	8	+1	2x 2, 2x 1	240	96 bomblets	72		1/43
Hs-129B2/R3	FB	0	9	8	+1	1x 4, 2x 2, 2x 1			72		2/43
Hs-129B2/R4	FB	0	9	8	+1	1x 5, 2x 2, 2x 1			72		3/43
JU-87	DB						1x 551, 4x 110		56		
JU-88C-1	FB	5	6,1	9	+1	2x 2, 3x 0			85		6/40
JU-88C-6	FB	5	9,1	9	+1	5x 2, 3x 0			85		12/42
Do 217J	B					4x 2, 4x 1			88		
He-111	B						880		66		
He-177	B						13,200		84		

Italian Aircraft Data Table											
Aircraft	Type	Maneuver	Attack	Defense	AA Def	Forward Guns	Bombs	Rockets	Move	Range	Date
CR-42 'Falco'		5	2	5	-1	1x 1, 1x 0					1/36
G. 50 'Freccia'		6	2	5	-1	2x 1					1/38
MC 200 'Saetta'		7	2	6		2x 1					10/39
MC 202 'Folgore'		9	3	6		2x 1, 2x 0					4/41
Re 2000 'Falco I'		8	2	6		2x 1	500				1/40
Re 2001 'Ariete'		7	3	6		2x 1, 2x 0					6/41

Japanese Aircraft Data Table											
Aircraft	Code Name	Type	Maneuver	Attack	Defense	AA Def	Forward Guns	Bombs, Torpedoes	Move	Range	Date
E8N	Dave	FP					1x 0		33		
H8K1	Emily	R, T	0	4	10		2x 2		83		
Nakajima Ki-84-Ia	Frank	F	10	6	7		2x 2, 2x 1		111		5/44
N1K1-Ja	George	F	10	6	7		2x 2, 2x 1		103		5/44
N1K1-Jb	George	F	10	8	7		4x 2	2x 551	103		11/44
N1K2-J	George	F	10	8	7		4x 2	2x 551	105		1/45
E13A	Jake	SP					1x 0	2x 551, 4x132	67		
Yokosuka 11-Shi	Judy	DB,K	5	1,1	5		2x 0	1x 551, 2x66	102		
Nakajima B5N1	Kate	TB	2	0	4			1torpedo or 6x 220	65	7	
G3M	Nell	MB	1	1	8		3x 0	1 torpedo or 1x 1100 , 2x 550	62	19	
G4M	Betty	MB	1	2	9		2x0, 1x 2	1 torpedo or 1x 1100 , 2x 550	77		
Nakajima B6N	Jill	TB						1 torpedo or 6x 220	84		
Ki-45 KAIb	Nick		9	5	7		1x 4, 1x 2, 2x 0				7/42
Ki-45 KAIc	Nick		9	6,1	7		1x 4, 2x 2	2x 551			5/43
Kawanishi H6K	Mavis	Rec	1	-	8		-	-	59	25	
Aichi D3A2	Val	DB	4	1,1	5		2x 0	1x 551, 2x132	69	6	1/40
Yokosuka B4Y	Jean	TB						1760 or 1100	49		
A5M	Claude	F					2x 2, 2x 0		72		
A6M2-N	Rufe	FPF					2x 2, 2x 0		77		
A6M2	Zero	F	10	5	6		2x 2, 2x 0	2x 132	94	10	1/40
A6M3	Zero	F	10	5	6		2x 2, 2x 0	2x 132	96		6/41
A6M5	Zero	F	10	5	6		2x 2, 2x 0	2x 132	100		8/43
Nakajima Ki-43-Ia	Oscar	F	8	1	6		2x 0	2x 33			4/41
Nakajima Ki-43-IIb	Oscar	F	8	2	6		2x 1	2x 220			1/43
Kawasaki Ki-61-I	Tony	F	10	6	7		2x 2, 2x 1		99		2/43
Kawasaki Ki-61-II	Tony	F	10	8	7		4x 2		108		1/44

Key

F - Fighter
 FPF - floatplane fighter
 FB - Fighter bomber
 B - Bomber
 MB - Medium bomber
 HB - Heavy bomber
 DB - Dive-bombed
 TB - Torpedo bomber
 SP - Seaplane
 R - Reconnaissance
 K - Kamikaze

Forward Guns

(nx g) = number of guns times gun type.

If second number is:

0 - 7mm - 9mm machineguns
 1 - 12.7mm - 15mm machinegun
 2 - 20mm -25mm cannons
 3 - 30mm cannons
 4 - 37mm - 40mm
 5 - Large guns 50mm-75mm

[illegible][illegible]

Russian Aircraft Data Table											
Aircraft	Type	Maneuver	Attack	Defense	AA Def	Guns	Bombs	Rockets	Move	Range	Date
I-153		5	1	3	-2	2x 0	2x 165				1/38
I-16 Type 10		5	2	4	-1	4x 0		6x RS-82			1/38
I-16 Type 24		7	5	5		2x 2, 2x 0	440				1/39
Mig-1		11	2	6		1x 1, 2x 0		6x RS-82			9/40
Mig-3		11	2	6		1x 1, 2x 0		6x RS-82			4/41
LaGG-1		10	6	6		2x 2, 2x 1					12/40
LaGG-3		8	4	6		1x 2, 2x 1		6x RS-82			2/41
La-5FN		11	4	7		2x 2	2x 220				6/42
La-7		13	6	7		3x 2	2x 220				1/44
Yak-1		10	4	6		1x 2, 2x 1					5/40
Yak-3		12	4	6		1x 2, 2x 1					3/43
Yak-9D		10	4	7		1x 2, 2x 1	2x 220				12/42
Yak-9U		13	4	7		1x 2, 2x 1					12/44
Il-2 'Sturmovik'		3	5	9	+1	2x 2, 2x 0	880				5/41
Il-2M 'Sturmovik'		3	5,1	9	+1	2x 2, 2x 0	880				9/42
Il-2m3		4	7,1	10	+2	2x.2, 2x 1	1300				1/43
Il-2m3		4	7,1	10	+2	2x 4					4/43
Il-10		6	9,1	10	+2	4x 2					2/45

French Aircraft Data Table										
Aircraft	Type	Maneuver	Attack	Defense	AA Def	Guns	Bombs	Torpedoes	Range	Date
Latecoere 298										
Vought 156 F										

Dutch Aircraft Data Table											
Aircraft	Type	Maneuver	Attack	Defense	AA Def	Guns	Bombs	Rockets	Move	Range	Date
										6	
										12	
										8	

Bombing Accuracy Factors vs. Ships	
Factor	Adjust
Crew quality level II	0
Crew quality level I	-1
Crew quality level III	+1
Each time damaged by AA.	-1
0-30° off ends attack angle.	0
30° - 60° off ends attack angle.	-1
Side on attack angle.	-2
Ship speed less than 2.	+2
Ship speed of 2-8.	+1
Ship course 30° or more different than last impulse.	-1
Aircraft evasive maneuvering	-1
Dive Bombing	+1
Low level bombing	0
Medium level bombing	-2
High level bombing	-3

Bombing To-Hit (D100>Low)										
Accuracy Factors	Target Size									
	-1	0	1	2	3	4	5	6	7	8
-6	0	0	1	1	2	2	2	3	3	3
-5	1	1	2	3	3	4	4	4	5	5
-4	2	2	3	4	5	5	6	7	7	7
-3	3	3	4	5	6	7	8	9	10	10
-2	3	4	5	6	7	9	10	11	12	13
-1	4	5	8	9	11	12	14	15	17	18
0	5	7	9	13	15	17	19	21	22	24
1	7	9	12	17	20	22	25	28	31	32
2	10	14	18	23	27	29	32	35	38	40
3	13	18	22	29	32	35	38	42	45	47
4	17	22	27	33	37	40	43	46	48	50
Effective Near Miss is 10 more than the number listed.										

Effective Near Miss Damage (D10)						
D10	Damage					
Loc	1-2	Bow	3-8	Amidship	9-10	Stern
	Pf (D+3)		H(D+3), F(D+3)		Pf(D+3), DC(D+3)	
D+3 Roll bomb damage ('Dam') factor plus 3 to effect this type of damage.						

Strafing Penetration				
Forward Guns Fac.	Altitude			
	Very Low		Low	
0	¼	0	¼	0
1	1	⅛	½	¼
2	1	¼	1	½
3	1½	½	1	1
4	2½	1	2	1½
5	3	1½	3	2

Bombing Altitude - Location of Hit			
D10	Dive Bomb, Medium and High Level	D10	Low Level Bomb DAF9
all	Horizontal Location	1-9	Horizontal Location
		10	Vertical Location
D10	Kamikaze DAF7		
1-7	Horizontal Location		
8-10	Vertical Location		

Penetration of AP Bomb						
Size to (lb.)	Dam	Dive	Low		Medium	High
150						
560	6	3	1	2½	3½	4
800	5	4	1½	3	4	5
1000	4	5	2	4	5	6
1200	4	5½	2	4½	5½	6½
1600	3	6	2½	5	6	7
2000	2	6½	2½	5½	7	8
2250	2	7	3	6	7½	8½

Penetration of SAP Bomb						
Size to (lb.)	Dam	Dive	Low		Medium	High
150	8	1½	1	1	1½	2
260	6	2	1	1½	2	2½
560	5	3	1½	2½	3	3½
800	4	3½	1½	3	3½	4
1000	3	4	2	3	4	5
1200	3	4½	2	3	4½	5
1600	2	5	3	4	5	6
2000	1	6	4	5	6	7
2250	1	6	4	5½	6½	7

Penetration of GP Bomb						
Size to (lb.)	Dam	Dive	Low		Medium	High
75	9	1	½	1	1	1
150	8	1½	1	1½	2	2½
260	6	2	1½	2	2½	3
560	4	3	2	2½	3	4
800	3	3½	2½	3	3½	4½
1000	2	4½	3	4	4½	5½
1200	2	4½	3½	4½	4½	5½
1600	1	5	4	5	5	6
2000	0	6	5	5½	6	7
2250	0	6	5	6	6½	7

Remember to use HE variable penetration column.

Minimum Range for Air Launched Torpedo		
Crew Quality		
Level I	Level II	Level III
12	9	6

Anti-Aircraft To-Hit Table (%)					Anti-Aircraft To-Hit Table (%)							
Factors	Number of Hits				Factors	Number of Hits						
	1	2	3	4		1	2	3	4	5	6	
1	1				51	51	14	3	-1	-4		
2	2				52	52	15	3	0	-4		
3	3	-4			53	53	15	3	0	-4		
4	4	-4			54	54	16	3	0	-4		
5	5	-4			55	55	16	3	1	-4		
6	6	-3			56	56	16	4	1	-4		
7	7	-2			57	57	17	4	1	-4		
8	8	-1			58	58	17	4	1	-4		
9	9	1			59	59	18	4	1	-4		
10	10	1			60	60	18	4	1	-4		
11	11	1			61	61	19	5	1	-4		
12	12	1			62	62	19	5	1	-4		
13	13	1	-4		63	63	20	5	1	-4		
14	14	1	-4		64	64	20	5	1	-4		
15	15	2	-4		65	65	21	5	1	-3		
16	16	2	-4		66	66	21	5	1	-3		
17	17	2	-4		67	67	22	6	1	-3		
18	18	2	-3		68	68	22	6	1	-3		
19	19	2	-3		69	69	23	6	1	-3		
20	20	3	-3		70	70	23	6	1	-3		
21	21	3	-3		71	71	24	7	1	-3		
22	22	3	-2		72	72	24	7	1	-2		
23	23	4	-2		73	73	25	7	2	-2		
24	24	4	-1		74	74	25	7	2	-2		
25	25	4	-1		75	75	25	7	2	-2		
26	26	4	0		76	76	26	8	2	-2		
27	27	5	0		77	77	26	8	2	-2	-4	
28	28	5	1		78	78	27	8	2	-1	-4	
29	29	5	1	-4	79	79	27	8	2	-1	-4	
30	30	6	1	-4	80	80	28	9	2	-1	-4	
31	31	6	1	-4	81	81	28	9	2	-1	-4	
32	32	6	1	-4	82	82	29	9	2	-1	-4	
33	33	7	1	-4	83	83	29	9	2	0	-4	
34	34	7	1	-4	84	84	30	10	2	0	-4	
35	35	8	1	-4	85	85	30	10	3	0	-4	
36	36	8	1	-4	86	86	31	10	3	0	-4	
37	37	8	1	-4	87	87	31	10	3	0	-4	
38	38	9	1	-4	88	88	32	11	3	1	-4	
39	39	9	1	-3	89	89	32	11	3	1	-4	
40	40	10	1	-3	90	90	33	11	3	1	-4	
41	41	10	2	-3	91	91	33	12	3	1	-4	
42	42	10	2	-3	92	92	34	12	3	1	-4	
43	43	11	2	-3	93	93	34	12	3	1	-4	
44	44	11	2	-3	94	94	35	12	3	1	-4	
45	45	12	2	-2	95	95	35	13	4	1	-3	
46	46	12	2	-2	96	96	36	13	4	1	-3	
47	47	12	2	-2	97	97	36	13	4	1	-3	
48	48	13	2	-1	98	98	36	14	4	1	-3	
49	49	13	2	-1	99	99	37	14	4	1	-3	
50	50	14	3	-1	100	100	37	14	4	1	-3	

Numbers of 0 or less are rolled for as unders.

For totals above 100 roll once at 100 column and roll on remainder column.

100 is not an automatic hit. An overs roll of 101 or more is a miss.

Binomial probability of 1.3%.

Anti-Aircraft To-Hit % per Gun						
		Altitude				Range
		Very Low	Low	Medium	High	
Short Range	Crossing	2	2	2		1-15
	Direct	5	4	4		1-15
Long Range		2	2	2	1	15-50
Other factors						
Target Evasive		-1	-1	-1		
Limited Visibility		-1	-1	x ½	x ½	
VT Shell (long)			+1	+1	+1	
Radar FCD (both)			+1	+1	+1	
No AA FCD (both)		x ½	x ½	x ½	x ½	
Ship turned 30° or more		x ½	x ½	x ½	x ½	
Add or subtract factors first. Then do any multiplication.						

Air to Air Combat Factors	
Attacking Aircraft Disposition	Factor
Attacking opponent from a higher level.	+2
Tailing opponent aircraft.	+2
Wingman supporting attack on opponent aircraft.	+1
Aircraft damaged	-2
Pilot is Level I	-2
Pilot is Level II	0
Pilot is Level III	-2
Carrying rockets	-1
Bombing or carrying bombs or torpedoes	-3