

# Douglas A-20A Havoc

A/C Type: Light bomber  
 Engine(s): Two Wright R-2600-11 radials  
 Eng. Pwr: 2550-3200 hp, air-cooled  
 A/C Crew: Pilot, Bombadier, Gunner

Maximum Speed: 347 mph at 12,400 ft  
 Maximum Ceiling: 28,100 / 22,000 / 15,000 ft.

Defense factor: 5 Size Modifier: +0  
 Damage Factor: 18/24 Endurance: 550  
 Cockpit View: Fair Blind Area: Rear, Low

Protection: Cockpit +0 Fuel +1 Engine +0

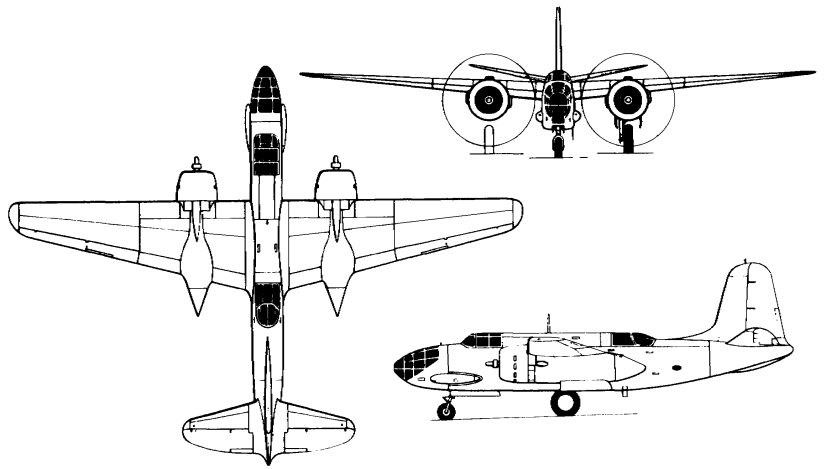
Climb Decel/ Dive Accel: 3.0 / 1.0

Weight and Load Limit: 4000 / 5-8

Wpn Stations Weight Allowed Loads  
 1,2 2000 lbs 2x1000 lb bomb or  
 1x 2000 lb bomb  
 1x xxx-gal FT

Country: USA

Service Entry Date: Aug, 1942



Class: L

Victory Points: 7-13

## AIRCRAFT PERFORMANCE CHART

Altitude		Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(3)	Min HT(4)	Min BT(5)	Min ET(-)	Altitude		Average Rate of Climb
Levels	Bands								Levels	Bands	
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	3.0	5.5	9.0	4.0	6.0	7.0	--	25-30	HI	300
19-24	MH	2.5	6.0	9.0	3.5	5.5	6.5	--	19-24	MH	600
13-18	ML	2.5	7.0	9.0	3.5	5.0	6.0	--	13-18	ML	1,000
7-12	LO	2.0	6.5	9.0	3.0	4.5	5.0	--	7-12	LO	1,400
1-6	VL	2.0	6.0	8.0	2.5	3.5	4.0	--	1-6	VL	1,600

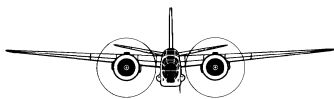
## FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
N1	One .30 cal mg	18	4
N2	One .30 cal mg	18	4
DG	Two .30 cal mg	12	4
VG	One .30 cal mg	8	4

## GUN ATTACK FACTORS

Rng	N1	N2	N3	DG	VG	Total
0	12	18	18	8	4	12
1	8	12	12	6	3	8
2	6	8	8	4	2	6
3	4	6	6	3	1	4
4	3	4	4	2	1	3
5	2	3	3	1	1	2
6	--	2	2	--	--	--
7	--	--	--	--	--	--

## WEAPON STATION LOCATION



1

## POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1.0/1.5	0.5/0.75	--	--	HI
19-24	MH	1.0/2.0	0.5/1.0	--	--	MH
13-18	ML	1.5/2.5	1.0/1.5	--	--	ML
7-12	LO	2.0/3.0	1.5/2.0	--	--	LO
1-6	VL	2.5/3.5	1.5/2.0	--	--	VL
Banking FPs		3	4	6	8	
Side Slip FPs		4	5	7	9	

## NOTES AND VARIANTS

### Defensive Guns

**DG:** Rear +30, level to high; 6:00 high only.  
**VG:** Rear, low

**Douglas A-20A:** Avail Aug-41. First USAAF production version, produced without a supercharger. Armed N1, DG, VG. Used in New Guinea. 140 built.

**Field-mod Strafers:** Some armed with additional forward .50 cal mgs as field mods (Pappy Gunn's strafers). Roll 1D10:

1-4: no extra MG per ADC

5-8: +2 .50 cal MG Add N2.

9-10: +4 .50 cal MG Add N2+N3.

New total attack: 30/20/14/10/7/5/2/-

New total attack: 48/32/22/16/11/8/4/-

# Douglas A-20B Havoc

A/C Type: Light bomber  
 Engine(s): Two Wright R-2600-11 radials  
 Eng. Pwr: 2650-3200 hp, air-cooled  
 A/C Crew: Pilot, 2 Gunners

Maximum Speed: 350 mph at 12,000 ft  
 Maximum Ceiling: 28,600 / 21,000 / 15,000 ft.

Defense factor: 5 Size Modifier: +0  
 Damage Factor: 18/24 Endurance: 550  
 Cockpit View: Fair Blind Area: Rear, Low

Protection: Cockpit +0 Fuel +1 Engine +0

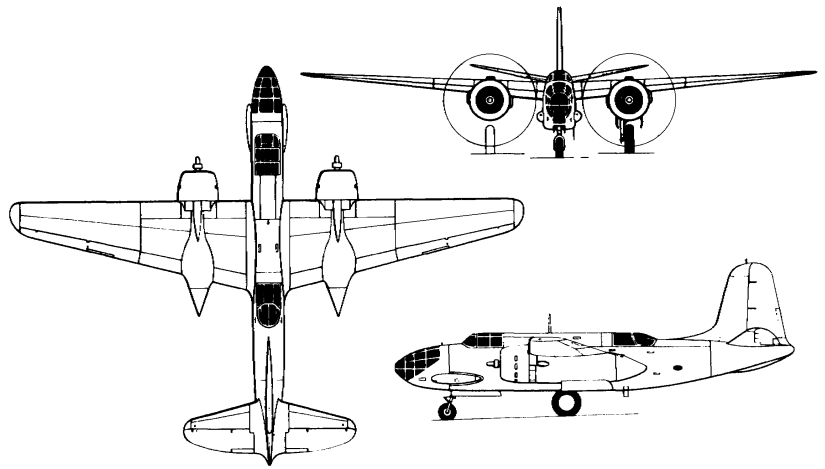
Climb Decel/ Dive Accel: 3.0 / 1.0

Weight and Load Limit: 2400 / 5-8

Wpn Stations Weight Allowed Loads  
 1 2000 bombs to 1000 lbs  
 or 1 torpedo

Country: USA

Service Entry Date: June, 1942



Class: L

Victory Points: 7-14

## AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(3)	Min HT(4)	Min BT(5)	Min ET(-)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	3.0	6.0	9.5	4.0	6.0	7.0	--	25-30	HI	400
19-24	MH	2.5	6.0	9.5	3.5	5.5	6.5	--	19-24	MH	800
13-18	ML	2.5	6.5	9.0	3.5	5.0	6.0	--	13-18	ML	1,300
7-12	LO	2.0	7.0	9.0	3.0	4.5	5.0	--	7-12	LO	1,700
1-6	VL	2.0	6.5	8.5	2.5	3.5	4.0	--	1-6	VL	2,000

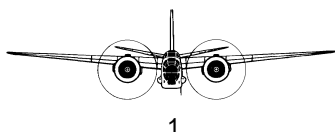
## FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
N1	One .50 cal M2 mg	18	3
N2	One .50 cal M2 mg	18	3
DG	One .50 cal M2 mg	10	3
VG	One .30 cal mg	8	4

## GUN ATTACK FACTORS

Rng	N1	N2	DG	VG	Total
0	9	9	6	4	18
1	6	6	4	3	12
2	4	4	3	2	8
3	3	3	2	1	6
4	2	2	1	1	4
5	1.5	1.5	1	1	3
6	1	1	1	--	2
7	--	--	--	--	--

## WEAPON STATION LOCATION



1

## POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1.5/2.5	0.5/1.0	--	--	HI
19-24	MH	2.0/3.0	1.0/1.5	--	--	MH
13-18	ML	2.5/3.5	1.5/2.0	--	--	ML
7-12	LO	2.5/3.5	1.5/2.0	--	--	LO
1-6	VL	2.5/3.5	1.5/2.0	--	--	VL
Banking FPs		3	4	6	8	
Side Slip FPs		4	5	7	9	

## NOTES AND VARIANTS

### Defensive Guns

**DG:** Rear +30, level to high; 6:00 high only.  
**VG:** Rear, low

**Douglas A-20B: Available Jun-42.** Used by USAAF in North Africa. Some sent to Pacific. 600+ sent to Soviet Union (who were the only ones to use the torpedo option operationally). 950 built.

**Field-mod Strafers:** Some armed with additional forward .50 cal mgs as field mods (US service). Roll 1D10:

1-4: no extra MG No change to ADC  
 5-8: +2 .50 cal MG Add N3. Values as total. New total: 36/24/16/12/8/6/4/-  
 9-10: +4 .50 cal MG Add N3+N4 as above. New total: 54/36/24/18/12/9/6/-

# Douglas A-20G Havoc

A/C Type: Light Bomber  
 Engine(s): Two Wright R-2600-23 radial  
 Eng. Pwr: 3200 hp, air-cooled  
 A/C Crew: Pilot, 2 Gunners

Maximum Speed: 339 mph @12,400 ft  
 Maximum Ceiling: 25,800 / 20,000 / 14,000 ft.

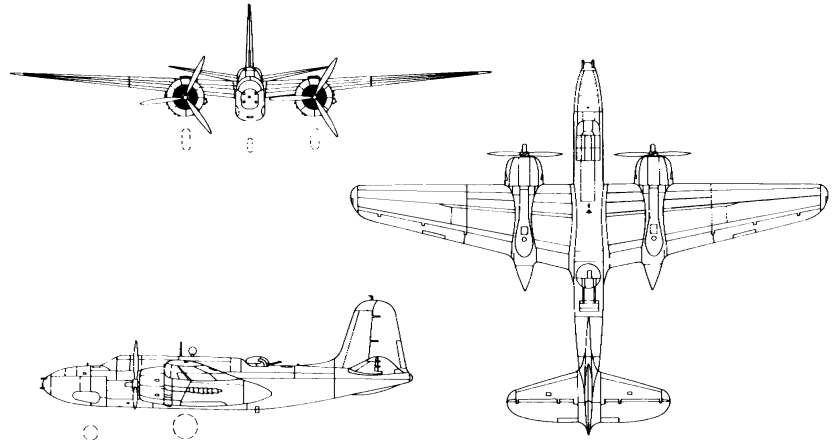
Defense factor: 5 Size Modifier: +0  
 Damage Factor: 12/18 Endurance: 155  
 Cockpit View: Fair Blind Area: Rear

Protection: Cockpit +2 Fuel +2 Engine +0  
 Climb Dece/ Dive Accel: 3.0 / 1.0  
 Weight and Load Limit: 4,000 / 5-8

Wpn Stations Weight Allowed Loads  
 1, 2,4,5 500 1 bomb  
 3 2000 1 bomb, mine, torp,  
 FT, or depthbomb

Country: USA

Service Entry Date: Aug 1943



Class: L

Victory Points: 8-16

## AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(5)	Min HT(6)	Min BT(7)	Min ET(-)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	3.0	6.0	9.5	5.0	6.0	7.0	--	25-30	HI	300
19-24	MH	2.5	6.0	9.5	4.5	5.5	6.5	--	19-24	MH	600
13-18	ML	2.5	6.5	9.0	4.0	5.0	6.0	--	13-18	ML	1,000
7-12	LO	2.0	6.5	9.0	3.5	4.5	5.0	--	7-12	LO	1,400
1-6	VL	2.0	6.0	8.0	3.0	4.0	4.5	--	1-6	VL	1,800

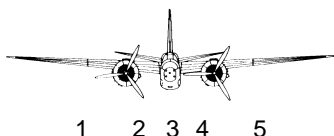
## FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
<b>N1</b>	Two .50 cal M2 MG	7	3
<b>N2</b>	Two .50 cal M2 MG	7	3
<b>N3</b>	Two .50 cal M2 MG	7	3
<b>DT</b>	Two .50 cal M2 MG	8	3
<b>VG</b>	One .50 cal M2 MG	8	3

## GUN ATTACK FACTORS

Rng	N1	N2	N3	DT	VG	Total
0	18	18	18	18	6	54
1	12	12	12	12	4	36
2	8	8	8	8	3	24
3	6	6	6	6	2	18
4	4	4	4	4	1	12
5	3	3	3	3	1	8
6	2	2	2	2	1	6
7	--	--	--	--	--	--

## WEAPON STATION LOCATION



## POWER VERSUS SPEED CHART

		(per engine)				
Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1.0/2.0	0.5/1.0	--	--	HI
19-24	MH	1.5/2.5	0.5/1.5	--	--	MH
13-18	ML	2.0/3.0	1.0/2.0	--	--	ML
7-12	LO	2.0/3.0	1.0/2.0	--	--	LO
1-6	VL	2.0/3.0	1.0/2.0	--	--	VL
Banking FPs		3	4	5	7	
Side Slip FPs		3	5	6	8	

## NOTES AND VARIANTS

**DT:** All, level to high; 6:00 hi only. **VG:** Rear, low.

**Douglas A-20G:** Available Sep-43. major solid nose production model. Served in Western Europe and the Pacific (with 5th AF starting in early 1944). First 250 a/c armed with 4x 20mm M2 w/3 ammo (ea: 22/16/11/7/5/4/3/-), 2x .50 cal w/10 ammo vice 6x .50 cal FF (total: 106/76/52/34/24/19/13/-). Cannon prone to jamming; most went to USSR. 28 to Australia Jun-44. 2850 built.

**Douglas A-20J:** Available Jul-44. A20G with frameless transparent nose. Used as lead bomber. Adds bombardier to crew. Armed with only N1, DT, VG. 169 with RAF as Boston IV. Better armored but less maneuverable than Boston III (so thought No. 342 Lorraine Sqdn). Norden bombsight. 450 built.

**F-3A:** Avail May-44. 23 A-20Js made into night photo-recon aircraft used over Europe. Carried photoflash bombs on wing stations. No BB, no nose guns.



# Douglas P-70 Nighthawk

A/C Type: Long-range fighter bomber  
 Engine(s): 2 P&W R-1830-S3C4G Twin Wasp  
 Eng. Pwr: 2800-3200 hp, air-cooled  
 A/C Crew: Pilot, radar operator, gunner

Maximum Speed: 329 mph at 4,000 ft  
 Maximum Ceiling: 28,500 ft.

Defense factor: 6 Size Modifier: +0  
 Damage Factor: 15/23 Endurance: 250  
 Cockpit View: Fair Blind Area: Rear, Low

Protection: Cockpit +0 Fuel +1 Engine +0

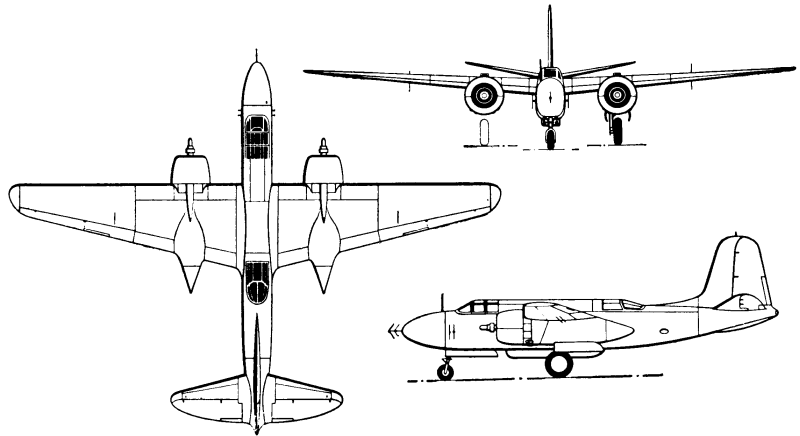
Climb Dece/ Dive Accel: 3.0 / 1.0

Weight and Load Limit: 3,200 / 3-12

Wpn Stations Weight Allowed Loads

Country: USA

Service Entry Date: November 1942



Class: F

Victory Points: 7-13

## AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(4)	Min HT(5)	Min BT(6)	Min ET(-)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	3.0	6.0	9.5	4.0	6.0	7.0	--	25-30	HI	300
19-24	MH	2.5	6.0	9.5	3.5	5.5	6.5	--	19-24	MH	600
13-18	ML	2.5	6.0	9.0	3.5	5.0	6.0	--	13-18	ML	1,000
7-12	LO	2.0	6.5	9.0	3.0	4.5	5.0	--	7-12	LO	1,400
1-6	VL	2.0	6.5	8.5	3.0	4.0	4.5	--	1-6	VL	1,600

## FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
N1	Two 20mm Hisp. Suiza	2	2
N2	Two 20mm Hisp. Suiza	2	2
N3	Two .50 cal M2 mg	9	3
N4	Two .50 cal M2 mg	9	3
N5	Two .50 cal M2 mg	9	3

## GUN ATTACK FACTORS

Range	N1	N2	N3	N4	N5	Total
0	44	44	18	18	18	88/54
1	32	32	13	13	13	64/39
2	22	22	9	9	9	44/27
3	14	14	6	6	6	28/18
4	10	10	4	4	4	20/12
5	8	8	3	3	3	16/9
6	6	6	2	2	2	12/6
7	--	--	--	--	--	--

## WEAPON STATION LOCATION



## POWER VERSUS SPEED CHART

(per engine)

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1.0	0.5	--	--	HI
19-24	MH	2.0	1.0	--	--	MH
13-18	ML	3.0	2.0	--	--	ML
7-12	LO	3.5	2.0	--	--	LO
1-6	VL	3.5	2.0	--	--	VL
Banking FPs		3	4	5	7	
Side Slip FPs		3	4	6	8	

## NOTES AND VARIANTS

**P-70 Nighthawks:** Long-range fighter version of the A-20 Havoc bomber. Mostly used to train US night fighter crews, while the P-61 was being developed. Saw a little operational use in the Pacific in 1943. P-70 based on A-20A with unsupercharged Wright R-2600-11 1600-hp radial engines. 60 built.

**P-70A-1:** Available July 43. Based on A-20C. Armed with N3, N4, N5 only and AI Mk IV radar. 39 built

**P-70A-2:** Available late 43. Based on A-20G. Armed with N3, N4, N5 only and AI Mk IV radar. 65 built

**P-70B-2:** Available 44. Based on A-20J. 105 built. Not used operationally.