STATISTICS OF ALL THE AERO ENGINES OF PACKARD

Engines are listed in order of their displacement without regard to when the engine was designed or produced, and without regard to what type of engine, (i.e. whether gasoline or Diesel, etc.). All known Packard aero engines are listed, whether production or experimental. In a few cases if the engine was experimental it is possible it was designed on paper only and no engine was actually built.

Engine Model	Date	Type	Number Made	Disp. cu. in.	Weight lb.	Bore	Stroke	Valves /Cyl	Rated HP RPM	Max HP RPM	BMEP	Price	Remarks
1A-258	1922	single	1	258		6 5/8	7 1/2	4	** 50/1500		120		1M-1551 test engine
299	1916	V-12(60)	2	299	500	2 21/32	4 1/2	2	100/2300	130/3300			"299" racer engine
452	1917	IL-6	1	452		4	6	2	**140/2000				6 cyl. aero exp.
1A-744	1919	V-8(60)	9	744	542	4 3/4	5 1/4	2	@180/1600	200/2000	115	$14658	OHC
1A-825	1921	V-8(60)	12	825	547	5	5 1/4	2	@230/1800	235/1900	137	$14860	OHC
905-1	1916	V-12(40)	1	905	800	4	6	2	@235/1800	250/2050	120		OHC
905-2	1917	V-12(40)	1	905		4	6	2	275/2000				OHC
905-3	1917	V-12(40)	1	905	990	4	6	2	285/2000				OHC, called 1A-905
DR-980	1928	R-9(D)	100#	980	550	4 13/16	6	1	@225/1950	240/2000	94	$4025	1st Diesel to fly
DR-980B	1931	R-9(D)	1#	980	590	4 13/16	6	2	280/2100		108		exp.
L-8	1917	V-8(45)	6	1100	525	5	7	2	275/1700	315/1900	123		(Packard 1A-1100)
1A-1116	1919	V-12(60)	6	1116	733	4 3/4	5 1/4	2	@270/1600	370/2100	125	$18625	OHC
1A-1237	1920	V-12(60)	55#	1237	734	5	5 1/4	2	@315/1600	400/2300	131	$8986	OHC
2A-1237	1923	V-12(60)	*	1237		5	5 1/4	2	315/1600	400/2300			proposed, built? OHC
1A-1300	1923	V-12(60)	1	1300	684	5 1/8	5 1/4	4	@375/1700	460/2200	137		OHC
DR-1340	1932	R-9(D)	2#	1340	1050	5 1/2	6 1/4		550/2100		77		2-cycle
1A-1464	1924	V-12(60)	*	1464		5 3/8	5 3/8	4	**475/2000				1st redesign of 1A-1300
1A-1500	1924	V-12(60)	29#	1498	720D	5 3/8	5 1/2	4	@500/2000	520/2200	134	$12000DI, $17345G	OHC
2A-1500	1925	V-12(60)	200#	1530	880G	5 3/8	5 1/2	4	@500/2000	620/2500	142	$12000DI, $17345G	OHC wt. 780D
3A-1500	1927	V-12(60)	19#	1530	915G	5 3/8	5 1/2	4	@500/2000	600/2500	140	$12000DI, $17345G	OHC wt. 800D
DR-1520	1932	R-9(D)	1	1520	1050	5 3/4	6 1/2		550/2100		68		2-cycle
1A-1551	1921	IL-6	13	1551	1138	6 5/8	7 1/2	4	@300/1400	350/1500	123	$16000	OHV
L-12A	1917	V-12(45)	5346	1650	858	5	7	2	@410/1750	430/1900	120	$4000 to $5625	5 exp. & 5341 prod.
L-12B	1918	V-12(45)	6	1650		5	7	2	@420/1750	446/1900	125		epicyclic geared
L-12C	1918	V-12(45)	3	1650		5	7	2	@400/1750	420/1900	116		spur geared
L-12N	1918	V-12(45)	1501	1650	858	5	7	2	360/1700	390/1900	110		low comp. Navy
L-12E	1918	U-12	1	1650	1136	5	7	2	400/1700		120		Duplex- 2 crankshafts
1A-1650	1919	V-12(45)	80#	1650	860	5	7	2	420/1750	446/1900	122	$4500	Packard's post war Liberty

Packard-Built Rolls-Royce Merlin engines (V-1650 and Merlin models listed below) totaled 55,873. Production figures by individual model are known for the US models (V-1650) and are listed by each model. They are not currently known for the British models (Merlin). All were SOHC engines.
(Note that Continental also built 897 V-1650 engines, models quantities as follows: V-1650-3: 2, V-1650-7: 752, V-1650-9: 124, V-1650-17: 19)

V-1650-1	1941	V-12(S60)	2760	1649	1510	5.4	6	4	1385/3000	1435/3000		cost was $13286 to
V-1650-3	1943	V-12(S60)	5851	1649	1700	5.4	6	4	1280/3000	1600/3000		$17185 for single stage engines.
V-1650-5	1944	V-12(S60)	?	1649	1575	5.4	6	4	1280/3000	1600/3000		
V-1650-7	1943	V-12(S60)	6325	1649	1715	5.4	6	4	1315/3000	1720/3000		
V-1650-9	1944	V-12(S60)	1460	1649	1725	5.4	6	4	1380/3000	2280/3000	360	
V-1650-11	1945	V-12(S60)	2	1649	1715	5.4	6	4	1380/3000	2280/3000	360	
V-1650-13	1944	V-12(S60)	?	1649	1700	5.4	6	4	1280/3000	1600/3000		
V-1650-15	1944	V-12(S60	?	1649	1575	5.4	6	4	1280/3000	1600/3000		cost was $12548 to
V-1650-17	1944	V-12(S60)	2	1649	1715	5.4	6	4	1315/3000	1720/3000		$15867 for two stage engines.
V-1650-19	1945	V-12(S60)	2	1649	1770	5.4	6	4	1350/3000	2200/3000		
V-1650-21	1945	V-12(S60)	?	1649	1750	5.4	6	4	1380/3000	2280/3000	360	
V-1650-23	1945	V-12(S60)	40	1649	1725	5.4	6	4	1380/3000	2280/3000	360	
V-1650-25	1945	V-12(S60)	40	1649	1760	5.4	6	4	1380/3000	2280/3000	360	
Merlin 28	1941	V-12(S60)		1649	1475	5.4	6	4	1385/3000	1460/3000		
Merlin 29	1941	V-12(S60)		1649	1475	5.4	6	4	1385/3000	1460/3000		
Merlin 31	1941	V-12(S60)		1649	1475	5.4	6	4	1385/3000	1460/3000		
Merlin 33	1943	V-12(S60)		1649	1500	5.4	6	4	1385/3000	1460/3000		
Merlin 38	1943	V-12(S60)		1649	1500	5.4	6	4	1385/3000	1460/3000		
Merlin 68	1943	V-12(S60)		1649	1675	5.4	6	4	1315/3000	1710/3000		
Merlin 69	1943	V-12(S60)		1649	1675	5.4	6	4	1315/3000	1710/3000		
Merlin 224	1944	V-12(S60)		1649	1500	5.4	6	4	1125/3000	1600/3000		
Merlin 225	1944	V-12(S60)		1649	1500	5.4	6	4	1125/3000	1600/3000		

Engine Model	Date	Type	Number Made	Disp. cu. in.	Weight lb.	Bore	Stroke	Valves /Cyl	Rated HP RPM	Max HP RPM	BMEP	Price	Remarks
Merlin 266	P1944	V-12(S60)		1649	1675	5.4	6	4	1315/3000	1710/3000			
Merlin 300	1945	V-12(S60)		1649	1675	5.4	6	4	1660/3000	2075/3000			
Merlin 301	1945	V-12(S60)		1649	1675	5.4	6	4	1660/3000	2075/3000			
DR-1655	1932	R-9(D)	1	1655	1150	6	6 1/2	1	550/2100		125		Exp. Diesel
1A-2025	1920	V-12(60)	11#	2025	1142D	5 3/4	6 1/2	4	@550/1800	600/2000	125	$20538	OHC (wt.w./mag.1172)
1A-2200	1923	V-12(60)	1	2205		6	6 1/2	4	600/1800	680/2000			OHC (made as 6 cyl.)
1D-2270	1952	V-16(TD60)	5	2272	4395	5 3/8	6 1/4	4	@800/2000	900/2300	140		DOHC
1A-2500	1924	V-12(60)	6#	2540	1120	6 3/8	6 1/2	4	800/2000	850/2500			OHC
2A-2500	1925	V-12(60)	75#	2540	1120	6 3/8	6 1/2	4	800/2000	850/2500	130	$19375G	OHC
3A-2500	1926	V-12(60)	175#	2540	1385(G)	6 3/8	6 1/2	4	@800/2000	900/2600	135	$15625D, $19375G	OHC
4A-2500	1927	V-12(S60)	1	2540	1640	6 3/8	6 1/2	4	@900/2000	950/2200			OHC
5A-2500	193?	V-12(S60)	1	2540	1430	6 3/8	6 1/2	4	1500/2500	1750/2800	190		OHC experimental
1A-2775	1927	X-24(60)	1	2775	1513	5 3/8	5	4	1200/2600	1250/2700	150	$25000	OHC
1A-2775	1928	X-24(S60)	1	2775	1635	5 3/8	5	4	1400/2600	1500/2700		$35000	supercharged OHC
2A-2775	1935	X-24(S60)	1	2775	1722	5 3/8	5	4	1900/2800		196		exp. supercharged
W-1	1921	W-18(40)	4	2832	1720	5 1/2	6 1/2	4	@710/1700	804/1900	135		Air Service-designed
W-1-A	1923	W-18(40)	5#	2832	1770	5 1/2	6 1/2	4	700/1700	800/1800			and Packard-built
W-1-B	1923	W-18(40)	5#	2832		5 1/2	6 1/2	4	700/1700	800/1800			OHC
1A-3000	193?	H-24	*	2350		5 3/8	5 1/2	4	2000/2800	2350/3000	185		OHC " H" exp.
W-2	1923	W-18(40)	2#	4980		6 1/2	7 1/2	4	**1000/1700		142		Air Service designed OHC
1A-5000	1939	X-24(60)	*	5080	2830	6 3/8	6 1/2	4	3500				OHC exp.
2A-5000	1939	H-24	*	5080	2750	6 3/8	6 1/2	4	3000/2500	3500/2700	190		OHC exp.
3A-5000	1939	X-24(90)	*	5080		6 3/8	6 1/2		3500				exp. sleeve valve

JET ENGINES

Engine model	Date	Type	Number made	Weight	Thrust	Price	Remarks
XJ41	1946	Turbo-Jet	7#	1100	4000		Experimental turbojet. 7 were contracted
XJ49	1948	Turbo-Fan	1	3000	10000		Experimental fan jet. Highest thrust jet built up to that time.
J47	1952	Turbo-Jet	3025	2389	5400	$44340*	GE turbojet built for Air Force under license

= Exact production figures for non-automotive engines have in most cases not survived. Estimated figures given are from sources such as military contracts, serial number information contained in Packard manuals and Packard engineering papers, and are considered accurate within 5%.

* = an engine design which may not have been constructed. If it was, only one or two prototypes would have been built.

** = estimated

Type - IL= in-line

V= vee configuration

R= radial

W= broad arrow configuration with three banks of cylinders.

X= x configuration with four banks of cylinders.

Following the configuration designation will be the number of cylinders. Following that in ( ) will be the following:

S if supercharged, T if turbocharged, D if Diesel and the included angle between the cylinder banks in the case of V, W and X engines. All Packard radial engines were air-cooled. All other types were water-cooled.

Price - Prices of military-contracted engines may be give as a range or an average (*) as they varied depending or production rates. If no price is quoted, it is either not known or the engine is of an experimental nature and the unit cost of such a small quantity would be astronomical and meaningless.

D = direct drive.

DI = direct drive, inverted configuration.

G = reduction geared propeller drive.

@ = A factory power graph has been found for this engine.

If particular technical data is unavailable for any model (which is the case for many experimental engines), that location will be left blank or estimated if it may be done with reasonable accuracy.

Any positions left blank are either because it does not apply (valves in sleeve valve engines for example) or because the data is unknown.

This information was compiled by Robert J. Neal while writing the book *Master Motor Builders*.

Geoffrey Sinclair provided the following on 13 October 2021:

The Ministry of Aircraft production initially tracked US Merlin production by version from start of production in August 1941 to the end of November 1943, then reverted to simply reporting total US Merlin production, the totals for the earlier versions are,

5,200 Merlin 28 (August 1941 to February 1943),
480 Merlin 29 (February to April, July to December 1942), To Canada for RCAF Hawker Hurricanes.
560 Merlin 31 (March 1942 to February 1943),
880 Merlin 33 (April to August 1943 and October 1943)

6,286 Merlin 38 (March to November 1943), production probably ongoing
2 Merlin 68 in November 1943, production probably ongoing