July 14, 1964

FOR THE RECORD

Attached are some basic facts about one of the greatest aircraft engines ever built. You will note that the engine and name started in 1924, and after one c hange of the "stroke" in 1926 and one change of "bore" in 1930 - the engine has been developed with the same displacement to 1625 today. It is still in small production today and will pass the 120,000 mark in 1964.

It established an enviable record in commercial and military aviation that is difficult to beat. Starting on American and E.A.L. in the Curtiss Condors - through the DC1 - DC2 to the famous DC3 series - they powered the first pressurized cabin transport (Boeing 307 in 1939), and the Lodestars of National. It was in many Fighters and Bombers from the Keystone of 1928 to over 60,000 engines in the B17's of World War Two. It has probably flown more different types of airplanes then any other aircraft engine. It also has been in development and production longer. The basic reason for its success was its technical leadership.

CYCLONE FACTS

1924 The name Cyclone was first used in 1924 and applied to the Wright 9 cylinder air cooled engine "P1" (R1654). This engine had 6" bore and 6½ stroke - was rated at 400 BHP @ 1650 RPM and weighed 840 lbs.

1924 Year Book - Preliminary Tests indicate very satisfactory performance.

1925 The Wright Cyclone 435 HP 9 Cylinder Radial Air Cooled has been continued and developed into the Model P2. Quote from Year Book.

1926 "Development of the Cyclone line was continued and several engine both geared and direct drive were delivered to the Navy. The Cyclone develops 435 BHP @ 1800 RPM."

"The outstanding development of the Wright Company during the year was the new type of Cyclone Engine Model R1750. This engine passed its 50 hour Navy test and is said to be the largest air cooled engine in the world developing 525 BHP. 6" bore, 6 7/8 stroke and 760 Lb. wt.
Originally designed for the Navy.

1927 The U.S. Navy established the policy that it would go air cooled and purchased 77 R1750 Cyclones. The U.S. Army also purchased 5 R1750 engines during this year for $14,188 each, rated at 525 BHP @ 1900 RPM.

1928 The Navy accepted 45 R1750's and 32 R1750-A's during the year. The U.S. Army purchased 68 R1750's, and Wright started commercial certification of the engine.

1929 The R1750 Cyclone received ATC 17 on January 26, 1929. 132 Cyclones were delivered to the U.S. Navy and 68 to the U.S. Army.

1930 Wright went out in front on the large air cooled radial field when it increased the bore of the R1750 fron 6.00 to 6 1/8 and kept the same stroke 6 7/8. This made the 1820 cubic inch displacement which has continued to the present models. It was certified with ATC #61 on September 8, 1930 at 575 BHP @ 1900 RPM. 345 R1820-E Engines were delivered to U.S. Navy in Fiscal 1930.

CYCLONE FACTS (Cont'd)

1930 - 1963 The Cyclone Series Engines were produced as follows for Military and Commercial through December 31, 1963

	Total
R1750 Series	568
R1820 E Series	721
R1820 F Series	3673
R1820 G Series	4092
R1820 G 100 Series	5319
R1820 G 200 Series WAD	22204
R1820 G 200 Series Studebaker (For B17's)	63789
R1820 G 200 Tank Caterpillar	120
R1820 C9HC Series	9063
R1820 C9HD Series WAD	820
R1820 C9HD Series Lycoming	3092
R1820 C9HE Series WAD	2304
R1820 C9HE Series Canadian P&W	287
R1820 C9HE Series Lycoming	3923
Total All Series "Cyclone 9"	119975 *

* Does not include C9's produced in Russia - quantity large but not known.

CYCLONE FAMILY RATING

Year	Model	Displacement	Bore	Stroke	Brake Horsepower	RPM	Weight
1924	P1	1654	6	6½	400	1650	840
1926	P2				435	1800	"
1926	R1750	1750		6 7/8	525	1900	760
1930	R1820E	1820	6 1/8	6 7/8	575	1900	850
1932	R1820F	"	"	"	750	1950	956
1935	R1820G	"	"	"	1000	2100	1198
1937	R1820G100	"	"	"	1100	2350	1275
1937	R1820G200	"	"	"	1200	2500	1310
1942	R1820 HC	"	"	"	1350	2700	1327*
1945	R1820 HD	"	"	"	1425	2700	1367
1954	R1820 HE	"	"	"	1525	2800	1455
1959	R1820 HE (Wet)				1625	2800	1484

* This is the first Reciprocating to be produced for less than one pound/horsepower.

	Take Off BMEP	Take Off RPM	#/HP	HP/Cu. In.
P1 (1924)	116	1650	2.10	0.241
C9HE 1961	253	2800	0.91	0.891
% Improvement	118%	70%	123%	270%

X

COMMERCIAL SALES PRICE HISTORY

Engine Model	Year	Gross Weight	Take-off BHP	Low Net Price	$/lb.	$/BHP.
GR1820E	1930	910	575	6,750.	7.42	11.74
GR1820E	1931	910	620	6,750.	7.42	10.89
GR1820F1	1934 (2)	1030	700	6,705.	6.51	9.58
	1932 (9)	920	670	7,000.	7.61	10.45
GR1820F2	1937 (1)	1050	750	7,245.	6.90	9.66
GR1820F52	1935 (8)	1060	804	7,305.	6.89	9.09
GR1820F52	1937 (9)	1085	875	7,785.	7.18	8.90
	1940 (1)	1095	875	8,250.	7.53	9.43
GR1820G2	1935 (12)	1163	1000	7,845.	6.75	7.85
	1940 (1)	1198	1000	8,730.	7.29	8.73
GR1820G2	1938 (3)	1198	1000	8,565.	7.15	8.57
GR1820G102	1936 (9)	1275	1100	8,345.	6.55	7.59
	1938 (5)	1275	1100	8,880.	6.96	8.07
GR1820G102A	1940 (1)	1275	1100	9,180.	7.20	8.35
GR1820G202A	1939 (2)	1290	1200	9,075.	7.03	7.56
	1940 (4)	1310	1200	9,750.	7.44	8.13
GR1820G202A	1942 (3)	1310	1200	10,022.	7.65	8.35
	1945 (5)	1320	1200	9,991.97	7.64	8.34
GR1820 (C9HD)	1946 (2)	1360	1425	15,000.	11.00	10.50
GR1820 (C9HD)	1946 (10)	1368	1425			
GR3350BA1	1945 (9)	2595	2200	24,781.20	9.55	11.30
GR3350BA2	1946	2651	2200	26,671.20	10.0	12.10
GR3350BA3	1946 (4)	2780	2200	32,073.00	11.5	14.60
GR3350BA3	1946 (10)	2780	2200	34,824.	12.5	15.80

REJ:cm
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