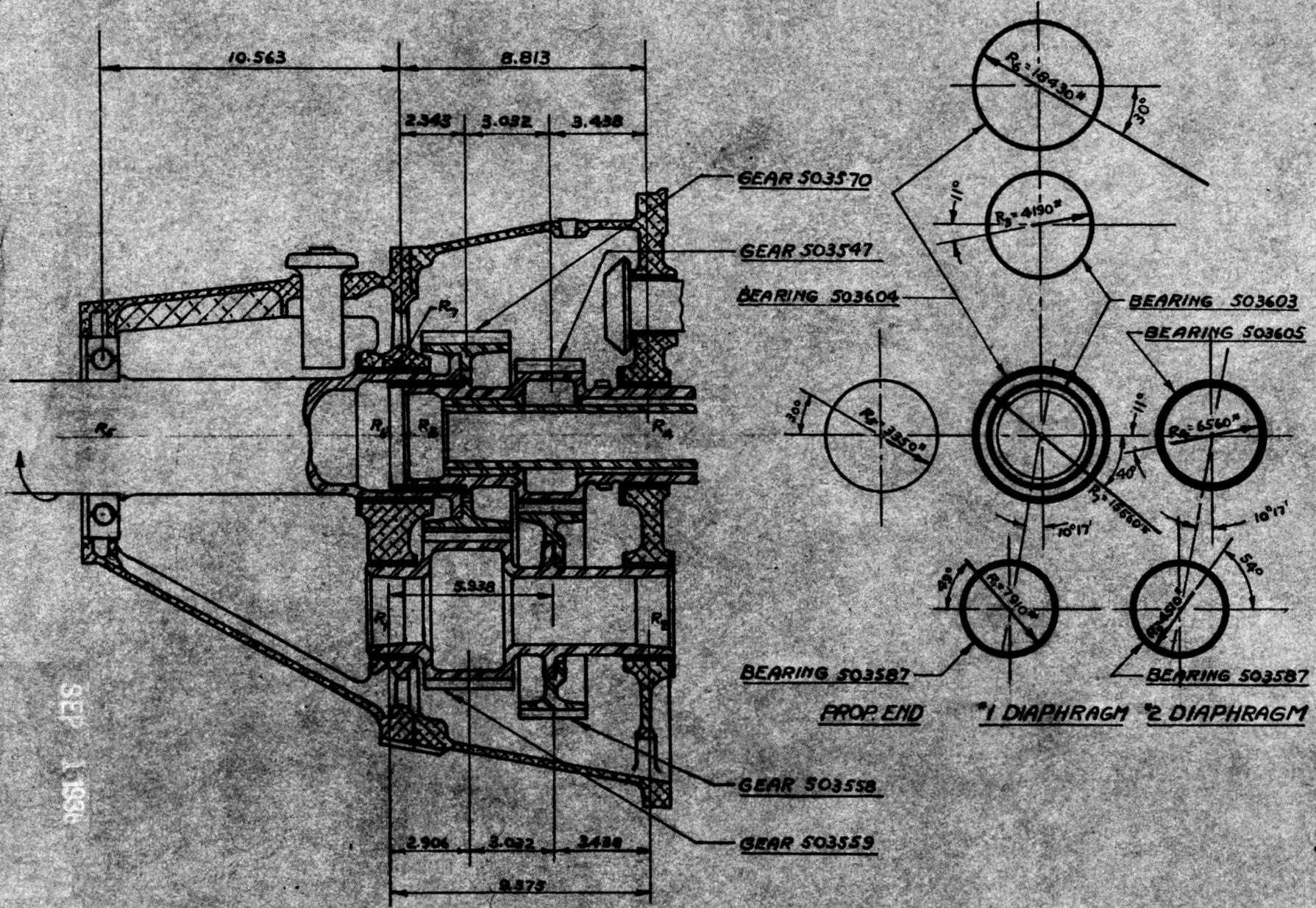


FORCES ON REDUCTION GEAR BEARINGS
 CRANK SHAFT SPEED 3000 R.P.M.

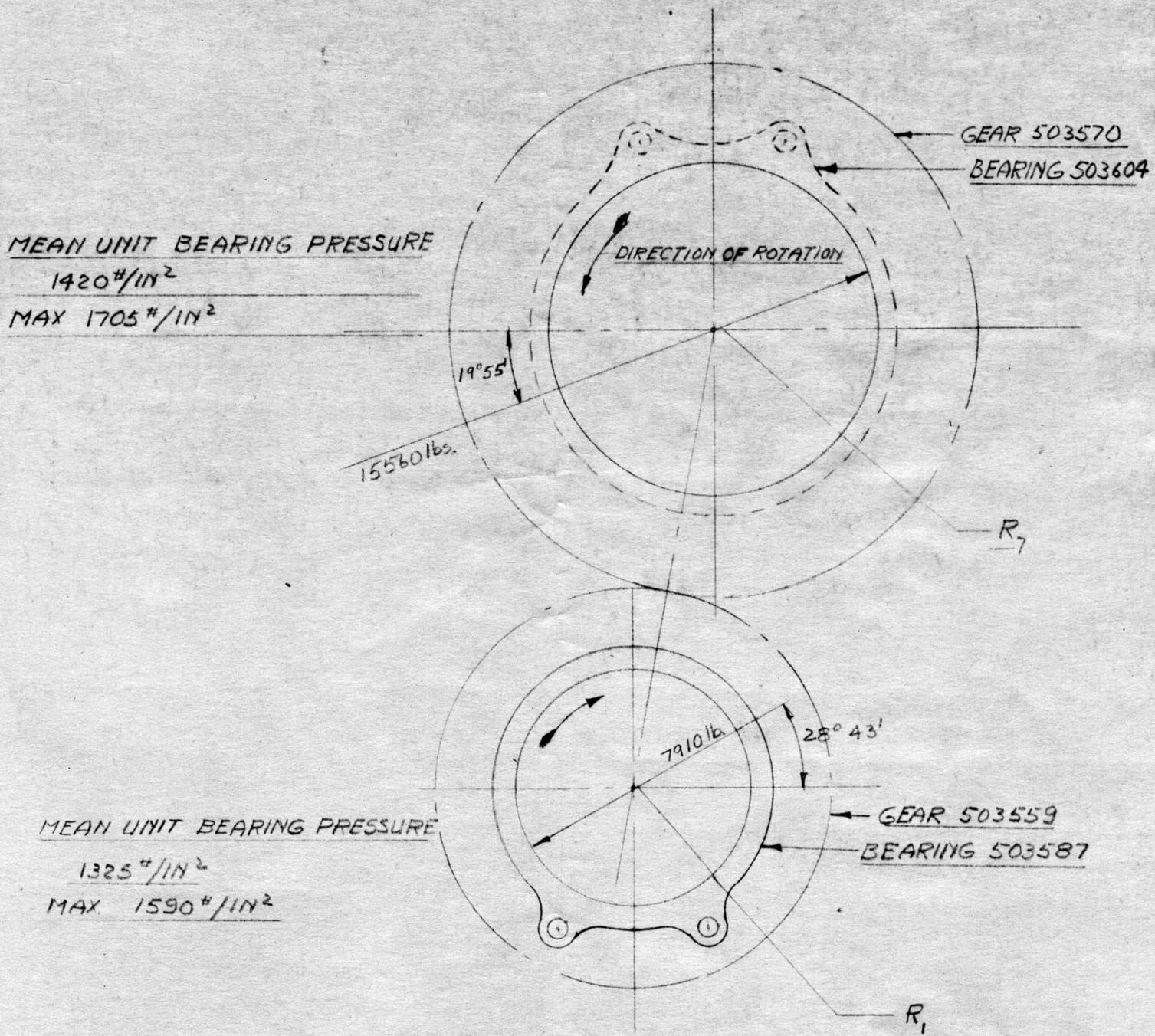
CONTINENTAL
 O-1430-1
 ENGINE

SEP 1936

FIG



BEARING LOADS FRONT REDUCTION GEAR HOUSING
REAR DIAPHRAGM FOR LEFT HAND DRIVE
LOOKING FROM REAR TO FRONT OF ENGINE

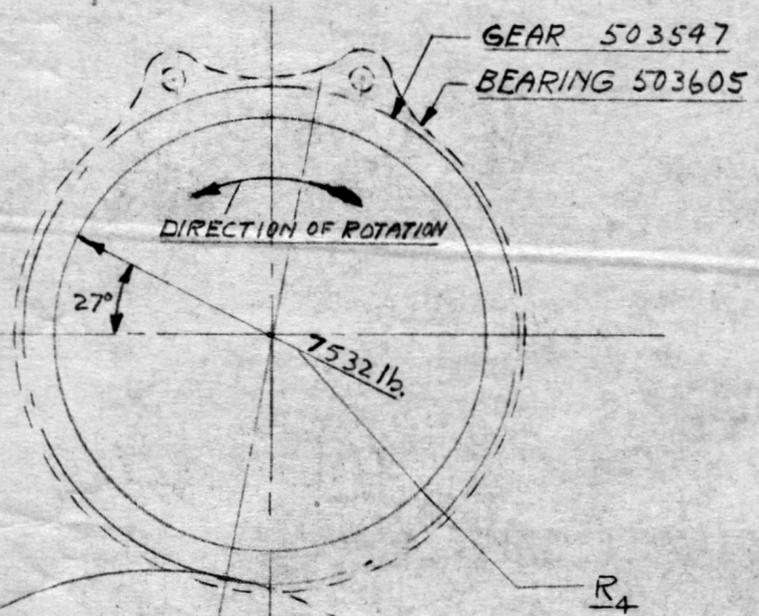


BEARING LOADS REAR REDUCTION GEAR HOUSING
REAR DIAPHRAGM FOR LEFT HAND DRIVE
LOOKING FROM REAR TO FRONT OF ENGINE

MEAN UNIT BEARING PRESSURE

1125 #/IN²

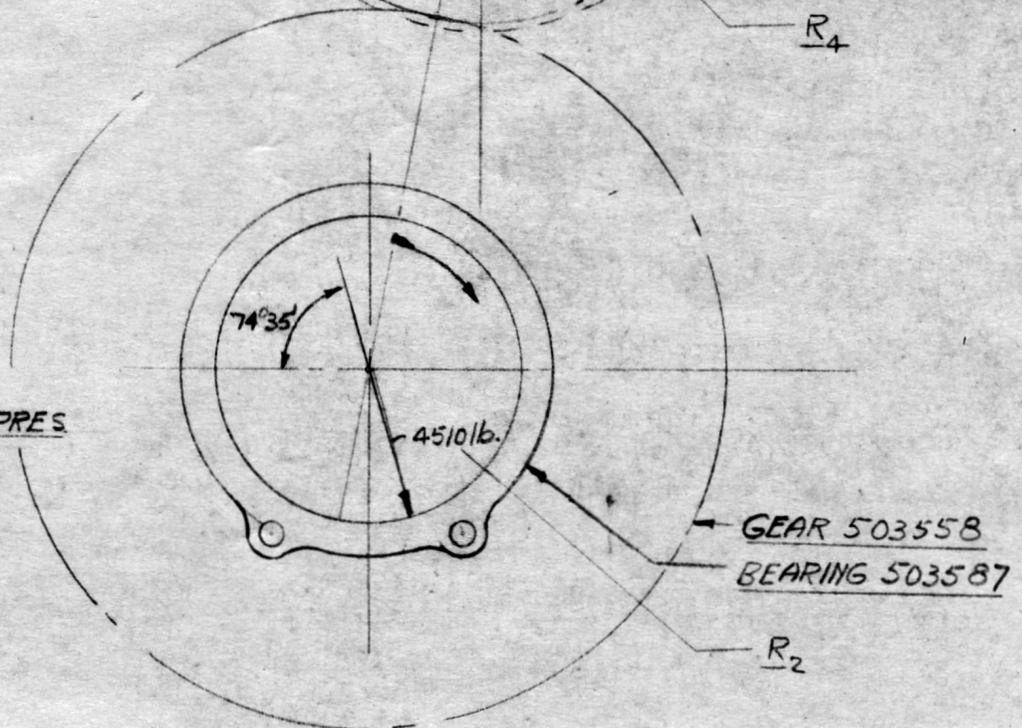
MAX. 1350 #/IN²



MEAN UNIT BEARING PRES

755 #/IN²

MAX. 906 #/IN²



SEP 1 1957

TABLE I - REDUCTION GEAR BEARING LOADS AT 1000 HP, 3000 RPM

(Taken from Design Report #57 Sheet #2)

+ Br'g	Br'g Dim.-In.		Proj. Area Sq.In.	Speed Of Shaft RPM	Rubbing Velocity Ft/Sec.	Resultant Force lbs.		Mean Unit Pressure lbs/sq.in.	Mean PV Rubbing Factor lbs-Ft/Sec.
	Length	Dia.				Max.	Mean		
R ₁	1.750	3.187	5.57	2070	28.8	8160	6800	1220	35,170
R ₂	1.750	3.187	5.57	2070	28.8	4250	3540	636	18,300
R ₃	2.000	3.250	6.50	1500*	21.2	4680	3900	600	12,700
R ₄	1.750	3.312	5.80	3000	43.2	5820	4850	836	36,150
R ₇	2.125	4.500	9.56	1500	29.4	11,500	9580	1000	29,400

* Relative Speed

+ See Figure

TABLE II - REDUCTION GEAR BEARING LOADS AT 1000 HP, 3000 RPM

(Based on Actual Dimensions)

+ Br'g	Br'g Dim.-In.		Proj. Area In. ²	Speed Of Shaft RPM	Rubbing Velocity Ft/Sec.	Resultant Force lbs.		Mean Unit Pressure lbs/sq.in.	Mean PV Rubbing Factor lbs-Ft/Sec.
	Length	Dia.				Max.	Mean		
R ₁	1.563	3.187	4.98	2000	27.85	7910	6590	1325	38,900
R ₂	1.563	3.187	4.98	2000	27.85	4510	3760	755	21,050
R ₃	1.875	3.375	6.33	1500*	22.10	4190	3490	551	12,200
R ₄	1.625	3.438	5.58	3000	45.00	7544	6280	1128	50,700
R ₇	2.031	4.500	9.14	1500	29.45	15,560	1296	1420	41,850

* Relative Speed

+ See Figure

TABLE III - REDUCTION GEAR BEARING LOADS AT 887 HP

+ Br'g	Mean Unit Pressure lbs./sq.in.	Mean PV Rubbing Factor lbs-Ft/Sec.
R ₁	1174	32,700
R ₂	670	18,680
R ₃	489	10,820
R ₄	1000	44,900
R ₇	1260	37,100

SEP 1 1936

HYPER 12-CYLINDER

Date: 8-7-36	R.P.M. 3000
Fuel: Shell 100 Octane	B.M.E.P. Corr: 101 to 171 #/Sq.In.
Oil: Kendall "J" SAE 70	Oil-In Temp.: 147°F. Avg.
Spark Plugs: B.G. 157	Oil-Out Temp: 240°F. Avg.
Carburetor: Stromberg NAF 70	Oil Press.: Front, 57 #/Sq.In. Avg.
	Rear, 80 #/Sq.In. Avg.

