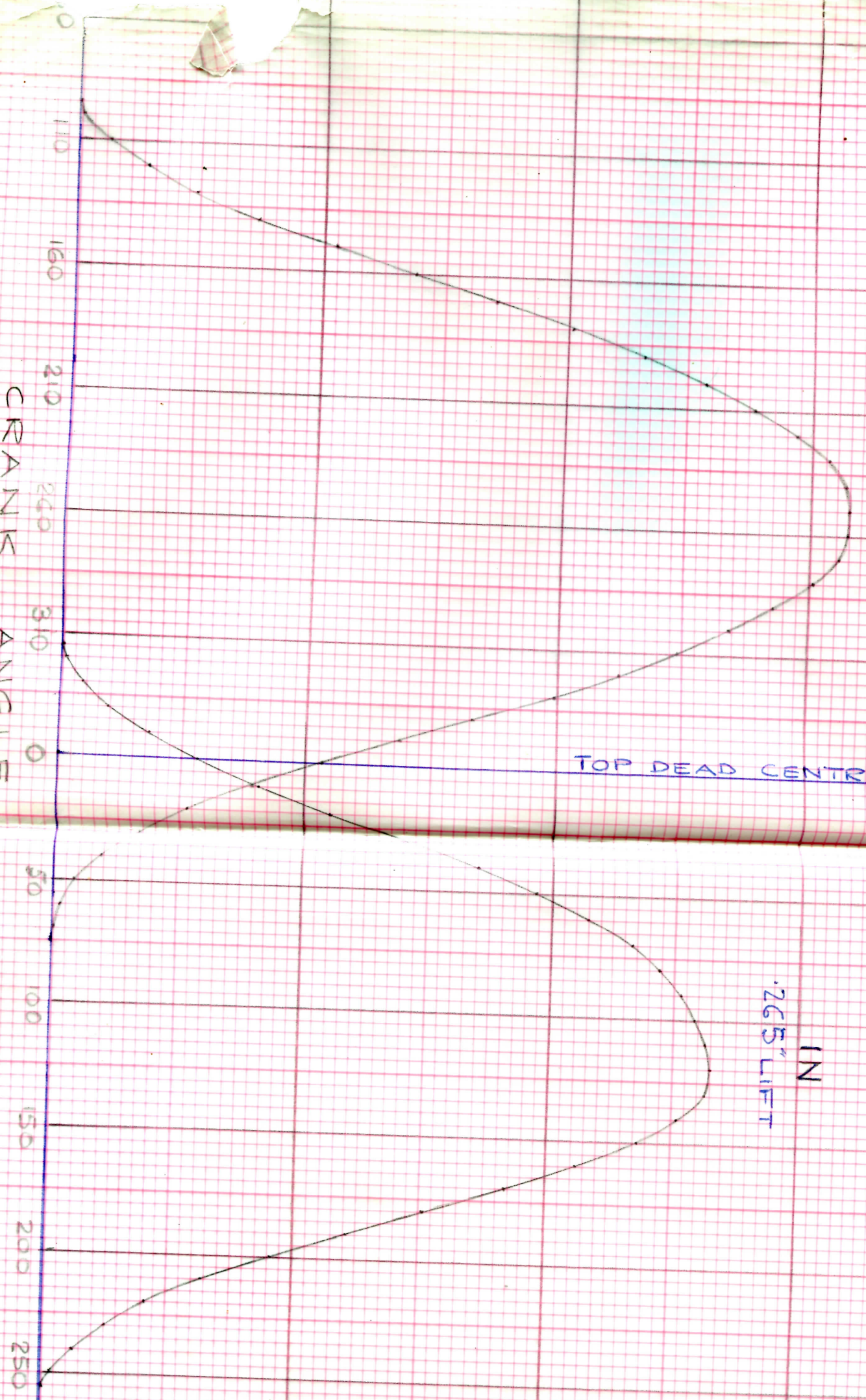


315" LIFT

TOP DEAD CENTRE

IN  
265" LIFT



1st PROTOTYPE 175cc O.H.C. MODEL

5-11-62

60 110 160 210 260 310 0 50 100 150 200

PROTOTYPE W/ET CAM  
WITH 3/4" RAD PAD  
ON FOLLOWER

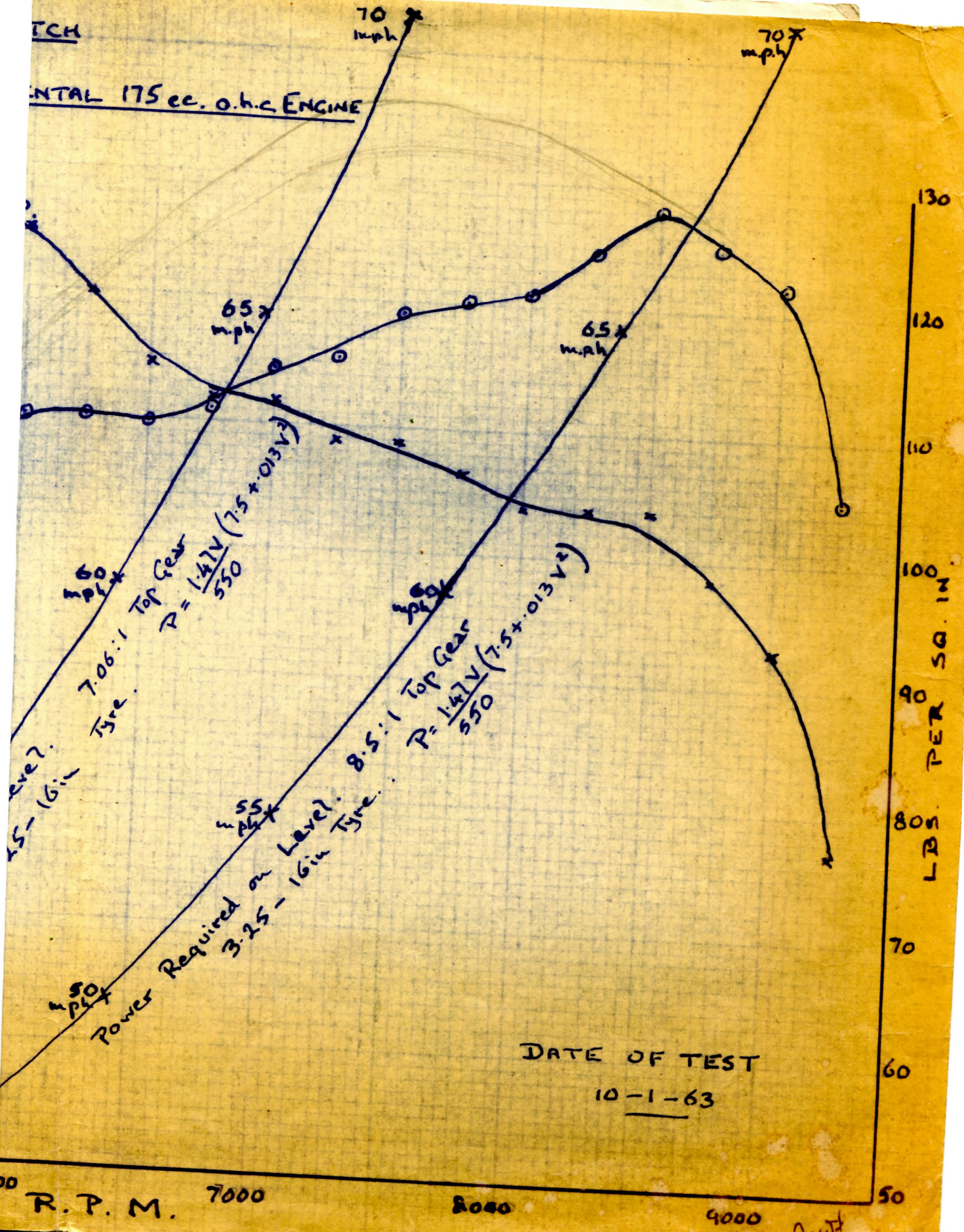
SAME CAM  
WITH 5/8" DIA ROLLER  
FOLLOWER



CRANK ANGLE

TCH

EXPERIMENTAL 175 cc. o.h.c ENGINE



DATE OF TEST  
10-1-63

R.P.M. 7000

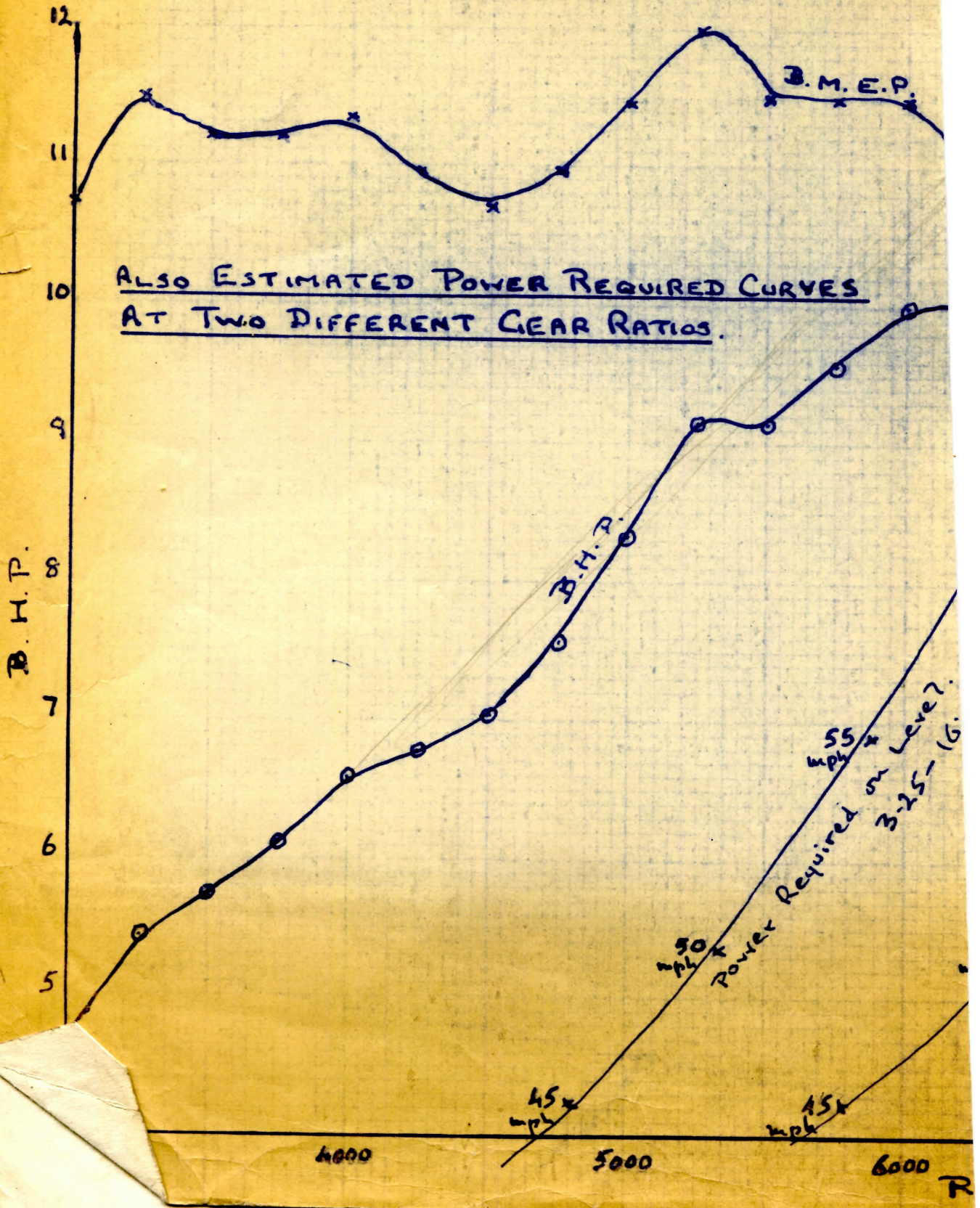
8000

9000

Rant  
10/2/63

THE ENFIELD CYCLE CO. LTD. REDDITC

B.H.P. AND B.M.E.P. CURVES FROM EXPERIMENT



?  
 Dowty Washers Cat  
 BS 308  
 .097" STD A/F Hex Key for MS CRUB?

	SURFACE FINISHES	
	µM	µINCH
VALVE FACES (LAP)	0,05/0,1	2/4
GRIND	0,4/0,8	16/32
	0,8/1,6	32/64
REAM	0,4	16
FINE BORE	0,8	32
BORE	1,6/3,2	64/125
MILL	3,2	125
GENERAL M/C	3,2	125
FLAME CUT	12,5	500 MAX

TYPE A 10 PRESSURE CONTROLLER B1079 & TYPE A 11 - B.1010

BODY B 4378  
 VALVE SEAT A 1318  
 SUPPORT WASHER A 1319  
 SEAT RETAINER A 1015  
 SPRING HOUSING B 1363  
 DIAPHRAGM BOLT A1075  
 LOADING NUT A1021  
 RELIEF ADJUSTING STEM A1023

MATERIAL EQUIVALENTS		
BRASS	BS 249	BS 2874? P005
	BS 218	
		BS 970
ST STEEL	EN 56M	
	EN 57 (380)	431 S29
	EN 58A	302 S25
	EN 56AM	416 S21
	EN 56BM	416 S29
AL. BRONZE	DTD 197A	
	BAR	
ALUM ALLOY	HE 15W	HE 15 TB?
	BAR	
ALUM ALLOY	LM 4M	LM 4M
CASTING	LM 8WP	LM 25 TF

Consult or Sub Contract L  
 Check for W = Quality

Standard Rocker

0°	
55	0
BTDC	
50	1
45	2
40	3
35	5
<del>30</del>	8
25	12
20	17
15	22
10	28
5	36
TDC	
0	46
5	50
10	67
15	79
20	92
25	107
30	122
35	136
40	151
45	166
50	180
55	192
60	204
65	215
70	223
75	233
80	240
85	246
90	252
95	255
100	258
105	260
110	262
115	264
120	266
125	267
130	267
135	265
140	260
145	253
150	242
155	232
160	220
165	206
170	192
175	175
BDC	
180	160
185	146
190	129
195	115
200	100
205	86
210	74
215	60
220	48
225	38
230	31
235	23
240	16
245	11
250	6

Roller Rocker

55	1
BTDC	
50	1
45	2
40	3
35	4
30	6
25	9
20	12
15	17
10	22
5	28
TDC	
5	35
10	43
15	53
20	63
25	74
30	88
35	102
40	117
45	133
50	149
55	166
60	182
65	197
70	211
75	222
80	233
85	242
90	248
95	253
100	257
105	259
110	261
115	264
120	266
125	267
130	268
135	267
140	262
145	253
150	243
155	230
160	217
165	204
170	190
175	173
180	160
BDC	
185	143
190	131
195	117
200	102
205	88
210	76
215	64
220	53
225	44
230	35
235	28
240	21
245	16
250	12
255	8
260	4
	1

$11\frac{1}{2}$  swg. (-110°)

1.500

.685" Inside Dia.

.375

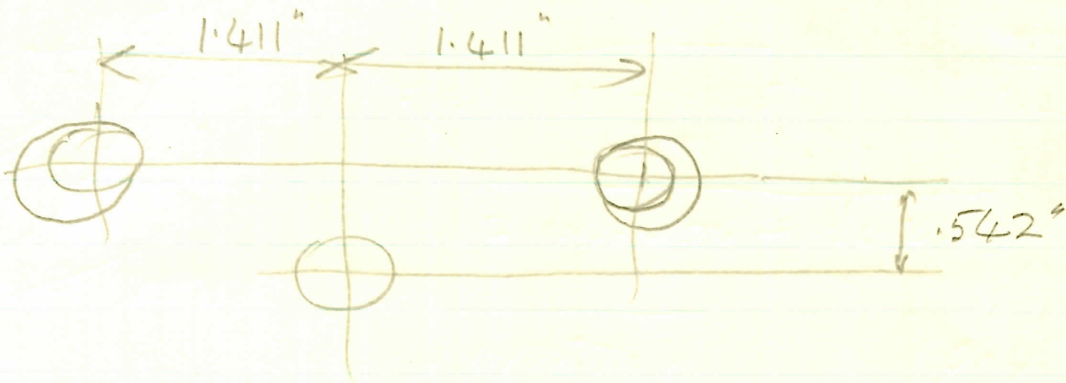
.110

.795 mean Dia

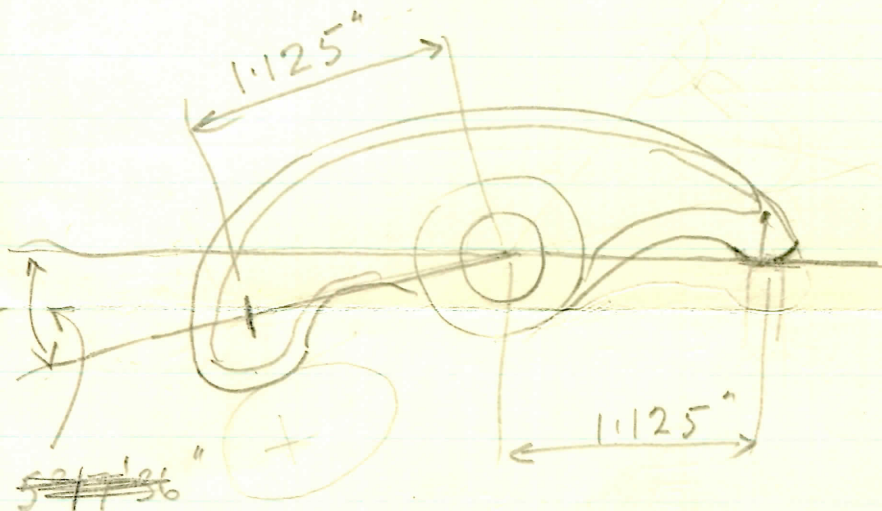
$$P = \frac{Q F d^4}{8 N D^3}$$

$$= \frac{11,500,000 \times .32 \times .110^4}{8 \times 4 \times .795^3}$$

$$= 33.5 \text{ lbs}$$



Distance between centre of camshaft and centre of follower pad radius at half lift = 1.084"



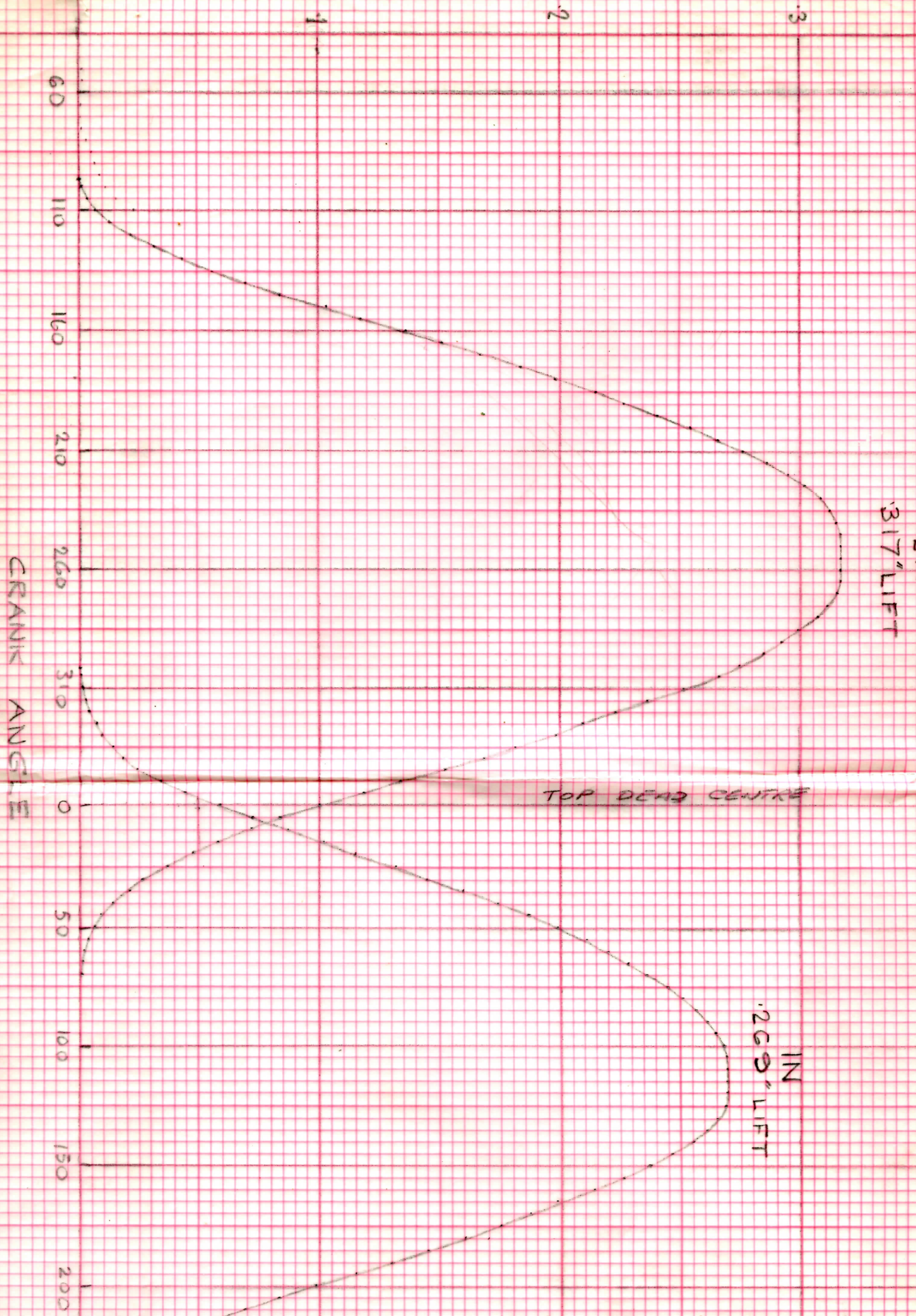
~~52/7'36"~~  
4° 49' 36"

180  
4 0 0  
49 36  
175 10 24

174 42 24  
175 10 24  
28

1.030  
.542  
1.572

# LIFT AT VALVE ENDS



1ST PROTOTYPE 175cc O.H.C MODEL  
WITH RE-DESIGNED ROCKER GEAR

14-3-63

317" LIFT

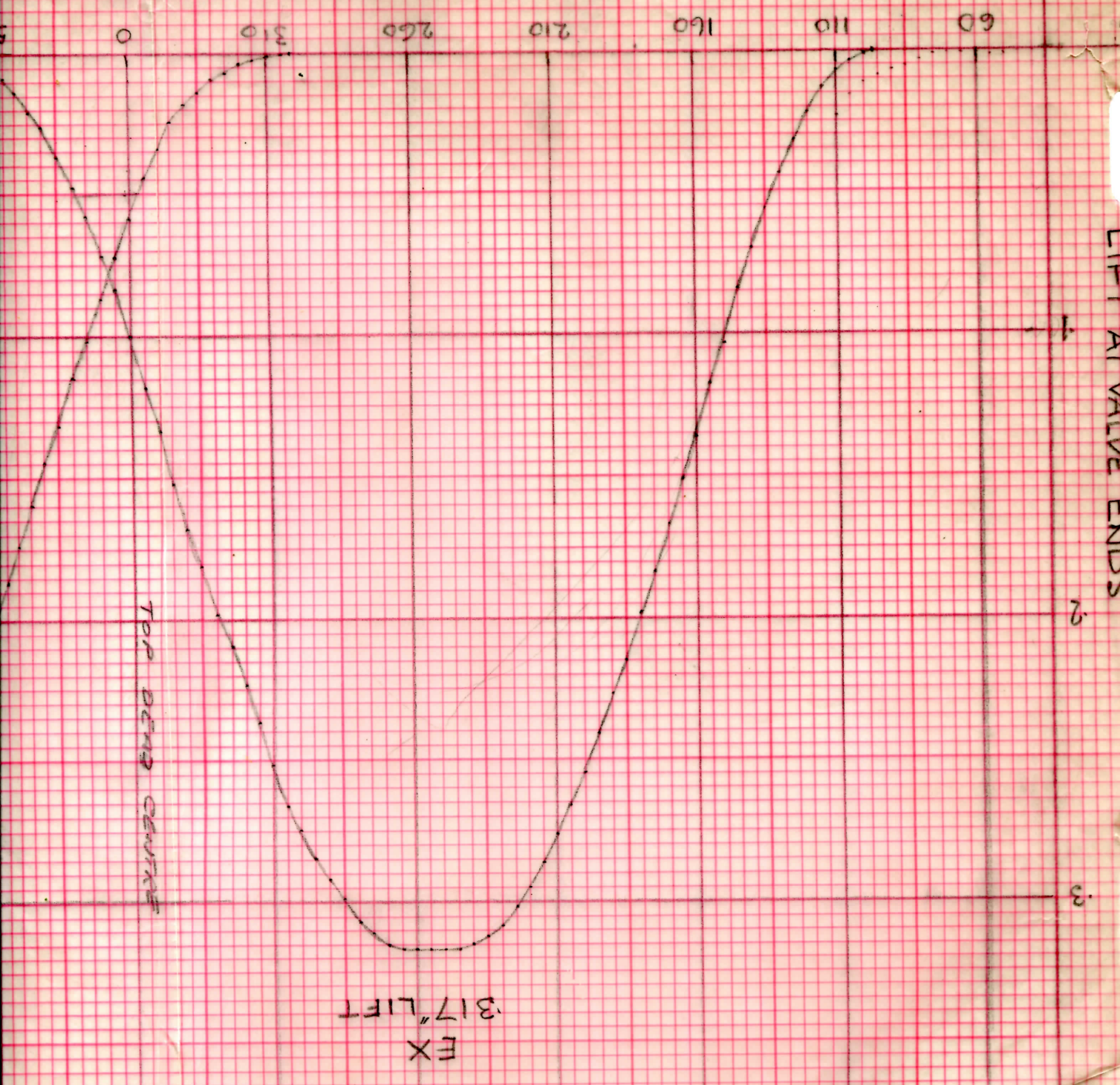
269" LIFT  
IN

TOP DEAD CENTRE

CRANK ANGLE

1ST PROTOTYPE 175cc. O.H.C. MODEL  
WITH RE-DESIGNED ROCKER

CRANK ANGLE

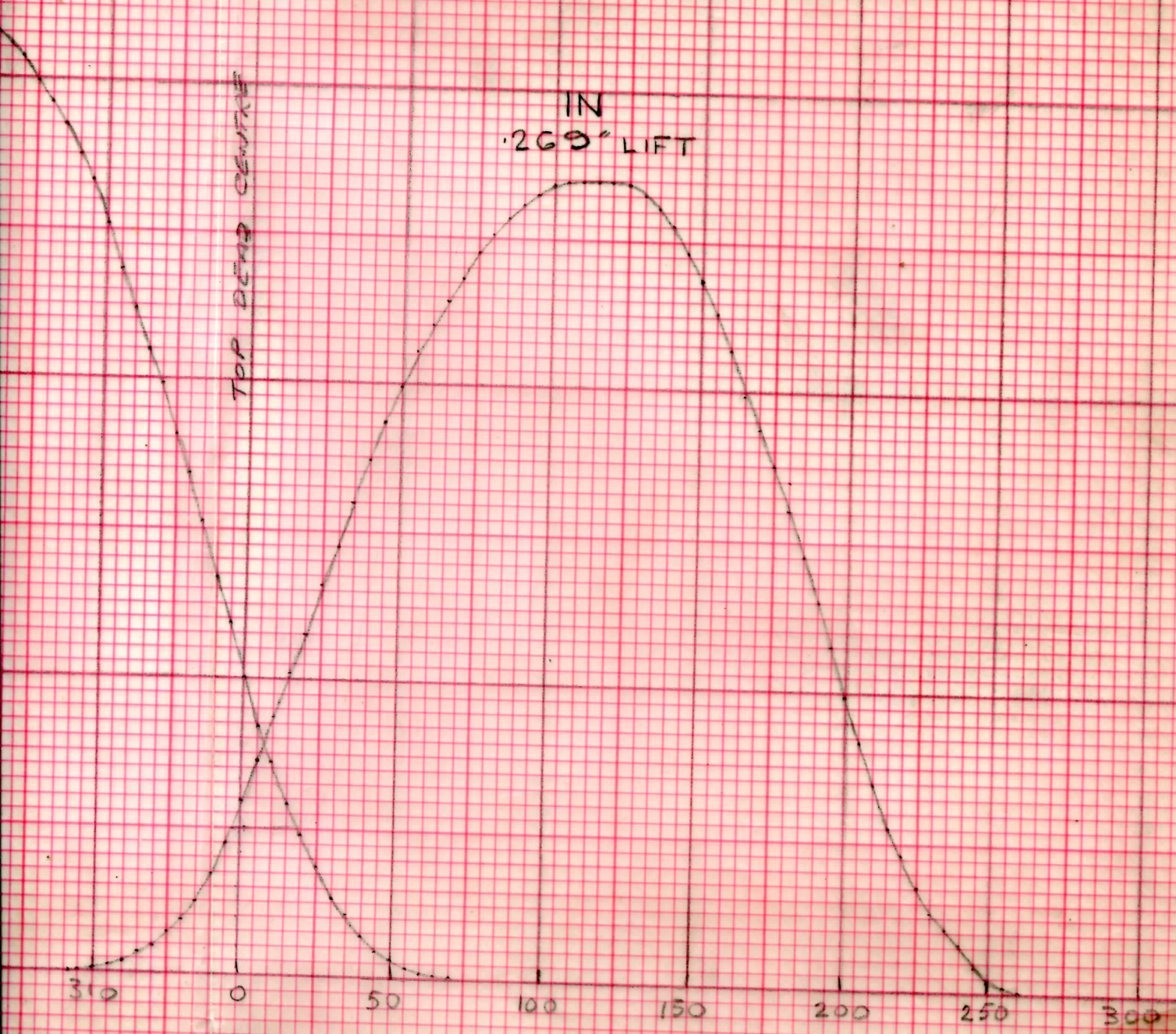


TOP DEAD CENTER

EX  
3.17" LIFT

LIFT AT VALVE ENDS

LIFT



IN  
2.69" LIFT

TOP DEAD CENTER

CRANK ANGLE

Sec. O.H.C. MODEL  
SIGNED ROCKER GEAR

14-3-63

Valve Timing. Small Cam and Rocker

14-3-63

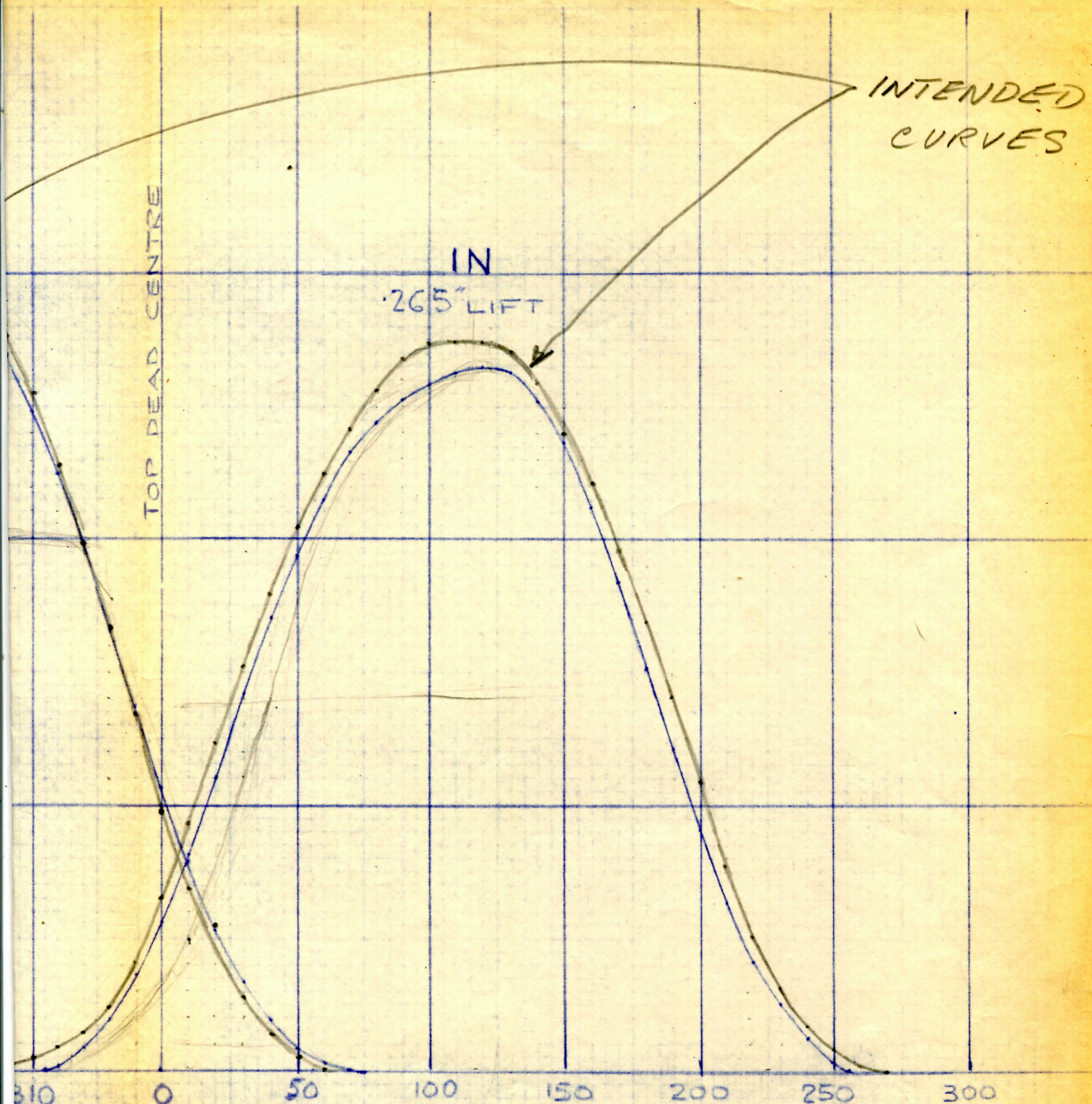
14

Inlet Cam

0°	Thous.	0°	Thous.	0°	Thous.	0°	Thous.
58 <sup>BDC</sup>	0	45	184	150	237	255	2
55	1	50	199	155	226	260	0
50	2	55	211	160	214		
45	3	60	220	165	198		
40	4	65	228	170	187		
35	7	70	236	175	175		
30	9	75	245	180	160		
25	14	80	251	185	145		
20	18	85	257	190	130		
15	25	90	262	195	115		
10	35	95	265	200	98		
5	45	100	268	205	83		
0 <sup>TDC</sup>	59	105	269	210	69		
5	72	110	269	215	55		
10	87	115	269	220	46		
15	102	120	269	225	35		
20	115	125	268	230	27		
25	132	130	265	235	21		
30	145	135	261	240	16		
35	160	140	255	245	8		
40	174	145	246	250	4		

Exhaust Cam

0°	Thous	0°	Thous	0°	Thous	0°	Thous
BBDC							
83	0	20	255	125	266	50	6
80	1	25	266	130	252	55	3
75	4	30	276	135	237	60	1.5
70	7	35	286	140	224	65	1
65	13	40	295	145	210	70	0.
60	22	45	302	150	198		
55	32	50	308	155	181		
50	44	55	312	160	168		
45	56	60	315	165	152		
40	70	65	317	170	134		
35	84	70	317	175	118		
30	103	75	317	TDC 0	100		
25	117	80	317	5	84		
20	136	85	317	10	72		
15	151	90	315	15	58		
10	167	95	311	20	48		
5	184	100	307	25	37		
BDC							
0	198	105	299	30	26		
5	215	110	292	35	21		
10	227	115	285	40	14		
15	241	120	275	45	9		



TOP DEAD CENTRE

INTENDED CURVES

IN  
265" LIFT

310 0 50 100 150 200 250 300  
ANGLE

R.H.C MODEL

5-11-62

LIFT AT VALVE ENDS

0.3  
0.2  
0.1

60

110

160

210

260

310

0

CRANK ANGLE

EX  
0.315 LIFT

TOP DEAD CENTRE

1st PROTOTYPE 175 cc Q.H.C. MODE

