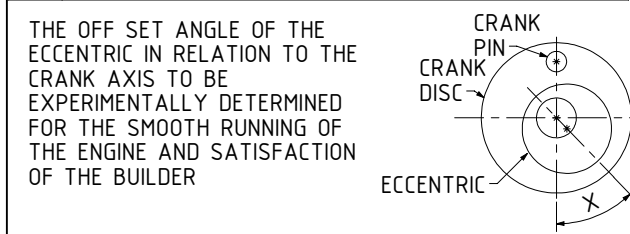


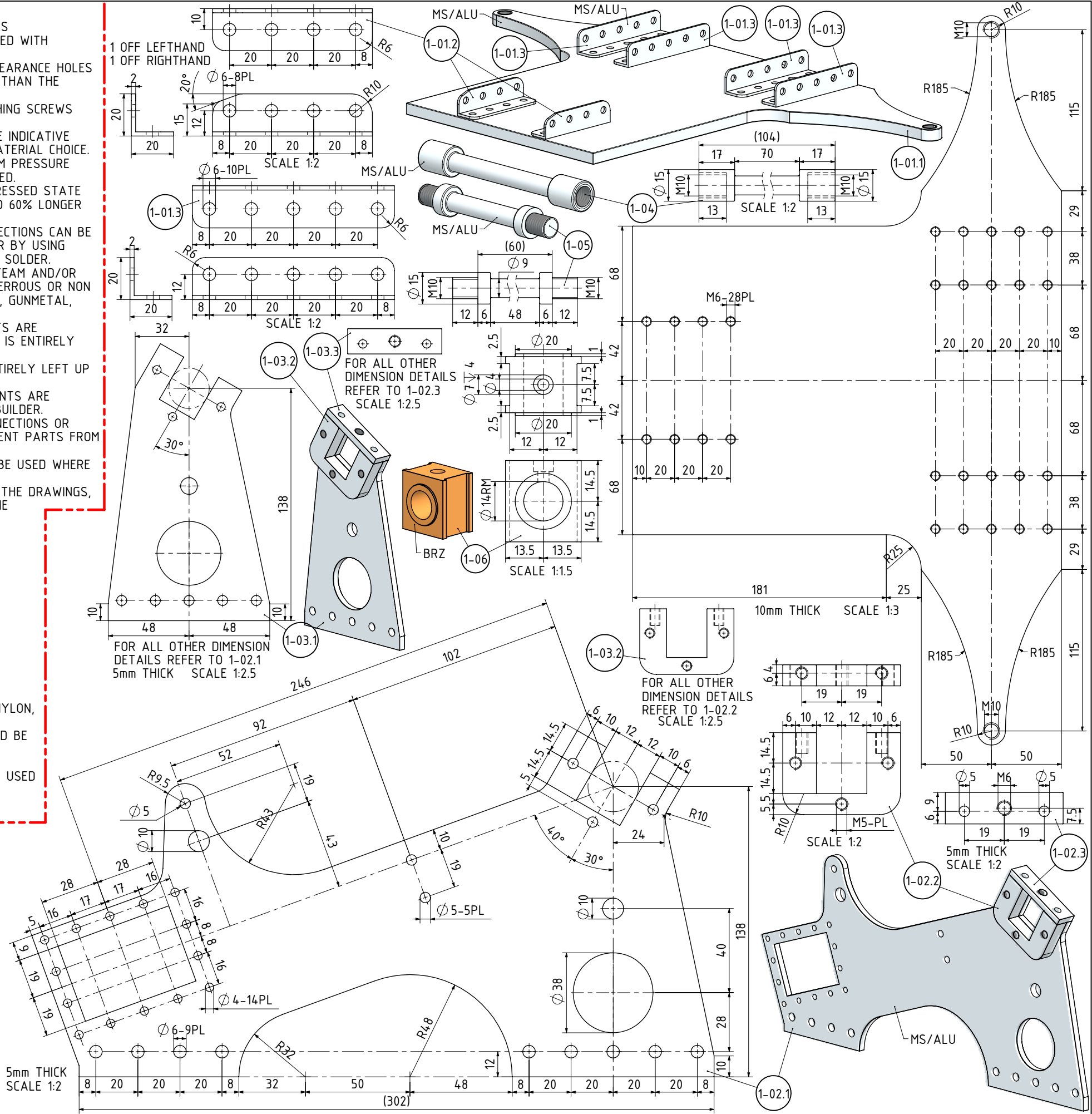
QTY.	PART NUMBER
1	PADDLE-1-01-BASE PLATE
1	PADDLE-1-02-INNER FRAME PLATE
1	PADDLE-1-02-INNER FRAME PLATE
1	PADDLE-1-03-OUTER FRAME PLATE
1	PADDLE-1-03-OUTER FRAME PLATE
2	PADDLE-1-04-INNER CROSS BRACE
2	PADDLE-1-05-OUTER CROSS BRACE
4	PADDLE-1-06-MAIN BEARING
4	PADDLE-1-07-MAIN BEARING OILER
2	PADDLE-1-08-CYLINDER
2	PADDLE-1-09-CYLINDER FRONT COVER
2	PADDLE-1-10-CYLINDER REAR COVER
4	PADDLE-1-11-DRAIN SCREW STOP
2	PADDLE-1-12-CROSSHEAD GUIDE BAR
2	PADDLE-1-12-CROSSHEAD GUIDE BAR
2	PADDLE-1-13-CROSSHEAD GUIDE OILER
2	PADDLE-1-14-CROSSHEAD BAR MOUNTING BRACKET
1	PADDLE-1-15-STEAM CHEST
1	PADDLE-1-15-STEAM CHEST
4	PADDLE-1-16-PIPE NUT
1	PADDLE-1-17-STEAM SUPPLY PIPE
1	PADDLE-1-18-STEAM EXHAUST PIPE
2	PADDLE-1-19-CRANK DISC SUPPORT STAND
2	PADDLE-2-01-CRANKSHAFT
2	PADDLE-2-02-PISTON+ROD+CROSSHEAD
2	PADDLE-2-03-CON-ROD
4	PADDLE-2-04-ECCENTRIC SHEAVE
2	PADDLE-2-05-ECCENTRIC STRAP
2	PADDLE-2-05-ECCENTRIC STRAP
2	PADDLE-2-06-SLIDE VALVE+SPINDLE
1	PADDLE-2-07-WEIGH SHAFT+ARMS
2	PADDLE-2-08-LIFTING LINK
2	PADDLE-2-09-EXPANSION LINK
2	PADDLE-2-10-DIE BLOCK
2	PADDLE-2-11-PADDLE WHEEL FRAME
2	PADDLE-2-11-PADDLE WHEEL FRAME
2	PADDLE-2-12-PADDLE WHEEL FRAME HUB
16	PADDLE-2-13-PADDLE WHEEL TIE ROD
8	PADDLE-2-14-PADDLE BLADE+BRACKET
8	PADDLE-2-14-PADDLE BLADE+BRACKET
32	PADDLE-2-15-PADDLE BLADE CENTER PIVOT BOLT
2	PADDLE-2-16-PADDLE WHEEL MASTER ROD
14	PADDLE-2-17-PADDLE WHEEL ARTICULATED ROD
30	PADDLE-2-18-PADDLE MASTER ROD PIVOT BOLT
2	PADDLE-2-19-PADDLE WHEEL CRANK DISC
4	PADDLE-M3 NUT
4	PADDLE-M3 WASHER-BRASS
2	PADDLE-M3x4.5 GRUB SREW
64	PADDLE-M3x10 A-K C-SINK SCREW
48	PADDLE-M4 NUT
2	PADDLE-M4 WASHER-BRASS
48	PADDLE-M4x4.5-COUNTER SINK RIVET
28	PADDLE-M4x8 A-K CYL HEAD SCREW
4	PADDLE-M4x10 A-K C-SINK SCREW
24	PADDLE-M4x10 A-K CYL HEAD SCREW
12	PADDLE-M4x14 A-K CYL HEAD SCREW
8	PADDLE-M4x22 A-K CYL HEAD SCREW
28	PADDLE-M4x44 STUD
6	PADDLE-M5 NUT
4	PADDLE-M5x10 A-K CYL HEAD SCREW
20	PADDLE-M5x15 A-K CYL HEAD SCREW
2	PADDLE-M5x25 A-K CYL HEAD SCREW
4	PADDLE-M5x32 A-K CYL HEAD SCREW
30	PADDLE-M6 NUT
2	PADDLE-M6x6 GRUB SREW-SPECIAL
28	PADDLE-M6x12 A-K CYL HEAD SCREW
28	PADDLE-M6x14 A-K CYL HEAD SCREW
2	PADDLE-M10 NUT
2	PADDLE-M10x16 A-K CYL HEAD SCREW



NOTES:
0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
3. PREFERABLY ALL TAPPED HOLES AND MATCHING SCREWS AND/OR BOLTS TO BE METRIC FINE (MF)
4. MATERIALS SPECIFIED ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER CAN MAKE HIS/HER OWN MATERIAL CHOICE.
5. ALL CONNECTIONS/JOINTS WHICH HAVE STEAM PRESSURE APPLIED TO IT SHALL BE SILVER/HARD SOLDERED.
6. COMPRESSION SPRINGS ARE DRAWN IN COMPRESSED STATE (CP), UNCOMPRESSED STATE IS APPROX 40% TO 60% LONGER THEN COMPRESSED STATE.
7. WHERE PREFERRED SCREW OR RIVETED CONNECTIONS CAN BE OMITTED AND PARTS CAN BE BONDED TOGETHER BY USING EITHER HIGH STRENGTH GLUE, EPOXY RESIN, OR SOLDER.
8. PARTS WHICH ARE DIRECTLY EXPOSED TO STEAM AND/OR WATER SHOULD BE CONSTRUCTED USING NON-FERROUS OR NON CORROSIVE MATERIAL SUCH AS BRASS, BRONZE, GUNMETAL, STAINLESS STEEL, COPPER OR MONEL.
9. THE ORDER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED AND THE MODEL IS ASSEMBLED IS ENTIRELY LEFT TO THE BUILDER/MODEL MAKER.
10. A COLOUR SCHEME FOR THIS PROJECT IS ENTIRELY LEFT UP TO THE MODEL MAKER.
11. THE MANNER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED IS ENTIRELY LEFT UP TO THE BUILDER.
12. USE LOCTITE, ON SCREW OR PRESS FIT CONNECTIONS OR SURFACES, WERE DEEMED NECESSARY TO PREVENT PARTS FROM LOOSENING.
13. WASHERS AND/OR SPRINGWASHERS SHALL BE USED WHERE DEEMED NECESSARY.
XX. ERRORS AND/OR OMISSIONS MAY OCCUR IN THE DRAWINGS, DO NOT HESITATE TO CONTACT ME SO THAT THE ERRORS/OMISSIONS CAN BE RECTIFIED.

MATERIAL ABBREVIATIONS:
ALU = ALUMINIUM
HALU= HARD ALUMINIUM
BRS = BRASS
BRZ = BRONZE OR GUNMETAL (BRZ/GM)
CI = CAST IRON
CU = COPPER
GRA = GRAPHITE
MS = MILD STEEL/BRIGHT MILD STEEL
SS = SILVER STEEL OR STAINLESS STEEL
SPS = SPRING STEEL
PEEK= POLYETHER ETHER KETONE
SYN = SYNTHETIC MATERIAL SUCH AS VETON, NYLON, TEFLON OR RUBBER
IN GENERAL SYNTHETIC MATERIALS SOULD BE ABLE TO WITHSTAND THE HEAT AND PRESSURE(S) APPLIED TO THEM.
nnn/nnn MEANS THAT EITHER MATERIAL CAN BE USED

OTHER ABBREVIATIONS
DP = DEEP
DAA= DRILL AFTER ASSEMBLY
D&TAA= DRILL AND TAP AFTER ASSEMBLY
CF = CLOSE FIT (SIZE FOR SIZE)
PF = PRESS FIT
PFAA= PRESS FIT AFTER ASSEMBLY
PCD = PITCH CIRCLE DIAMETER
RM = REAM
HEX = HEXACON, 6SIDED
CP = COMPRESSED
KNL = KNURLED
CSK = COUNTERSINK
PL = PLACES
DWL= DOWEL
SPF= SPOTFACE
(T)HESOP=(TAPPED)HOLES EQUALLY SPACED ON PCD
(T)HESOC=(TAPPED)HOLES EQUALLY SPACED ON CIRCUMFERENCE
[SA-xxx]= SUB ASSEMBLY-xxx



NOTES: THE ORIGINAL DRAWINGS AND ARTICLE WERE GIVEN TO ME. THE ORIGINAL ARTICLE AND DRAWINGS WERE FIRST PUBLISHED IN THE "MODEL ENGINEER" MAGAZINE OF NOVEMBER 1955 UNDER THE TITLE "POWER BY PADDLES" BY E.T.WESTBURY									
TITLE			DRAWING CONTENTS			PROJECT No 09E-25-00		PROJECTION	MODEL SCALE: 1:1
A 2x1 CYLINDER STEAM ENGINE WITH REVERSER FOR A PADDLE STEAMER			BILL OF MATERIALS, NOTES, PARTS AND ASSEMBLIES			JDW DRAUGHTING SERVICES		JDWDS	DWG SCALE: 1:1 @A3 OR AS SHOWN
						J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAKAPURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.	DATE	JULY 2018	Copyright © J.A.M. DE WAAL PAPAKURA NZ
							SHEET: 02 OF 06	A3	No: 09E-25-00-SHT02