

Appendix 1

SEQUENCE OF EVENTS

June 1984	Letter of agreement signed by NORAD and BOBP.
June	Type of craft for motorization selected. Timber for the boats ordered.
July	Preliminary construction drawings and drawings of stern gear prepared. Five engines ordered from VST, Bangalore.
Aug.	Stern gear ordered from Bharati Engineering, Bombay.
Sep.	Construction work on the first dinghy completed.
Nov.	Engines and stern gear reached Balasore. Engines delayed due to heavy demand for engines for tractors.
Dec.	First motorized dinghy launched.
Jan. 1985	Technical trials carried out on the first dinghy. Propeller changed to a larger one. After some fishing trials the fishermen requested a gearbox to be able to stop the propeller before running over driftnets. Further motorization suspended till suitable gearbox available.
Feb.	Gearboxes ordered from VST, Bangalore.
May	Collection of operational data for one boat started.
June	First motorized dinghy fitted with gearbox launched.
Aug.	All four dinghies motorized, three with gear boxes and one without. One private and one department mechanic sent to the engine manufacturer for training.
Sep.	Collection of operational data for three more boats.
Sep./Oct.	20 Hilsa nets sent to Balasore.
Nov./Dec.	Discussion held to move the engine approximately 1 m further forward, and to fit a universal joint and a thrust bearing.
April 1986	First boat fitted with universal joint and thrust bearing launched.
May	Problems with the gearbox reported.
July	Two boats fitted with universal joint and thrust bearing.

Appendix 2

TEST RESULTS- ENGINE rpm, SPEED AND FUEL CONSUMPTION

Test I — Direct camshaft drive, Propeller: 12½ x 7 in (dia x pitch)

Engine rpm	Fuel consumption l/h	Speed (kn)	Fuel consumption (l/n. mile)
2,900	1.67	5.3	0.32
2,600	1.22	4.9	0.25
2,300	0.90	4.6	0.20

Test II — Direct camshaft drive using 14 x 8 in (dia x pitch) propeller*

Engine rpm	Fuel consumption l/h	Speed (kn)	Fuel consumption (l/n.mile)
2,600	2.22	6	0.37
2,300	1.33	5.4	0.25
2,000	0.93	5	0.19

Test III — Using 2: 1 reduction gearbox giving a total of 4: 1 reduction between the engine and the propeller using 18 x 14 propeller**

Engine rpm	Fuel consumption l/h	Speed (kn)	Fuel consumption (l/n.mile)
3,300	3.70	7.0	0.52
2,660	1.30	5.8	0.23
2,200	0.87	4.6	0.19

*Optimum propeller would be 13 x 8 in

**Optimum propeller would be 18 x 16 in

Appendix 3**SAMPLE OF MONTHLY CATCH AND OPERATION STATISTICS 1985: BOBP MOTORIZED DINGHY**

Month : September 1985 Place of Operation : Kasafal

	BOBP I	BOBP II	BOBP III	BOBP IV
Total catch (Rs/kg)	2913/371	56571735	54301661	44481430
Fish price (Rs/kg)	7.85	7.70	8.21	10.35
Number of fishing trips	12	14	9	16
Costs: Total in Rs	384	748	292	480
Diesel	336	392	252	448
Oil	48	56	40	32
Grease	—	—	—	—
Engine repair	—	200	—	—
Hull repair	—	100	—	—
Net repair	—	—	—	—
Net earnings in Rs (catch minus costs)	2529	4909	5138	3968
Average duration of fishing trip (h) (column 7 of daily form)	7	7	7	7
Depth of fishing ground in fathoms				
Min-Max	7 - 12	7 - 12	7 - 12	7 - 12
Type of nets used : length (fathoms)	850	1000	850	850

Appendix 3-(Contd.)

	BOBP I	BOBP II	BOBP III	BOBP IV
Type of nets used: depth (meshes)	11Ø	11Ø	11Ø	110
mesh size (in)	3-4	3-4	3-4	3-4
Type of driftnet operation	surface	surface	surface	surface
No. of crew members:	5	5	5	5
No. of non-fishing days :				
Total	18	16	21	14
— Engine defect	—	4	10	—
— Hull defect	—	—	—	—
— Rough sea	4	4	4	4
— Rain	—	—	—	—
— Full moon	1	1	1	1
— Poor catch	—	—	—	—
— Net repair	2	2	-	-
— Holidays	—	—	—	—
— Crew rest	—	5	-	-
— Crew problems & coordination problems	11	—	6	9

Appendix 4

RECORD OF FISHING TRIPS AND GROSS REVENUE FOR MOTORIZED AND NON-MOTORIZED DINGHIES (MAY 1985-APRIL 1986)

MOTORIZED DINGHY										
Month	BOBP 1		BOBP 2		BOBP 3		BOBP 4		DEP. 1 Lombardini	
	Trips	Gross income (Rs)	Trips	Gross income (Rs)	Trips	Gross income (Rs)	Trips	Gross income (Rs)	Trips	Gross income (Rs)
1985										
May	13	2207								
June	11	4581								
July	2	345								
August	—	—								
Sept.	12	2913	14	5657	9	5430	16	4448		
Oct.	12	2304	11	2528	—	—	8	8727		
Nov.	6	1374	15	3397	—	—	6	1575		
Dec.	6	1256	11	2572	10	1026	11	2954	6	1429
1986										
Jan.	11	2292	12	4179	4	505	13	3193	14	4648
Feb.	10	1141	16	2646	7	1191	5	2038	12	4200
March	—	—	—	—	—	—	6	657	15	4496
April	—	—	—	—	—	—	6	1363	10	2381
Total	83	18413	79	20979	30	8152	71	24955	57	17104
Gross income/trip	222		265		272		351		300	
NON-MOTORIZED DINGHY										
1985	cc 1		c c 2		c c 3		c c 4		c c 5	
May	18	2186								
June	9	703								
July	17	1659								
August	—	—								
Sept.	15	1821	6	1400	13	1434	9	985		
Oct.	17	2373	11	1289	12	2078	16	3432		
Nov.	11	992	—	—	6	415	24	5736		
Dec.	18	2425	—	—	15	2286	14	2649	8	807
1986										
Jan.	18	2391	7	543	6	726	12	2345	7	1037
Feb.	21	2859	—	—	21	1831	19	3925	13	987
March	24	2970	20	948	22	2059	15	1788	15	877
April	23	5635	16	1297	11	3070	27	3984	16	1374
Total	191	26014	60	5477	106	13899	136	24884	59	5082
Gross income/trip	136		91		131		183		86	
	(Rs)									

Appendix 5

SUPPLIERS OF EQUIPMENT

1. Engine gearbox : VST Tiller Tractors Ltd.
No. 1 Dyavasundra Industrial Layout,
Whitefield Road,
Post Box No. 4801,
Mahadevapura P.O.,
Bangalore 560 048.

2. Sterngear and Propeller : Bharati Engineering Co
35/B, Green Building,
Moulana Azad Road,
Bombay 110011.

3. Double universal joint : Agarawalla Auto Parts,
OT Road, Balasore, Orissa.

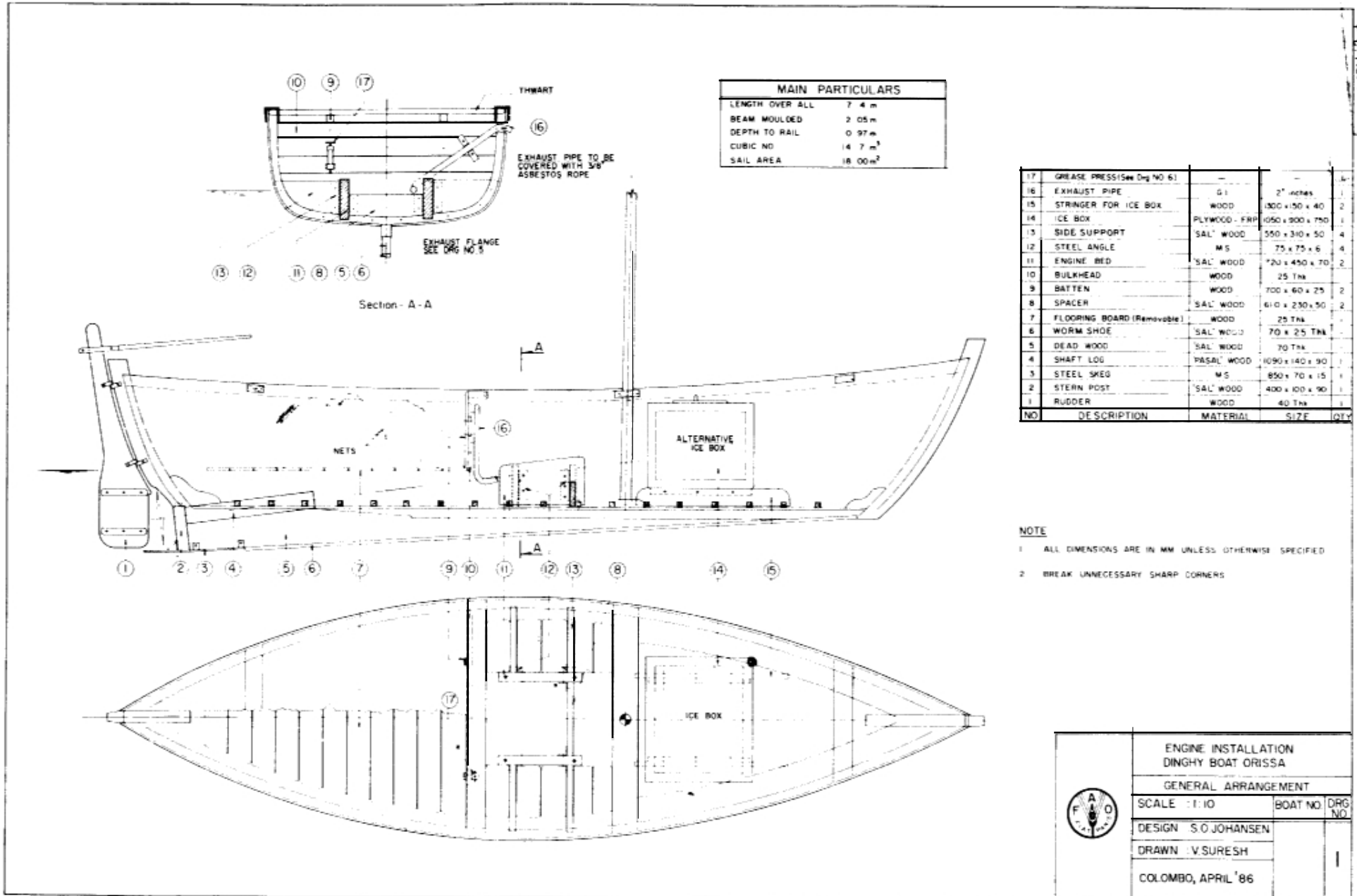
4. Thrust Bearing : Balasore Automobile Works
Balasore, Orissa.

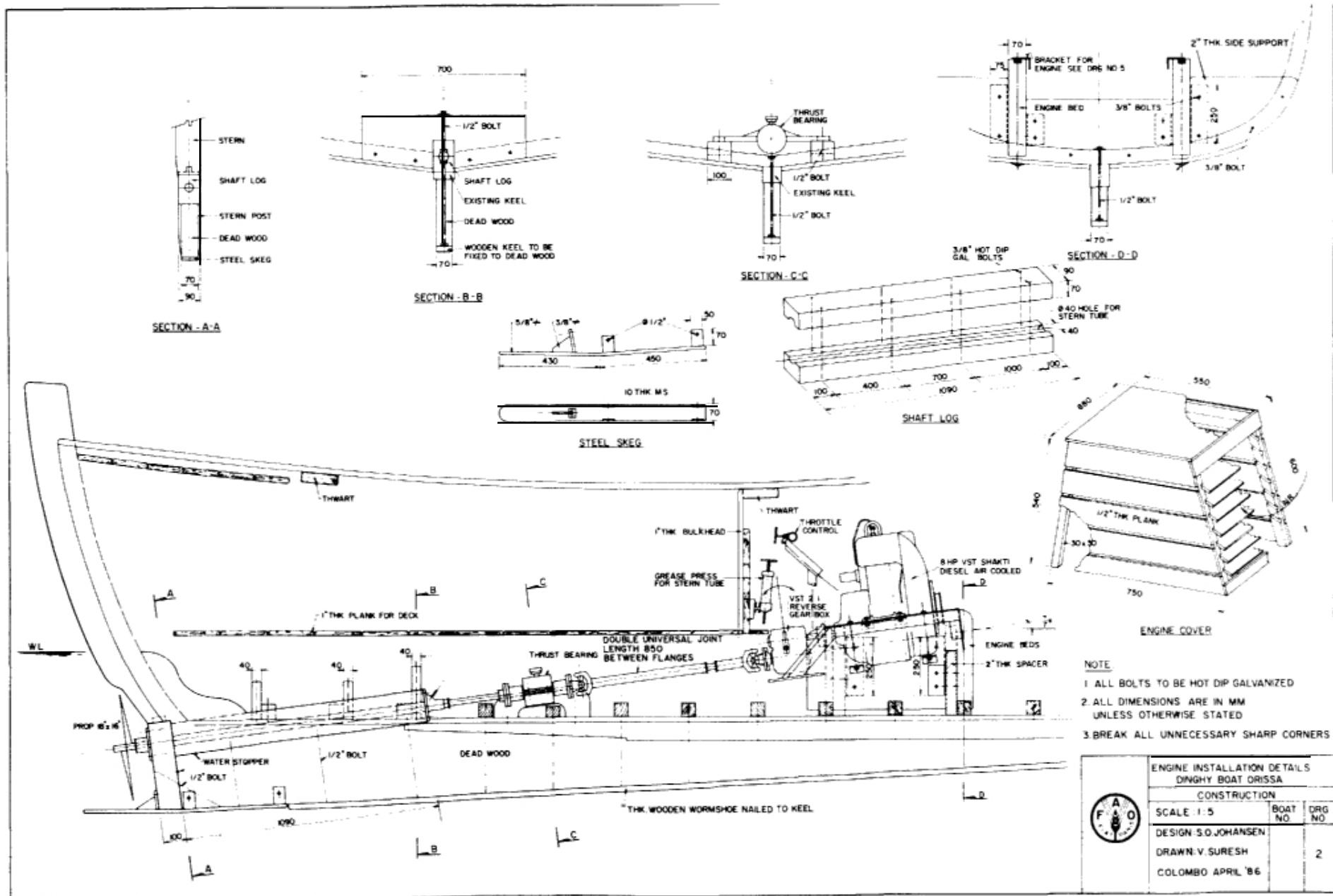
5. Timber : Gitta Timber Co.
Cinema Bazar,
PO & District Balasore 756 003
Orissa.

6. Stainless steel hose clamps : M. Shah & Company,
1 Bonfield Lane,
Calcutta 700 001.

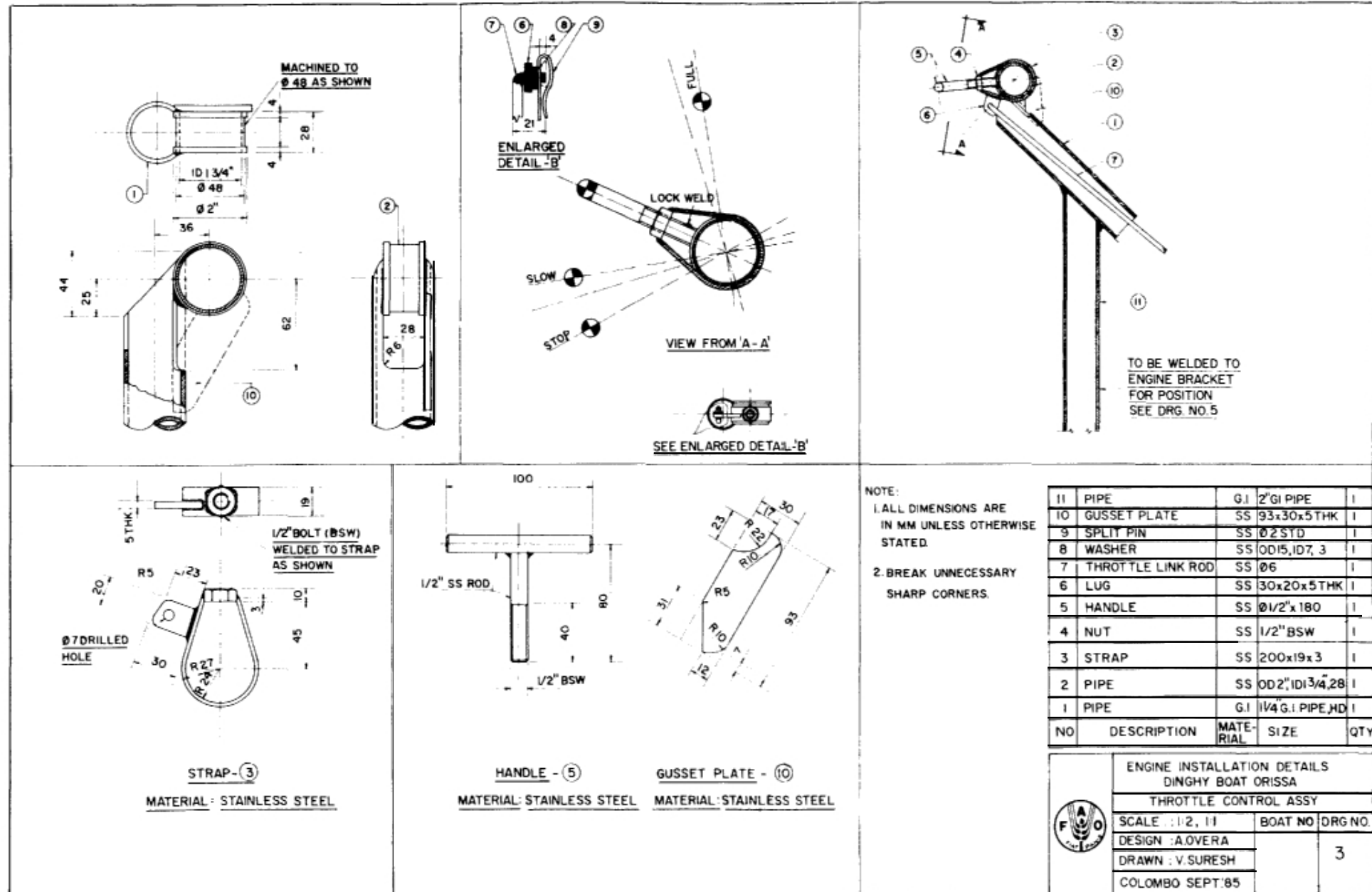
7. Hot dip galvanized bolts : Calcutta Hardware & Syndicate
32 Netaji Subhas Road,
Calcutta.

GENERAL ARRANGEMENT: THE DINGHY





THROTTLE CONTROL ASSEMBLY



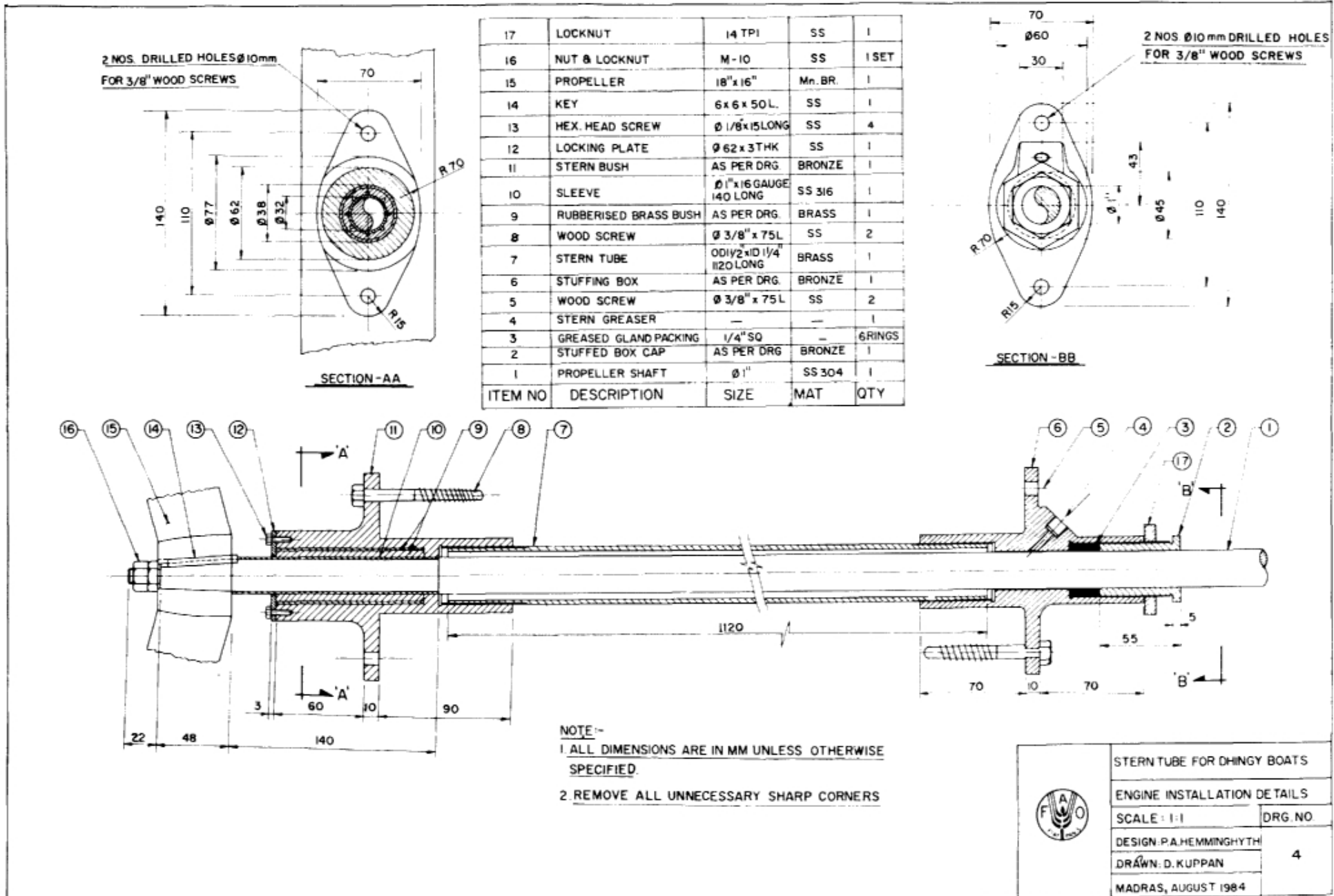
ENGINE INSTALLATION DETAILS
 DINGHY BOAT ORISSA
 THROTTLE CONTROL ASSY

SCALE : 1:2, 1:1 BOAT NO DRG NO.

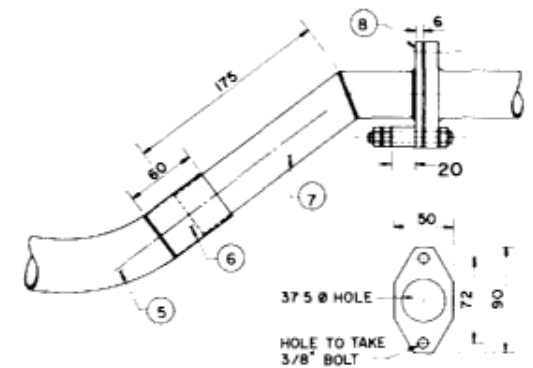
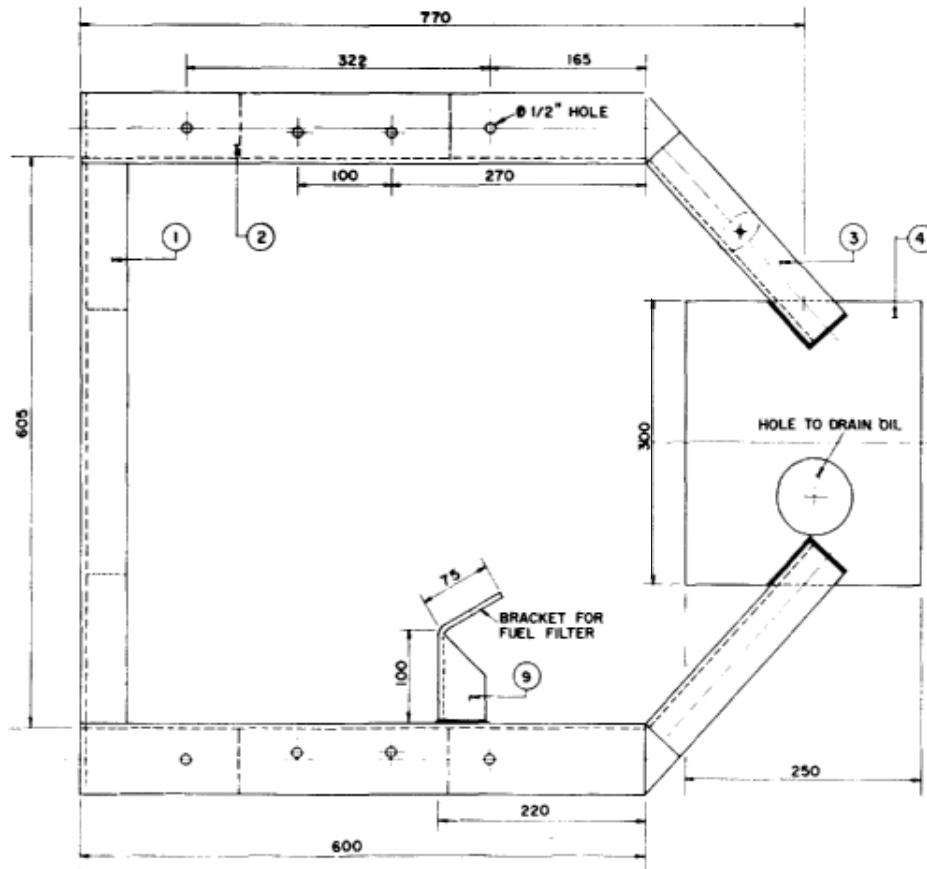
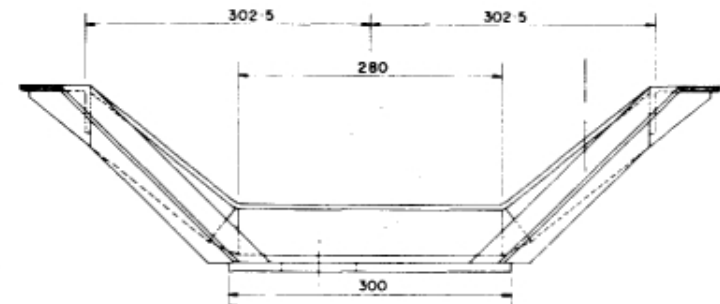
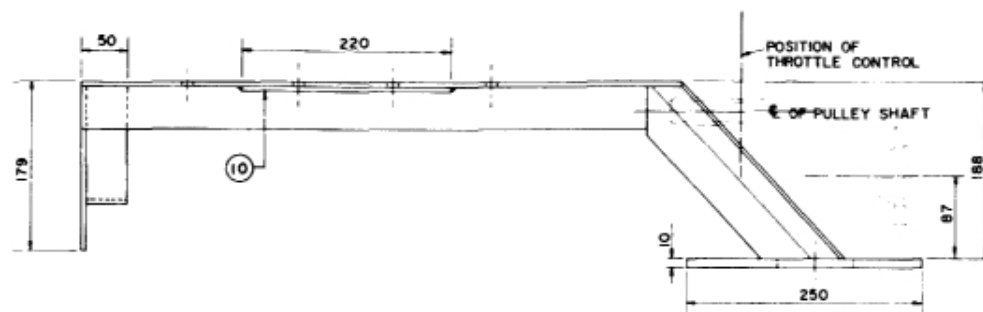
DESIGN : A.OVERA
 DRAWN : V.SURESH
 COLOMBO SEPT:85

3

STERN TUBE



BRACKET FOR ENGINE AND GEARBOX
DETAIL OF EXHAUST FLANGE



DETAIL OF EXHAUST FLANGE
SCALE 1:2

NO	DESCRIPTION	MATERIAL	SIZE	QTY
10	FLAT STEEL	MS	220x70x6	1
9	STEEL ANGLE	MS	50x50x6	1
8	EXHAUST FLANGE	SS	PER DETAIL	1
7	PIPE	SS	1 1/2" OD	1
6	PIPE	SS	2" OD	1
5	PIPE	GI	2" OD	1
4	STEEL PLATE	MS	300x250x10	1
3	STEEL ANGLE	MS	50x50x6	2
2	STEEL ANGLE	MS	75x50x6	2
1	STEEL ANGLE	MS	50x50x6	1

NOTE

- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
- BREAK ALL UNNECESSARY SHARP CORNERS

	ENGINE INSTALLATION DETAILS DINGHY BOAT ORISSA	
	BRACKET FOR ENGINE & GEARBOX DETAIL OF EXHAUST FLANGE	
	SCALE 1:25, 1:2	BOAT NO. DRG. NO.
	DESIGN - S.G. JOHANSEN DRAWN - V. SURESH COLOMBO, APRIL '88	5

