

WASC 1989

Working Notes
of Tom Gladwell

WORKING NOTES OF
TOM GLADWELL

Commenced employment at
 RQPF 21-9-36 - Cordite Factory
 Promoted Foreman 16-9-41
 Left 27-7-45

Re-entered employment, ERDE 8-5-61

Faint handwritten notes on the left page, possibly including dates and names.

15/4/42 Furness 370/048 volunteered to work in Bld W
 in place of Hardiman 370/102 after getting
 outside

22/4/43 Seal-less Banding Tape
 Dimension of tape $\frac{3}{8}$ " width 0.015" thick
 Weight and length of tape used for Micaman
 Picrite box

- (a) Short lengths

Length 2' x 3' 11"	=	7' 10"
Wt		2 1/2 oz
 - (b) Long length

Length 1' x 5' 2"	=	5' 2"
Wt	=	1 3/4 oz.
- Total length of tape = 13'
 Total Wt = 4 1/4 oz

29/3/43

TRAY
 STOP

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N. Paste Multitubular Die 316 - 032.

11/0. 11/11.

Size 025/32 new size 9/5/43. Stoved
at 11/11.

154/156

95	Trays	Per	Blend
7	lb	per	tray
20	lb	Per	Bag
32	Bases	Per	Blend
625	lb	Per	Blend
5,000	lb	Per	Lot
250	Bases	Per	Lot.
8			

Incorporating Hours.

Instructions for loading. Incorporating machines with Paste.

- ① Place the Loading Box and its apron and the leather cover, straight edge to the front in position.
- ② Pour half a can of acetone into the machine distributing it well, through the rose, and start the blades.
- ③ One bag of paste is to be emptied carefully into the box so that no dust is raised. The mouth of the bag is to be securely tied, and the bag folded up mouth inwards.

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④ The Changerman is to stand on the left of the box and load the paste into the machine with his hands, making as little dust as possible. The other man is to stand at the back of the machine or the side away from the belts, and sprinkle the charge with the remainder of the can of acetone through the rose, while the Loading is going on

⑤ With machines taking more than one bag of paste, operations (3) and (4) are to be repeated with each bag. The whole can of acetone for each of these bags is to be sprinkled over

the Charge while Loading is going on

⑥ Stop the machine, and if required, add the appropriate quantities of carbamite, chalk and cyclite distributing as evenly as possible. The leather cover is to be wiped with a wet sponge cloth and removed from the machine. The top of the machine is to be wiped with a sponge cloth, (previously mineral jellied if this material is in the composition of the explosive). The Aluminium cover is to be replaced and the machine started. The rest of the machine, excluding any parts that are in motion, is then to be cleaned with a cloth and the floor swept.

Meaning

TRAY
STOP

⑦ Record the time of starting the incorporation on the board.

(8) Half an hour after loading the machine is to be stopped, the safety catch put on, and the blades cleaned by hand. The machine may be run in reverse for a few minutes previous to cleaning the blades.

(9) If Mineral Jelly is to be added, the appropriate quantity of the melted mineral jelly is to be added to the machine from the bro set can. The time of the addition must be recorded on the board. Instruction (8) is to be repeated, $\frac{1}{2}$ hr after the addition of mineral jelly.

(10) At least an interval of 1 hour is to elapse after the loading of one machine, before the loading of another machine in the same bay.

Special Instructions for compositions

W. M.

- (1) The carbamite and chalk are to be added as in general instruction (6) and the mineral jelly according to general instruction 9. Three hours after loading.
- (2) The temp. of the dough is to be raised to 35°C . within the first 2 hours, and maintained @ 35°C . throughout the remainder of the incorporation.
- (3) The incorporation is to be carried out for a period of not less than 5 hours.

W.

- (1) The carbamite and chalk are to be added as in general instruction 6.
- (2) The temp. of the dough is to be raised to 35°C . within the first 2 hours and maintained @ 35°C throughout the remainder of the incorporation.
- (3) The incorporation is to be carried out for a period of not less than 5 hours.

TRAY
STOP

- 5
- M. D.
- (1) The mineral jelly is to be added according to General Instruction 9, 3 hours after loading.
 - (2) The temp. of the dough is to be raised to 25°C within the first 3 hours, and maintained @ 25°C throughout the remainder of the incorporation.
The temp. must never exceed 28°C
 - (3) The incorporation is to be carried out for a period of not less than 6 hours.

- MK. I
- (1) The mineral jelly is to be added according to General instruction 9, 3 hours after loading.
 - (2) The temp. of the dough is to be raised to 20°C during the first 3 hours, and maintained @ 20°C throughout the remainder of the incorporation.
The temp. must not exceed 22°C
 - (3) The incorporation is to be carried out for a period of not less than 6 hours.

- R. D. Q
- (1) The carbamide, chalk, cryolite, and dye are to be added as in General Instruction 6.
 - (2) The temp. of the dough is to be raised to 25°C during the first 3 hours, and maintained @ 25°C throughout the remainder of the incorporation.
 - (3) The incorporation is to be carried out for a period of not less than 6 hours.

R. D. N. Cordite Manufacture.

Paste: The nitro-cellulose (previously rubbed through a sieve if moulded for drying) is mixed with the picrite (Spec. C.S. 1281) and the mixture rubbed through a sieve. The nitro-glycerine is passed on to the mixture and the paste rubbed through a sieve $\frac{1}{4}$ " mesh in each case.

Incorporation: Normal. The paste is loaded into the machine. (previously deaired with solvent) while the solvent is sprayed from a can. The other ingredients

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STOV.

R.D.N. CONT²

6
cantamite, chalk and eryolite are then evenly distributed. The blades are cleaned 1/2 hour after loading. The temp of incorp. is 25°C., and the time is 6 hours.

The blades speeds are 11:22 but it is considered that 5 1/2 : 11 R.P.M. would be satisfactory

Pressing Normal. The filler is a 50 mesh I.M.H phosphor bronze gauge. From small screw presses the cord is seeded and cut.

Shoring The material is dried @ 45°C for 3-5 days according to size

Data

Solvent 16-20% of the dry dough weight. 92:8 acetone - water mixture

2% extra solvent is required for small screw press work.

1% extra solvent is recommended for S.T. sizes

1% " " " " - G.C. compositions

R.D.N. CONT²

S.T.	Size	Die size	Drawing No
S.T.	0.045 mm	0.145 - 0.045	C.E.D. (M) 1026
S.T.	0.058 "	0.184 - 0.050	" 1099
S.T.	0.072 "	0.229 - 0.057	" 1100
T	0.114 - 0.040	0.129 - 0.057	" 982

Shrinkage Factors

General formula for small screw
R.D.N/A 1%. solvent 0.030 - 0.080
solid cords

$x = 1.2y - 0.003$, where x = die size
 y = finished cord size

0.1 - 1.05 - 1.15

Hydraulic 1.16

Pressure

Small screw 800 - 1200 lbs/o"

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Hydraulic 250 - 500 lbs/0" rates 7-92 depending on size and solvent.

General Information

- ① Picrite compositions dry very rapidly. During working, surface drying of the dough occurs, giving a skin effect. It is advisable to keep dough enclosed as much as possible to prevent loss of solvent. Local hardness in the dough owing to partial loss of solvent will cause uneven extrusion, wrinkled cords and high pressure's G/C compositions are somewhat more susceptible.
- ② Stale paste is sometimes found to be difficult to bind

W M	Bordite	Length	Wt/Case	Wt/Lbs	Lot Size	# of Cases	Size	MAX V. M	Tray
	017	2-25"			1000.	15.		0.5	12 Cases @ 50 lbs Per Blend
	07	16"	55	2,500	56	2,500			No Tray (Affore) Lotted
	67	32"	8.	55	3,460	63.	① 1,250	0.5	into 1 lb Buckles
	642	30"	13	75	8,000	107.	② 2,000	0.5	" - 4%
	109	30"	19	70.	40,000.	571.	④ 2,500.	1.0	
	130	36"	19		40,000	445	④ 2,500	1.3	
	182	29"	23	90	40,000	421	④ 2,500	1.4	
		33"		100	40,000	400	④ 2,500		
T124/040		28.5"	17.5	70	15,000	215	⑥ 2,500	0.9	36 Cases Per Blend 245 Trays (affore)
	061	33"	18	75	25,000	334	⑩ 2,500	0.75	
		29"		70	25,000	358	⑩ 2,500		36 Cases / Blend 136 Trays (affore)
T145/048		36"		80	15,000	188	⑥ 2,500	1.0	
	245	30"	100	40,000	400	④ 2,500		1.5	2) Cases / Blend 110 Trays / Blend
T154/156		10-5"	20	5,000	250	625		0.5	
	130	30-5"	70	40,000	571			1.3	23 Cases / Blend 160 Trays (affore)

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Reeling of M.D 5-2.

Wt / 15" - 35.8 - 36.5

Wt/15" x 44	Wt/100"	N. of strands
381	57.8	41
373	56.5	42
365	55.3	43
355	53.8	44
348	52.7	45
340	51.5	46

Gauging of M.D. bordite

5-2 gauged to .330" for .303 Cartridge (44 strand)
 7-2 " " .548 " .5 " " (77 "
 " " .600 " .55 " " "

Drumming of M.D. bordite

Factor for converting single strand reels to 11 strand reels multiply by .128

For a Lot of 2,500 lbs (50 Drums)
 164 11 strand 5-2 reels required (4 x 41)
 160 " " 7-2 " "

Reeling House 2. 8 Bays (1 Packing)
 28 reeling Machines. 9 Drumming M.

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Date	Type	Gun	Weekly Output S. tons
11/8/41	WM: .07/25"	Smith Gun	0.75
	.07/32"	Q.F. 4.5 How.	2.5
	.042/30"	B.L. "	6.0
	.109/30"	B.L. 5.5 <u>11A III</u>	30.0
	.130/36"	" 4.5	26.0
	.148/048.26"	Q.F. 2 Pdr. <u>11K IX</u> <u>11K</u>	20.0
	.182/33"	B.L. 6" <u>11K VII</u> <u>XXIV</u>	35.0
	M.D.T.		20.0
			<u>140.25</u>

Sorting Houses.

No 5	Bed 5/6	Limit	15,000 lbs
No 6	" 6/2	"	5,000 lbs
No 7	" 5/2	1,000 lbs / Bay 7 bays	7,000 lbs

Bordite Section Boats

Large. 11" 1. 6. 7. 8. 15. 16. 25. 33. 34. 35. 36. for Runways

Small Nos 3. 9. 14.

M.D. Bordite.

Joints to be $1\frac{1}{2}$ " apart 5/2

$2\frac{1}{2}$ " " 7/2.

M. D Bordite Sleeves

Weekly Consumption

21/6 - 27/6/42 { 5-2 Sleeves 10 lbs

{ 7-2 " " 28 lbs.

7.2 Sleeves Dimensions

① .096 - 073 die

.098 - 073 die.

Micrometer

TRAY

STOP

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Composition of Cordite Dough.

Type of Cordite.	Paste.						Mineral Jelly.		Carbamite
	G. (Dry)		N. G.		Picrite		Wt. lbs. ops.	%	Wt. lbs. ops.
	Wt. lbs. ops.	%	Wt. lbs. ops.	%	Wt. lbs. ops.	%			
W.	38.9	65	17.13½	29.	-	-	-	-	3. 4½
W.M.	38.9	65	18.2	29.5	-	-	1.2.	3.05	1. 3¼
M.D.	38.9	65	18.7	30	-	-	3. ½	5	-
M.K.I.	27.8	37	44.0.	58	-	-	3. 11.	5	-
R.D.Q.	N.C. (2.2% N.C.) 12. 10	21.	12. 10	21.	33.0	55.	-	-	1. 13.
R.D.N.A.Q.	10. 0	16.5	12. 10	21.	33.0	55	-	-	4. 8.

	Chalk.		Dye		Solvent.					
	%		%		Acetone		Water		Total	Ratio
	Wt. ops.	%	Wt. ops.	%	Wt. lbs. ops.	%	Wt. lbs. ops.	%	%	Ac./Water.
6	2½	0.4	-	-	Screw. 18. 12. Hydramul. 17. 3		2. 13½		36	86.8/13.2.
2.	2.	0.3	-	-	{ 17. 7. 17. 3		2. 9½		33	88/12.
-	-	-	-	-	21.0		2. 9½	35	33	86.8/13.2.
-	-	-	-	-	15		2.0	38	38	90/10.
-	-	-	-	-	15		-	38	38	91.3/8.7.
3	41 grains	0.15	105	82 grains	Screw 10. 8 Hydramul. 8. 8 Hydramul. 9.		0. 14½		19	92/8
7.5	41 grains	0.15	105	82 grains	9.		0. 12½		15.5	"
-	-	-	-	-	-		0. 13		17.	92/8.

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cordite sizes and weights

Dye Size	Finished Size	Length		Weights		Factor
		Wet (ins)	Dry (ins)	Wt. grains 100" length Wet.	Wt. 100" length (Dry)	
W.M. 218	(182) 183	29.5	29	(1312-1320 1430)	990-1100	1.30
W.M. 149/049	124/040	29	28.5	(573- 575)	410-460	1.25
W.M. 074	061.	33.6	33	} 147 (131-170)	106-136	1.29
		29.6	29			
W.M. 157	130			(624- 730)	510-570	1.28
W.M. 132	109			(451- 502)	355-390	1.27
W.M. 019	017			(10-1-12.0) 11.3	8.4-10.0	1.20
374/120.	316/100	34	33	3500		
M.D. 0535	.044-.015	Drums		68.		
222	(5-2)					
M.D. 7/2.	.057-.016.	Drums		122.		
R.D.G. 050	045			91		
	047/027			49.5		
128/348	114/040			21.9		
147/043	132/042			410		
	034			520		
			29	44.8		

Targets - Reeling & Drumming M.D.T. & C.D.T.

Size	Targets / person / shift (8 hrs)					
	Reeling			Drumming		
	No. of Reels 11 strand	Wt (lbs)	Man hrs short ton	No. of Drums	Wt (lbs)	Man hrs short ton
5-2						
4% waste	20.	300.	53.3	10	500	32.0
8% waste	14.	210.	76.2	8	400	40.0

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STOV.

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Stencilling on bordite bases

C175 Both Sides

S - A

S - 2

bordite M.D.T.

Date -

Nett

Gross wt

5-2

Both Ends

S - A

bordite M.D.T.

W. A

Nº

Top

Group Label (Centre)

2 W.D.C Labels (as scale)

72 bases

Additional to sides

7-2 for 56.

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SIDE

11/5/43 M^o Neil J 370/069 suspended 3 Days
 for threaten F/47 11/43 - 12/43, 1/43.

Industrial Holidays for People
 working - closed periods.

Hutchings R	370/302	June 21 st to 26 th
Lardage J	370/417	June 21 st to 26 th
Bowley F	1172	Aug 3 rd to 10 th
Gillan W	1091	" " " "
Caton W	1075	June 28 th July 3 rd
Boorman C	1213	Aug 9 th to 14 th
Green E	1117	Sept 6 th " 11 th
Fenwick W	1123	" X th " X th " "
Bassett L	1337	26 th July 1 st to 31 st
Smith C F	1256	July 26 th to 31 st
Bowen D	1081	Aug 3 rd to 7 th

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Milestone @ 370/428 July 26th to 31st
 Goodge H " / 326 July 12th to 17th
 Lea S " / 230 20 7 Aug

Entered 21/9/36.	Left 21/7/45	
Blending from	21 st 9 36	to 23-2-37.
Storing	24 th 2-37.	
... C/H	14 th 6-37.	to 13-8-39
Blending C/H	14 th 8-39	
A/I Stores	10 th 7-40	
P. F/I General	16-9-41	

Re entered May 8th 1961

Reeling finished 2nd shift 28 Aug
 Drumming " " 2nd shift 30 Aug
 C Shift

Pre-War Entrants of Military Age

If transferred to other employment.
 mark discharge papers. Withdrawn to
 other employment by order of N. S. O.
 Should these men be subsequently directed
 to the Forces they are to report
 back to R. G. P. F. to make
 arrangements for Balance of Civil
 Pay etc. Directions will be
 given to each man as to his
 position on leaving this
 factory.

1911
 1921-1930
 1930-1938

TRAY STOP

SIZE	DRYING TIME	V.M.
245/30	24 Days	1.50
182/33	19	1.40
148/36	14	1.10
06./29	10	.75
130/30	14	1.30
124/040	11	.90
109/30	13	1.10
042/30	7	.58
154/136	4	.50
07/32-16	5	.50
7-2	12	.60
5-2	10	.60

Boat No	Mac No	Large	Small
1.	Nu.	✓	
6.	Nu.	✓	
7.	A390.	✓	
8.	A970.	✓	
10.	A1134.	✓	
12.	A1142.	✓	
13.	171143.	✓	
16.	A1594.	✓	
25.	A620.	✓	
33.	A623.	✓	
3.	A953.	Small	
9.	A1030.	✓	
14.	A960.	✓	

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Re-Entered Factory E. R. D. E 8-5-61
Promoted to Grade II 23-10-61
" " I 8-1-62

Previous Service Sept 1936 to July 21 1945

TRPV
STOV