

No. 1886

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. *1646* No. in Register Book *2905*

*Wallacburg*  
" *JOHN J. RAMMACHER* "

Makers of Engines *EARLES S+E CO LTD.*

Works No. *644*

Makers of Main Boilers *EARLES S+E CO LTD.*

Works No. *644*

Makers of Donkey Boiler

Works No.

MACHINERY.



Lloyd's Register  
Foundation

*14*  
*004653-004661-0025*

No.

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 1646 No. in Register Book 2905

Received at Head Office 18<sup>th</sup> July 1923

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the ~~Single Screw~~ ~~Steam Quadruple~~ Screw JOHN J. RAMMACHER

Official No. 147080 Port of Registry Hull.

Registered Owners The Eastern Steamship Co. Ltd.  
Port Colborne, Ontario, Canada.

Engines Built by Earle S & Co. Ltd.  
at Hull.

Main Boilers Built by Earle S & Co. Ltd.  
at Hull.

Donkey " "   
at

Date of Completion 27-4-23

First Visit 11-12-22 Last Visit 27-4-23 Total Visits 36



## RECIPROCATING ENGINES.

Works No. **644** No. of Sets **1** Description **Triple Expansion**  
**Surface Condensing**

No. of Cylinders each Engine \_\_\_\_\_ No. of Cranks \_\_\_\_\_  
 Diars. of Cylinders \_\_\_\_\_ Stroke \_\_\_\_\_  
 Cubic feet in each L.P. Cylinder \_\_\_\_\_  
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.? \_\_\_\_\_  
 " " " each Receiver? \_\_\_\_\_  
 Type of H.P. Valves, \_\_\_\_\_  
 " 1st L.P. " \_\_\_\_\_  
 " 2nd L.P. " \_\_\_\_\_  
 " L.P. " \_\_\_\_\_  
 " Valve Gear \_\_\_\_\_  
 " Condenser \_\_\_\_\_ Cooling Surface \_\_\_\_\_ sq. ft.  
 Diameter of Piston Rods (plain part) \_\_\_\_\_ Screwed part (bottom of thread) \_\_\_\_\_  
 Material " \_\_\_\_\_  
 Diar. of Connecting Rods (smallest part) \_\_\_\_\_ Material \_\_\_\_\_  
 " Crosshead Gudgeons \_\_\_\_\_ Length of Bearing \_\_\_\_\_ Material \_\_\_\_\_  
 No. of Crosshead Bolts (each) \_\_\_\_\_ Diar. over Thrd. \_\_\_\_\_ Thrds. per inch \_\_\_\_\_ Material \_\_\_\_\_  
 " Crank Pin " " " " " " \_\_\_\_\_  
 " Main Bearings \_\_\_\_\_ Lengths \_\_\_\_\_  
 " Bolts in each \_\_\_\_\_ Diar. over Thread \_\_\_\_\_ Threads per inch \_\_\_\_\_ Material \_\_\_\_\_  
 " Holding Down Bolts, each Engine \_\_\_\_\_ Diar. \_\_\_\_\_ No. of Metal Checks \_\_\_\_\_  
 Are the Engines bolted to the Tank Top or to a Built Seat? \_\_\_\_\_  
 Are the Bolts tapped through the Tank Top and fitted with Nuts Inside? \_\_\_\_\_  
 If not, how are they fitted? \_\_\_\_\_

*Same as 643.  
 Robert W. Pomeroy*

Connecting Rods, Forged by \_\_\_\_\_  
 Piston " " \_\_\_\_\_  
 Crossheads, \_\_\_\_\_  
 Connecting Rods, Finished by \_\_\_\_\_  
 Piston " " \_\_\_\_\_  
 Crossheads, " " \_\_\_\_\_  
 Date of Harbour Trial **23.4.23.**  
 " Trial Trip **26-4-23.**  
 Trials run at in **River Number** \_\_\_\_\_  
 Were the Engines tested to full power under Sea-going conditions? **No.**  
 If so, what was the I.H.P.? \_\_\_\_\_ Revols. per min. \_\_\_\_\_  
 Pressure in 1st L.P. Receiver,  lbs., 2nd L.P.,  lbs., L.P.,  lbs., Vacuum  ins.  
 Speed on Trial \_\_\_\_\_  
 If the Conditions on Trial were such that full power records were not obtained give the following estimated data:—  
 Builders' estimated I.H.P. **950** Revols. per min. **105**  
 Estimated Speed **9½ knots**

*Same as 643*



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## TURBINE ENGINES.

Works No.	Type of Turbines		
No. of H.P. Turbines	No. of I.P.	No. of L.P.	No. of Astern
Are the Propeller Shafts driven direct by the Turbines or through Gearing?			
Is Single or Double Reduction Gear employed?			
Diar. of 1st Reduction Pinion	}	Width	Pitch of Teeth
" 1st " Wheel			
Estimated Pressure per lineal inch			
Diar. of 2nd Reduction Pinion	}	Width	Pitch of Teeth
" 2nd " Wheel			
Estimated Pressure per lineal inch			
Revs. per min. of H.P. Turbines at Full Power			S.H.P.
" " I.P. " "	If the Conditions on Trial were such that full power records were not obtained give following estimates		
" " L.P. " "	Date		
" " 1st Reduction Shaft	Builder's estimate I.H.P.		
" " 2nd " "	Estimated speed		
" " Propeller Shaft	Estimated speed		
Total Shaft Horse Power			
Date of Harbour Trial			
" Trial Trip			
Trials run at			
Speed on Trial	Knots.	Propeller Revs. per min.	S.H.P.
Turbine Spindles forged by			
" Wheels forged or cast by			
Reduction Gear Shafts forged by			
" Wheels forged or cast by			

## DESCRIPTION OF INSTALLATION.

No. of Turbo-Generating Sets	Capacity of each		
Type of Turbines employed			
Description of Generators			
No. of Motors driving Propeller Shafts			
Are the Propeller Shafts driven direct by the Motors or through Gearing?			
Is Single or Double Reduction Gear employed?			
Description of Motors			
Direction of Rotation			
Speed on Trial			
Estimated Pressure per lineal inch			
Diar. of 1st Reduction Pinion	}	Width	Pitch of Teeth
" 1st " Wheel			
Diar. of 2nd Reduction Pinion	}	Width	Pitch of Teeth
" 2nd " Wheel			
Estimated Pressure per lineal inch			
Revs. per min. of H.P. Turbines at Full Power			S.H.P.
" " I.P. " "	If the Conditions on Trial were such that full power records were not obtained give following estimates		
" " L.P. " "	Date		
" " 1st Reduction Shaft	Builder's estimate I.H.P.		
" " 2nd " "	Estimated speed		
" " Propeller Shaft	Estimated speed		
Total Shaft Horse Power			
Date of Harbour Trial			
" Trial Trip			
Trials run at			
Speed on Trial	Knots.	Propeller Revs. per min.	S.H.P.



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TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets Capacity of each

Type of Turbines employed

Description of Generators

Are the Propeller Shafts driven direct by the Turbines or through Gearing?

No. of Motors driving Propeller Shafting

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Description of Motors

Diar. of 1st Reduction Pinion } Width Pitch of Teeth  
 " 1st " Wheel }

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion } Width Pitch of Teeth  
 " 2nd " Wheel }

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

" Motors "

" 1st Reduction Shaft

" 2nd "

" Propellers at Full Power

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial Knots. Propeller Revs. per min. S.H.P.

Makers of Turbines

Generators

Motors

Reduction Gear

Turbine Spindles forged by

Wheels forged or cast by

Reduction Gear Shafts forged by

Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

SKETCH OF TURBINE SHAFTING

Are the Crank Shafts built or sold?

No. of Bearings in each

Dist. by Rule

Length between Webs

Thickness

Greatest Width of Crank Webs

Dist. of Keys in Crank Webs

Dist. between Crank Pins

Dist. at Mid Length

No. of Bolts each Coupling

Type of Thrust Blocks

No. Rings

Dist. of Thrust Shafts at bottom of Collars

As Air Coupling

Dist. of Intermediate Shafting by Rule

Dist. at Mid Length

No. of Bolts each Coupling

Actual

Dist. of Propeller Shafts by Rule

Are Propellers shafted with Continuous Brass Liners?

Dist. over liners

Dist. when shafted and the After Bearing removed?

Are Motors provided for starting the After Bearings with Oil?

Is there a Water Cooling System?









## BOILERS.

Works No. *644.*

No. of Boilers *2* Type *Multitubular Cylindrical*

Single or Double-ended *Single ended.*

No. of Furnaces in each *Two*

Type of Furnaces *Dighton Patent*

Date when Plan approved *18. 12. 22.*

Approved Working Pressure *180 lbs.*

Hydraulic Test Pressure *320 "*

Date of Hydraulic Test *10. 4. 23.*

" when Safety Valves set *23. 4. 23.*

Pressure at which Valves were set *180 lbs + 5 lbs.*

Date of Accumulation Test *23. 4. 23.*

Maximum Pressure under Accumulation Test *190 lbs.*

System of Draught *Howden, Cloud ashpit.*

Can Boilers be worked separately? *Yes.*

Makers of Plates *J. Spencer & Son Ltd.*

" Stay Bars *Trudingham*

" Rivets *Cooper & Turner Ltd.*

" Furnaces *Leeds Forge Co Ltd.*

Greatest Internal Diam. of Boilers

" " Length "

Square Feet of Heating Surface each Boiler

" " Grate " "

No. of Safety Valves each Boiler Rule Diam. Actual

Are the Safety Valves fitted with Easing Gear?

No. of Pressure Gauges, each Boiler No. of Water Gauges

" Test Cocks " Salinometer Cocks

*Same as 643*

BC TEST  
 No 2797  
 320 lbs  
 WP 180 "  
 GAN.  
 10-4-23.



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Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars?

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes?

Are these Pipes connected to Boilers by Cocks or Valves?

Are Blow-off Cocks or Valves fitted on Boiler Shells?

No. of Strakes of Shell Plating in each Boiler

Plates in each Strake

Thickness of Shell Plates Approved

in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

Are the Butt Straps Single or Double?

Are the Double Butt Straps of equal width?

Thickness of outside Butt Straps

inside

Are Longitudinal Seams Hand or Machine Riveted?

Are they Single, Double, or Treble Riveted?

No. of Rivets in a Pitch

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

BC TEST  
No 2777  
320  
WR 180  
GAW  
10 H 23

6H3  
Same as

Thickness of End Plates in Steam Space Approved

in Boilers

Pitch of Steam Space Plates

Diar. of Rivets per Inch

in Boilers

Material of

How are Seams Secured?

Diar. and Thickness of Loose Washers on End Plates

Riveted

Width of Doubling Straps

Thickness of Middle Back End Plates Approved

in Boilers

Thickness of Doublings in Wide Spaces between Flanges

Pitch of Straps

Diar. of Rivets per Inch

in Boilers

Material

Are Seams fitted with Ribs outside?

Thickness of Back End Plates at Bottom Approved

in Boilers

Pitch of Straps at Wide Spaces between Flanges

Thickness of Doublings in

Thickness of End Plates at Bottom Approved

in Boilers

Thickness of End Plates at Bottom Approved

in Boilers



Thickness of End Plates in Steam Space Approved

" " " " in Boilers

Pitch of Steam Space Stays

Diar. " " " " Approved Threads per Inch

" " " " in Boilers

Material of " " "

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

" " Riveted " " "

Width " " Doubling Strips "

Thickness of Middle Back End Plates Approved

" " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " "

Diar. of Stays Approved Threads per Inch

" " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

" " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Thickness of Front End Plates at Bottom Approved

" " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

643

Same as

Threads per Inch

in Boilers

Thickness of Front Tube Plates Approved

in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in

Stay Tubes at

Are Stay Tubes fitted with Nuts at Front End?

Thickness of Back Tube Plates Approved

in Boilers

Pitch of Stay Tubes in Back Tube Plates

Plan "

Thickness of Stay Tubes

Plan "

External Diam. of Tubes

Material

Thickness of Furnace Plates Approved

in Boilers

Smallest outside diam. of Furnaces

Length between Tube Plates



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Diar. of Stays Approved Threads per Inch

" " in Boilers

Material

Thickness of Front Tube Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in " " "

" Stay Tubes at " " "

Are Stay Tubes fitted with Nuts at Front End ?

Thickness of Back Tube Plates Approved

" " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

" Plain "

Thickness of Stay Tubes

" Plain "

External Diar. of Tubes

Material

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diar. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of " " Tops Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Tops

*Same as 64?*

Threads per Inch

in Boilers

Material

Thickness of Combustion Chamber Plates Approved

in Boilers

Pitch of screw stays in C.C. tops

Threads per Inch

in Boilers

Material

Thickness of Combustion Chamber Backs Approved

in Boilers

Pitch of screw stays in C.C. backs

Threads per Inch

in Boilers

Material

Are all screw stays fitted with nuts inside C.C.?

Thickness of Combustion Chamber Bottoms

No. of Girders over each Water Chamber

Centre

Height and Thickness of Girders

No. of Staybolts

No. of Girders in Bottom



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Diar. of Screwed Stays Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Sides

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Are all Screwed Stays fitted with Nuts inside C.C.?

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " " Centre "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes, each Boiler

Side of Lower Manholes

*Same as 643*

VERTICAL DONKEY BOILERS

No. of Boilers  
Type  
Greatest Int. Diar.  
Height  
Height of Boiler Crown above Fire Grate  
Are Boiler Crowns Flat or Dished?  
Internal Radius of Dished Ends  
Thickness of Plates  
Description of Beams in Boiler Crown  
Diar. of Rivet Holes  
Pitch  
Height of Firebox Crown above Fire Grate  
Are Firebox Crowns Flat or Dished?  
External Radius of Dished Crown  
Diar.  
No. of Crown Stays  
External Diar. of Firebox at Top  
Thickness of Plates  
Bottom  
No. of Water Tubes  
Int. Diar.  
Thickness  
Material of Water Tubes  
Diar. of Manhole in Shell  
Dimensions of Compression Ring  
Height of Tubes, each Boiler  
Plate Thickness

SUPERHEATERS



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*Vertical Donkey Boilers*

## VERTICAL DONKEY BOILERS.

No. of Boilers Type

Greatest Int. Diar. Height

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Ends Thickness of Plates

Description of Seams in Boiler Crowns

Diar. of Rivet Holes Pitch Width of Overlap

Height of Firebox Crowns above Fire Grate

Are Firebox Crowns Flat or Dished?

External Radius of Dished Crowns Thickness of Plates

No. of Crown Stays Diar. Material

External Diar. of Firebox at Top Bottom Thickness of Plates

No. of Water Tubes Int. Diar. Thickness

Material of Water Tubes

Size of Manhole in Shell

Dimensions of Compensating Ring

Heating Surface, each Boiler Grate Surface

*None fitted*

## SUPERHEATERS.

Description of Superheaters

Where situated?

Which Boilers are connected to Superheaters?

Can Superheaters be shut off while Boilers are working?

No. of Safety Valves on each Superheater Diar.

Are " " fitted with Lifting Gear?

Date of Hydraulic Test Test Pressure

Date when Safety Valves set Pressure on Valves

*None fitted*

## MAIN STEAM PIPES.

No. of Pipes

Material

How are Pipes secured?

Internal Diar.

Thickness

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

How are Pipes secured?

Internal Diar.

Thickness

Date of Hydraulic Test

Test Pressure

*2*  
*Steel*  
*2 1/2 inch*  
*4*  
*1/4*  
*Expanded with pressure*  
*18th Dec 1903*  
*240 lb*



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## MAIN STEAM PIPES.

No. of Lengths	2		
Material	Steel		
Brazed, Welded or Seamless	Seamless		
Internal Diam.	4"		
Thickness	1/4"		
How are Flanges secured?	Expanded nuts - grooves		
Date of Hydraulic Test	18.4.23.		
Test Pressure	540 lbs.		
No. of Lengths			
Material			
Brazed, Welded or Seamless			
Internal Diam.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			
No. of Lengths			
Material			
Brazed, Welded or Seamless			
Internal Diam.			
Thickness			
How are Flanges secured?			
Date of Hydraulic Test			
Test Pressure			

No.			
Type			
Material			
Working Pressure			
Date of Test or date of Valve under Steam			
No.			
Type			
Material			
Working Pressure			
Date of Test			
No.			
Type			
Material			
Working Pressure			
Date of Test			

FEED WATER HEATERS  
 FEED WATER FILTERS  
 Same as  
 18.4.23



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EVAPORATORS.

No.	Type	Tons per Day
	Steel	
	Expanded metal	
	1/4"	

Working Pressure      Test Pressure      Date of Test

Date of Test of Safety Valves under Steam

FEED WATER HEATERS.

No.	Type	

Working Pressure      Test Pressure      Date of Test

FEED WATER FILTERS.

No.	Type	Size
	Same as 643	

Working Pressure      Test Pressure      Date of Test 26.4.23.

LIST OF DONKEY PUMPS.

No. of Top Flange	No. of Bottom Flange	No. of Cylinder Cover Bands
Coasting Valve	Main Heating Valve	Valve Chest
Low Pump Valve	Low Pump Valve	High Pump Valve
L.T. Piston Rings	L.T. Piston Rings	L.T. Piston Rings
Spring	Spring	Spring
Safety Valve	Pine Bars	Leaf Check Valve
Piston Rods	Connecting Rods	Valve Spindles
Low Pump Rods	High Pump Rods	Air Pump Valve
Oil	Oil	Oil
Cond. Water	Cond. Water	Cond. Water
Propeller Shafts	Propeller Shafts	Propeller Shafts
Boiler Tubes	Boiler Tubes	Boiler Tubes

Same as 643 - Box 1885

Same as 643 - Box 1885



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GENERAL CONSTRUCTION.

Have the Machinery and Boilers been constructed in accordance with the requirements of the Rules and the

Approved Plans? *Yes.*

If not, give details of the points of difference, and state when these were sanctioned by the Chief

Surveyor.

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and trustworthy? *Yes.*

Is the Workmanship throughout thoroughly satisfactory? *Yes.*

The above correctly describes the Machinery of the S.S. "JOHN J. RAMMACHER"

as ascertained by me from personal examination

*John J. Rammacher*  
 Engineer Surveyor to the British Corporation for the  
 Survey and Registry of Shipping.

Fees—

MAIN BOILERS.			
H.S.	2940	Sq. ft.	£ 4 s. 2 d.
G.S.	76	"	19 4 23
DONKEY BOILERS.			
H.S.	✓	Sq. ft.	23 4 23
G.S.	✓	"	26 4 23
ENGINES.			
L.P.C.	29	Cub. ft.	27 4 23
Testing, &c. ....			
Expenses ....			
Total ... £ : :			

It is submitted that this Report be approved,

*John King*  
 Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the

*21st November 1973.*

Fees advised

Fees paid



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 Secretary.

GENERAL CONSTRUCTION

DATE	DESCRIPTION	AMOUNT
11.12.22		
13.12.22		
22.12.22		
29.12.22		
3.1.23		
9.1.23		
15.1.23		
17.1.23		
23.1.23		
25.1.23		
29.1.23		
5.2.23		
6.2.23		
12.2.23		
14.2.23		
19.2.23		
26.2.23		
1.3.23		
6.3.23		
9.3.23		
12.3.23		
16.3.23		
19.3.23		
22.3.23		
27.3.23		
7.4.23		
9.4.23		
10.4.23		
16.4.23		

It is submitted that this Report be approved.

*[Signature]*

10/11/2023

Approved by the Committee for the Class of M.B.S. on 10/11/2023

*[Signature]*

*[Large Signature]*

11.12.22	17.4.23.
13.12.22	18.4.23
22.12.22	19.4.23
29.12.22	20.4.23
3.1.23	23.4.23
9.1.23	26.4.23
15.1.23	27.4.23.
17.1.23	
23.1.23	
25.1.23	
29.1.23.	
5.2.23	
6.2.23	
12.2.23	
14.2.23	
19.2.23	
26.2.23.	
1.3.23	
6.3.23	
9.3.23	
12.3.23	
16.3.23	
19.3.23	
22.3.23	
27.3.23.	
7.4.23	
9.4.23	
10.4.23	
16.4.23.	



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17. N. 71

18. N. 81

19. N. 91

20. N. 00

21. N. 10

22. N. 20

23. N. 30

24. 01. 11

25. 02. 01

26. 03. 01

27. 04. 01

28. 05. 01

29. 06. 01

30. 07. 01

31. 08. 01

32. 09. 01

33. 10. 01

34. 11. 01

35. 12. 01

36. 01. 02

37. 02. 02

38. 03. 02

39. 04. 02

40. 05. 02

41. 06. 02

42. 07. 02

43. 08. 02

44. 09. 02

45. 10. 02

46. 11. 02

47. 12. 02

48. 01. 03

49. 02. 03

50. 03. 03

51. 04. 03

52. 05. 03

53. 06. 03



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