ABRIDGED SPECIFICATION NO. 30 – CENTURIONS MK. 9 & 10

4 Sheets

DRAWINGS F.V. 251921 – 5 SHEETS – CENTURIONS MKS. 7, 8, 9 & 10

Outline diagram
Transport & C of G diagram
Armour details
Turret
Suspension

Sheet 1
Sheet 2
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PHOTOGRAPHS Nos. 43012/1-6 – CENTURION MK. 10 FIRST PRODUCTION VEHICLE

No. 43012/1
No. 43012/2
No. 43012/3
No. 43012/4
No. 43012/5
No. 43012/6

Plan – Front
Plan – Rear
Side – Right
Rear side – Gun to Rear
Front side – Gun to Rear
Side – Front Right

Issued by:
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Ministry of Aviation,
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W.C.1.

30.10.59

KUNGL. ARMÉGFORVALTNINGEN
187 9 MRS. 1962
Nr: FA H
SECRET
CENTURION MK 10 FOR SWEDEN

ACCEPTANCE OF FIRST PRODUCTION VEHICLE

AT

MESSRS VICKERS ARMSTRONGS (ENGINEERS) LTD.,

NEWCASTLE

NOVEMBER 1959
1. GENERAL

Vehicle Type: Centurion (Basic Mk. 7)
Crew: 4, i.e., Commander, Driver, Loader, Gunner
Weight laden: 51 Tons
Weight Unladen, dry: 47.5 Tons
Ground Pressure (Nominal): 13.2 lbs./sq.in.
P/T Ratio: 12.5 BHP/Ton
Bridge Classification: 50

2. ARMAMENT

Main Armament: 105 mm. Cal. 105 mm. (4.14 ins.)
Traverse: 360° (18° per second)
Elevation: 20° to minus 10°

Auxiliary Armament: .30″ Browning M/G (Elec. and Mech. firing)

Ground to Air Defence: .30″ Browning M/G on Cupola (Mech. firing)
Traverse: 360°
Elevation: 45° to minus 15° (Frontal arc)

Gun Control:
Elevation: Electric Power and manual (gunner), manual (commander)
Traverse: Electric Power, manual and emergency
(gunner), Power - overriding (commander)
Firing: Main - Electrical and mechanical for Co-ax. M/G
Aux. - Electrical and mechanical
Automatic Control: Stabilized in elevation and traverse (by handswitch in Mk. 9 - by automatic velocity relay in Mk. 10)
3. **ARMOUR:**

- **Hull**
  - Glacis: $\frac{3}{4}$ (120 mm.) at 57°
  - Nose: 3" (76 mm.) at 45°
  - Side: 2" (51 mm.) at 120°
  - Floor: .669" (17 mm.)
  - Rear: 1.25" (32 mm.)

- **Turret**
  - Front: 6" (152 mm.)
  - Sides: $\frac{3}{4}$" (89 mm.)
  - Roof: $\frac{1}{4}$" (29 mm.)
  - Rear: $\frac{3}{8}$" (89 mm.)

4. **SIGHTING:**

- Commander: (i) **Mk. 9** - 360° rotating ARV cupola inc. (i) x 7 monocular sight optically linked to gunner's sight.
  - **Mk. 10** Fully contra-rotating cupola. (ii) 7 fixed episcopes.
  - (ii) x 10 cupola mounted binoculars.

- Gunner: A.F.V. Periscopic Sight (X6 and unit power) – optically linked to commander's sight.

5. **VISION:**

- Commander: See sighting
- Gunner: See sighting
- Driver: 2 Periscopes
- Loader: 1 Periscope

6. **COMMUNICATIONS:**

- **W/T Installation**: No. Cl2 and B47 Sets, (Control Cl2 & Cl2 & B47)
  - (Command Cl2 & Cl3 & B47)
- Intercommunication: For all crew.
- Emergency Crew Control: Commander to Driver
- Remote Control: Cable Reel (220 or 440 or 880 yds.)
- Infantry telephone: On rear of hull (to inter-comm.)
Vehicle: Centurion Mk. 9 and 10.

Sheet No. 3.

Date of issue: 29.10.53.

7. ENGINE

<table>
<thead>
<tr>
<th>Make</th>
<th>Meteor Mk. 4B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore and Stroke</td>
<td>5.4&quot; x 6&quot;</td>
</tr>
<tr>
<td>No. of Cylinders</td>
<td>12</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>7 to 1</td>
</tr>
<tr>
<td>Max. B.H.P. (Cross)</td>
<td>635 @ 2550 R.P.M.</td>
</tr>
<tr>
<td>Max. Torque (Gross)</td>
<td>1550 lbs/ft. @ 1600 R.P.M.</td>
</tr>
<tr>
<td>Coolant Capacity (Gall)</td>
<td>33</td>
</tr>
<tr>
<td>Oil (Gall)</td>
<td>14</td>
</tr>
<tr>
<td>Clutch</td>
<td>16&quot; - 3 plate - dry.</td>
</tr>
</tbody>
</table>

8. TRANSMISSION

<table>
<thead>
<tr>
<th>Gearbox</th>
<th>Z51R - Constant mech. - 5F and 2R speeds - mech. opn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Drive</td>
<td>Double reduction spur gears - 7.47 to 1 ratio.</td>
</tr>
<tr>
<td>Steering</td>
<td>Controlled differential - mech. opn.</td>
</tr>
<tr>
<td>Sprocket P.C.D.</td>
<td>29 ins.</td>
</tr>
<tr>
<td>Brakes</td>
<td>Girling Bendix</td>
</tr>
<tr>
<td>Bevel Drive</td>
<td>17/25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gear</th>
<th>Gearbox Ratio</th>
<th>Overall Ratio</th>
<th>Max. Speed</th>
<th>Turning Radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th</td>
<td>1.343</td>
<td>10.04</td>
<td>21.9</td>
<td>130 ft.</td>
</tr>
<tr>
<td>4th</td>
<td>1.607</td>
<td>13.51</td>
<td>16.3</td>
<td>96 ft.</td>
</tr>
<tr>
<td>3rd</td>
<td>2.855</td>
<td>21.34</td>
<td>10.3</td>
<td>61 ft.</td>
</tr>
<tr>
<td>2nd</td>
<td>4.593</td>
<td>34.33</td>
<td>6.4</td>
<td>38 ft.</td>
</tr>
<tr>
<td>1st</td>
<td>11.643</td>
<td>87.02</td>
<td>2.5</td>
<td>15 ft.</td>
</tr>
<tr>
<td>Rev.</td>
<td>22.894</td>
<td>171.11</td>
<td>1.3</td>
<td>7.5 ft.</td>
</tr>
<tr>
<td>H.Rev.</td>
<td>3.559</td>
<td>28.84</td>
<td>7.5</td>
<td>45 ft.</td>
</tr>
</tbody>
</table>

9. SUSPENSION

| Road Wheels | 12 of 31.6 dia. in pairs on 13½" rad. arms with horizontal coil springs in 6 bogies. |
| Tracks      | 2½" x 5½" pitch - 103 shoes per track - manganese cast. |

10. VEHICLE ELECTRICAL SYSTEM

| Power Supply | 24 volts (4 - 6V - 120 a/h batteries) |
| Generators   | (i) 3 KW dynamo driven by aux. engine |
|              | (ii) 1.5 KW dynamo driven from main engine |
| W/T Supply   | 24 volts. |
| Wiring       | Negative earth return |

11. VENTILATION SYSTEM

Crew Compartment: Aux. Generator ventilating fan.

12. FIRE FIGHTING EQUIPMENT

| Internal   | CO₂ System - (2-7 lb. bottles) |
| External   | 2 Tetrachloride Extinguishers (Hand) |
|            | 2 Methylbromide Extinguishers (Hand) |
13. **PERFORMANCE:**

Max. Road Speed : 21.5 m.p.h.
Vertical Obstacle : 3' 0"
Max. Gradient : 30° approx. at full tractive effort
Trench : 11' 0"
Shallow Fording : 3' 6" minimum requirement
Fuel Consumption : .6 Pts./B.H.P./Hour (½ m.p.h. c.c. speed)

14. **SPECIAL FEATURES:**

(i) Provision for towing mono wheel jettisonable fuel trailer
- Capacity : 200 gals.
- Laden Weight : 2 Tons

(ii) Provision for deep fording equipment on air louvres.
CENTURION 7, 8, 9 & 10.
OUTLINE DIAGRAM
CENTURION 7, 8, 9 & 10
TRANSPORT & CG DIAGRAM

NOTE: FOR OVERALL DIMENSIONS SEE SHEET №1!
CENTURION, 7, 8, 9, & 10 (FULLY MODIFIED)
ARMOUR DETAILS.
CENTURION 7, 8, 9 & 10.
SUSPENSION.

SPRINGS.
TYPE: HELICAL.
NO: 3 - OUTER, 1 INNER, 1 BUMP.
DRG. NO: 23292T, 23293T, 35089T.

DIA. OF WIRE INS.
MEAN DIA. OF COILS INS.
NO. OF EFFECTIVE COILS.
FREE LENGTH INS.
STATIC " INS.
" LOAD LBS.
BUMP LENGTH INS.
" LOAD LBS.
SOLID LENGTH INS.
CORRECTED STRESS AT FULL BUMP LBS/IN².
RATE, LBS/IN.

SHOCK ABSORBERS:
NEWTON & BENNETT
TYPE: S-2100/NB.

DIMENSIONS IN INCHES.
0  6  12  24  36  48  60  72 INS.

31.6 DIA.
12.75
3.5
5.75
2.25
3.5
4.6
13.5
### Marks of CENTURION

<table>
<thead>
<tr>
<th>Mark</th>
<th>Main armament</th>
<th>Subsidiary armament</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>20-pr</td>
<td>7.92 Besa</td>
<td>Mark 3 hull</td>
</tr>
<tr>
<td>5</td>
<td>20-pr</td>
<td>.30 Browning</td>
<td>Up-armoured Mark 5</td>
</tr>
<tr>
<td>5/1</td>
<td>20-pr</td>
<td>.30 Browning</td>
<td>Up-gunned Mark 5</td>
</tr>
<tr>
<td>5/2</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Up-armoured and up-gunned Mark 5</td>
</tr>
<tr>
<td>6</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 6 with IR</td>
</tr>
<tr>
<td>6/1</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 6 with RMG</td>
</tr>
<tr>
<td>6/2</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Hull redesigned to give increase in fuel capacity and number of ready rounds.</td>
</tr>
<tr>
<td>7</td>
<td>20-pr</td>
<td>.30 Browning</td>
<td>Up-armoured Mark 7</td>
</tr>
<tr>
<td>7/1</td>
<td>20-pr</td>
<td>.30 Browning</td>
<td>Up-gunned Mark 7</td>
</tr>
<tr>
<td>7/2</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 7 hull with new type mantlet and contra rotating cupola.</td>
</tr>
<tr>
<td>8</td>
<td>20-pr</td>
<td>.30 Browning</td>
<td>Up-armoured Mark 8</td>
</tr>
<tr>
<td>8/1</td>
<td>20-pr</td>
<td>.30 Browning</td>
<td>Up-gunned Mark 8</td>
</tr>
<tr>
<td>8/2</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Up-armoured and up-gunned Mark 7</td>
</tr>
<tr>
<td>9</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 9 with IR</td>
</tr>
<tr>
<td>9/1</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 9 with RMG</td>
</tr>
<tr>
<td>9/2</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Up-armoured and up-gunned Mark 8</td>
</tr>
<tr>
<td>10</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 10 with IR</td>
</tr>
<tr>
<td>10/1</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 10 with RMG</td>
</tr>
<tr>
<td>10/2</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 6 with IR and RMG</td>
</tr>
<tr>
<td>11</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 9 with IR and RMG</td>
</tr>
<tr>
<td>12</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td>Mark 10 with IR and RMG</td>
</tr>
<tr>
<td>13</td>
<td>105-mm</td>
<td>.30 Browning</td>
<td></td>
</tr>
</tbody>
</table>

Note: IR = Infra Red
RMG = Ranging Machine Gun