



## WEIGHTS AND MEASURES FOR ADVOCATES

**Table 1: Centurion tank main armament ammunition weights (84mm calibre) 20 Pounder:**

AMMUNITION TYPE	WEIGHT  INDIVIDUAL ROUNDS	WEIGHT PACKED (STEEL CONTAINER)	No OF ROUNDS PER CONTAINER
DST Practice	17kgs	36kgs	1 round only
High explosive	17kgs	36kgs	1 round only
APDS	17kgs	36kgs	1 round only
APCBC	?	?	1 round only
Smoke	18kgs	37kgs	1 round only
Canister	22.5kgs	41.5kgs	1 round onl

**Note: All ammunition weights in Tables 1 to 3 were supplied by the Gunnery Wing at the School of Armour.**

**Table 2: Leopard tank main armament ammunition weights (105mm calibre):**

AMMUNITION TYPE	WEIGHT  INDIVIDUAL ROUNDS	WEIGHT PACKED (STEEL CONTAINER)	No OF ROUNDS PER CONTAINER
DST Practice	18.5kgs	35kgs	1 round only
APDS	18.5kgs	35kgs	1 round only
HESH	20.5kgs	40kgs	1 round only
Anti-personnel	25kgs	72.6kgs	1 round only
HEAT	21.8kgs	63.6kgs	1 round only
White phosphorous	20.6	62kgs	1 round only

**Table 2A: ABRAMS M1A1/2 tank main armament ammunition weights (120mm calibre):**

AMMUNITION TYPE	WEIGHT ♦ INDIVIDUAL ROUNDS	WEIGHT PACKED  (STEEL CONTAINER)	No OF ROUNDS PER CONTAINER
M865 TPCSDS-T Prac			
M831 TP-T Prac			
M8300 HEAT-MP-T			
M829 APFSDS-T			
Anti-personnel			
White phosphorous			

**Table 3: Scorpion and Saladin main armament ammunition weights (76mm calibre):**

AMMUNITION TYPE	WEIGHT ♦ INDIVIDUAL ROUNDS	WEIGHT PACKED  (STEEL CONTAINER)	No OF ROUNDS PER CONTAINER
HIGH EXPLOSIVE (HE)	17lbs	81lbs	2 rounds
HESH	17lbs	81lbs	2 rounds
CANISTER	17lbs	81lbs	2 rounds
SMOKE	22.5lbs	93lbs	2 rounds

**Table 4: .50 cal (12,7x99mm)/.30 cal Guns and Ammo liner weights:**

.50Cal MG with barrel	84lbs	38kg
.50Cal MG barrel	28lbs	12.7kgs
.30Cal MG with barrel	31lbs	14kg
.30Cal MG barrel	7lbs	3.2kgs
.50Cal liner		15.5kgs
.30Cal liner, 200 rounds	19.25lbs	9.25kgs

**Note: Info supplied by WO2 Mitch "Mother" Anderson now retired and serving with 1/15 RNSWL and Chris Brooker**

**Table 5: Jerry can weights:**

<b>WATER</b>	<b>DIESEL</b>
24kgs	21.7kgs

**Note: Diesel has a lighter Specific Gravity than water, hence the lighter weight.**

**Table 6: Gun shield weights and Track link weights:**

<b>1/2" THICKNESS ARMOUR</b>	<b>5/8" THICKNESS ARMOUR</b>	<b>SECTION OF 8</b>	<b>FULL TRACK</b>
200-250kgs	300-350KGS	75kgs approx	640kgs approx

**Note: This info was supplied by John "Dutchy" Viergever prior to his retirement from the Regular Army in 1992 and is as far as I am aware, the most accurate info I am able to get on gun shields/track links.**

**Table 7: Ration Packs:**

<b>FULL RATION PACK (10 MAN)</b>	<b>FULL RATION PACK (10 x 1 MAN)</b>
19.5kgs	19.5kgs

**Note: The ration pack info was supplied by Clive Mitchell-Taylor (ex 8 RAR) and former National President of the VVAA, who changed streams and was a Q Instructor at Bandiana in the 1980s and is well known to me.**

**Table 8: Other heavy vehicle parts:**

Centurion track Link	19 Kg		
Centurion Road Wheel	80 Kg		
Engine Deck One Panel - Hinge Lift	100 Kg / panel. There were 5 sections/panels.		
Transmission Deck - one panel	50 Kg/ panel. Same as above		
Centurion "A" frame	120 Kg plus.		

**Note: The above weights were supplied by Larry Hartnett & Noel McLaughlin.**

**Table 9: Full Sandbags well packed:**

<b>Dry</b>	<b>Wet</b>
26 kgs	28 kgs

**Note: Info supplied by Bill Kearney.**

**Table 10: General Weights (Infantry) - small arms, rations, batteries, webbing etc:**

UNIT OF EQUIPMENT	WEIGHT (lbs)	WEIGHT (kgs)	REMARKS
Bayonet	1.10lbs	0.50kg	
Dixie set with KFS	1.82lbs	0.83kg	
Entrenching Tool	3.25lbs	1.48kgs	
Grenade Frag M26A2	1.00lb	0.45kg	
Grenade Smoke M8	1.50lbs	0.68kg	
LAW 66mm (formerly M72)	4.75lbs	2.20kgs	
Launcher 40mm M79	6.45lbs	2.95kgs	Loaded
Bandolier 40mm (6 rounds)	3.25lbs	1.50kgs	
Machete	1.54lbs	0.70kg	
Marker Panels Identification	2.00lbs	0.91kg	
Mine Anti-Personnel M18A1 Claymore	5.70lbs	2.60kgs	
Machine Gun 7.62mm M60	29.50lbs	13.45kgs	With 100-rd belt
Belt Ammo 7.62mm (100rounds)	6.50lbs	2.95kgs	
Spare Barrel M60	8.23lbs	3.74kgs	
Radio AN/PRC 25/77 Set	23.10lbs	10.50kgs	Manpack
Spare Radio Batteries	2.20lbs	1.00kg	
Ration Pack 24-hr (AUST)	3.00lbs	1.40kgs	1 x Individual pack
Ration Pack  C  24-hr (US)	6lbs	2.72kgs	1 x Individual pack
Rifle 7.62mm L1A1 SLR	11.00lbs	5.00kgs	With full 20-rd magazine
Magazine SLR with 20 rds	1.60lbs	0.73kgs	
Rifle 7.62mm L2A1 (AR)	15.00lbs	6.80kgs	With full 30-rd magazine
Rifle 5.56mm M16	8.50lbs	3.86kgs	With full magazine
Magazine 5.56mm (20 rds)	0.70lb	0.32kg	
Magazine 5.56mm (30 rds)	1.0lb	0.45kg	
Rifle 5.56mm M203 (over & under)	11.00lbs	5.00kgs	Loaded

Pistol 9mm L9A1	2.38lbs	1.08kgs	With full magazine
Magazine	0.45lb	0.21kg	
Shelter Individual (Hoochie)	1.32lb	0.60kg	
SMG 9mm F1	9.40lbs	4.30kgs	With full magazine
Magazine 9mm F1 (30 rounds)	1.32lbs	0.60kg	
Stove w/solid fuel (Hexie Stove)	0.18lb	0.40kg	
Torch w/batteries	1.00lb	0.45kg	
Steel Helmet with liner	5.00lbs		
Flak Jacket	7.00lbs		
Spare batteries	0.66lb	0.30kg	
Water bottle with cover	3.40lbs	1.50kgs	Full
Webbing equipment	9.50lbs	4.31kgs	Includes: pistol belt; small (bum) pack; large (back) pack; suspenders; 1 <sup>st</sup> Aid dressing; basic

**Note: This information was kindly provided by Bob Coker**

**Table 11: Weight Chart - Other Defence Stores**

UNIT OF EQUIPMENT	WEIGHT (kgs)	REMARKS
2.5KVA Generator Set	50.0	
Barbed Wire 119m Roll	12.5	
Camouflage Net	16.9	Dry
Concertina Wire	25.5	10 per bundle
Full Ration Pack 10 Man Carton	19.5	10 Packs per carton
Full Ration Pack 10 x 1 Man Carton	14.5	10 Packs per carton
Emergency Ration 1 Man Packs	20.0	100 Packs per carton
Practice Depth Charge	45.0	Fitter & Armourer Supplied in boxes of 12
Pyrotechnics Case	35.0	Fitter & Armourer
Ration Pack Supplementary (US)	21.0	100 Packs per carton
Ration Pack 1 Man (US)	11.5	4 Packs per carton
Retro Gun	40.0	Fitter & Armourer
Landrover Tyre Only	20.0	

Landrover Tyre and Rim Complete	35.0	
Radio AN/GRC 106	55.3	Vehicular ground station used in A type radio stations
Radio AN/PRC F1 & F3	9.9	Light-weight HF equipment for general purpose use
Radio AN/GRC F2 Vehicle Mounted	25.0	Vehicle/ground station version of the PRC-F1
Radio AN/GRC F2 Ground Mounted	13.3	Vehicle/ground station version of the PRC-F1
Radio AN/PPS10	4.5	Recon, Survival, Inf Bn
Radio AN/PRC 25 or 77	11.1	Short range man pack VHF equip for unit/sub-unit voice communication. AN/PRC 77 used for secure voice
Radio AN/PRC 125 or 160	17.5	Short range man pack VHF equip for unit/sub-unit voice communication. Used in B type radio stations.
Radio AN/PRC 41	19.7	Portable UHF equipment for ground to air communications in tactical air support and by army aviation units
Radio AN/PRC 47	31.7	Vehicular/portable ground station equipment used in B type radio stations
Radio AN/PRC 54	11.3	Airborne VHF equipment for air to air and air to ground communication for Army aviation aircraft
Radio AN/PRC 64	3.4	Light-weight HF equipment for long range infantry patrols
Radio AN/PRC 114	3.1	AA Avn
Radio AN/PRC 115	3.2	AA Avn
Radio AN/PRC 116	3.6	AA Avn
Radio AN/VRC 46	27.2	RA Sigs, RAA, RAAC
Radio AN/VRC 49	54.5	RA Sigs, RAA, RAAC
Radio ASB 100	8.1	Medium power airborne VHF equipment for air to ground communication by army aviation aircraft
Radio 618F-1A	5.7	Airborne VHF equipment for air to air and air to ground communications for army aviation aircraft
Radio GS No 14 Mk1 ZB298	32.0	Allocated to Survival Troop, Recon Regt
Sand Bag	26.0	Single Bag Filled Dry or 28.0 Wet
Sand Bag Bundle 1,000	24.5	
Sonar Buoys	40.0	Fitter & Armourer
Steel Piquet 1.8m	4.00	Supplied in Bundles of 10 eg 40Kg
Steel Piquet 0.6m	1.00	Supplied in Bundles of 20 eg 20Kg
Steel Piquet Dolly	12.6	
Tannoy Reel	14.4	
Tarpaulin	15.4	Dry
Tool Box	62.0	Vehicle Mechanic

**Table 12 Weight Chart - Artillery General**

ITEM	WEIGHT (kgs)	COMMENTS
"Hamel" Light Gun 105mm L119	1814.00	
Howitzer 105mm M2A2	2040.00	
Ammunition 105mm	57.50	Wooden Box contained 2 x 15kg projectiles, 2 x Brass Cartridge Cases, 2 x Cardboard Cylinders & packing
Water Jerri can (full) x 2	48.60	Normally carried one in each hand for balance
6 Foot Star Pickets - bundle of ten	40.00	
Dolly for driving Star Pickets	12.60	
Camouflage Net (dry)	16.90	
Tarpaulin	15.40	
Drag Rope Assembly	3.20	
Tannoy Reel (with wire)	10.00	

**Table 13: Weight Chart - Fuel Stores**

CONTAINER & TYPE OF FUEL	WEIGHT (kgs)	MASS PER LITRE
MTGAS/AVGAS 20L	18.0	0.77
MTGAS/AVGAS 200L	180	
AVTUR/JP4/Kero 20L	20.0	0.87
AVTUR/JP4/Kero 200L	199	
Diesel 20L	22.0	0.96
Diesel 200L	216	
Lube Oil 20L	22.0	0.98
Lube Oil 200L	221	

## General Stores

Item	How Supplied	Weight in kG	Reference
Potatoes	Bags	25 - 68	Items varied depending on State & Country
Onions	Bags	34	Items varied depending on State & Country
Cabbage	Bags	35 - 40	Items varied depending on State & Country
Carrots	Bags	23	Items varied depending on State & Country
Pumpkin	Bags	34 - 40	Items varied depending on State & Country
Flour	Bags	23 - 68	Items varied depending on State & Country
Sugar	Bags	34	Items varied depending on State & Country
Salt	Bags	68	Items varied depending on State & Country
Meat	Carton	32	Items varied depending on State & Country
Butter	Boxes	27	Items varied depending on State & Country
Dripping (Beef)	Carton	25	Items varied depending on State & Country
Frying Oil	Cans	25	Items varied depending on State & Country
Lard	Carton	25	Items varied depending on State & Country
Eggs	Carton	12.5	Items varied depending on State & Country
Milk	Cans	90	Items varied depending on State & Country
Quick Frozen Veg's	Carton	22	Items varied depending on State & Country
Tinned Fruit and Veg'	Cans	20	Items varied depending on State & Country
Fruit Pulp	Cans	15	See note 2, items varied depending on State & Country
Beer	Carton	9.2	Weighing on scale, 2 usually carried at a time
Beer	Kegs	81	18 Gallon kegs for messes and canteens
Soft drink	Carton	9	Weighing on scale, 2 usually carried at a time
Detergent	Drum	22	Weighing on scale, 2 usually carried at a time



**IMPORTANT NOTE:** When a veteran carried any ammunition in particular liners, Water Jerries, Diesel Jerries or ration boxes, he always carried one in each hand in order to balance his body. Hence, a veteran would be carrying double what would normally be the case, therefore the stress on weight-bearing joints and the back would be doubled.

Additionally, consideration should also be given to circumstances that arise that where a veteran lifts an object that is, for example, 50kg in weight, carries that object a certain distance, puts it down and lifts it again, the veteran has in effect lifted 100kgs. This can be applied to all objects lifted, carried, put down and re-lifted again. Simply put, the total lift can increase considerably where, just to use an example, crew members carry 2 X full 24kg carry water Jerries (48kg total), over a distance and stop more than once to rest, pick up and continue on again. The totality of that weight carried and lifted for example, 3 times, equates to a total of 144kgs carried. Multiply by the total number of times this was done over an operational tour and the totality of the weight carried is significant.

Add fuel, ammo, rations to that total, and it will go a long way towards meeting the relevant cumulative weight requirements for the SOPs.

#### **STATEMENT of FACTS for CENTURION TANKS**

Vehicle servicing was also physically demanding, particularly when changing tracks or servicing the engine. Access to the engine was by way of lifting the armoured engine deck and transmission covers which were approximately 15cms thick and weighed in excess of 100kgs each. This task which required two people to lift, was usually accomplished by only one person. The veteran found himself in this situation hundreds of times.

There were 5 engine covers and 5 transmission covers which were approximately half the weight of the engine covers. Because of the wear and tear on the engines and transmission combined with their age, servicing was always conducted at regular intervals both in the field and also in barracks.

The lifting of these covers formed part of the Standard Operating Procedures (SOPs) for vehicle maintenance in that this was one of a number of tasks designated as a two-man task involving the commander and driver. The veteran was subject to these physical demands as a consequence of his posting as a tank driver.

However, where the commander was not present due to other commitments, it usually fell to the driver to lift and lower these covers himself. Servicing the tank's suspension was also physically demanding with each track link on a tank weighing in excess of 50kgs and involved considerable physical effort by tank crews to remove and change whole tracks as part of the servicing schedule. Changing of road wheels was also designated as a two-man task, however in the absence of assistance from other crew members, one person carried out this task. The veteran found himself in the situation where he was required to carry out these tasks without assistance.

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