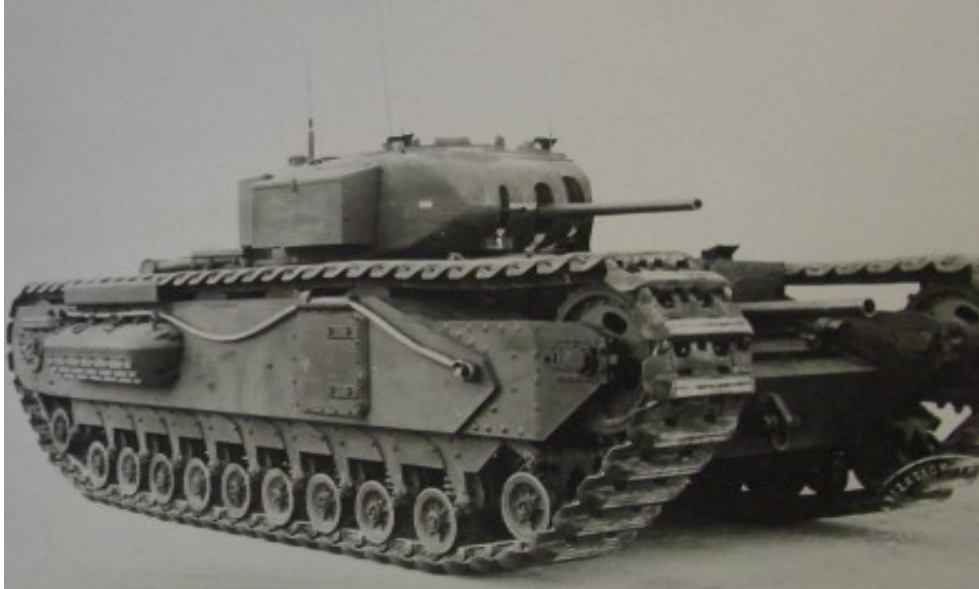


Churchill Infantry Tank (A.22)

Written by Administrator

Wednesday, 31 December 2008 20:19 - Last Updated Sunday, 12 August 2012 13:54

The Churchill Infantry Tank (A.22)



A Mk I Churchill

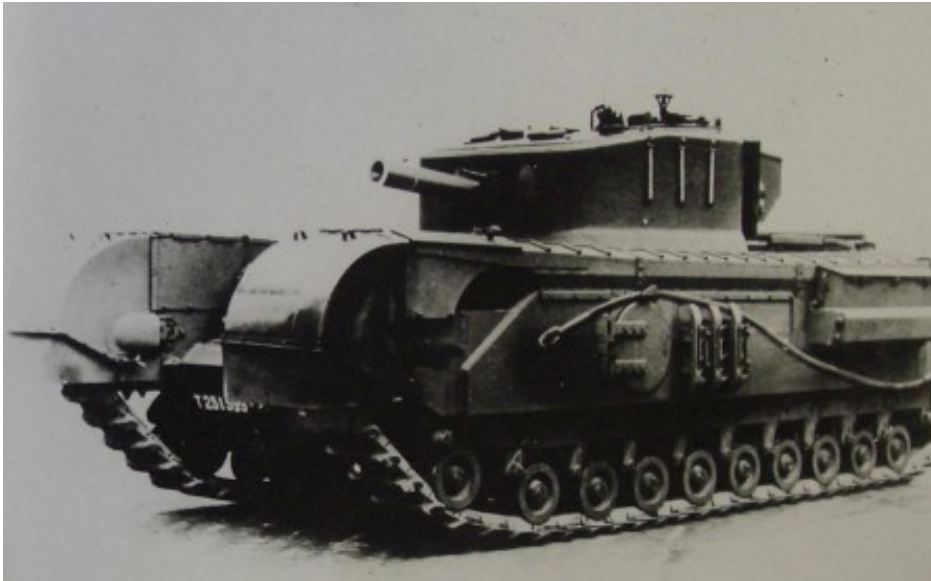


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A Mk IV Churchill



A Mk VI Churchill

The development of the Churchill can be dated back to the A20, this vehicle looked similar to the Churchill and its armament consisted of a 2pdr in the turret and a 2pdr in the hull, two prototypes were built by Harland and Wolf in June 1940. The project was then taken over by Vauxhall who were required to have the vehicle in production within a year, the resulting vehicle was the A22, known as the Churchill and the first vehicles were produced in June 1941. Due to the fact that the vehicles were ordered off the drawing board and Vauxhall did not have the time to rectify issues the first Churchills had a series of defects when they were issued to units.

The Churchill's armour was extremely thick for the period, over 100mm thick at the front and 76mm sides on the Mk I which would have posed a very difficult target for any German tank or anti-tank gunner. The hull consisted of machineable armour on a milled steel frame, this allowed production to be easier, the turret was usually cast although in later versions it was also machineable armour. The machineable armour + milled steel armour configuration offered slightly less ballistic resistance to a single machineable plate but the milled steel plate offered better protection against non penetrating rounds. The biggest change in armour came in the Mk VII version when frontal armour was increased to up to 152mm and sides 95mm, Mk III - VI

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versions also had additional armour added to the front and sides of the tank.

The Armament on the Mk I consisted of a 2pdr in the turret and a 3" Howitzer in the hull, this allowed the vehicle to fire both Armour Piercing and High Explosive shells but the position of the 3" Howitzer in the hull restricted it's movement and was removed in the Mk II version to be replaced by a Besa 7.92 machine gun. It was obvious in 1940 that the 2pdr was becoming obsolete but production of the 6pdr was delayed until mid 1941, investigations into how to up gun British tanks to carry the new 6pdr were carried out and by February the first 6pdr armed Mk III tanks were produced - the first British tanks to carry a 6pdr gun. Later the 6pdr was changed to a 75mm so the vehicles could fire a more efficient HE shell at the loss of some penetration ability.

Churchill tanks first saw action at Dieppe where MkI, II, and III tanks were used. Performance was not great as they struggled to get off the beach - it must be remember that all tanks would have probably suffered the same fate. A number of vehicles were sent to North Africa where performance was much better, the tanks thick armour and ability to climb extremely steep hills was put to good use. In fact it was the Churchill's performance in Tunisia that kept the tanks in production as the project had been scheduled to end in 1943.

Name	Churchill I	Churchill II	Churchill III	
Type				
Production Date	June 1941		February 1942	
Total Production	303	1128	671	
Crew	5	5	5	5
(In turret)	3	3	3	3
Length	24'-1"	24'-1"	24'-1"	24'
Width	9'-5"	9'-5"	9'-5"	9'
Height	8'-2"	8'-2"	8'-2"	8'
Weight	38.5	38.5	38.5	38
Ground pressure	13.1	13.1	13.1	13
Ground clearance	21"	21"	21"	21
Track type	Box Section Spudded	Box Section Spudded	Box Section Spudded	Bo
No per track	70	70	70	70
Weight of one Track	4345	4345	4345	43
Track width	22"	22"	22"	22
Engine	Vauxhaul	Vauxhaul	Vauxhaul	Vauxhaul

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B.H.P/Ton	8.45	8.45	8.45	8.
Max road speed	17.3	17.3	17.3	17
Average road speed	16.4	16.4	16.4	16
Gear box type	H4 Constant Mesh	H4 Constant Mesh	H4 Constant Mesh	H4
Gears	4 Forward 1 Reverse	4 Forward 1 Reverse	4 Forward 1 Reverse	4
Fuel consumption (road) – MPG	0.81	0.81	0.81	0.
Fuel consumption (cross country)	0.4	0.4	0.4	0.
Petrol capacity	150	150	150	15
Auxiliary capacity	-	-	-	-
Radius of action (road)	123	123	123	12
Radius of action (cross country)	60.5	60.5	60.5	60
Trench Crossing	6'-9"	6'-9"	6'-9"	6'
Vertical obstacle	4'	4'	4'	4'
Fording height	3'	3'	3'	3'
Gradient	34	34	34	34
Main Armament	2 Pounder	2 Pounder	6 Pounder	6 Pounder
Ammunition			85	85
Secondary Armament	Besa 7.92	Besa 7.92	2xBesa 7.92	2x
Ammunition			7875	78
Tertiary Armament	3" How	-	-	-
Transverse type	Hand & Electric	Hand & Electric	Hand & Electric	Ha
Max elevation	20	20	20	20
Max depression	15	15	12.5	12
Turret Ring Size	54.25	54.25	54.25	54
Optics	No.30 No.30	No.39 No.39		
Armour				
Lower Hull Nose	76.2(I.T.80)+12.7(MS)	76.2(I.T.80)+12.7(MS)	76.2(I.T.80)+12.7(MS)	76
Upper Hull Nose	38.1(I.T.80)	38.1(I.T.80)	38.1(I.T.80)	38
Hull Front	88.9(I.T.80)+12.7(MS)	88.9(I.T.80)+12.7(MS)	88.9(I.T.80)+12.7(MS)	88
Hull Sides Upper	50.8(I.T.80)+12.5(MS)	50.8(I.T.80)+12.5(MS)	50.8(I.T.80)+12.5(MS)	50
Hull Sides Lower	63.5(I.T.80)+12.5(MS)	63.5(I.T.80)+12.5(MS)	63.5(I.T.80)+12.5(MS)	63
Hull Rear Lower	25.4(I.T.80)	25.4(I.T.80)	25.4(I.T.80)	25
Hull Rear Upper	50.8(I.T.80)	50.8(I.T.80)	50.8(I.T.80)	50
Hull Roof (Front)	19.05(I.T.80)	19.05(I.T.80)	19.05(I.T.80)	19
Engine Deck	15.88(I.T.80)	15.88(I.T.80)	15.88(I.T.80)	15
Hull Floor Front (Hull front forward)	19.05(I.T.80)	19.05(I.T.80)	19.05(I.T.80)	19
Hull Floor Rear	15.88(I.T.80)	15.88(I.T.80)	15.88(I.T.80)	15
Turret Front	101.6(I.T.90)	101.6(I.T.90)	88.9(I.T.80)	88
Turret Roof (Front)	28.58(I.T.90)	28.58(I.T.90)	19.05(I.T.80)	34
Turret Roof (Rear)	28.58(I.T.90)	28.58(I.T.90)	19.05(I.T.80)	34

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Turret Sides	88.9(I.T.90)	88.9(I.T.90)	76.2(I.T.80)	76
Turret Rear	88.9(I.T.90)	88.9(I.T.90)	76.2(I.T.80)	76
Appliqué Armour			31.75(I.T.80)	20
			Turret Front	Tu
			20(I.T.80)	Ho
			Turret Sides	
			Hull sides (From turret rear forw	

Name	Churchill VI	Churchill VII	Churchill VIII
Type			
Production Date		December 1943	
Crew	5	5	5
(In turret)	3	3	3
Length	24'-1"	24'-2"	24'-2"
Width	9'-5"	9'-5"	9'-5"
Height	8'-2"	8'-7"	8'-7"
Weight	38.5	39.5	39.5
Ground pressure	13.1	13.45	13.45
Ground clearance	21"	21"	21"
Track type	Box Section Spudded	Webbed & Studded	Webbed & Studded
No per track	70	72	72
Weight of one Track	4345	3790	3790
Track width	22"	22"	22"
Engine	Vauxhaul	Vauxhaul	Vauxhaul
B.H.P/Ton	8.45	8.6	8.6
Max road speed	17.3	13.5	13.5
Average road speed	16.4	13.5	13.5
Gear box type	H4 Constant Mesh	H41 Constant Mesh	H41 Constant Mesh
Gears	4 Forward 1 Reverse	4 Forward 1 Reverse	4 Forward 1 Reverse
Fuel consumption (road)	0.8MPG	0.95	0.95
Fuel consumption (cross country)	0.4	0.31	0.31
Petrol capacity	150	130	130
Auxiliary capacity	-	-	-
Radius of action (road)	123	142	142

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Radius of action (cross country)	60.5	46	46
Trench Crossing	6'-9"	6'-9"	6'-9"
Vertical obstacle	4'	4'	4'
Fording height	3'	3'	3'
Gradient	34	34	34
Main Armament	75mm	75mm	95mm
Ammunition			
Secondary Armament	2xBesa 7.92	2xBesa 7.92	2xBesa 7.92
Ammunition			
Tertiary Armament	-	-	-
Transverse type	Hand & Electric	Hand & Electric	Hand & Electric
Max elevation	20	20	20
Max depression	12.5	12.5	12.5
Turret Ring Size	54.25	54.25	54.25
Optics	No.50 x 3	No.50 x 3	No.48 x 3
Armour			
Lower Hull Nose	76.2(I.T.80)+12.7(MS)	139.7(I.T.80)	139.7(I.T.80)
Upper Hull Nose	38.1(I.T.80)	57.15(I.T.80)	57.15(I.T.80)
Hull Front	88.9(I.T.80)+12.7(MS)	152.4(I.T.80)	152.4(I.T.80)
Hull Sides Upper	50.8(I.T.80)+12.5(MS)	95.25(I.T.80)	95.25(I.T.80)
Hull Sides Lower	63.5(I.T.80)+12.5(MS)	82.55(I.T.80)	82.55(I.T.80)
Hull Rear Lower	25.4(I.T.80)	25.4(I.T.80)	25.4(I.T.80)
Hull Rear Upper	50.8(I.T.80)	50.8(I.T.80)	50.8(I.T.80)
Hull Roof (Front)	19.05(I.T.80)	19.05(I.T.80)	19.05(I.T.80)
Engine Deck	15.88(I.T.80)	15.88(I.T.80)	15.88(I.T.80)
Hull Floor Front (Hull front to rear)	19.05(I.T.80)	25.4(I.T.80)	25.4(I.T.80)
Hull Floor Rear	15.88(I.T.80)	19.05(I.T.80)	19.05(I.T.80)
Turret Front	88.9(I.T.90)	152.4(I.T.90)	152.4(I.T.90)
Turret Roof (Front)	19.05(I.T.80)	20(I.T.80)	20(I.T.80)
Turret Roof (Rear)	19.05(I.T.80)	20(I.T.80)	20(I.T.80)
Turret Sides	76.2(I.T.90)	95.25(I.T.90)	95.25(I.T.90)
Turret Rear	76.2(I.T.90)	95.25(I.T.90)	95.25(I.T.90)
Appliqué Armour	20(I.T.80)		
	Turret Sides		
	Hull sides (From turret rear forward)		

Production of Churchill Tanks by year (UK Only)

1941 1942 1943 (End of May)

Churchill (2000) - - -

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Churchill (6pdr/75mm)	571	095	-
Churchill Reworded	89	14	-
2pdr to 6pdr conversion	3263	-	-
6pdr conv to 75mm	257	-	-
Heavy Churchill	6567	17	-
AVRE Churchill	-	5322	-
3" Churchill	2823	-	-

Sources - AVIA 46 188, AVIA 22 456-514, WO 194