

# U.S. LIGHT TANK M3 STUART

1/35 MILITARY MINIATURES SERIES NO.42



With a view to reinforcing U.S. armoured troops, the Army Ordnance Department placed a contract in October 1939 with American Car & Foundry in Berwick, Pennsylvania for the production of 329 M2A4 light tanks – the last model of the M2 light tank series carrying a 37 mm tank gun M5 on the single revolving turret.

The M2A4 light tank was designed by Rock Island Arsenal in Illinois on the basis of its predecessor M2A3 light tank. The M2A4 needed about 3,000 drawings and consisted of 14,000 parts. By the Lend-Lease Act which came into effect on 11th March 1941, M2A4 light tanks were supplied to British armoured troops, which had lost about two thirds of their total tanks in the French War, in order to reinforce their armour strength. The British armoured troops used the lend-leased M2A4 light tanks equipped with the 37 mm tank gun M5 in the Battle of Flanders and the French War. As a result, it was found necessary to strengthen their armour protection and suspension system. To fill the new-felt need, Rock Island Arsenal made a successor to the M2A4. It had many improvements over the M2A4 as in the following: The frontal armour was thickened to 51 mm at projected parts and 38 mm at other parts. Peep holes on the turret sides were removed to strengthen the armour of the entire turret. Idler wheels of the grounded type were employed in place of those of the suspended type to give higher reliability to the suspension system. As a result, the superstructure on the engine compartment became longer, and armour plate covering the engine compartment was strengthened to protect the engine more effectively against machine-gunning from aircraft. The improved version was adopted as the M3 light tank on 5th July 1940. After fulfilling the contract for the production of M2A4 light tanks, American Car & Foundry produced 5,811 M3 light tanks from March 1941 to August 1942. The M3 light tank powered by a gasoline engine was called General Stuart Mk I or "Honeys" after Confederate General J.E.B. Stuart, famous commander of cavalry in the Civil War. The M3 light tank powered by a diesel engine was called General Stuart Mk II or "Stuart Hybrid".

Under the Lend-Lease Act, which came into effect on 11th March 1941 280 out of 538 M3 General Stuart Mk I light tanks produced by American Car & Foundry in three months from April to June of 1941 were to be lend-leased to the British armoured troops in addition to M2A4 light tanks, which had already been supplied to them. In July of that year, 84 were transported by sea to Suez in Egypt and Massawa port and delivered to the tank companies of the 8th Light Cavalry Regiment, 4th Armoured Brigade, 7th Armoured Division "Desert Rat" which, after taking part in Operation Battle Axe, had retreated from the Libyan Desert to Egypt for a rest and reorganization. In other British armoured forces, each regimental headquarters received one to four and each of three regimental companies received 20. These Stuart Mk I's were supplied as cruiser tanks to be used in place of the cruiser tanks Mk I(A9), Mk II(A10) and Mk III(A13) which were then used by the British.

On 18th November 1941, the M3 General Stuart Mk I light tanks of the British Eighth Army, which had been withdrawn to the Egyptian border, defeated German tank forces and occupied Cyrenaica again. Thereafter, the British started Operation Crusader for the purpose of occupying Tripolitania. Most of the M3 light tanks were incorporated into the 8th Light Cavalry Regiment, 3rd Tank Regiment and 5th Tank Regiment of the 4th Armoured Brigade, 7th Armoured Division, 30th Corps which were in the van of the attack. Thus, 165 American tanks first saw action in North Africa as part of British armoured forces. After this operation until the end of 1941, the M3 light tank showed activity in Italy and other parts of Europe as a reconnaissance tank of armoured reconnaissance regiments

in armoured divisions. Thus it was a tank of the longest battle experience. In the Pacific theatre of war, the M3 General Stuart Mk I first saw action on 21st January 1942 at the Battle of Bagac in the Philippines against the 20th Infantry Regiment, 16th Division of the Japanese Fourteenth Army. At that time, the 197nd and 194th Armoured Regiments (these did not have B Company), equipped with 54 M3 light tanks each, stayed in the Philippines as the armour of the United States Army Forces, Far East in the Philippines. Since the M3 light tanks were divided into small groups, they achieved no war results and were annihilated by Japanese forces. After the Battle of Corregidor, some captured M3 light tanks were sent to Japan for investigation and opened to the public. At the end of 1943, the Indian 254th Tank Brigade etc. under the direct control of the South East Asia Command used M3 General Stuart Mk I light tanks in Burma together with M4 General Lee Mk I medium tanks. The 5th Company of the Japanese 14th Tank Regiment was equipped with five M3 light tanks which the Japanese captured when they gave chase to the British 17th Indian Division in their offensive toward Imphal. On 22nd March 1944, the 5th Company threw the five captured M3 light tanks into the Battle of Thonze to support the 2nd Battalion of the 214th Infantry Regiment, but four of them were destroyed on the road by mines laid by the retreating enemy. Fighting between M3 light tanks on both sides was not actualized in the end.

M3 General Stuart Mk I tanks produced in the period from March light 1941 to August 1942 were classified into the following three: early production model, intermediate production model and late production model. The early production model was powered by a Continental W670-9A radial 7-cylinder air-cooled gasoline engine of 250 hp and equipped with vertical volute spring suspension system. A riveted polyhedral revolving turret for the 37 mm tank gun was mounted on the riveted body and equipped with a commander's cupola. A calibre 0.30 (7.62 mm) Browning machine gun M1919A4 was mounted on the sponson on each side of the body, on the coaxial mount and also on the frontal mount. In addition, a calibre 0.30 (7.62 mm) Browning machine gun M5 was carried on the anti-aircraft mount at the top of the commander's cupola.

The intermediate production model produced after the middle of 1941 was a combination of a homogeneous welded revolving turret equipped with a commander's cupola and the body of the early production model. The welded turret was designed from the end of 1940 with a view to making the tank lighter and avoiding the danger of rivets being scattered by shell burst, and was put to production in March 1941. The welded turret was so shaped as to minimize the possibility of being directly hit.

The late production model combined a welded body with the welded turret of the intermediate production model. It employed a gyro-stabilizer manufactured by Westing House in about 1941 to improve the running fire ability of its 37 mm main gun. Also, it carried a drum-shaped auxiliary fuel tank with a capacity of 95 litres on each rear side of the body to increase its cruising range.

As World War II grew in intensity, the need of greatly reinforcing air forces became pressing and it became difficult to use Continental aircraft engines in tanks. Under these circumstances, a T1020-G radial 9 cylinder air-cooled diesel engine of 250 hp developed by Guiberson came to be used in the Stuart Mk I in place of the Continental W670-9A radial engine. The M3 light tank powered by the Guiberson diesel engine was called Stuart Mk II. The production of the Stuart Mk I totalled 5,311 in number by August 1942 and that of the Stuart Mk II reached 500.

by courtesy of Yukio Kawai

# PAINTING & APPLYING DECALS

## Painting of M3 Stuart

The M3 Stuart was used not only by the U.S. Army but also by most of other allied armies such as the British, the Italian, and the Canadian Armies. And naturally their painting schemes differed according to nations and battle lines where they were shown activity. The general features are as follows: U.S. Army type...Single Olive Drab colour. British Army type...Used on the North African front. Basic colour is Dark Yellow (British Sand), and also camouflage paintings were applied according to the terrain. Almost every vehicle carried skirts on its fenders and smoke dischargers. Canadian Army type...Dark Green overall.

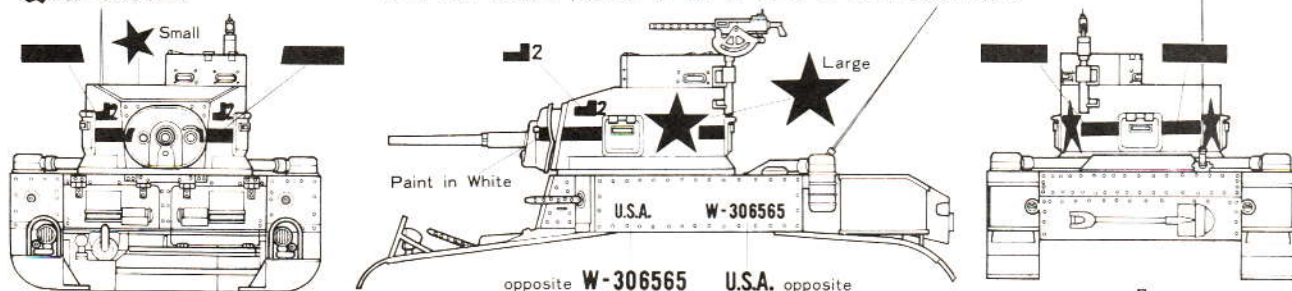
## Paint Colour List

Matt Black	Gloss White
Matt Brown	Flesh
Dark Green	
Light Grey	
Gloss Red	
Khaki	
Matt White	
Dark Yellow	
Olive Drab	

### U.S. Army, Tunisia No. 2 car, C Company, 1st Battalion, 13th Armoured Regiment, 1st Armoured Division (Late 1942)

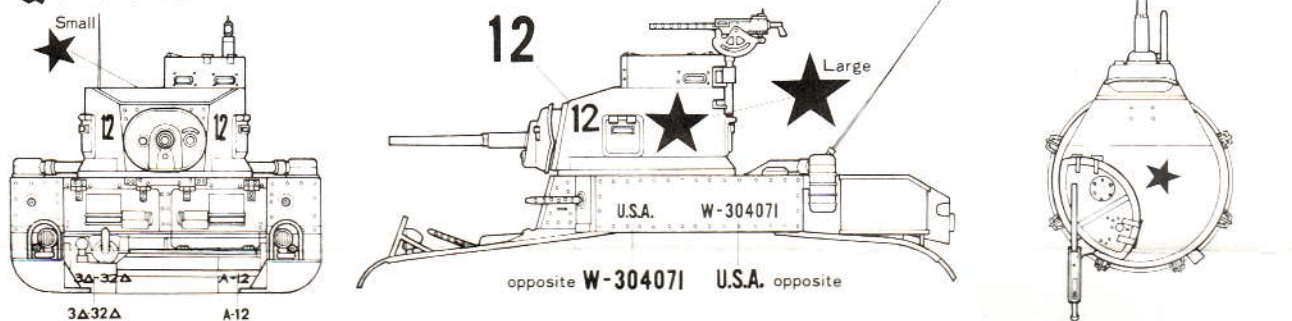
Hull—Olive Drab

★Fix Star Mark in position on top of turret as shown below right.



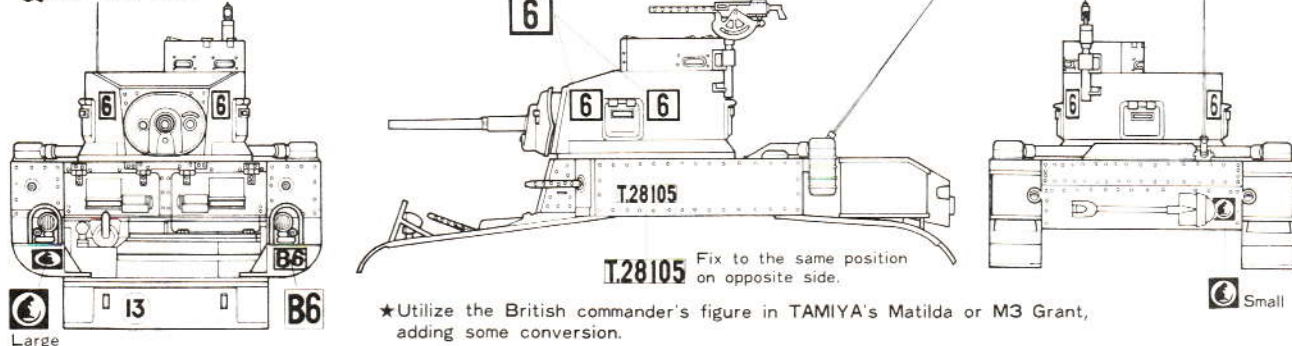
### U.S. Army, Europe No. 12 car, A Company, 32nd Armoured Regiment, 3rd Armoured Division.

Hull—Olive Drab



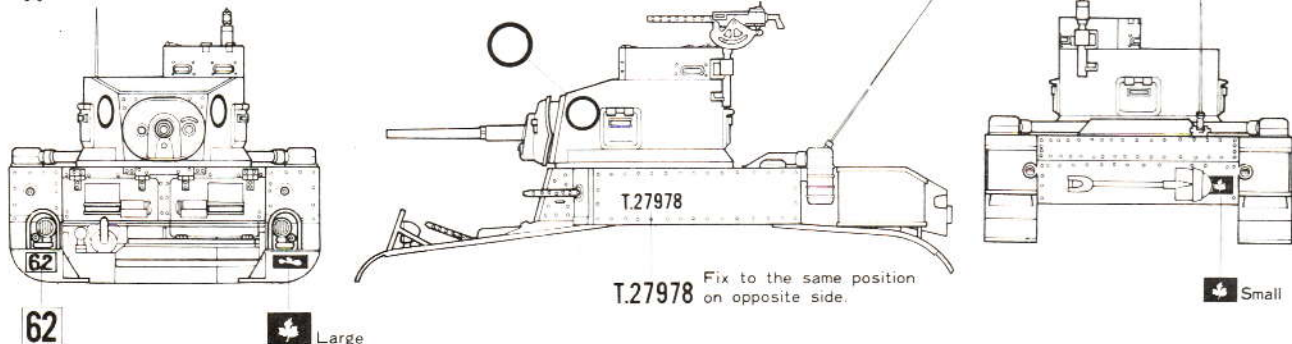
### British Army, Africa No. 6 car, B Company, 8th Lt. Cavalry Regiment, 4th Armoured Brigade, 7th Armoured Division.

Hull—Dark Yellow



### Canadian Army C Battalion, 22nd Armoured Regiment, 4th Canadian Armoured Brigade.

Hull—Dark Green





★Study the instructions and photographs before commencing assembly.

★You will need a sharp knife, a screwdriver, a pair of tweezers, a file, and a pair of pliers.

★Do not break parts away from sprue, but cut off carefully with a pair of pliers.

★Before finally cementing each part together, be sure that parts fit correctly together. And that you are of the next sequence to be followed.

★Use glue sparingly. Use only enough to make a good bond. Apply cement to both parts to be joined.

**★Painting Your Model**

As well as improving the reality of your completed model, painting will give you greater satisfaction to make your own model. Moreover, paint coat ensures a good application of decals.

★Small parts and internal parts should be painted while still on the sprue.

★For your painting scheme, refer to instructions on the opposite page.

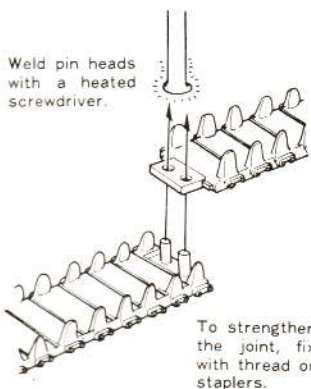
● This mark shows which colour to be painted.

**(How to Construct Your Stuart Model)**

See the figures carefully, and follow each construction step in the order of wheels assembly, lower hull, upper hull, and then turret. Fix upper and lower hull halves together with glue.

**(Construction of Tracks)**

Use a heated screwdriver, or a nail. Pass pins through holes and heat-weld pin heads.



To strengthen the joint, fix with thread or staples.

**(How to Make Antenna)**

Heat the runner and when its centre portion begins to melt, stretch both ends to the thinness wanted and hold it still to cool. Cut an 8cm-long piece and cement.



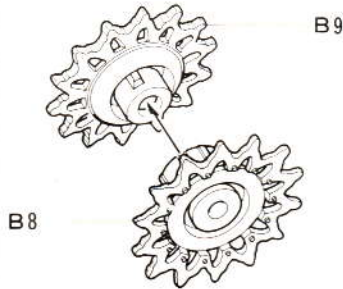
Heat

★Caution: Careless handling of fire may cause injury or fire accident. When you make tracks and antenna, use flame or heater proper and safe with great care.

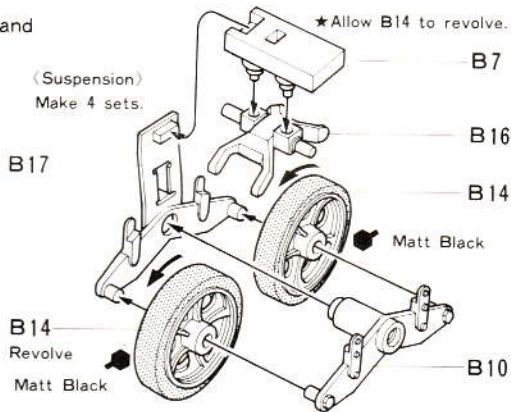
(Construction and Painting of Figure)  
Construct Figure as shown below. If you

**1 Construction of Suspension and Drive Sprocket**

(Drive Sprocket) Make 2 sets.

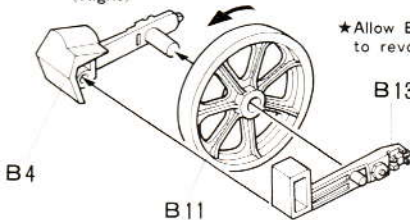


(Suspension) Make 4 sets.

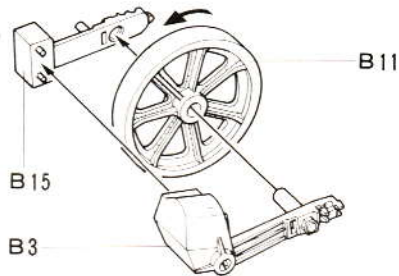


**2 Construction of Idler Wheels**

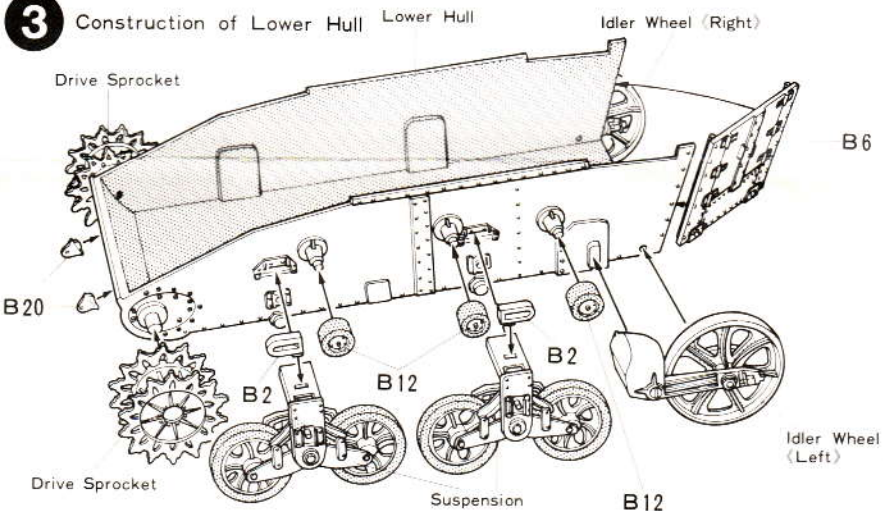
(Right)



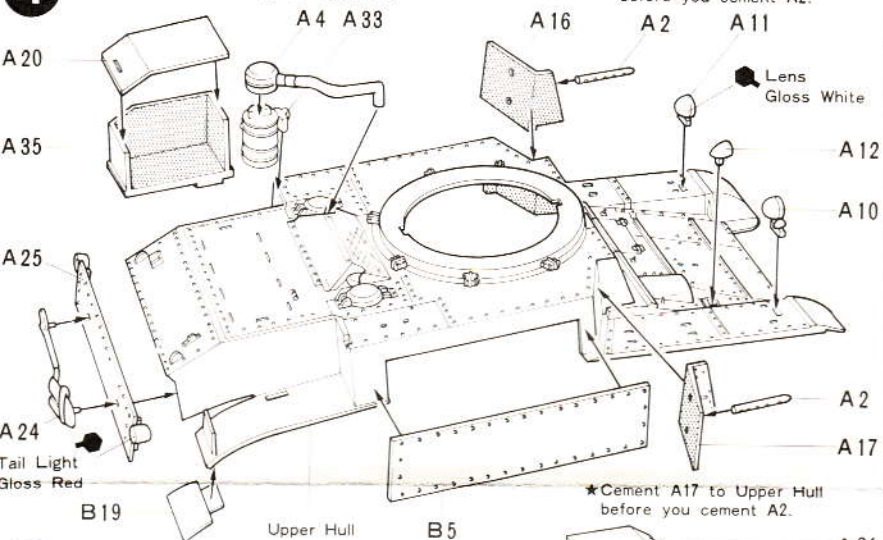
(Left)



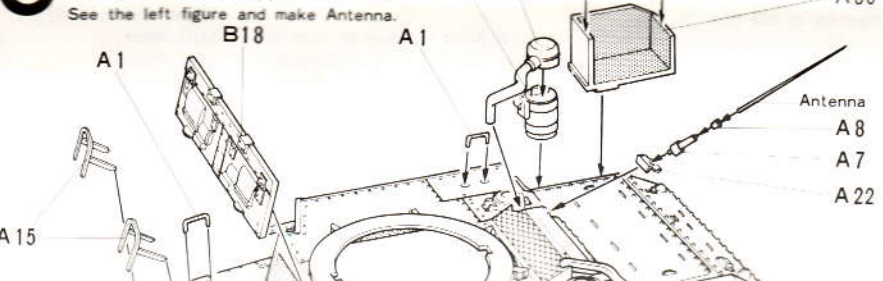
**3 Construction of Lower Hull**



**4 Construction of Upper Hull (1)**



**5 Construction of Upper Hull (2)**



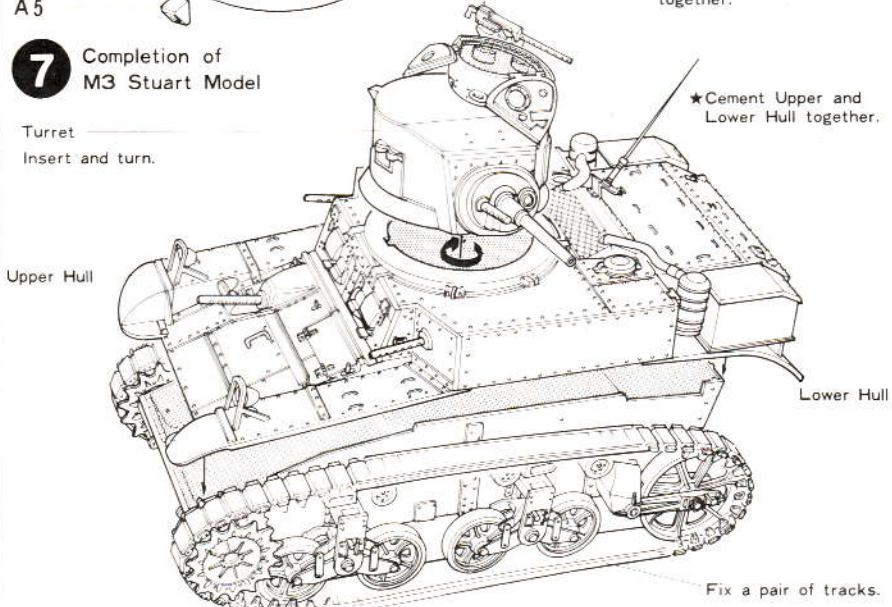
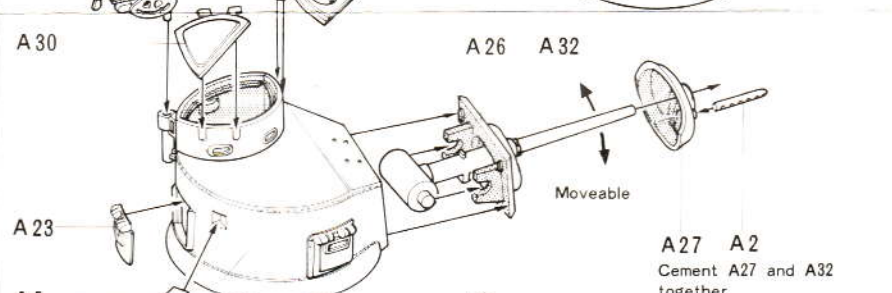
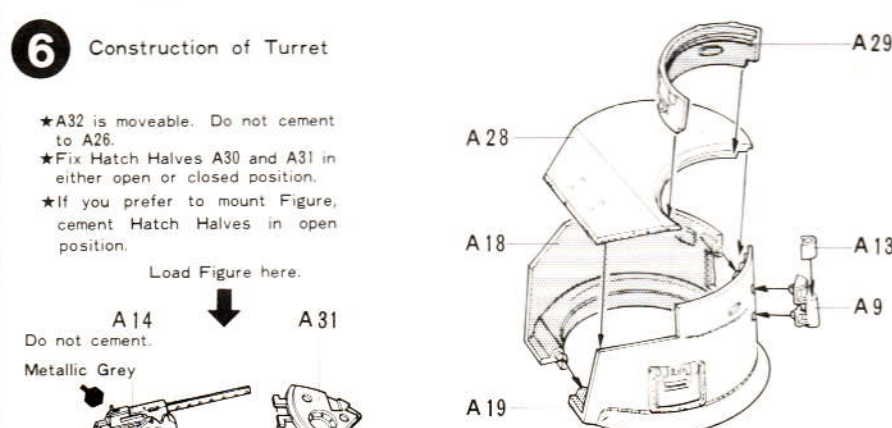
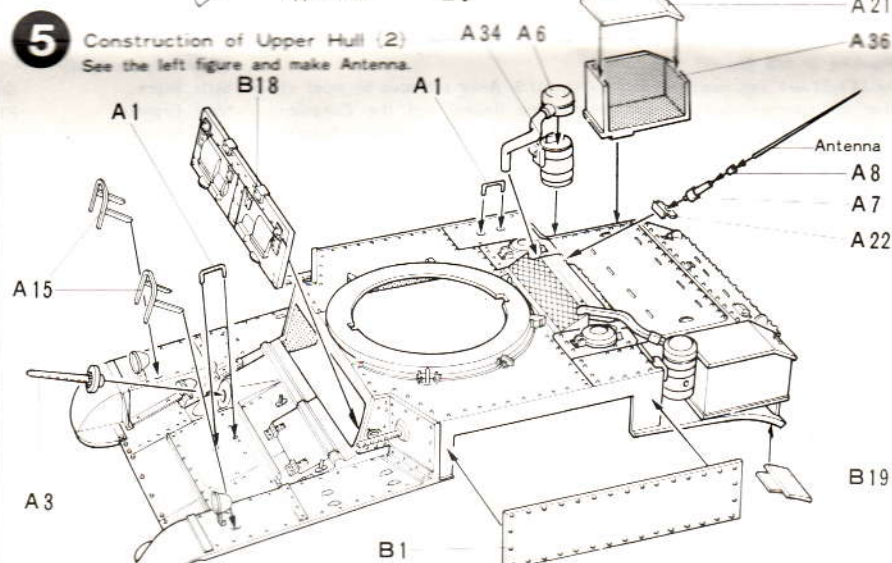
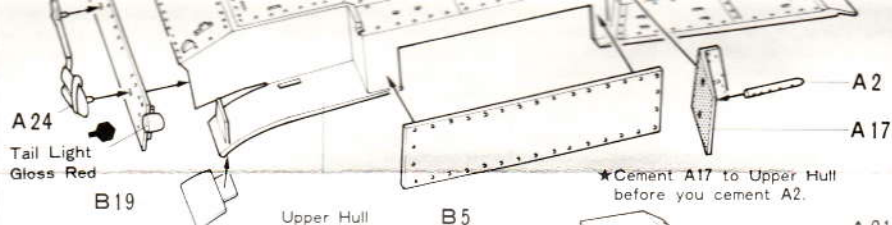
**(How to Make Antenna)**

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★Caution: Careless handling of fire may cause injury or fire accident. When you make tracks and antenna, use flame or heater proper and safe with great care.

(Construction and Painting of Figure)  
Construct Figure as shown below. If you prefer to place Figure to Turret, cement Hatches A30 and A31 in open position. Place Figure after the painting has finished and the paints dried thoroughly.



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