



US VEHICLE NOTES

1. M113: Known as the "Green dragon" to the VC in the early stages of the war, the M113 was destined to become one of the most successful armored vehicles of all time, seeing action in Vietnam on a country-wide scale from the DMZ to the Delta. Early versions of the M-113 were armed with a single .50 caliber machine gun. There was no armored protection for the .50 cal MG operator. Sandbags were often stacked around the rear hatch to provide some cover for the troops as well as a means of steadying their weapons while the vehicle was in motion. It was powered by a petrol engine.

The hull of the M-113 is fully watertight with all hatches having rubber seals which allows the vehicle to cross bodies of water and slow moving streams. To become amphibious, the vehicle driver turns on two bilge pumps and lowers the trim vane. The trim vane is extended forward and helps maintain the correct balance of the vehicle in the water. It also prevents water from flowing over the front of the vehicle and into the drivers position or the front-mounted engine.

In the water the vehicle is propelled by the forward motion of it's tracks and could reach a speed of 3.5mph. Due to the fact that most crews severely overloaded their vehicles with stowage both inside and out, the amphibious capabilities of the vehicles were generally severely degraded and rarely used.

See Vehicle Note A.

2. M113A1: A modernized version of the M113 with an extended carrying capacity and outfitted with a diesel engine. It is also equipped with 2 M60 GPMGs at the rear loading hatch. They were manned by the transported infantry.

See Vehicle Note A.

3. M113A1 ACAV: Following lessons learned, in particular the loss of 14 ARVN .50 cal gunners at the Battle of Ap Bac in January 1963, the standard M113 was upgraded both in armament and armour protection to the M-113.

Two M60 GPMG's were mounted, one either side of the rear hatch, and fitted with protective gun shields. An FMC-designed armoured gun shield/turret combination was also added to the commanders cupola to afford him protection when manning the .50 cal machine gun. This vehicle was designated the M-113 Armored Cavalry vehicle.

Although the M-113 was initially designed to carry a full 10 man rifle squad in addition to the two-man crew, the Cav doctrine was actually to fight directly from the vehicle on the move and it was intended not to dismount the infantry unless in extremis. As a consequence of this doctrine, the vehicle became a mobile fire platform and stowage of prodigious quantities of ammo and other equipment considerably reduced the internal troop carrying capacity.

See Vehicle Note A.

4. M106A1 4.2-INCH MORAT CARRIER: Fitted with a 4.2-inch mortar on a rotating turntable mounted in the rear compartment, the M-106 provided quick and highly mobile firepower. The mortar could be dismounted and used externally from the vehicle and the base plate and tripod were often carried on the outside of the vehicle when not in use.

The mortar is mounted on a turntable in the passenger compartment and is fired to the rear of the vehicle through the rear top hatch opening. A base plate and tripod was often mounted externally so that the mortar could be dismounted from the vehicle and used externally.

The floor of the basic M-113 had a reinforced beam added in order to compensate for some of the recoil from the weapon. Average ammo load was 88 rounds. A two-part circular hatch allowed for traversing the mortar within the vehicle.

See Vehicle Note A.

5. M125A2 81MM MORTAR CARRIER: The 81mm mortar could be traversed through 360 degrees and fired from within the vehicle. Using a base plate and tripod, the mortar could also be used from outside of the vehicle. The firing hatch comprised a three-piece assembly which provided adequate clearance for the firing of the weapon. The vehicle carried 114 rounds of 81mm ammunition.

See Vehicle Note A.

6. M577A1 COMMAND VEHICLE: The M-577 was a standard M-113 but with a raised rear compartment allowing passengers to stand upright. The M577 was employed as a Command Post, Communications Vehicle, Artillery FDC, as well as a Field Aid Station.

See Vehicle Note A.

7. M163 VULCAN: Originally designed for an air defence role, the M163 mounted a six-barrel 20mm vulcan gatling gun. Used in the ground assault role similar to the M-42 Duster, the M163 could lay down some devastating fire-power. One problem however was the vast quantity of ammunition required to keep the vehicle fully operational. Only a small number of M-113's were converted to carry the Vulcan 20mm six-barreled machine gun.

See Vehicle Note A.

8. M132 "ZIPPO": Nicknamed the 'Zippo' after the popular american cigarette lighter, instead of the standard commander's cupola the M132 had a small enclosed one-man turret. The turret had a dual mount consisting of a flame-gun and a machinegun. 200 gallons of napalm fuel was carried on-board, stored in the converted crew compartment.

See Vehicle Note A.

9. M114: The M114 was the scout version of the original M113 family, sharing many of the same components. It was used briefly in Vietnam but found to have poor cross-country performance, particularly when compared to the M113 itself.

See Vehicle Note A.

10. M113 BRIDGELAYER: ???

See Vehicle Note A.

11. M113-RCL: ???

See Vehicle Note A.

12. M233A1: ???

See Vehicle Note A.

13. V-100 COMMANDO: The Commando was a radical departure from normal US Army practices of the period which emphasised mobility over the nuclear battlefield. With Vietnam though, the US Army was forced to recognise that tracked vehicles were expensive to operate in all the roles in which armour was required (particularly "internal security" duties such as convoy escort) and so the Commando was quickly adopted. It was also supplied in some numbers to the ARVN.

14. M8: ???

15. M48A3 PATTON: Developed from the M47 "General Patton" tank, the M48 was the mainstay of the US Army and Marines in Vietnam. The Blackhorse arrived in Vietnam equipped with the new M48A3, powered by a diesel unit, having replaced the earlier M48A2 (which featured a gasoline engine and was very prone to fire) prior to their departure for RVN.

16. M48 DOZER: ???

17. M67: ???

18. M728 CEV: ???

19. M551 SHERIDAN: Developed in 1959 as a replacement for the M41 light tank and the airborne M56 Scorpion self propelled antitank gun, the Sheridan was intended as an airborne reconnaissance and assault vehicle. Whilst the Sheridan had a steel turret it only had a thin aluminum hull which was vulnerable to RPG's.

The Sheridan was intended to replace the M41 light tank in US service. It suffered from numerous teething problems when first introduced, mainly centered around the combustible cartridges used with the main armament.

Vehicles dispatched to Vietnam had the guidance system for their ATGW missiles removed. When firing normal ammunition the vehicle was grossly overgunned for its class and tended to move alarmingly (up to several metres) when fired.

See Vehicle Note A.

20. M56 SCORPION: Developed to give airborne forces some measure of AT protection, the M56 was used operationally in Vietnam only by the 173rd Airborne Brigade. Mainly employed on convoy escort, the vehicle was unarmoured and the crew dangerously exposed. By 1968, the vehicle had been completely withdrawn.



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21. M24 CHAFFEE: Originally supplied to the ARVN by the French, the M24 was obsolete by the mid-1960's. It was largely replaced by the M41 light tank, except for the RVNAF whom retained a company of these tanks for airfield defence and counter-coup duty at Ton Son Hut airfield.

22. M41 "WALKER BULLDOG": The M41 replaced the M24 in ARVN service from the early 1960's on. Used primarily for internal-security duties, coups and convoy protection, the ARVN armoured units were not used for fighting the NLF/NVA in the field.

The M41 suffered from being too light for most traditional battlefield support tasks and too heavy for most internal security tasks.

23. M50 ONTOS: "Ontos", Greek for "the thing", the M50 was an aptly named vehicle if ever there was. Mounting up to 6 recoilless rifles the Ontos possessed a fearsome amount of firepower. However, being basically unarmoured and needing the crew to be exposed to reload, which could only be accomplished from outside the vehicle meant that it was extremely vulnerable.

Its 6 recoilless rifles, if fired collectively, produced a considerable backblast which would reveal the vehicle to all onlookers and usually invoke a considerable response. The Ontos didn't really come into its own, except during the great battles in Hue' during the 1968 Tet Offensive when indirect fire support was denied to the attacking Marines for fear of damaging the city.

24. M42 DUSTER: Developed from the M41 Walker Bulldog light tank, the Duster was considered obsolete by the time of the Vietnam War and had been delegated to the National Guard because of its lack of onboard radar to counter high-speed jets. However calls for increased firepower quickly brought it back into the frontline where its ability to "mow the grass" was greatly appreciated.

25. LVTP-5: The LVTP-5 was the post-war successor to the WWII "Amtracks". It featured a bow ramp and a cavernous hold. Intended and designed primarily for over the beach assaults, the Marines made extensive use of their LVTP-5's well inland, as their role changed from coastal areas to defending "MacNamara's Fence" along the DMZ and suffered accordingly due to their large size and light construction.

26. M109: Successor to the M108 was the M109 which used the same hull but had a heavier 155mm gun mounted in the turret and carried one more Ammunition Number in the crew.

27. M107: The M107 was used extensively to provide long range firesupport (being able to fire more than 30 km) and took part in numerous cross-DMZ duels with NVA guns during the Vietnam War.

28. M110: Designed to be part of a common family of weapons utilising the same chassis components, the M110/M107 was essentially the same vehicle, mounting different barrels.

29. M110A1: ???

30. JEEP: ???

31. JEEP (MG): ???

32. JEEP-RCL: ???

33. 2 1/2-TON TRUCK: ???

34. M35 5-TON TRUCK: ???

35. M35A2 GUN TRUCK: The majority of Gun Trucks used in Vietnam were based on the M54 5-Ton Truck. The early Trucks however were built on the M35 5-Ton Truck. One of the most colourful of these early Gun Trucks was *NANCY*, an M35A2 with the addition of the quad .50cal mount taken directly from the WWII M16 Half Track.

VEHICLE NOTES

A Due to a very thin underbelly armor made of aluminium instead of armor grade steel, all mine attacks vs. the M113/M114 family and M551 Sheridan receive a -2 DRM.

US ORDNANCE NOTES

1. M101A1: The

2. M10: The

3. M114: The

4. M20A1: The

5. M67: The

6. M40A1: The

7. M29: The

8. M30: The

9. MK19: The

US HELICOPTER NOTES

1. UH-1A IROQUOIS: The "Huey" as it was called after it's original model designation, the HU-1, was essentially a stretched Bell (model 47) Sioux with room for seven troops or three stretchers in it's cargo compartment behind the pilot. It was redesignated as the Utility Helicopter UH-1 in 1962 under a tri-service agreement. The HU-1A Iroquois, initially procured by the Army in 1959 as a general utility helicopter, was the first model ordered in large numbers. It saw wide use in Vietnam following initial fielding in September 1962. The "Huey" saw service with the 82nd Airborne Division, the 101st Airborne Division, and the 57th Medical Detachment. The "Huey" became the basis for the creation of the 1st Aviation Brigade in 1966.

"Hueys" armed with only two M60D door guns, called "Slicks" because of their uncluttered external appearance. Unarmed MedEvac "Hueys" were called "Dust Offs", because of the clouds of dust they kicked-up when landing.

2. UH-1D HUEY: The Bell UH-1C could seat nine troops, had the improved rotor and had a greater range. It was introduced 1965 and was the the backbone of all airmobile combat operations in Vietnam.

3. CH-46 SEA KNIGHT: The CH-46 Sea Knight was first procured in 1964 to meet the medium-lift requirements of the Marine Corps in Viet Nam with a program buy of 600 aircraft. The aircraft has served the Marine Corps in all combat and peacetime environments. However, normal airframe operational and attrition rates have taken the assets to the point where a medium lift replacement is required. The safety and capability upgrades are interim measures to allow continued safe and effective operation of the Sea Knight fleet until a suitable replacement is fielded.

4. CH-47A CHINOOK: The CH-47 is a twin-engine, tandem rotor helicopter designed for transportation of cargo, troops, and weapons during day, night, visual, and instrument conditions. The aircraft fuselage is approximately 50 feet long. With a 60-foot rotor span, on each rotor system, the effective length of a CH-47 (with blades turning) is approximately 100 feet from the most forward point of the forward rotor to the most rearward point on the aft rotor.

Maximum airspeed is 170 knots with a normal cruise speed of 130 knots. However, speed for any mission will vary greatly depending on load configuration (internal or external), time of day, or weather conditions. The minimum crew for tactical operations is four, two pilots, one flight engineer, and one crew chief. For more complex missions, such as air assaults, commanders may consider using five crew members and add one additional crew chief.

The CH-47A, first delivered for use in Vietnam in 1962, is a tandem-rotor medium transport helicopter. The Chinook's primary mission is moving artillery, ammunition, personnel, and supplies on the battlefield. It also performs rescue, aeromedical, parachuting, aircraft recovery and special operations missions.

The aircraft had a maximum gross weight of 33,000 pounds allowing for a maximum payload of approximately 10,000 pounds. The hot mountainous conditions of Vietnam limited the A models performance capabilities and generated a requirement for increased payload and better performance.

5. CH-53A SEA STALLION: The CH-53A was introduced into the Marine Corps in 1966. Used extensively both afloat and ashore, the Sea Stallion was the heavy lift helicopter for the Marine Corps. The CH-53A Sea Stallion is designed for the transportation of equipment, supplies and personnel during the assault phase of an amphibious operation and subsequent operations ashore. Capable of both internal and external transport of supplies, the CH-53A is shipboard compatible and capable of operation in adverse weather conditions both day and night.

The twin-engine helicopter is capable of lifting 7 tons (6.35 metric tons).



The helicopter will carry 37 passengers in its normal configuration and 55 passengers with centerline seats installed.

6. OH-13 SIOUX: The OH-13 was used for observation, reconnaissance and in the MedEvac role as a litter carrier in Korea, following initial fielding in 1951. A distinctive feature of the Bell OH-13 was the now familiar "Goldfish bowl" plexiglass canopy, featured in the TV-series MASH (Mobile Army Surgical Hospital). The OH-13 earned the nickname "Angel of Mercy" for evacuating some 18,000 United Nation's casualties during the Korean war.

The OH-13 Sioux also saw service during the early days of the Vietnam war before the fielding of the OH-6A Cayuse in early 1968. The Sioux had a single, two-bladed main rotor and a metal two-bladed tail rotor. The OH-13 had a speed of 106 mph (92 knots). The Sioux could be armed with twin M37C .30 Cal. machine guns on the XM1 armament subsystem or twin M60C 7.62mm machine guns on the M2 armament subsystem.

See Helicopter Note A.

7. OH-6A CAYUSE: The OH-6A was designed for use as a military scout during the Vietnam war to meet the U. S. Army's need for an extremely maneuverable light observation helicopter (LOH). Initially fielded in Vietnam in early 1968, the Hughes OH-6A was used for command and control, observation, target acquisition, and reconnaissance. The Cayuse was organic to division, brigade, and battalion size units. The four-passenger tear-drop shaped "Flying egg" (six-passengers with rear seats folded down) was a small, light, sturdy, maneuverable helicopter, with very low drag.

The OH-6A Cayuse was quite effective when teamed with the AH-1G Cobra attack helicopter as part of what were known as "Pink Teams". The OH-6A "Loach" (for "LOH") would find targets by flying low, "trolling for fire", then marking the target with colored smoke to lead in a Cobra, or "Snake", to attack. The Cayuse could absorb an extensive amount of small arms fire and still bring the crew home safely. The OH-6A was powered by a single turboshaft engine, and had a cruising speed of 144 mph (125 knots).

The OH-6A could be armed with the M27 armament subsystem, the port (left) side mounting M134 six-barrel 7.62mm "Minigun" or a 40mm grenade launcher.

† The 40mm Grenade Launcher is only available via SSR.

7. OH-6C: The OH-6C is an armed version of the 1st Air Cav Division first fielded in early 1972. It is armed with the port side mounted M134 six-barrel 7.62mm "Minigun" and two 2.75" rocket pods.

8. OH-58 KIOWA: The successor to the Hughes OH-6 "Cayuse" as the standard LOH (light observation helicopter), the Kiowa was built at so high a rate that no fewer than 2,200 were delivered to the US Army between May 1969 and the end of the American involvement in Vietnam. Kiowas were in action in Vietnam by September 1969, swiftly becoming the preferred type for executive, liaison and light transport missions as well as undertaking all forms of reconnaissance and target acquisition.

11. UH-1C: UH-1C "Hueys" were used with moderate success as a gun ship with door mounting M60D 7.62 machine. They could also be armed with a pod or side-mounting six-barrel "Minigun" and seven-tube 2.75" rocket launcher, and the M5 chin-turret mount for a 40mm grenade launcher.

10. UH-1B: The UH-1B, in addition to the armament of the UH-1C, was also armed with two fixed-mounting M24A1 20mm cannon. With the fielding of the larger UH-1D as the Army's primary utility helicopter, the smaller UH-1Bs/UH-1Cs assumed the gunship role as their primary mission.

11. AH-1G COBRA: The Cobra was first employed to Vietnam with the 1st Cavalry Division (Airmobile) in August 1967. The Cobra's primary mission was to give fire support to troop carrying "Hueys". The AH-1G Cobra had a speed of 196 mph (170 knots), almost twice the speed of the UH-1 "Huey". The Cobra performed it's job so well it was possible for the first time for "slicks" and gun ships to operated as true air cavalry.

12. AH-1G(20) COBRA: Some Cobras wer armed with a 20mm Gatling gun instead of the 40mm GL. Only one of 6 AH-1Gs were so equipped.

HELICOPTER NOTES

A The OH-13 could be equipped with a twin BMG, 7.62mm or .30cal. Both have 6FP and 2x TK DR. This armament is only available via SSR.

US AIR SUPPORT NOTES

1. AC-130H SPECTRE: The AC-130H Spectre gunship's primary missions are close air support, air interdiction and armed reconnaissance. Other missions include perimeter and point defense, escort, landing, drop and extraction zone support, forward air control, limited command and control, and combat search and rescue.

These heavily armed aircraft incorporate side-firing weapons integrated with sophisticated sensor, navigation and fire control systems to provide surgical firepower or area saturation during extended periods, at night and in adverse weather.

The AC-130 is an excellent fire support platform with outstanding capabilities. With its extremely accurate fire control system, the AC-130 can place 105mm, 40mm and 25mm munitions on target with first round accuracy. During the Vietnam War, gunships destroyed more than 10,000 trucks and were credited with many life-saving close air support missions.

2. A-1 SKYRAIDER [1957-74]: The typical "Spade or Sandy", as the Close Air Support aircraft were called. The A-1 Skyraider was designed as a single-seat aircraft to replace the less attractive BTG, and was much simpler and lighter. It was too late for WWII, but much used in Korea and later in Vietnam. The Skyraider was a very effective attack aircraft, but exhausting for the pilot. Some of the 3180 Skyraiders built were still in combat service 1979.

3. A-6A/E INTRUDER [1963-77]: All-weather attack aircraft, entered service in 1963. The A-6 is an ugly mid-wing aircraft, with side-by-side seating in a blunt nose. The subsonic A-6 is a true all-weather aircraft; it has good range and carries a heavier load than any previous USN attack aircraft.

4. A-7A/E CORSAIR [1967-98]: The A-7 was a very capable attack aircraft, bought by both USN and USAF. The design used F-8 Crusader experience in a smaller, subsonic airframe.

5. F-8E/U CRUSADER [1960-77]: It originally was a fast dayfighter, but later models were capable of all-weather operations. The problem of putting a powerful, heavy supersonic fighter on a carrier deck was solved by giving the F-8 a variable incidence wing, and it could operate even from smaller carriers. The F-8 enjoyed a long and distinguished career, and was still very effective in Vietnam.

6. A-4C/CS/F SKYHAWK II [1959-83]: This small and simple tailed delta jet, originally designed as carrier-based (nuclear) bomber, later enjoyed a long career as an extremely versatile attack aircraft.

7. A-37 DRAGONFLY [1960-69]: The little T-37 jet trainer was developed into the A-37 attack aircraft, with more powerful engines and carrying an impressive weapons load for such a small aircraft.

8. F-100 SUPER SABRE [1963-72]: First operational supersonic fighter. The F-100 had a long and distinguished career, but was not without problems. It was very big for a fighter aircraft when it was first flown. As an interceptor, it was soon overtaken by newer designs; the F-100 was used mostly as a fighter-bomber.

9. F-105D THUNDERCHIEF [1959-74]: The F-105 was a large fighter-bomber. Development was slow, with numerous teething problems. Many modifications were needed to make the aircraft combat-ready, but then the F-105 proved a very effective aircraft.

It was used a lot in Vietnam. Intensive use resulted in heavy losses; of the 610 F-105Ds built about half were lost in combat.

10. F-111 AARDVARK [1971-96]: The swing-wing F-111 was designed as a multi-role aircraft, but ended as an attack/strike aircraft. It was the result of an unwise and unhappy attempt to fulfill different USAF and Navy requirements with a single aircraft. The F-111B shipboard fighter was a complete failure. The F-111 strike fighter itself had a difficult start, but accumulated a good service and combat record in later years.

11. F-4C PHANTOM [1963-79]: The The USAF's Phantom II, designated F-4C, made its first flight on May 27, 1963. Production deliveries began in November 1963. In its air-to-ground role the F-4 could carry twice the normal bomb load of a WW II B-17. USAF F-4s also flew



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reconnaissance and "Wild Weasel" anti-aircraft missile suppression missions. Phantom II production ended in 1979 after over 5,000 had been built--more than 2,600 for the USAF, about 1,200 for the Navy and Marine Corps, and the rest for friendly foreign nations.

US RIVERINE NOTES

1. PBR MKI: The PBR, the ubiquitous workhorse of the River Patrol Force, was manned by a crew of four bluejackets, equipped with a Pathfinder surface radar and two radios, and commonly armed with two twin-mounted .50-caliber machine guns forward, M-60 machine guns (or a grenade launcher) port and starboard amidship, and a .50-caliber aft. The initial version of the boat, the Mark I, performed well in river patrol operations but was plagued with continual fouling of its water-jet engines by weeds and other detritus. In addition, when Vietnamese sampans came alongside for inspection they often damaged the fragile fiberglass hull of the PBRs.

2. PBR, MKII: New Mark IIs, first deployed to the delta in December 1966, brought improved Jacuzzi jet pumps, which reduced fouling and increased speed from 25 to 29 knots, and more durable aluminum gunwales.

3. PCF "SWIFT": The Patrol Craft Fast (PCF) or Swift Boat... ???

4. ASPB "ALPHA": The MRF served several functions up the rivers but was principally involved in ferrying and supporting the movement of 9th Army troops around the delta. For most of the boats this was all they did all year. The Assault Support Patrol Boat (ASPB), better known as an Alpha Boat was the Destroyer/Minesweeper of the fleet. Two Alpha's usually headed each column of boats and one generally took up the rear position in the column (generally considered the worst place to be).

5. ATC "TANGO": Armored Troop Carriers (ATC's) with mounted .30cal and .50cal machine guns, Mk 19 auto grenade launchers, and 20mm cannons transported the Riverine Infantry throughout the delta. In the early part of the war this was principally troops of the 9th Infantry Division. Later Vietnamese Army and Marine troops took the fight to the enemy aboard the Tango boats. Those Tangos with added helo decks, ATC(H), also provided a means of landing helicopters for swift evacuation of the wounded. All Tango boats have the distinctive bow ramp.

6. MONITOR: The Monitor was the battleship of the Riverine fleet. It was equipped with 50cal MG, 40mm and 20mm gun mounts, two 40mm grenade launchers, and an 81mm mortar. Around 1969, the monitors started sporting a 105 howitzer mount used in tanks. This gun made a huge explosion and got Charlie's attention in a big way.

7. MONITOR ZIPPO: The flamethrowing converted monitor with bow mounted flamethrowers and napalm tanks provided a means of clearing the dense growth near river banks where Charlie was prone to ambush the boats or support ships.

8. PACV: Task Force 116 also employed the experimental patrol air cushion vehicle (PACV), three of which operated in the Mekong Delta during 1966 and 1967 as PACV Division 107. During 1968, the PACVs deployed to the Danang area as Coastal Division 17. Although able to move with great speed over shallow, marshy areas, such as in the Plain of Reeds, the PACVs proved to be too noisy and too mechanically sophisticated for riverine war in South Vietnam. After the Tet emergency, the craft were shipped back to the United States for reevaluation.