

TECHNICAL MANUAL

**AVIATION UNIT AND AVIATION
INTERMEDIATE MAINTENANCE MANUAL**

CH-47D HELICOPTER

This manual together with TM 55-1520-240-23-1, TM 55-1520-240-23-2, TM 55-1520-240-23-4, TM 55-1520-240-23-5, TM 55-1520-240-23-6, TM 55-1520-240-23-7, TM 55-1520-240-23-8, TM 55-1520-240-23-9, TM 55-1520-240-23-10, TM 55-1520-240-23-11, supersedes TM 55-1520-240-23-1, TM 55-1520-240-23-2, TM 55-1520-240-23-3, TM 55-1520-240-23-4, TM 55-1520-240-23-5, TM 55-1520-240-23-7, TM 55-1520-240-23-8, TM 55-1520-240-23-9, TM 55-1520-240-23-10, 10 May 1983, and TM 55-1520-240-23-6, 6 May 1983, including all changes.

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AVIATION UNIT AND AVIATION INTERMEDIATE MAINTENANCE MANUAL CH-47D HELICOPTER

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) located in the back of this manual, directly to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is: DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is: 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028. For the World Wide Web use: <https://amcom2028.redstone.army.mil>.

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CHAPTER 3

ALIGHTING GEAR

SECTION I

LANDING GEAR DESCRIPTION AND OPERATION

3-1 LANDING GEAR**3-1**

There are four high-flotation landing gear assemblies, two forward and two aft. The two forward assemblies have dual wheels. Each aft assembly has a full-swivel single wheel. The aft wheels can be locked in trailing position. A power steering unit is installed on the aft right landing gear assembly.

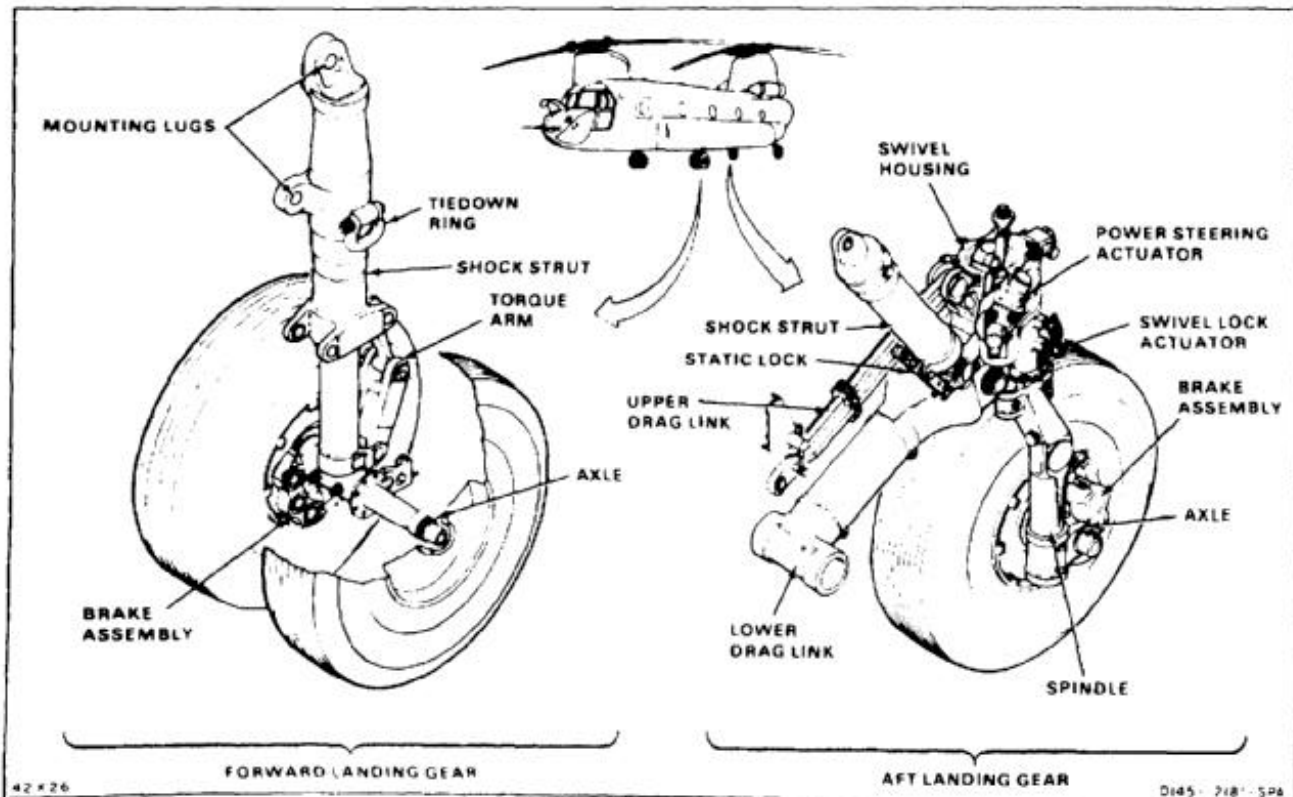
FORWARD LANDING GEAR

The forward landing gear dual wheels are installed on a fixed axle. The axle is mounted on an air-oil shock strut bolted to the fuselage support structure. A torque arm keeps the assembly aligned. A disk and brake unit are provided for each wheel. Hinged panels allow access to the forward landing gear assemblies. Each assembly has a towing and tiedown fitting. The wheels can be raised at jacking points on the lower torque arms. Left and right landing gear assemblies can be converted for use in either forward position.

AFT LANDING GEAR

Aft landing gear assembly is installed on each side of the fuselage. Each aft wheel is mounted on an axle supported by a spindle. The spindle rides on bearings in

the swivel housing. Upper and lower drag links support the swivel housing. Both drag links are connected to fuselage fittings. A shock strut is mounted between the lower drag link and a fuselage fitting. The shock strut has a static lock mechanism to prevent strut extension during helicopter jacking. A disk and brake unit are installed on each wheel. The aft wheels can be free to swivel, or they can be locked in trailing position. A centering cam in the swivel housing centers each wheel in trailing position. A hydraulically-operated swivel lock secures the wheel in this position. The power steering actuator is connected to the aft right landing gear swivel housing. A towing and tiedown fitting is also attached to this housing. Static ground wires are installed on each landing gear axle housing. A proximity switch is mounted on the forward bulkhead of each aft landing gear compartment. Linkage from the upper drag link is connected to a target which is sensed by each switch. The switches are operated as the helicopter takes off or lands. Extensions on the aft axles are used for connecting a tow bar. An aft landing gear assembly can be installed on either side of the helicopter. This requires disassembly and repositioning of certain components.

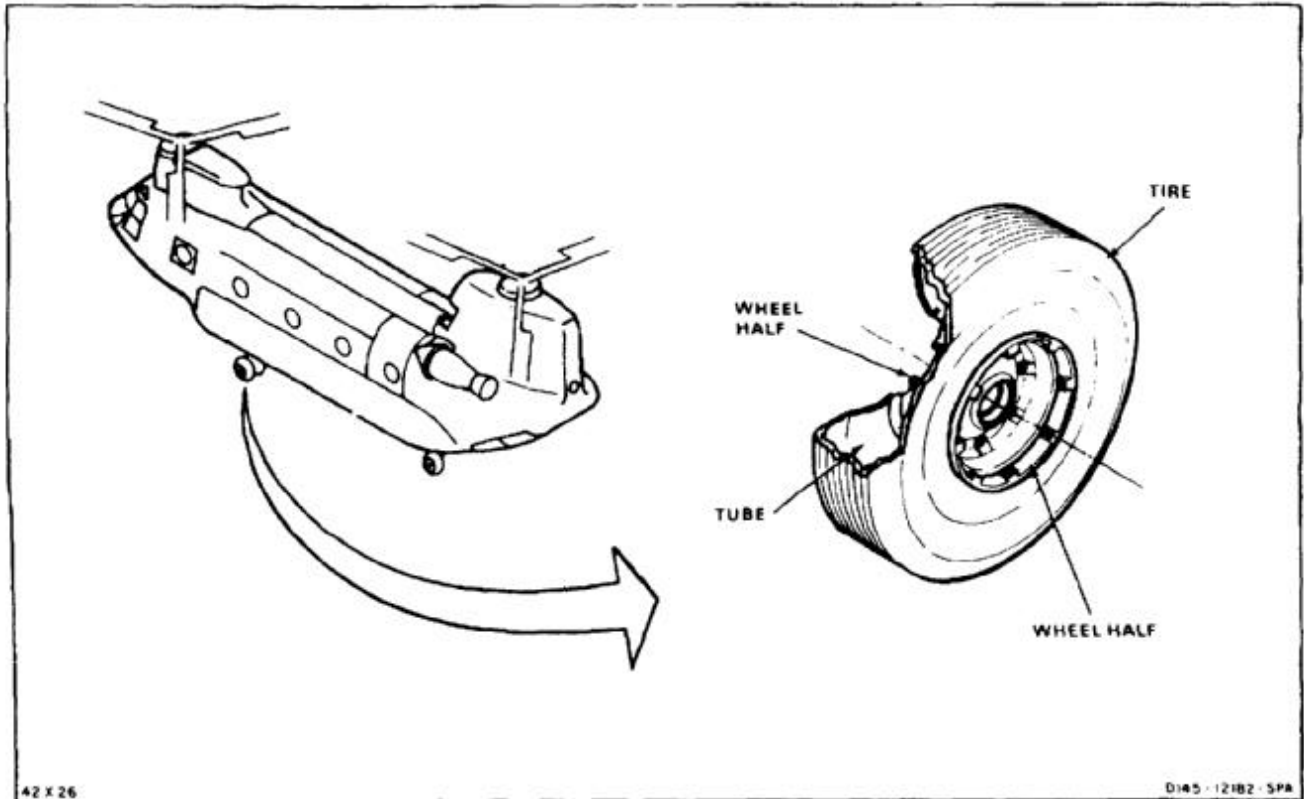


TIRES AND TUBES

Tires are interchangeable on all six wheels. The tires are 10-ply or 10-ply rating. Tubes are required for both tubeless and tube-type tires.

WHEELS

The wheels consist of two halves. Moisture-proof seals protect the bearings. Wheels are separated for removing or mounting tire or tube.



AXLES

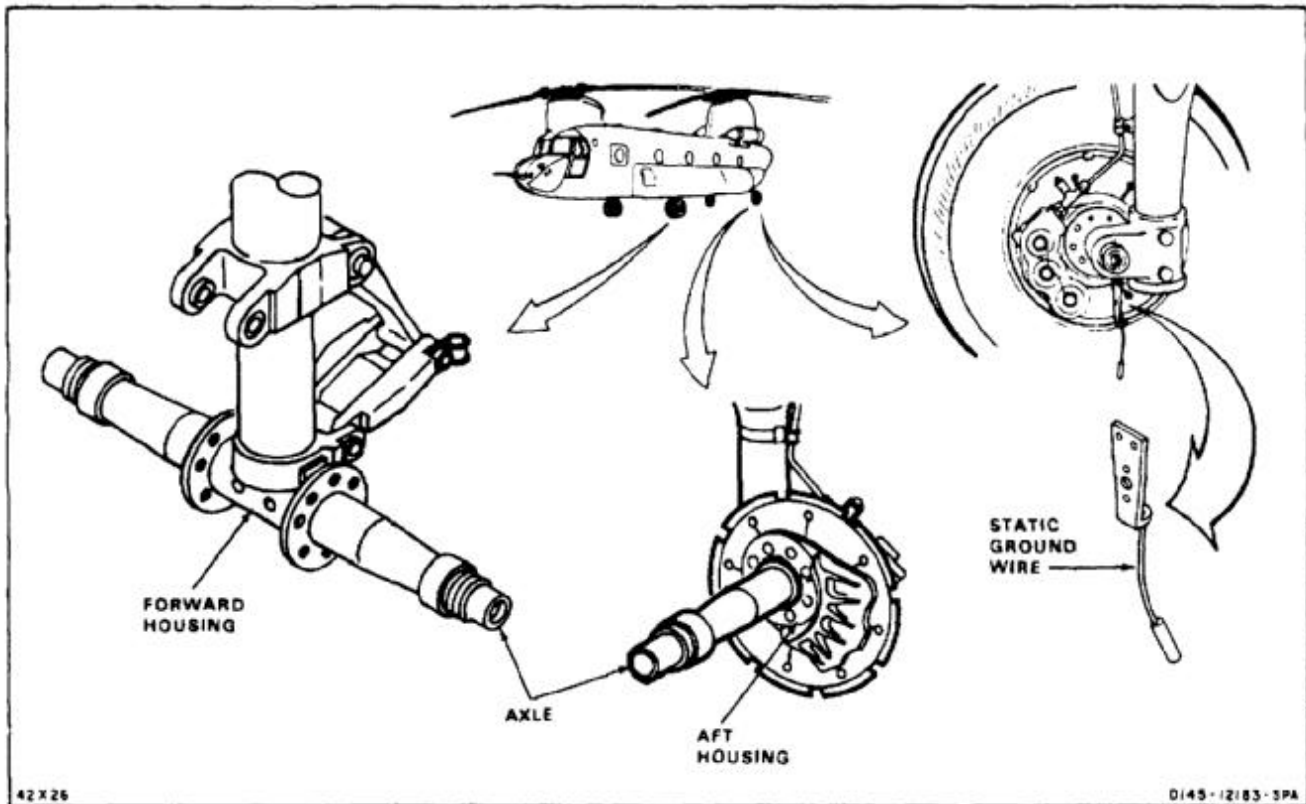
Forward and aft axles are removable and can be used on either forward or aft landing gear. Each axle is secured to the axle housing by a bolt which passes thru the axle.

SHOCK STRUTS

All landing gear shock struts are air-oil units. Compressed air absorbs shock, and hydraulic fluid dampens up and down movements.

STATIC GROUND WIRE

A static ground wire is installed on the aft left landing gear. The wire consists of a cable and tube attached to a mounting bracket. Three holes on the mounting bracket provide for wire length adjustment. The mounting bracket is installed on a clip on the axle housing.



PROXIMITY SWITCHES

Linkage from the aft landing gear upper drag link is connected to a target. The target is set so the proximity switch is open when the helicopter is in flight. When the helicopter is on the ground, the switch is closed. The switches prevent DASH actuator input during lift-off to hover. They also reduce AFCS sensitivity **50 percent** until lift-off. The right switch turns off the IFF when the helicopter is on the ground.

STATIC LOCK MECHANISM

The static lock mechanism is a link attached to aft landing gear shock strut. It is operated by hand to lock the shock strut in the up position when the helicopter is jacked.

SWIVEL HOUSING AND SPINDLE

A swivel housing is supported by the two drag links and shock strut of each aft landing gear. The housing allows the spindle and wheel to swivel **360°**. A centering cam in the housing centers the wheel in the trailing position for taxiing or flight. The swivel locking pin can lock the wheel in this position.

