

# THE STROBE



EAA 512

Placerville, CA

November 2023

## Welcome to the Experimental Aircraft Association Chapter 512

Join us every third Wednesday of the month at 7pm on the Placerville Airport. We meet at the EAA 512, green Quonset hangar.

Bring your aviation enthusiasm and we will do our best to answer your questions and share the many opportunities the EAA has to offer our aviation community.

Contact us at:

[chapters.eaa.org/ea512/contact-us](https://chapters.eaa.org/ea512/contact-us)



Judi & Sam making the highways scenic again!

## Dates To Remember

**November 15**-General Meeting 7pm

**\*\*Last chance to VOTE via paper**

**November 18**- Adopt-A-Highway 7:30am

**\*\*Volunteers must contact Judi prior at**

[judieaa512@gmail.com](mailto:judieaa512@gmail.com)

**December 5**-IMC/MC 7pm

**December 13**-Development Committee 6pm for PVF tenants, EAA Hangar

**December 14**-Board Meeting 6pm, Zoom

**December 16**-Adopt-A-Highway 7:30am

**December 20**-Holiday Party 5:30-8:30pm

**\*\*Gift Exchange Optional, Meat is provided**

**Please bring a side dish or dessert to share**

Many Thanks to our Wonderful Volunteers, some who quietly yet diligently work unnoticed behind the scenes !

# Prez Sez by Jim Wilson

## Remembering Our Veterans-on-Veterans Day

Saturday 11/11/2023 Veterans Day Ceremony

*The Veterans Day ceremony in Placerville began at the symbolically important time of 11 a.m. — the eleventh hour of the eleventh day of the eleventh month being the official beginning of the armistice that marked the close of World War I in 1918.*

Over 105 years later, Chapter 512 pays tribute and remembers our veteran members who served in the US Armed Forces. The list below honors all chapter members who have served and who are serving. This list is the author's best recollection and knowledge over the last 10 years.

Veteran/Active Duty*	Birth	Service	
Bob O'Hara	1930 - 2020	Army Air Corp, 1950 Civil Air Patrol	Korean War, A26 gunner, AT-6
James Golding	1928	USN 1941	WWII, pilot certificate in 1946
Hal Stephens	1936	ROTC, ANG, CAP	Chapter president
Dick Wampach	1939	USAF 1958-1963	Aircraft Electronic Technician
John McPherson	1939	USAF 1962-1968	Aircraft Maintenance Officer
Chuck Borman	1946	USAF	Colonel, F111 pilot, resident of North Carolina
Jim Wilson	1947	USNR 1968-1990	LCDR, P3 Orion Navigator
John Crocker	1952	USAF/NG 1978-2012	Colonel, F111 pilot
Sean Conley-Widing	1965	Army NG	
Dan Stein	1968	USAF 1986-present	Master Sergeant, C5 crew chief and maintainer at Travis AFB
Jose Fierro	1975	USMC 1997-2013	Major, F/A18 pilot, deployed on Truman and Reagan carriers during Iraq and Afghanistan conflicts
Chuck Stein*	2001	USAF 2019 – present	Senior Airman, Aero Evac Medical Corpsman
Andrew Gordon*	2002	USAF 2021-present	Airman, Air Traffic Controller



Photo by Jim Wilson

The men and women who join the military over the decades do it for different reasons and under different conditions or circumstances. We all have one thing in common, our love of country and concern for our nation and our role in the world. Let us pray for a more hopeful future and lessening of tensions as the holiday season approaches.



# TORQUE *By Richard Wampach*

I have torqued a lot of fasteners in my 50+ years working as a mechanic and "rocket scientist". I could brag that my count is well over a million, I have some experience by now. But what does that mean. One definition of Torque is a twisting force that tends to cause rotation. Another definition of torque is the product of the magnitude of the force and the perpendicular distance of the line of a force from the product of the magnitude of the force and the perpendicular distance of the line of action of a force from the axis of rotation.

That sounds pretty heavy duty. I will try to keep it on a level most of us are familiar with---Our Airplanes. We install a bolt or a screw, snug it up and we're done. In a lot of cases that works, but in some cases it can lead to a big OOPS!

The purpose of applying torque to a fastener is to hold parts together so that they don't rattle, or rub, and not so tight as to over stress the bolt to the point of stretching it to the point of failure.

In most cases our aircraft hardware is manufactured to a standard such as AN, MS, NAS with markings on the head to help identify it as a standard steel bolt, \* such as this star. Do not expect to find this hardware at the local stores in town!! Almost all of our hardware is made with fine threads (not counting the course thread engine bolts used to secure aluminum castings). You will find structural bolts starting at:

**AN3-** 3/32" 32 thread (NO 10)

tq 20-25 in/lb, wrench size 3/8"

**AN4-** 1/4" 28

tq 50-70 in/lb, wrench size 7/16"

**AN5-** 5/16" 24

tq 100-140 in/lb wrench size 1/2"

**AN6-** 3/8 24

tq 160-190 in/lb wrench size 9/16"

These are examples of most of the hardware you will find on our general aviation planes.

There are exceptions to the torque value, such as when aligning holes for safety wire or cotter pin installation you may

need to go a bit tighter, or change nuts, bolts, washers to get what value is required (it's hard to teach common sense here).

There are times the maintenance manual will call for no lubrication, or wet with specific oils & even the drag (resistance) of the nut plus the torque value.

The most critical torque requirement I can think of is putting the connecting rods onto the crankshaft at engine build-up. The next most critical is installing cylinders on an engine, doing the torquing from both sides at the thru-studs.

In most cases we use inch pounds, or foot pounds on a torque wrench as a means of securing fasteners (which is acceptable for most government work), 12in/lb is the same as 1ft/lb. On some critical hardware the stretch of the fastener measured to the thousandth of an inch (.001") is the means of doing the torquing.

How you do the torquing is also an important item to be thinking of, and my purpose of this article. When you apply torque to a component that force is also being applied to parts that are attached. The oil filter adapter on the big bore Continentals O-470, O-520, O-550 & some other models, has about a 2" diameter threaded mount into the rear case of the engine & a jam nut torqued to 50-65 ft/lbs. The oil filter sticks out at about 90° to it. When you apply force to the 1" knob of the filter you are also applying a force on the mount!!!

**Now here is the big thing!** If your wrench is being held vertical (to the adapter) that force is turning against the jam nut and mount threads and can loosen or over tighten the adapter. If the force being applied is at a 90° to the adapter it will have much less of an effect on the mounting into the rear case.

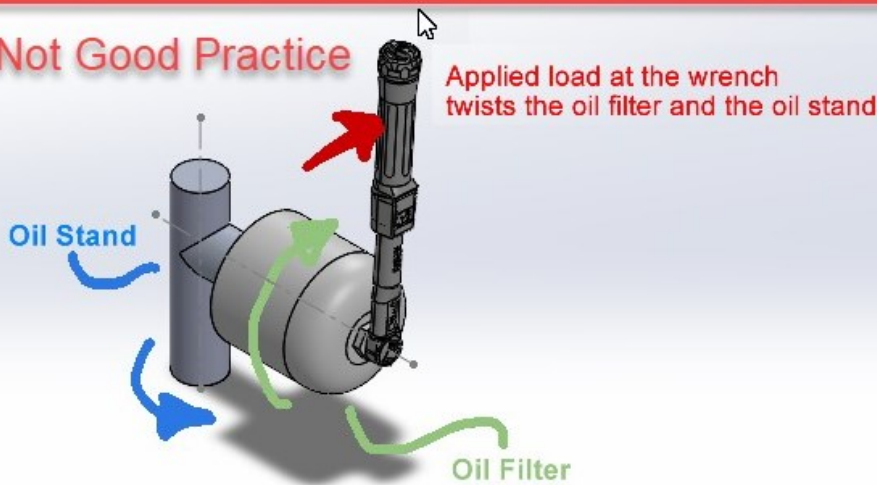
Recently I heard of a shop removing a very tight oil filter and measured the loosening torque at 94 ft/lbs. Had that force been applied vertically it certainly would have affected the torque on the jam nut.

Two AD notes come to mind here; AD 2022-04-04 covers F & M now Tempest/Stratus, and AD 96-12-22 covers Cessna brand (used on numerous A/C models). Looseness, oil leaking, or scribe line & witness mark not being aligned are cause for removal, inspecting threads for damage, and if found replacement of adapter for big bucks.

To summarize; there is a lot to the art of snugging up hardware enabling airplanes to operate safely.

Sometimes what you don't know will hurt you!

## Not Good Practice

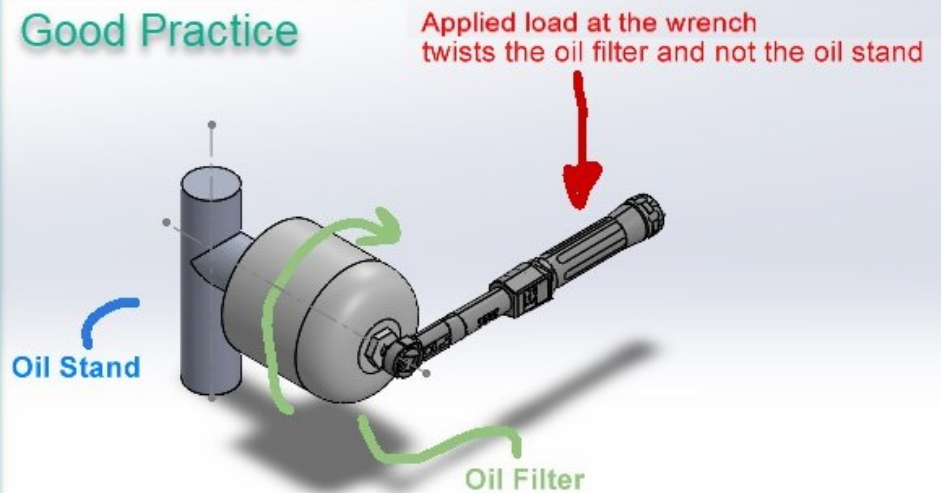


My thanks to Steve Ells for his article in Cessna Flyer July 2022 & Standard A/C handbook.

*-Richard Wampach EAA 308218, A/P-IA, TC. ATP CFI, Retired Rocket Scientist*

Torque Diagrams by Jason Brand  
For illustrative purposes only

## Good Practice



**ATTENTION:** If you have a build project update, have recently flown into a place with an air museum or some great food, or would like to share your aviation experiences & knowledge, please submit your content and photos to [more\\_right\\_rudder@yahoo.com](mailto:more_right_rudder@yahoo.com)

**We would love to hear from you!**

**\*Helpful Pro-Submission Hint for a Happy Editor-** Send typed content via a word document without font changes or special spacing & send photos, graphs, and diagrams separately!

Thanks,  
The Editor



Photo by Audrey Brand

National Transportation Safety Birds report-10/28/23, approximately 0600

Warbler 1 was in transition from runway to taxiway near helipad at RWY 5 when Warbler 1 came into contact with sudden rotor wash from nearby departing helicopter, losing directional control resulting in high speed nose dive followed by impact. There were no witnesses and ELT INOP.

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