Future scheduled meetings will start at 6:30 pm beginning with the April 19th General Meeting. Meeting location will remain at Mark's Casa Chevrolet on east Lomas Blvd.

TECHNICAL SIDEBAR

New Mexico Corvette Association

March 23 2013

Special points of interest:

- NMCA votes to participate in NMCC Buy an Acre program.
- Ron Williams of Horizon Auto Glass and Trim shares paint protection technology.
- NMCA to begin planning for SW Invitational.
- NMCA increasing the number of club events each month.

AN- Fittings

AN- stands for ***Air Force-Navy Aeronautical Standard*** and is an aviation fitting standard developed around WWII. The fitting featured a 37 degree mating angle which provided superior sealing compared to the common 45 degree fittings and used a higher class of thread quality. Eventually the AN- fittings saw widespread military use and a multiple manufacturers began producing the fittings, leading to quality problems. The Joint Industries Council (JIC), an industry organization, sought to standardize the specifications on this type of fitting and created the "JIC" fitting standard, a 37 degree fitting with a slightly lower class of thread quality than the military AN- version. The SAE went on to adopt the JIC standard as well. As a result JIC or SAE 37 degree fittings are perfectly interchangeable with AN- fittings, and while this may not be acceptable for military aviation use, for automotive use there is no downside other than perhaps mismatched color coordination as JIC fittings are not available in the pretty anodize aluminum colors. However this may be a worthy tradeoff considering the JIC fittings are a fraction of the price of their true "AN-" counterparts.

90⁰ stainless AN– fitting

AN- Fitting Size	Equivalent - O.D. vs. I.D.	General Uses
-2	1/8" - 0.125	oil pressure/fuel pressure/vacuum
-3	3/16" - 0.188 (5/32" id - .15625)	oil pressure/fuel pressure/vacuum
-4	1/4" - 0.250 (7/32" id - .2185)	oil pressure/fuel pressure/vacuum
-6	3/8" - 0.375 (11/32" id - .34375)	fuel/transmission/power steering
-8	1/2" - 0.500 - (7/16" id - .4375)	power steering/fuel/transmission/heater hose
-10	5/8" - 0.625 (9/16" id - .5625)	fuel/heater hose
-12	3/4" - 0.750 (11/16" id - .6875)	heater/hose
-16	1" - 1.00 - (7/8" id - .875)	
-20	1 1/4" - 1.250 (1 1/8" id - 1.125)	radiator hose
-24	1 1/2" - 1.500 (1 3/8" id - 1.375)	radiator hose
-32	2" - 2.00	radiator hose

The fittings and adapters seal on the seat and cone, and any sealant can cause a poor seat and, therefore, a leak. A lubricating oil should be used instead of a sealant. Only tapered pipe (NPT) threads require a sealant.

The chart shows the fitting size, the (accepted) equivalent size and the hoses' real inside diameter, and some general uses for the various sizes. Note the General Uses is a guideline only is not meant to be all inclusive; you could use a -32 (2") fuel line if you really wanted to.

When selecting a fitting supplier, each recommend you use only their hoses for their fittings. Also some hoses are to be used with specific type fittings. I suggest you do just that to bypass any fitment or application problems.

New Mexico Corvette Association

We're on the Web
nmcorvette.org

"AN-" Thread Sizes (Army/Navy Threads)

Commonly used on Nitrous Oxide systems. The sizing chart and numbering system was developed during World War II where the armed forces used Nitrous Oxide systems to boost the power output of aircraft engines.

AN-SIZE	Metal Tube O.D. Inches	Closest SAE Thread Size
-2	1/8"	5/16-24
-3	3/16"	3/8-24
-4	1/4"	7/16-20
-5	5/16"	1/2-20
-6	3/8"	9/16-18
-8	1/2"	3/4-16
-10	5/8"	7/8-14
-12	3/4"	1-1/16-12
-16	1"	1-5/16-12
-20	1-1/4"	1-5/8-12
-24	1-1/2"	1-7/8-12
-28	1-3/4"	2-1/4-12
-32	2"	2-1/2-12
NOTE: A sealer is NOT required when "AN" type fittings.		

AN- sizes, originally developed for use by the U.S. Armed forces ("A" for army and "N" for navy), describe the outside diameter (O.D.) of tubing in 1/16-inch increments. For example, an AN-2 fitting will fit a tube with an O.D. of 2/16", or 1/8", while an AN-8 fitting will fit a tube with an O.D. of 8/16", or 1/2". Because the actual thickness of tube walls can vary from brand to brand, the inside diameter of a tube is not used as a reference. You will also find the dash (-) symbol or the word "dash" itself used in conjunction with AN- sizes. A "dash six" fitting translates to AN-6.

Each AN- fitting has an established thread sizing. The chart above shows the relationship between AN- size, tube O.D., and SAE thread size.

"NPT" Thread Sizes (National Pipe Taper)

NPT sizes are the most commonly used fitting sizes for general plumbing, piping, and tubing use; not quite as popular as AN- for automotive use, but still very common. While AN- fittings depend on the outside diameter of a tube for sizing, NPT fittings depend on the interior diameter (I.D.) of the fitting itself. The following chart shows the each size's thread-per-inch count, the I.D. of the fitting, and the AN fitting size with the closest-matching I.D. (inside dimension).

Pipe Thread Size	Threads Per Inch	App. Interi-or Diameter	Closest AN- Size
1/16"	27	1/16"	2
1/8"	27	1/8"	4
1/4"	18	1/4"	6
3/8"	18	3/8"	8
1/2"	14	1/2"	10
3/4"	14	3/4"	12
1"	11-1/2	1"	16
1-1/4"	11-1/2	1-1/4"	20
1-1/2"	11-1/2	1-1/2"	24
2	11-1/2	2"	32
NOTE: A sealer is required for "NPT" type fittings.			