SOUTHERN OREGON CORVETTE ASSOCIATION, LLC

WWW.SOVETTE.COM

P.O. Box 865 • Medford, Oregon 97501
501(c) (7) Non-Profit Organization • Federal Tax I.D. #91-1819589

Newsletter
August 2020

Elected Officers

President:	Ron Howard
Vice-President:	Cathy Cardoza
Secretary:	Paul Mitchell
Treasurer:	Carol Misner
Sergeant-at-Arms:	Patrick Smith
Membership:	Robin Miranda
Past President (2019):	Ron Howard

Appointed Positions

Sunshine:	Sandee Anderson
Activities:	Cathy Cardoza
Event Reminder:	Pat Dobson
Internet Site:	Sharon Hook-Martino, Elaine Ellis
Parade Coordinator:	Sheron Leigh, Kerry Razza
Natl Corvette Museum:	Len Atlas
Historian:	Group Effort
Photographer:	Group Effort

Next Club Social

The next club social is Saturday, August 22, at 5:00 p.m., at The Original Roadhouse Grill, 2699 West Main Street, Medford (note: not the Roadhouse Grill with "Texas" in its name).

Upcoming Meeting

General Membership Meeting, Wednesday, September 2, 2020, 6:00 p.m. at the Palmerton Park, 300 West Evans Creek Road, Rogue River

Visitors are always welcome!

Why Join SOCA?

- **Promote *esprit de corps* among Corvette enthusiasts.**
- **Create interest in the Corvette as a true dual-purpose sports car.**
- **Provide a means of technical information and service to members.**
- **Encourage dealer and manufacturer cooperation.**
- **Organize and promote events of a social nature and provide social gatherings for enthusiasts with common interest.**
- **Sponsor or participate in activities to benefit the community through recognized charities as selected by the members of the Association.**

SOCA Logo Apparel

Competitive Athletics, 105 NE 7th St., Grants Pass
(541) 479-1001

August Birthdays		September Birthdays	
William Bozarth	Ron Nichols	Yolanda Bruton	Teri Lavery
William Dister	Janet Peterson	Jennifer Clark	Debbie Miller
Tim Kasdorf	Karen Raskin	Brian Davis	Jack Roberts
Cynthia Luce	Dennis Schneider	Norman Foley	Gar Stevens
		Don Hubbard	Dale Yellin

August Anniversaries		September Anniversaries	
Darren & Jennifer Clark	Jack & Cynthia Luce	Michael Duggan & Tonjie Ophus	Dave & Riley Siddon
Jim & Elaine Ellis	Dennis & Carol Misner	William & Fleeta Lackey	Michael & Laura Vaara
Rob & Blanca Hill	John & Janet Peterson	Jack & Vickie Roberts	
Dan & Yvonne Hughes	Michael & Laura Vaara		

2020 Southern Oregon Corvette Association (SOCA) Events

	Sep	Oct	Nov	Dec
Club meeting (Wed.)	2	7	4	2

(Most dates, times and locations listed below are tentative after August 31. All dates are Saturdays, except as noted.)

AUGUST

Drive	15 – 9:45 a.m., "President's Choice" drive to Glendale and Canyonville
Social	22 – 5:00 p.m., The Original Roadhouse Grill, 2699 West Main Street, Medford

SEPTEMBER

Parade?	7 – (Labor Day) Cave Junction parade
Sigel Show & Shine	12 – Jim Sigel Show & Shine, Grants Pass
Social	19 – Grants Pass

OCTOBER

Social	17 – Medford
Cruise?	17 – Sea Cruise, Crescent City

NOVEMBER

Social	– Final date and location to be determined
Thanksgiving	26 – Thanksgiving holiday

DECEMBER

Parade?	5 – Grants Pass Christmas Parade
Social	19 – SOCA Christmas Party, Grants Pass Golf Club, 230 Espey Rd., Grants Pass

For additional events, information and links … see the SOCA website "Events Page:" https://www.sovette.com/events

Southern Oregon Corvette Association 2020 membership dues

Dual membership: $50.00 Single membership: $35.00 Initiation (one-time): $15.00

Make checks payable to "SOCA" and mail to: SOCA, 2603 Garden Meadow Dr, Grants Pass OR 97527

Techin & Toolin

Atkinson Cycle Engine [Wikipedia, the free encyclopedia (Condensed)]

The **Atkinson-cycle engine** is a type of internal combustion engine invented by James Atkinson in 1882. The Atkinson cycle is designed to provide efficiency at the expense of power density.

A modern variation of this approach is used in some modern automobile engines. While originally seen exclusively in hybrid electric applications such as the earlier-generation Toyota Prius, later hybrids and some non-hybrid vehicles now feature engines with variable valve timing, which can run in the Atkinson cycle as a part-time operating regimen, giving good economy while running in Atkinson cycle, and conventional power density when running as a conventional, Otto cycle engine.

Design

Atkinson produced three different designs that had a short compression stroke and a longer expansion stroke. The first Atkinson-cycle engine, the *differential engine*, used opposed pistons. The second and most well-known design, was the *cycle engine*, which used an over-center arm to create four piston strokes in one crankshaft revolution. The reciprocating engine had the intake, compression, power, and exhaust strokes of the four-stroke cycle in a single turn of the crankshaft, and was designed to avoid infringing certain patents covering Otto-cycle engines. Atkinson's third and final engine, the *utilite engine*, operated much like any two-stroke engine.

The common thread throughout Atkinson's designs is that the engines have an expansion stroke that is longer than the compression stroke, and by this method the engine achieves greater thermal efficiency than a traditional piston engine. Atkinson's engines were produced by the British Gas Engine Company and licensed to other overseas manufacturers.

Many modern engines now use unconventional valve timing to produce the effect of a shorter compression stroke/longer power stroke. Miller applied this technique to the four-stroke engine, so it is sometimes referred as the Atkinson/Miller cycle, US patent 2817322 dated Dec 24, 1957. In 1888, Charon filed a French patent and displayed an engine at the Paris Exhibition in 1889. The Charon gas engine (four-stroke) used a similar cycle to Miller, but without a supercharger. It is referred to as the Charon cycle".[1]

Modern engine designers are realizing the potential fuel-efficiency improvements the Atkinson-type cycle can provide.

For example as of July 2018, the following manufacturers are using Atkinson-cycle theories in their hybrid vehicle drivetrain models.

Chevrolet	Chrysler
Ford	Lincoln
Honda	Hyundai
Infiniti	Kia
Lexus	Mazda
Mercedes	Mitsubishi
Toyota	Subaru

A small engine with Atkinson-style linkages between the piston and flywheel. Modern Atkinson-cycle engines do away with this complex energy path.

Modern Atkinson Cycle Engines

In the late 20th century, the term "Atkinson cycle" began to be used to describe a modified Otto-cycle engine—in which the intake valve is held open longer than normal, allowing a reverse flow of intake air into the intake manifold. This "simulated" Atkinson cycle is most notably used in the Toyota 1NZ-FXE engine from the early Prius.

The effective compression ratio is reduced—for the time the air is escaping the cylinder freely rather than being compressed—but the *expansion* ratio is unchanged (i.e., the compression ratio is smaller than the expansion ratio). The goal of the modern Atkinson cycle is to make the pressure in the combustion chamber at the end of the power stroke equal to atmospheric pressure. When this occurs, all available energy has been obtained from the combustion process. For any given portion of air, the greater expansion ratio converts more energy from heat to useful mechanical energy—meaning the engine is more efficient.

The disadvantage of the four-stroke Atkinson-cycle engine versus the more common Otto-cycle engine is reduced power density. Due to a smaller portion of the compression stroke being devoted to compressing the intake air, an Atkinson-cycle engine does not take in as much air as would a similarly designed and sized Otto-cycle engine. Four-stroke engines of this type that use the same type of intake valve motion but using forced induction to make up for the loss of power density are known as Miller-cycle engines.

Example Vehicles Using Atkinson Cycle Engines

Hyundai Ioniq hybrid

2010 Ford Fusion Hybrid (NA)

While a modified Otto-cycle piston engine using the Atkinson cycle provides good fuel efficiency, it is at the expense of a lower power-per-displacement as compared to a traditional four-stroke engine. If demand for more power is intermittent, the power of the engine can be supplemented by an electric motor during times when more power is needed. This forms the basis of an Atkinson cycle-based hybrid electric drivetrain. These electric motors can be used independently of, or in combination with, the Atkinson-cycle engine, to provide the most efficient means of producing the desired power. This drive-train first entered production in late 1997 in the first-generation Toyota Prius.

Disclaimer - Discretion is advised. The preceding information may not apply to specific vehicles or all circumstances. Always refer to the manufacturer's specifications, service manuals, technical data, and product information.