THE CLARIFIER

Volume 20 Number 1 **February, 2009**

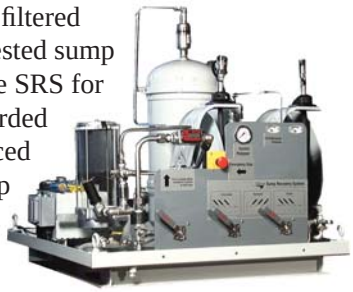
David Taylor Celebrates 30 years

December, 2008 marked President Dave Taylor's 30th Anniversary with Velcon. As he reflects on his years with Velcon, Dave says "It is hard to believe that I have been working for Velcon for thirty years …it sure doesn't feel like thirty years have gone by!" One of his favorite things about Velcon and the whole industry is the people. "We are fortunate to work with the best people, both here within Velcon and with our distributors and customers."

Robin Mason (l) presents Dave (r) with a certificate recognizing Dave's 30th Anniversary with Velcon..

Sump Recovery System Saves Fuel & Money!

Velcon's Sump Recovery System (SRS) is a self-contained, closed circuit system that reclaims and recycles sumped fuel. The SRS allows you to sample and visually examine fuel removed from filter, monitor, or filter/separator housing sumps for dirt and/or water contamination, per ATA-103. Fuel removed from the sump is displaced by clean filtered fuel from the SRS system. After inspection, tested sump samples are re-circulated through filters on the SRS for removal of contaminants. Fuel formerly discarded as waste is filtered by the SRS and re-introduced back into the fuel system during the next sump sampling process.



For more info:
www.velcon.com/environment/SumpRecoverySystem.html

VCA-CV Recognized at Energy Institute (EI)

Velcon Filters, Inc and CLA-VAL were informed in September that their combined VCA-CV unit, a new fuel quality assurance system, was recognized by the Energy Institute for the institute's ***"2008 Innovation Award."*** The VCA-CV was one of four products that were short-listed for the Awards ceremony held in November 2008. Although the VCA-CV did not win, Velcon and CLA-VAL were pleased to have been recognized as one of the finalists.

For more information please see the Energy Institute's web page: *www.energyinst.org.uk*

For more information about the VCA® and VCA-CV please see Velcon's web page: *www.velcon.com/aviation/vca.html*

CONTENTS

Velcon®

Fueling a Helicopter in Iraq

Soldiers in Iraq fueling an Apache helicopter. Photo by SPC Peter Oppelt, son of Linda Oppelt, Marketing Services Dept. at Velcon.

Velcon Recognizes Three Distributors for Fifty Years of Service

Velcon Filters, Inc. appreciates all of our distributors for their loyalty and commitment to serving Velcon customers.

The following distributors will celebrate their Fiftieth (50th) Anniversary with Velcon in 2009!

- AFTEC, Aviation Fuel Technicians, LLC
- Gammon Technical Products, Inc.
- Mil-Tech Sales Company, Inc.

Please join us in thanking these companies for their longterm service to Velcon.

Alternative Fuels in the News

Coal, natural gas, jatropha, algae, seaweed, biomass, palm oil—what do these have in common? They are all being considered as sources for alternatives to traditional jet fuel.

In the 1920's two German chemists developed a process called Fischer–Tropsch to produce synthetic jet fuel from coal and natural gas. Some areas of the world have abundant coal resources but sparse petroleum available, so being able to produce synthetic jet fuel from coal and natural gas was quite beneficial.

Since 1999 Sasol in South Africa has been producing synthetic jet fuel from coal, and this has been used as a blend with regular jet fuel by South African Airways. This blend of fuel has received certification (DEF STAN 91-91). Velcon Filters has been supplying a combination of coalescers, separators, filters and monitor cartridges for use in South Africa with this blended fuel.

In the last year several airlines as well as the United States Air Force (USAF) conducted test flights using a blend of jet fuel and bio-derived fuels, made from various plants, such as jatropha. The airlines are: Virgin Atlantic Airways Ltd., Air New Zealand, and Continental Airlines Inc. In the case of the USAF, they have flown high performance aircraft with 100% fuel produced from natural gas.

Most recently, Japan Airlines also conducted a successful test using a biofuel blend.

This technology is changing all the time as new feedstocks that do not interfere with the food chain are being developed. In the United States, the new administration of President Barack Obama also appears to be ready to tackle the energy crisis by seeking solutions in many areas, including renewable energy and alternative fuels.

For information on the test flight conducted by Continental Airlines:
www.bloomberg.com/apps/news?pid=20601081&sid=ayiWn9Z4EwIM&refer=australia

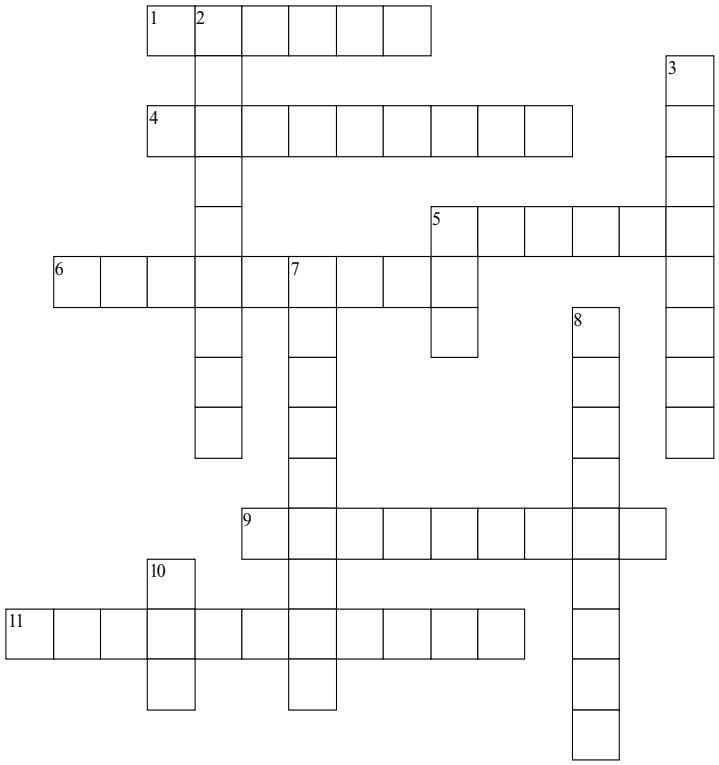
For more information about the recent test flight in New Zealand using a Jatropha-blended jet fuel, as well as a video link, please see:
www.airnewzealand.co.nz/aboutus/biofuel-test/
(Please note the importance of taking oxygen out of the oil when it is to be used in an aviation application.)

For a report on Japan Airlines' test:
http://biofuelsdigest.com/blog2/2009/01/30

See also *http://spectrum.ieee.org/aug07/5492* and *http://spectrum.ieee.org/sep08/6694*

Solve this Puzzle and Win with Velcon!

Test your knowledge of filtration, fuel handling and other industry information. If you are attending the AIE show, stop by Booth # 1145 for the solution key and a prize, and a chance to win a stuffed animal from Kathy's Kreations (*www.kathyskreations.com*), as shown on page 4. If you won't be attending the Aviation Industry Expo, contact Velcon at vfsales@velcon.com for your solution key.



 www.crosswordweaver.com

ACROSS

1. Type of helicopter
4. Part of a vessel to which cartridges are connected.
5. Device used to hold cartridges in place within a vessel
6. First stage cartridge in a filter/separator
9. Second stage cartridge (often Teflon® coated)
11. Static charge is one type of this

DOWN

2. Baffle plates should be used in this type of vessel
3. This plant is used to make a bio-blended jet fuel
5. A Velcon product that reclaims/re cycles sumped fuel (abbr.)
7. Type of fuel made with the Fischer-Tropsch process
8. A natural type of fuel
10. Velcon's product that analyzes fuel for water and solid contaminants (abbr.)

Fill out this form and drop it off at Velcon's booth, #1145, for a chance to win!

- Name: _____
- Company: _____
- Title: _____
- Address: _____
- City, State, Zip: _____
- Country: _____
- Email address: _____
- Phone/Fax: _____

Employees, distributors, and affiliates of Velcon Filters, Inc. are ineligible to enter and participate in the Contest or be awarded or retain any Contest Prize.

Show Dates & Hours:

Tues., March 10, 10:00 am - 5:00 pm
Wed., March 11, 10:00 am - 5:00 pm
Thurs., March 12, 10:00 am - 2:00 pm

This year the show is being held in the Las Vegas Convention Center. Stop by **Velcon's booth (number 1145)** and see demo units of SRS and VCA®. We look forward to seeing you there!

For more information please see ***aviationindustryexpo.com***

Registration Information:

We strongly suggest avoiding lines by registering online, by fax, or by mail prior to the event. The onsite registration fee will be $25 for an Exhibit Hall Pass.

There are three ways to register before the show and avoid the $25 fee. Go to this web site: ***aviationindustryexpo.com*** and click "Register to attend". From there you can either register onlne or download the registration form and either fax or mail it as directed.

When you register, please use PRIORITY CODE "VIPE".

Win with Velcon!

Test your fuel handling knowledge and puzzle solving skills! Page 3 of this newsletter contains a crossword puzzle. The answers to the clues are found within the pages of this Clarifier newsletter and on Velcon's web site, www.velcon.com. Fill out the puzzle and bring it with you to the Aviation Industry Expo in March. Bring it to Velcon's booth (#1145) to receive a special prize. You will also be entered into a drawing to win one of the cute stuffed bobcats shown here!

API/EI 1581 5th Edition Qualification Test

On July 17 & 18, 2008, Velcon Filters, Inc. ran a witness test to *API/EI 1581 Specification and Qualification Procedures for Aviation Jet Fuel Filter/Separators*, 5th Edition, as follows:

Category M100 (Military – JP8+100 fuel), three stage filter/separator vessel HVS-2628 at 600 gpm

- Horizontal, End-opposed Side Opener Vessel, containing
  - 10 x I-628A4TB coalescers
  - 8 x SO-616GS separators
  - 40 x FOW-215 filters

The test was successful, making this the 19th successful qualification test for this 5th edition for Velcon. For a complete list of Velcon's qualification tests, please see *www.velcon.com/vessels/vessel.html.*

The Importance of Spiders

CAUTION: FAILURE TO INSTALL SPIDERS CAN RESULT IN POOR VESSEL PERFORMANCE AND INTERNAL FIRE OR EXPLOSION FROM STATIC DISCHARGE

Below is an updated article that originally appeared in the "Clarifier" Newsletter in October, 2001 (Vol. 12, No. 3).
Spider plates (spiders) are an important part of a filter separator vessel. Spiders are usually made of aluminum or stainless steel, and may be rigid or open-mesh design. Spiders are fitted over the ends of various types of filter cartridges within the filter vessel.

There are five purposes for spiders in vessels:

1. To keep the cartridges separated in order to equalize flow around the cartridges, and to provide paths for the coalesced water drops to fall to the sump
2. To give support to the "free" ends of the cartridges (the ends not rigid against the deckplate)
3. To prevent microbial growth
4. To meet API/EI 1581 5th Edition requirements
5. To prevent static discharge and internal fires

Keeping the coalescers (first stage cartridges) from touching each other enhances the coalescing process by giving room between the coalescers for the water to fully form into drops 1/8 to ¼ inch in diameter, and then having room to fall by gravity to the sump at the bottom of the vessel.

It is very important to support the free ends of cartridges, particularly the heavy coalescers in horizontal vessels. Without a spider supporting the free ends, and without the spider being rigidly clamped or clipped to the vessel interior, the free ends can be exposed to heavy vibration which could eventually loosen the mounting ends leading to bypass, or even rupture the mounting.

Another reason to keep the coalescer socks from touching each other is to reduce the microbial growth area. Have you ever seen a light or dark grayish or blackish line running vertically down a coalescer? This is microbial growth.

API/EI 1581 5th Edition Specification requires the use of spiders for cartridges longer than 18 inches (3.2.2.13) as well as certain minimum spacings between coalescers, separators (second stage cartridges), and between coalescer and separator within qualified vessels (3.2.2.15). To maintain such spacing a spider is required.

Spiders in the various vessels should not be allowed to become "unbonded charge collectors." A solid electrical path from the spider to the vessel shell is essential. This can be accomplished through the tie rods that make solid contact with the spider, or by contact with a metal clip attached to the side of the vessel. (Some filter/separator vessels have 2 spiders as shown in Fig. 1).

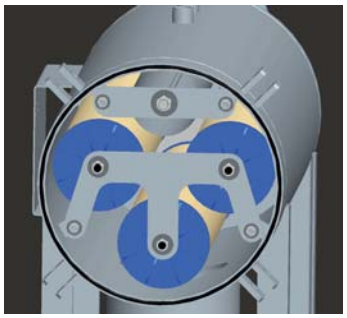


Figure 1. *Two spiders in horizontal filter/separator bonded by clips to vessel.*

The spider for the separators is electrically bonded to the tie rods that are bonded to the vessel. However, the other spider on the screw-base coalescers might not be bonded to anything (it thus becomes an "unbonded charge collector" which could lead to fires in the vessel). Insure that these spiders are bonded electrically to the vessel by attaching to a metal clip, or by a braided stainless steel wire to the separator spider (see Fig. 2).

Figure 2. *Two spiders in vertical filter/separator bonded together with braided stainless steel wire, bonded to vessel via separator tie-rods.*

When converting a pre-filter (micronic) vessel from open-ended cartridges with tie rods to screw-base cartridges, ensure the spider is somehow bonded to the vessel either by support clips on the vessel interior or by the braided stainless steel wire to the baffle plate (see Fig. 3).

Figure 3. *Spider on pre-filter bonded to baffle with braided stainless steel wire.*

A prefilter vessel with no internal baffle plate is a problem. The purpose of the baffle plate or angle iron is to divert flow to the top of the vessel so the full flow does not all work against the nearest cartridges. Without the baffle plate, the nearest cartridges to the inlet can be torn apart. This vessel had been converted to screw-base filter cartridges, and had an unbonded spider at the top. There was visual and audio evidence of internal electrical discharge. Spiders, properly bonded, are important components of filter vessels!

Velcon Service Awards

Congratulations to these Velcon employees who have recently celebrated special anniversaries with Velcon:

30 Years
Dave Taylor (CO)
Joyce Steveson (AL)

20 Years
Gene Johnson (CO)

10 Years
Bernie Pittman (CO)
Becky Glenn (CO)

25 Years
Shirley Blair (AL)
Rachel Garrett (AL)
Era Hopkins (AL)
Gussie Kelley (AL)

15 Years
Robin Mason (CO)
Ron Davis (CO)

5 Year
Dennis Thompson (CO)
Karl Hinkle (CO)

IMPORTANT REMINDER!

Velcon Filters, Inc. no longer recommends the use of monitor elements in pre-blended fuel. Please see Service Bulletin Vol. 5 No. 1, available on our web site at *http://www.velcon.com/doc/Vol5-No1-05.30.06.pdf* or scroll down on the home page, *www.velcon.com*, on the left column - "Important Bulletin".

Velcon Filters, Inc.
Attn: Robin Mason
1210 Garden of the Gods Road
Colorado Springs, CO 80907-3410
Phone: (719) 531-5855
Fax: (719) 531-5690
e-mail: **vfsales@velcon.com**
Velcon Filters, Inc. is an Equal Opportunity Employer

If you know anyone who would like to receive ***The Clarifier***, fax or email their name,company and address to the address listed on the left.

We also welcome your comments and suggestions on topics covered in ***The Clarifier***.

PRSRT STD
U.S. POSTAGE
PAID
COLO SPGS, CO
PERMIT NO. 623

1210 Garden of the Gods Road
Colorado Springs, CO 80907-3410