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BULLETIN NO. 155

Manufacturer Notification Awareness - Water Barrier Filtration

13 December 2024

THIS BULLETIN REQUIRES URGENT ACTION BY ALL JIG MEMBERS WITH INTO-PLANE OPERATIONS USING WATER BARRIER FILTRATION

BACKGROUND:

A **Product Safety Awareness Bulletin** was issued by Parker Velcon on 6th December regarding a manufacturing defect affecting an unknown number of water barrier elements. This defect, caused by improper application of the dye used in the black outer sleeve, allows some of the dye to be released shortly after contact with fuel resulting in a colour change of the fuel (to a blue / grey colour). The Product Safety Awareness Bulletin indicated that this issue affected elements manufactured between July 1st and December 31st, 2023.

Since issue of the Product Safety Bulletin, JIG has received a report of Jet fuel being affected after contact with Water Barrier Filter elements manufactured outside of the date range indicated above. This JIG bulletin is therefore applicable to **ALL WATER BARRIER FILTER ELEMENTS**, regardless of manufacturing date, manufacturer or model number (e.g. CDFX, FWB, etc.).

Where Water Barrier Filter elements cause any colour change of the fuel, the elements and the fuel are not acceptable for use and shall be quarantined and excluded from aviation use.

Examples of Jet Fuel colour change from WBF dye:



Picture A shows dye being released from the element after soaking for a short time

Picture B shows the soak fuel (left) colour has changed from the before soak fuel (right) - after the elements have been soaked for 20 minutes in the fuel.

Picture C shows significant fuel colour change from a high concentration of dye. It is unlikely that such a bright blue will be observed during soak testing of a single element.

Additional samples showing fuel colour change:



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ELEMENTS WITHIN SCOPE OF THIS BULLETIN

ALL WBF elements currently held in stock, and any new elements received shall have their manufacturing date checked, regardless of manufacturing date, manufacturer or model number (e.g. CDFX, FWB, etc.). Note that the manufacturing date will be in the format MM/DD/YY or MM/YY.

Reminder: this requirement applies to all elements, as the outer wrap with the manufacturing defect may have been used in all available models and lengths of WBF.

There is no requirement to open filter vessels which have already had WBF elements installed, regardless of the elements manufacturing date.

IMMEDIATE ACTIONS FOR OPERATIONS WITH WATER BARRIER FILTERS

All organisations Operating to JIG Standards using Water Barrier Filter elements, shall implement the following actions immediately:

1. Manufacturing Date Verification

Sites shall check manufacturing dates of all Water Barrier elements that are in stock at the site. These dates are printed on the shipping carton, on the element plastic bag sticker, and on the end cap of each element. The date format is MM-DD-YY (example photo below of Parker Velcon CDFX plastic bag labelling).



2. ALL Water Barrier elements manufactured before January 1st, 2024, **shall be quarantined and not installed** into any filter vessel. Contact the manufacturer / distributor as soon as possible for assistance and replacement elements.
3. ALL Water Barrier elements manufactured from January 1st, 2024, **shall be subjected to the testing protocol** defined in Appendix 1 of this Bulletin before installation into the filter vessel.

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4. Until further notice, **Water Barrier Filters shall not be used in Avgas service** (Already installed elements may continue in service). This temporary restriction is introduced because the testing protocol in Appendix 1 is unlikely to be effective in identifying any colour change compared to the normal fuel colour of Avgas. The testing protocol is also not appropriate due to the different flammability and handling considerations of Avgas grades. As a result, there is no meaningful way to assess the suitability of Water Barrier Filter elements for service with Avgas.

Note that items 3 and 4 above are intended to be temporary measures until such time that further information regarding quality assurance of elements is provided and a further Bulletin is issued by JIG.

NOTE THAT THESE ACTIONS APPLY TO ALL WATER BARRIER ELEMENTS, REGARDLESS OF MANUFACTURING DATE, MANUFACTURER OR MODEL

MONITORING OF ISSUES WITH WATER BARRIER ELEMENTS.

Operators shall notify **JIG** if any of the Water Barrier elements tested at their sites are affected by the issue described in this JIG Bulletin 155, by sending an email with details of the element batch, date of manufacturing, and if safe and possible, photos of the fuel colour change, for monitoring proposes. **Information will be managed confidentially, and the JIG Team will anonymise organisation name/site before sharing with JIG Filtration Working Group and manufacturer (unless JIG receives a different instruction from the organisation).**

Notification email: filtration@jig.org

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ACTIONS TO IMPLEMENT THIS BULLETIN (SEE TABLE 2 FOR ACTION TYPE CODES)

Action Description	Action Type	Effective date
Entities operating to JIG Standards using Water Barrier filter elements (of any manufacturer or model number), shall implement this Bulletin with immediate effect , in accordance with the requirements detailed in this document.	JS	Immediate
Operators who identify Water Barrier Filters which cause a colour change of the fuel shall withdraw the elements and fuel from use and inform JIG via the JIG Filtration email, as soon as possible.	JS	Immediate

Table 2 Action Type Codes

Action Types	JIG Bulletin Action Type Definition
JS	Change to JIG Standard – to be adopted by JV and/or Operator to continue to meet the JIG Standard(s) (JIG 1, 2, 4, EI/JIG 1530 and the JIG HSSE Management System).
RA	Required Action to implement one off verification or checks outlined in the table of actions.
RP	JIG Recommended Practice which the JV should consider adopting as its own practice (**).
I	Issued for information purposes only.

Note (**) - If the JV agreements require any of the JIG Standards and/or any of the JIG Common Processes as the governing operational standard then adoption of changes to applicable JIG Standards and/or Common Processes should not be considered optional by the JV Board.

If you have any questions about this Bulletin, please write to filtration@jig.org

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APPENDICES

Appendix 1 – Water Barrier Testing Protocol – Full Immersion Soak (bucket method)

Equipment needed to implement Testing Protocol

- Large bucket (minimum 10 litre)
- Drip / spill tray
- 2 clear glass containers / bottles (minimum 1 litre volume)
- Clean Fuel
- Camera (where safe to take pictures)



Testing Protocol Procedure

1. Clean bucket. Place bucket inside drip tray. Remove elements from packaging and place elements in the bucket.
2. Fill one of the clear glass bottles with the same fuel which will be used to soak the elements. Put aside as the '**control sample**' used for the visual comparison in step 8.
3. Fill the bucket with fuel to submerge as much of the element as possible (approx. 1-2 inches from the top of the bucket, so that at least half of the element is wetted with fuel) and leave to soak **for a minimum of 20 minutes**, observing periodically for signs of dye being released from the element.
 - a. If any dye is observed, take pictures and continue the test to completion.
4. Turn all elements over so that the opposite end (half) of the element is submerged in the fuel and leave to soak **for a further 20 minutes (minimum)**, observing periodically for signs of dye being released from the element.
 - a. If any dye is observed, take pictures and continue the test to completion.
5. After the soak period, carefully remove the elements and place them in a clean bucket.
6. Inspect the fuel for any signs of dye / colour change.
 - a. If any dye is observed, take pictures and continue the test to completion.
7. Collect a sample of the fuel from the bucket into the other clear glass bottle (this is the '**soak sample**').
8. Place the 2 samples ('control' and 'soak') next to each other with a white background and compare the colour of the samples. Take pictures of the samples.
9. If any dyes or fuel colour change are observed, the elements shall be quarantined and shall not be installed into any filter vessel.
 - a. **Any fuel which has changed colour shall be downgraded to non-aviation use.**
10. **If there is no evidence of any dyes or fuel colour change, the elements may be installed into the filter vessel.** After the vessel has been filled with fuel, it **shall be left to soak for a minimum of 20 minutes**. Then take a low point sample to re-confirm no fuel colour change. Product shall be circulated through the unit (filter vessel) to complete the installation following **JIG 1 A5.3.2** requirements.

NOTE: This testing protocol has been developed with information from issues reported in field use. This protocol may need to be updated as further information is gathered from field experience.

All WBF elements manufactured from 1st January 2024 need to be tested before being installed

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