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Two years ago, the COVID pandemic forced global experimentation with remote training. On 20 April 2020, IWCF introduced virtual classroom training, which transformed the way we do business. We were posed with not only challenges but also opportunities.

We recognise the transition from face-to-face training to virtual has been a challenge, as many instructors and candidates were introduced to virtual classrooms for the first time.

Two years on, we would like to thank our instructors and assessors for overcoming the challenges they were faced with and ensuring the successful delivery of our virtual training courses and assessments.

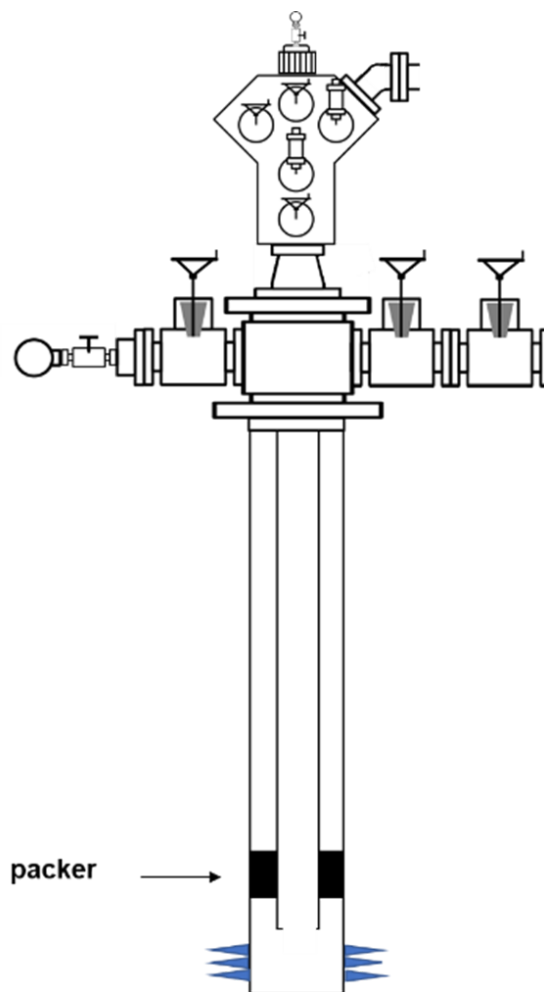
We recently created an IWCF Virtual Training Feedback Group on LinkedIn. We encourage all Instructors and Centres to participate and provide information on experiences, improvements, solutions, and general feedback. To access the group on LinkedIn please click on the link below: <https://www.linkedin.com/groups/12458393/>

## **IOGP Lessons Learned**

We monitor IOGP's 'Well control incident lesson sharing', which is a regular email that alerts the industry to recent incidents with the hope of sharing knowledge and preventing future well control incidents.

IOGP shared well control Lesson 22-1 on January 2022. The lesson is titled '*Gas flow while setting tubing hanger in wellhead*'.

included a retrievable packer, tubing string, tubing hanger and Xmas Tree.



The programme did not require displacing the tubing and 'A' annulus to a kill weight fluid before removing the Xmas Tree. After confirming there was no flow from the tubing or annulus, the Xmas Tree was removed. There was now a single barrier on the tubing side and on the annulus side:

- Tubing barrier - overbalance fluid inside the tubing
- Annulus barrier – tubing string and packer

The tubing hanger needed to be replaced with a different type of hanger before the rig BOPs could be installed.

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team decided to unseat the packer to allow the tubing hanger to be re-landed. The rig team did not recognise that unseating the packer removed a well barrier. There was no risk assessment or management of change process in this decision.

### **What caused the incident?:**

- Gas flowed to surface after the packer was unseated.
- The crew managed to land the tubing hanger and nipple up the rig BOPs while gas flow was diverted out of the 'A' annulus side outlet.
- The blowout was stopped by closing the BOP pipe rams and then closing the 'A' annulus.

### **What Went Wrong?: (taken directly from IOGP)**

Inconsistency of approved well program execution:

- Hydrostatic barrier prior to x-mas tree removal was not established – decision was based on accepted practice from previous well execution.
- The risk of unsetting packer was not communicated and addressed.
- Well control risks of well program deviation (i.e. unsetting completion packer and not establishing hydrostatic pressure barrier) were not recognized nor followed with Risk Assessment (RA) and Management Of Change (MOC) process.

### **Corrective Actions and Recommendations: (taken directly from IOGP)**

- Displace Kill Fluid prior to beginning a single barrier operation and ensure all well programs for special operations require a hydrostatic barrier to be in place at all times.
- Install flow control to pump and bleed prior to commencing operation.
- Retrain rig personnel on hazard recognition and the MOC process.

Both the IWCF drilling well control (DWC) and well intervention pressure control (WIPC) syllabi contain key topics that aim to prevent these incidents.

**We have created a short explanation below on how these lessons relate back to the IWCF Drilling and WIPC syllabi.**

Well integrity assurance, risk management, management of change (MOC) are learning objectives of the WIPC syllabi, the learning outcome risk level is classified as a necessary knowledge to prevent moderate/serious risk to life, limb, or environment.

Below we have listed several syllabus items that highlight the importance of these topics.

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*Well integrity requirements throughout the well life cycle*

**WI-SF-COM-02.03.01**

*Risk management principles and practices*

**WI-SF-COM-02.04.01**

*The management of change (MOC)*

**WI-SF-COM-02.06.01**

*Well intervention pressure control training and assessment*

**WI-SF-COM-04.01.02**

*Well barrier elements and envelopes in intervention and completions*

**WI-SF-COM-04.01.03**

*The principles of different well barrier element types*

Please note that IWCF aligns with the requirements of the **ISO-16530 Well Integrity Standard**, which requires ‘at least two independent well barriers along any leak path’. Therefore, this type of single barrier operation is not part of the IWCF syllabus.

You can find this lesson and previous examples of IOGP’s ‘lessons shared’ on the [IWCF website](#)

## Instructor Focus

This section of the newsletter contains information that may be relevant for instructors and their training material.

All WIPC instructors have been contacted with their login details to the Instructor Hub. Instructors can participate in the WIPC LinkedIn Group where they are able to contribute and receive updates that have been released. Below follows the links to the LinkedIn groups.

IWCF Well Intervention Pressure Control: <https://www.linkedin.com/groups/7440658/>

If you have questions relating to the below information, please contact [assessmentdevelopment@iwcf.org](mailto:assessmentdevelopment@iwcf.org)

## Drilling Well Control (DWC)

In recent months, our candidate review process has highlighted several syllabus areas in which candidates may need more support.

<b><i>Syllabus code and description</i></b>	<b><i>Suggested areas for instructor focus</i></b>

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	<p>The required frequency and test values for DPSVs and IBOPs (reference API standards).</p>	<p>equipment and language used in the latest edition of API STD 53 (2018).</p> <p>The level 4 candidates are required to know the BOP and equipment testing requirements for both frequency and relevant test values for all equipment specified in API STD 53. It is recommended that the instructor material is reviewed against tables C1-C6 (surface) and C7-C14 (subsea) for equipment components and test types / values.</p>
	<p><b>DR-SF-PNP-03.01.06</b></p> <p>Barrier terminology – ‘primary’ and ‘secondary’ barrier elements.</p>	<p>Feedback shows that candidates do not have sufficient understanding of barrier concepts and terminology.</p> <p>It is critical that an identified barrier can act to secure the section of the well or the required component location.</p> <p>For a two barrier (primary and secondary) to be effective, barriers must be able to maintain their competency without reliance on the other identified barrier.</p> <p>For example, a fluid column and a side outlet valve would not be sufficient for both primary and secondary barrier because failure of the side outlet valve would also lead to failure of the fluid barrier (however failure of the fluid barrier would not necessarily mean failure of the side outlet valve).</p> <p>In addition to the above, candidates need to understand that hydrostatic barriers have different acceptance &amp; maintenance criteria to mechanical barriers. The IWCF syllabus highlights these differences.</p> <p>It is recommended that the instructor material for barrier terminology and identification should be reviewed to ensure it is in alignment with the latest IWCF learning outcomes.</p>

### Well Intervention Pressure Control (WIPC)

The next planned release of new WIPC question bank content, will take place 29 August 2022. This update includes selected content for optional modules (wireline, coiled tubing, and snubbing).

This document aims to give instructors additional recommendations to help them prepare for the upcoming release of new content.

In December 2021 we circulated 'Well intervention pressure control – Supporting Information for Instructors - February 2022 deployment'. Following feedback, we have made an update to our recommendation for learning outcome WI-SF-SNO-02.01.01 'Snubbing BHAs'. The recommendation now includes a reference to NorsokD-010 (2021) Section 13.3.

The updated document can be downloaded from the Instructor Hub on our website.

We would like to thank the instructors who took part in our Well Intervention feedback call sessions. We received valued feedback which will assist us in making positive and constructive improvements to future instructor support.

If you have any questions related to the WIPC project, please email [assessmentdevelopment@iwcf.org](mailto:assessmentdevelopment@iwcf.org)

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## Instructor Recommendations

The following are common areas where training materials have not complied with the details of the WIPC syllabus. This notice is to highlight these areas to ensure training centre internal review takes place. It is important that candidates understand what is expected of them when they take the WIPC assessment.

It is felt that by including references to the below items in training materials, suggests endorsement, which is wrong.

### **Manually operated slickline stuffing boxes**

These tools are not recommended because they cannot be operated safely.

Crew would be required to work at height and function the stuffing box while hydrocarbons are flowing through them.

Hydraulically operated stuffing boxes should be used.

in the PCE above it or the lubricator will need to be lifted with wire in the well.

If hydrocarbons are leaking from the PCE it would be unsafe to put a crew member into the area to close the BOP. No other intervention BOP is closed manually.

Hydraulically operated slickline BOPs are available that can be closed from a safe distance.

### **Single barrier slickline BOPs**

A single BOP does not provide a double barrier if the lubricator must be lifted when there are tools in the well. We have a double barrier principle that we must adhere to.

Therefore, there should always be a minimum of two, independently tested and hydraulically operated slickline BOPs in all rig up drawings and supporting materials.

### **Single barrier e-line BOPs**

E-line or braided line BOP consists of two sets. A standard BOP and an inverted BOP. These assemblies together make up only one barrier. To comply with the two barrier principle there must be a minimum of two sets.

These must be independently tested so it is not sufficient to rely on a single inverted BOP within a triple BOP. If the inverted BOP was to fail, then both standard BOPs would also fail.

### **Shear/seal BOPs referred to as tertiary barriers**

The term 'tertiary barrier' should not be used to describe shear/seal BOPs. The term is used for relief well drilling.

In principle a BOP that shears and seals is a type of secondary barrier.

Our candidate review process has highlighted a syllabus area that candidates may need more support in.

<b><u>Syllabus code and description</u></b>	<b><u>Suggested areas for instructor focus</u></b>
<b>WI-SF-EQP-01.01.01</b>	Feedback suggests candidates may not fully understand this equipment syllabus area.

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	<p>For example, a gas well that produces water.</p> <ul style="list-style-type: none"> <li>• If the internal diameter is too big, gas velocity might be insufficient to lift the water and the well will eventually die.</li> </ul> <p>Well construction should be planned based on the optimum design for well production. The completion internal diameter is the key element. If correctly sized will ensure that the production of hydrocarbons is not restricted and production can be maximised.</p>	
	<p><b>WI-SF-SNO-02.01.01</b></p> <p>PCE required for snubbing operations.</p> <p>Feedback suggests candidates may not fully understand this equipment syllabus area.</p> <p>Live well deployment must have the required barriers to be in place at all times.</p> <p>The SCSSSV should never be used for deployment purposes as there is always a risk of tools dropping into the well. It is rare for a SCSSSV to be leak tight.</p> <p>Although the integrity of the lower master gate valve on a Xmas Tree should always be good, it is not good practice to use this valve for general deployment requirements.</p> <p>Leaving the upper master gate valve and the swab valve to provide the two barriers from the well.</p> <p>For example, BHA and perforating guns need to be staged into the well. Unless there is a fit for purpose deployment configuration included in the rig up then they must fit in the riser above the swab valve. The lower stripping ram will need to be sealed on workstring so that when the Xmas Tree valves are opened the tools with non-standard outside diameters are already past the deployment seals.</p>	

## Assessor and Train the Trainer Dates

An updated assessor and train the trainer course nomination form has been released, dated February 2022. The updated document (AC-139) can be accessed in the [Members](#)



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## Virtual Assessor Course Dates



- 15 - 19 August 2022 - FULL
- 29 August - 2 September - FULL
- 19 - 23 September 2022 - FULL
- 17 - 21 October - FULL
- 7 - 11 November 2022
- 21 - 25 November 2022
- 5 - 9 December 2022

## Virtual Train the Trainer Course Dates



- 1 - 4 August 2022 - Limited
- 5 - 8 September 2022
- 10 - 13 October 2022
- 7 - 10 November 2022
- 5 - 8 December 2022

### Virtual Assessor Training Courses

Limited spaces are available for virtual courses, they are capped at a maximum of 3 participants to ensure the best candidate experience. Visit our website for more information and course dates.

Please contact [accreditation@iwcf.org](mailto:accreditation@iwcf.org) to reserve a place.

Our second face to face assessor course in two years will take place in August in Houston.

- 1 – 5 August – Houston, United States

Please contact [accreditation@iwcf.org](mailto:accreditation@iwcf.org) to reserve a place.

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## Virtual Train the Trainer Courses

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## You asked - We listened!

1. Could the Grading Analysis Sheets (GAS) be more descriptive, this will assist the instructor to guide the candidate on topics that need extra focus?

*The grading analysis sheet (GAS) is a tool which allows candidates to see areas where they have failed to answer correctly. Instructors can support candidates by using the information within the GAS to cross reference the syllabus area.*

*In 2021 we updated the Drilling Well Control (DWC) Grading Analysis Sheets to make them more descriptive.*

[Subscribe](#)[Past Issues](#)[Translate ▼](#)*DR-SF-EQP-06.01.02**The general operating principles of the remote-control panel.**The location of electric pressure (activation) switches for the remote control.*

*Cross referencing the code with the syllabus shows further information, including a detailed bulleted list of topics included in this question bank category. As all questions are based on the syllabus learning outcome, this should advise the candidate of targeted areas for retraining and revision.*

Please [contact us](#) if you have any feedback, questions, queries, or suggestions for future editions!

**Thank you!**

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