# Daya Bay Shift Starters Guide

~Even Professor can start Daya Bay shift~

Version 1.0

Hide TANAKA (BNL)

This is a **starters guide** for new shifters. This document covers only **minimal** information on the shift procedure. You **MUST** read full 'shift check' procedure carefully:

http://dayawane.ihep.ac.cn/twiki/bin/view/Internal/ShiftCheck

If you find any questions, please ask '**Weekly Run Coordinator**' or **LOM**.

## 1. When you start your shift...

1) Please make a note in **Shift Elog** for current **run numbers** and **trigger rates** (see below) for all detectors of three sites, like:
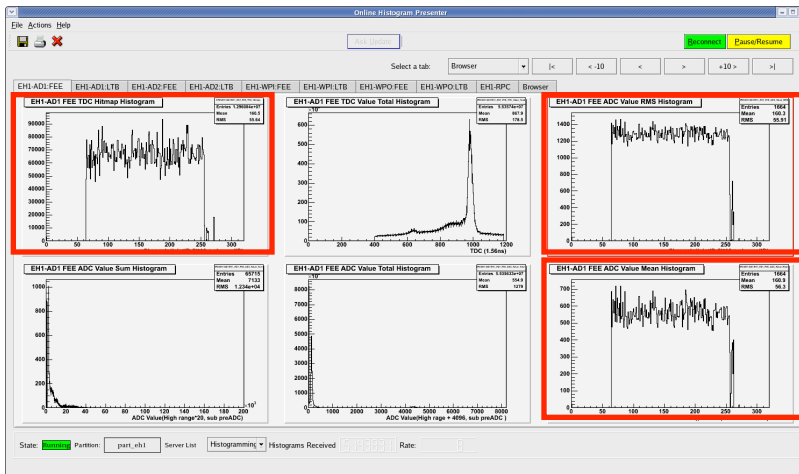


**Shift ELog:** http://web.dyb.ihep.ac.cn:8099/Shift/

And compare the trigger rates with that in previous shift.

The "trigger rate" can be found in "**CurrentEventSentRate**" by **double-clicking** each **detector name**:

2) Check '**Online Histogram**' for all detectors in three sites if any **new spike** or **dip in ADC and TDC hit-maps** (usually "OHP" is running in **second workspace**).



The list of "**known dead channels**" can be found at '**Standard Histogram**' page:

http://dayawane.ihep.ac.cn/twiki/bin/view/Internal/ShiftStandardHistograms

3) Go through '**Hourly Shift Check-list**' in the wiki-page:

http://dayawane.ihep.ac.cn/twiki/bin/view/Internal/ShiftCheck

4) And go through '**Additional Shift Checklist (Every 4 hours)**' that is also in the same wiki-page above.

*Repeat '**Hourly Shift Check-list**' and '**4-hour check-list**' during your shift.

***Keep recording in Shift ELog for everything** what you did/observed during your shift:

- Start & stop DAQ - run numbers and time
- Warning/error in DAQ,
- Alarm/error on DCS monitoring (HV, gas, water system etc),
- New feature in data
    - Trigger rate jump/drop
    - New dead and/or noisy channels
- Any activity in underground
- etc...

# 2. Take "Pedestal" and "FEEDiag" data

Take '**Pedestal**' and '**FEEDiag**' data **every time when start <u>new</u> 'Physics' run.**
(roughly every two days).  Normally the Pedestal and FEEDiag runs take ~30 sec each.

1) Stop DAQ by clicking **[Stop]** button.
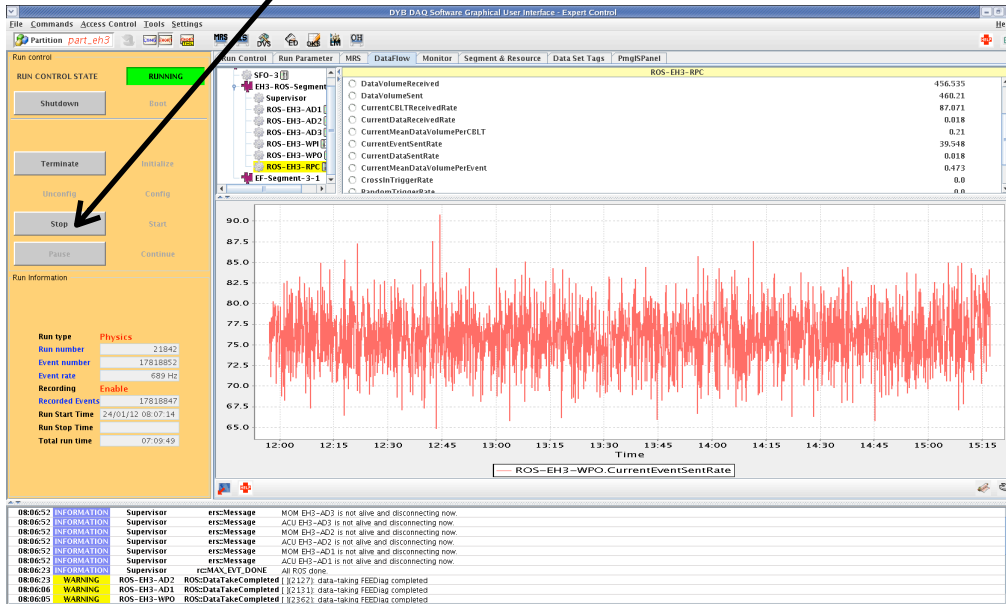


2) When you stopped run, make a note in **ELog** on **run number** and **stopped-time**

3) [Unconfig] button will be active then.  Click **[Unconfig]**

4) Go to "**Run Parameter**" tab (in DAQ GUI) and set **Run Type** and **Filename Tag**

- Pedestal:  Run type: **Pedestal**, Filename Tag **NoTag**
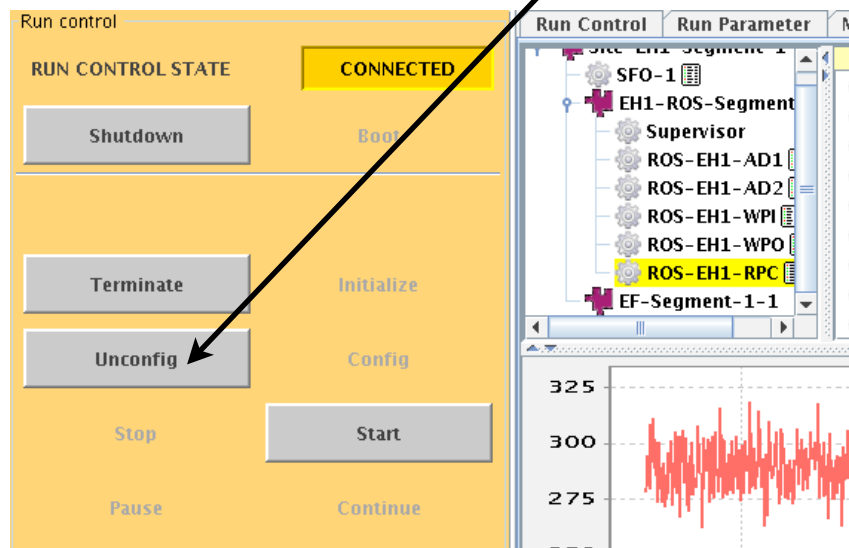- FEEDiag: Run type: **FEEDiag**, Filename Tag **NoTag**

Then, click **[OK]**                                      **Run Parameter** tab

| Monitor | Segment & Resource | Data Set Tags | CnISPanel |
|---|---|---|---|
| Run Control | | Run Parameter | MRS | DataFlow |

**Run Parameters**

| | |
|---|---|
| Run Number : | 18654 |
| Maximum Number of Events : | 0 |
| Detector Mask : | 2 |

Run Type ———→ Run Type :  **Physics** ▼

**Recording**
◉ enable                          ○ disable

Filename Tag ———→ Filename Tag :  **Neutrino** ▼

Computer Name :  daqs2

OK

5) Go to "**Run Information**" field (lower-left of DAQ GUI), and make sure "**Run Type**" is correct and "**Recording**" is **Enable**.

Run Information

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| | |
|---|---|
| **Run type** | **Pedestal** |
| **Run number** | 21829 |
| **Event number** | 234846744 |
| **Event rate** | 0 mHz |
| **Recording** | **Enable** |
| **Recorded Events** | 234846744 |
| **Run Start Time** | 23/01/12 08:22:54 |
| **Run Stop Time** | 25/01/12 09:09:20 |
| **Total run time** | 48:46:26 |

| 08:21:43 INFORMATION | Supervisor | ers::Message | ACU |
|---|---|---|---|
| 08:21:43 INFORMATION | Supervisor | ers::Message | MON |
| 08:21:43 INFORMATION | Supervisor | ers::Message | MON |

6) **[Config]** button should be active at this point.  Click [**Config**]
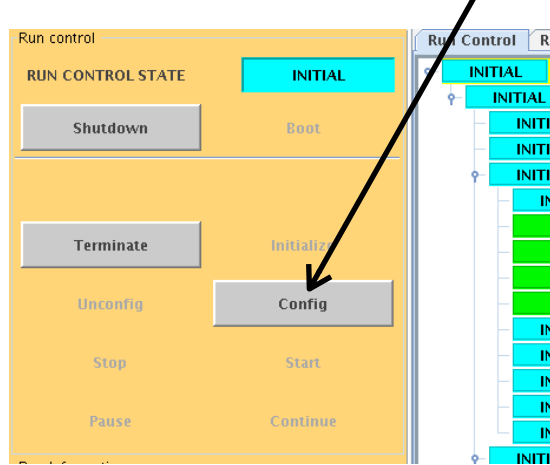


7) After [Config] clicked, check if any WARNING / ERROR / FATAL in **DAQ message window** (see below).  Then click **[Start]** to start the run.
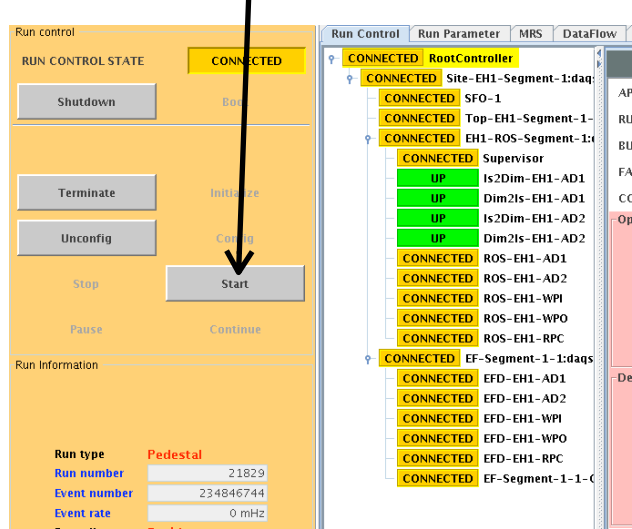


After clicked [Start], please check if any WARNING / **ERROR** / **FATAL** in the **DAQ message window**.



DAQ message window
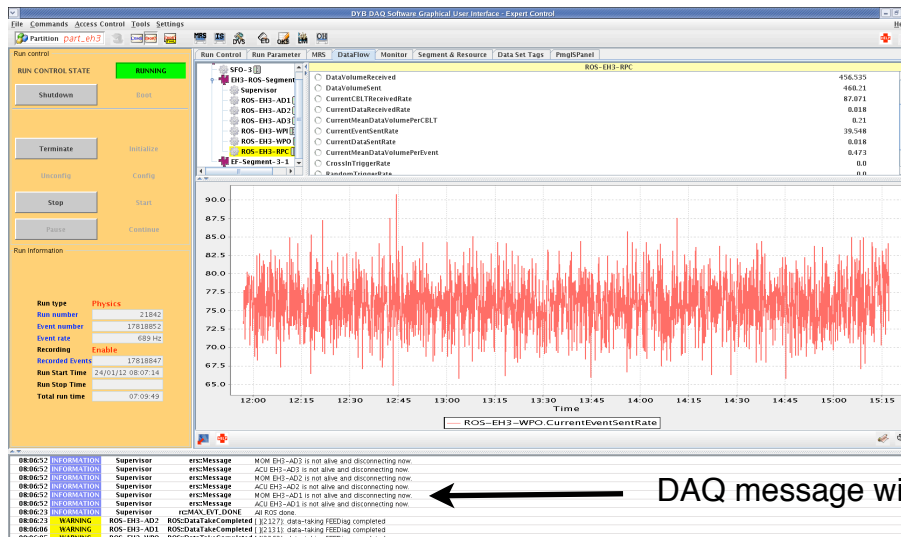
8) Make a note in ELog for **run number, run type** and the **start-time** of the run.


The 'Pedestal' and 'FEEDiag' run will be **automatically stopped**.  You do not need to [Stop] by yourself.  When the run stopped, **[Unconfig]** button will be active (also there will be a message "**All ROS done**" in **DAQ message window**).

Normally the run length of Pedestal and FEEDiag is around 30 seconds each.


9) When both 'Pedestal' and 'FEEDiag' runs were finished, we restart 'Physics' run:

    1) Click **[Unconfig]**

    2) Go to '**Run Parameter**' tab

    3) Set the '**Run Type**' to **Physics** and the '**Filename Tag**' to **Neutrino** and click **[OK]**

    4) Go to **'Run Information'** field (lower-left of DAQ GUI) and check '**Run Type**' is **Physics** and '**Recording**' is **Enable.**

    5) Click **[Start]** to start 'Physics' run

    6) Make a note in **ELog** for **run number**, **run type** (Physics), **start-time** of the run, and **trigger rates** for all detectors and **compare** with that in previous 'Physics' run.

    7) Check through all '**Online Histogram**' and check if any new dead (dip) or noisy (spike) channels.  Usually 'OHP' is running in the second workspace.

    8) Check through '**Hourly Shift Check-list**'

# 3. Take AD and WP calibration data (every Friday)

We take WP and AD calibration every Friday, starting at ~9:00 AM (in Beijing time).

WP calib run starts at ~9:00 AM, and followed by AD calib run at ~10:30 AM.

WP calibration takes ~1.5 hours, and AD calibration takes ~5.5 hours.

Before you start anything for WP and AD calib run, make sure 'Weekly Run Coordinator' or LOM is in the control room.


**WP calibration**

1) Call to WP on-call expert(s) with **skype**, and **keep the skype connection all the time** during the WP calib run.  The name(s) of WP calib on-call expert(s) can be found on the whiteboard in the control room and/or 'Weekly Run Plan' page:

   http://dayawane.ihep.ac.cn/twiki/bin/view/Internal/WeeklyRunPlan

2) Please follow "**MuCal Shifter Manual**" step-by-step. If you have any questions, ask WP calib expert on skype.

3) Once you started WP calib run, please make a note in **ELog** for **run number, run type** (WPCalib) and **start-time** of the run.

4) When WP calibration is running, the WP trigger rate looks like this:
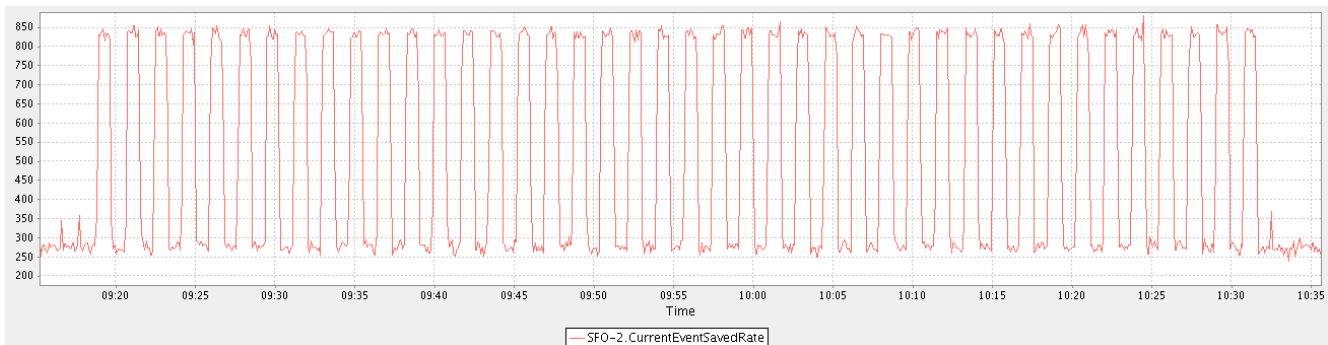


**If you find a long gap between peaks, tell WP on-call expert on skype immediately.**
(Probably we need to start over the WP calibration...)

## AD calibration

1) AD calibration will start right after the WP calibration finished.

2) Call to AD calib on-call expert(s) with **skype**, and **keep the skype connection for all the time** during the AD calib run.  The name(s) of AD calib on-call expert(s) can be found on the whiteboard in the control room and/or 'Weekly Run Plan' page:

http://dayawane.ihep.ac.cn/twiki/bin/view/Internal/WeeklyRunPlan

3) Go to DAQ GUI.  If 'WPCalib' or 'Physics' run is still running, ask 'Weekly Run Coordinator' or LOM to get the directions.

4) When DAQ stopped, [Unconfig] button should be active.  Click **[Unconfig].**

5) Go to "**Run Parameter**" tab, and set 'Run Type' to **ADCalib** and 'Filename Tag' to **NoTag**, and click **[OK]**

6) When [Config] button became active (**Do not click** [Config] at this point), tell AD calib expert on skype that DAQ is ready to run.

7) When AD expert told you that ACUs are ready, click **[Config]** and you will see a pop-up window from DAQ GUI and click **[OK]**.  Then AD calib run will be **automatically started**.

8) Make a note in **Elog** for **the first run number** of AD calib run and **start-time**.

> **'ADCalib' is fully automated.**  You do not need to touch DAQ during ADCalib run.
>
> Shifters need to keep eyes on **DAQ message window** if any **ERROR** or **FATAL** messages.  If any ERROR or FATAL, tell 'Weekly Run Co' / LOM and AD on-call expert on skype **immediately**.