

Control Room Status

ICARUS BNL internal meeting | December 19 2019

Diana Mendez



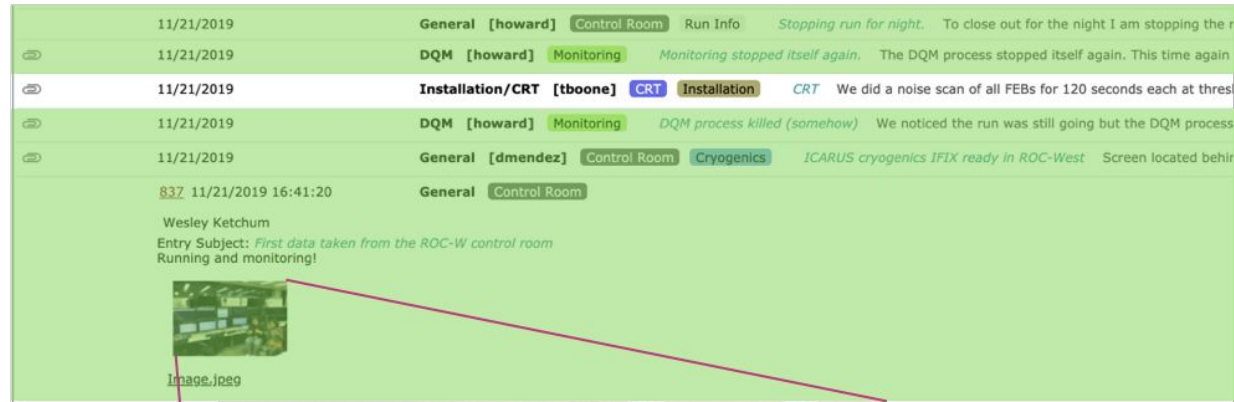
We have already been doing work

November 21st

First pass of setup
which took data and
used monitoring.

Have since developed
more & continued
testing from ROC-West
setup

Thanks to Wes
for his help, and
for taking pic!



First data taken using
CR machines!

ROC-West CPUs and screens

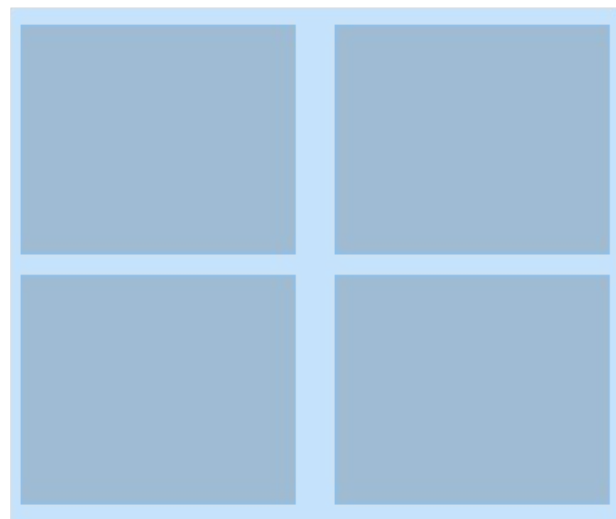
ROC-West computers

icarus cr 01 – 4 monitors

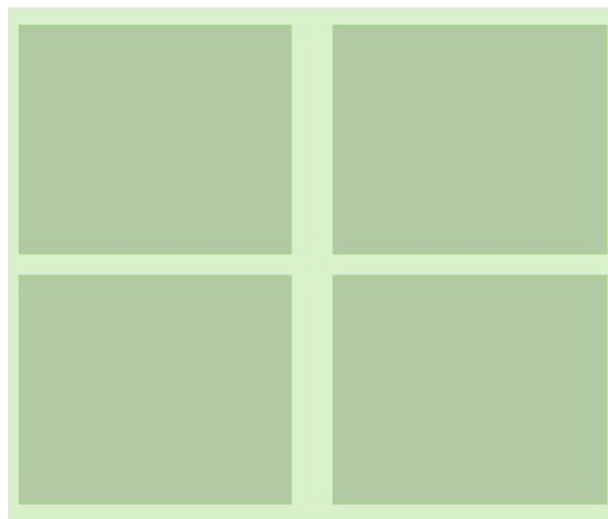
icarus cr 02 – 4 monitors

icarus cr 03 – 2 monitors

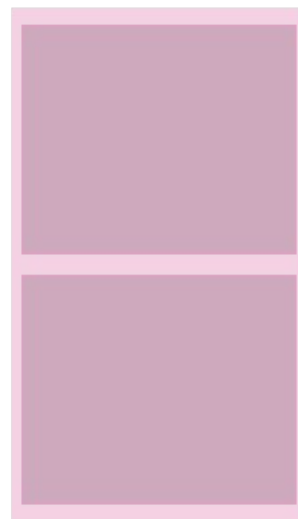
icarus-cr01



icarus-cr02



icarus-cr03



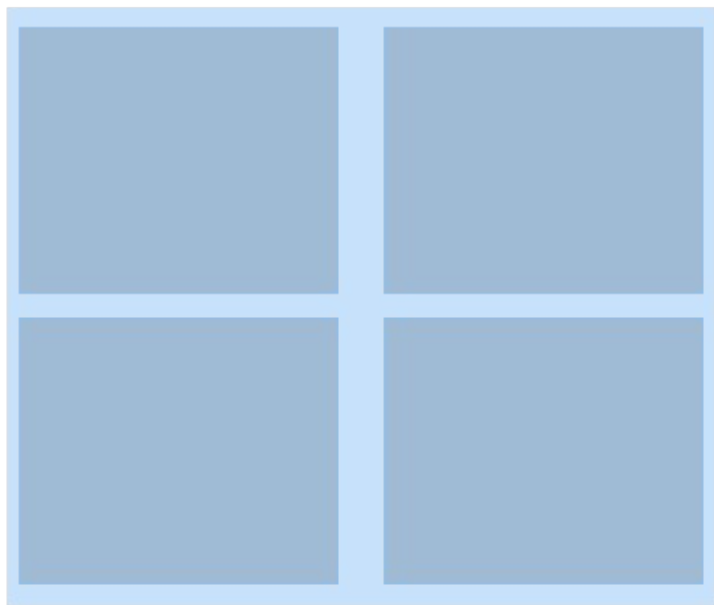
NOvA
main operations



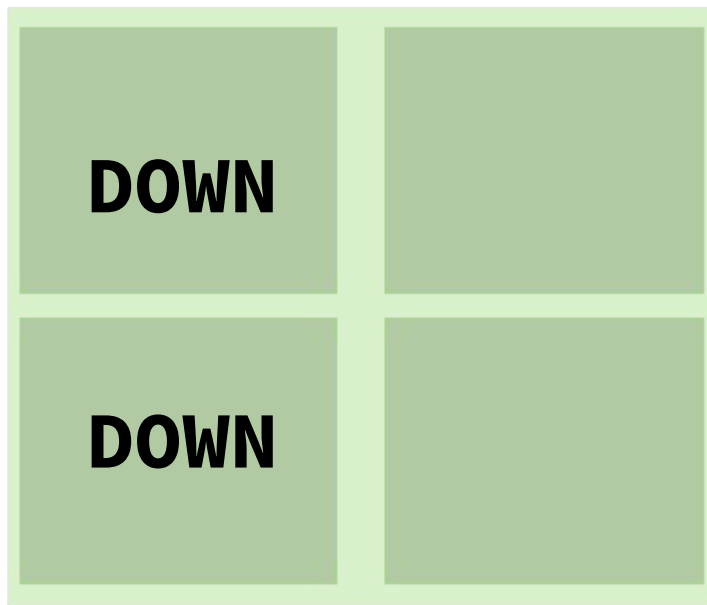
NOvA
test beam



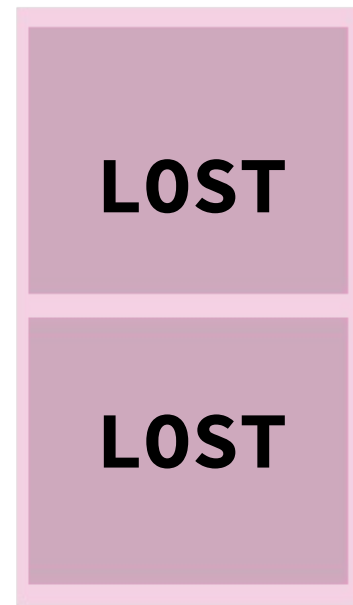
icarus-cr-01



icarus-cr-02



icarus-cr-03



Notes

- Computers: Will be getting **new CR computers** *shortly*, so will set things up again
- VNC: Testing NoVNC connected to evb-01, which only requires ssh tunnel & Internet browser
 - This option is more **flexible** than standard VNC. Still under test
- Users: have to be added one by one to CR machines
 - Need list of users or alternative keytab

Screens layout

* Further details in DocDB [15868](#) and [15584](#)

PENDING

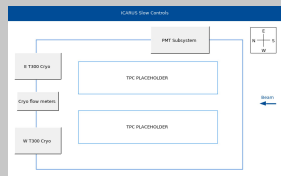


PENDING



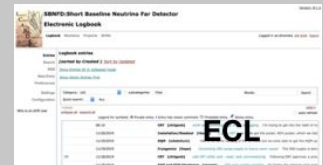
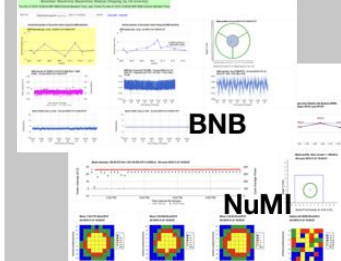
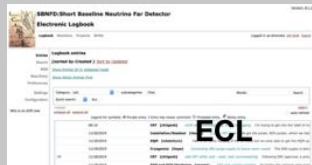
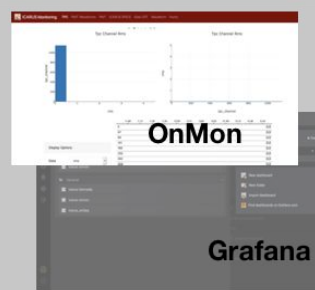
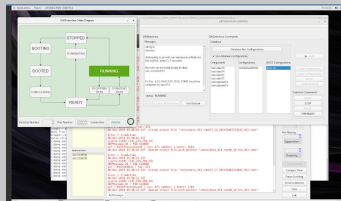
Description and slides

DEVELOPMENT

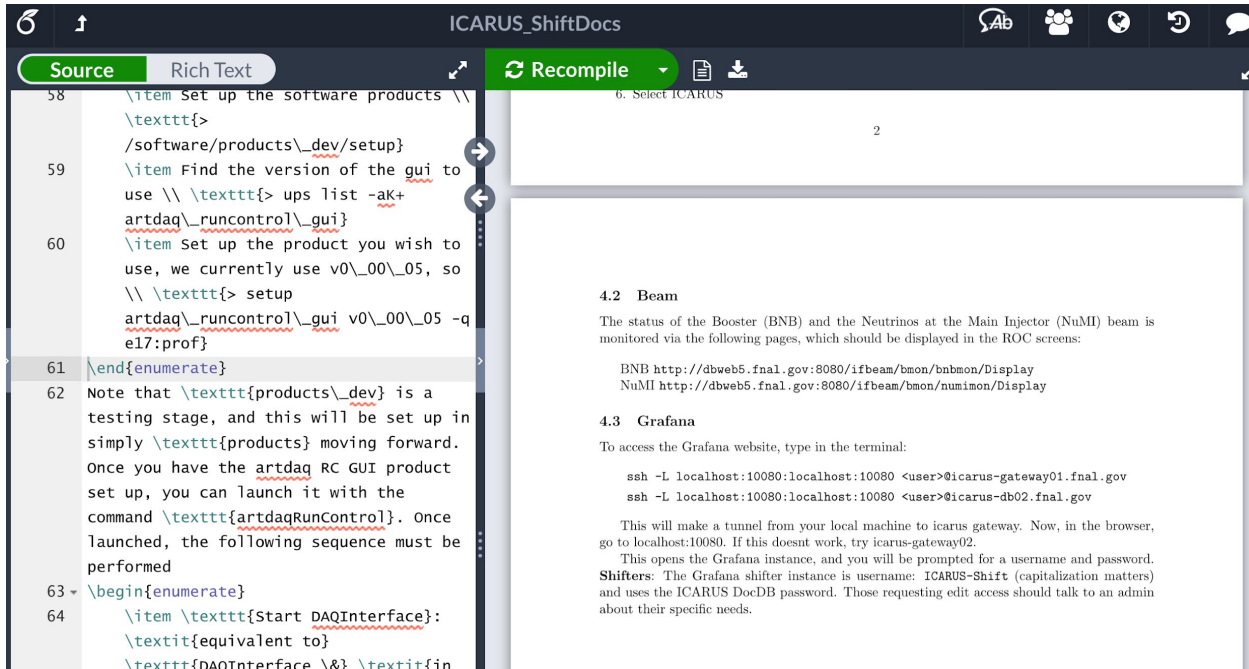


Slow controls
(Voltage and Cryo)

RC GUI



Control room master document



The screenshot shows a document editor interface. The top bar includes a search icon, a home icon, the text 'ICARUS_ShiftDocs', and several utility icons. Below the bar are two tabs: 'Source' (active) and 'Rich Text'. The 'Source' tab displays a code editor with lines 58 through 64. The code includes instructions for setting up software products, finding GUI versions, and configuring the artdaq GUI. The 'Rich Text' tab shows a rendered document with a heading '6. Select ICARUS', a sub-heading '4.2 Beam', and a paragraph about monitoring the Booster (BNB) and Neutrinos at the Main Injector (NuMI) beam. Below this, there are URLs for BNB and NuMI displays. Another sub-heading '4.3 Grafana' is visible, followed by instructions on how to access the Grafana website via terminal commands and a note about the Grafana shifter instance.

```
58 \item Set up the software products \\  
\texttt{>  
/software/products\_dev/setup}  
59 \item Find the version of the gui to  
use \texttt{> ups list -ak+  
artdaq\_runcontrol\_gui}  
60 \item Set up the product you wish to  
use, we currently use v0\_00\_05, so  
\texttt{> setup  
artdaq\_runcontrol\_gui v0\_00\_05 -q  
e17:prof}  
61 \end{enumerate}  
62 Note that \texttt{products\_dev} is a  
testing stage, and this will be set up in  
simply \texttt{products} moving forward.  
Once you have the artdaq RC GUI product  
set up, you can launch it with the  
command \texttt{artdaqRunControl}. Once  
launched, the following sequence must be  
performed  
63 \begin{enumerate}  
64 \item \texttt{Start DAQInterface}:  
\textit{equivalent to}  
\texttt{DAQInterface \&} \textit{fin
```

What has to be where

- Run Control GUI
- Pages to monitor (beam, grafana)
- Tabs to keep open (ECL)

How to

- Set up ROC connection (NoVPN)
- Tunnel for Grafana
- Initiate run (manually or with Run Control GUI)

Likely serves purpose in full form & also parts will be split into pages/sections on wiki
Very preliminary version in SBN DocDB 15944

Cryogenics

iFix Already up in ROC-West (behind main NOvA screens)

Got granted personal access to the `ppd-ifix2.fnal.gov` and successfully connected to it.

User list or keytab for connection from remote ROCs

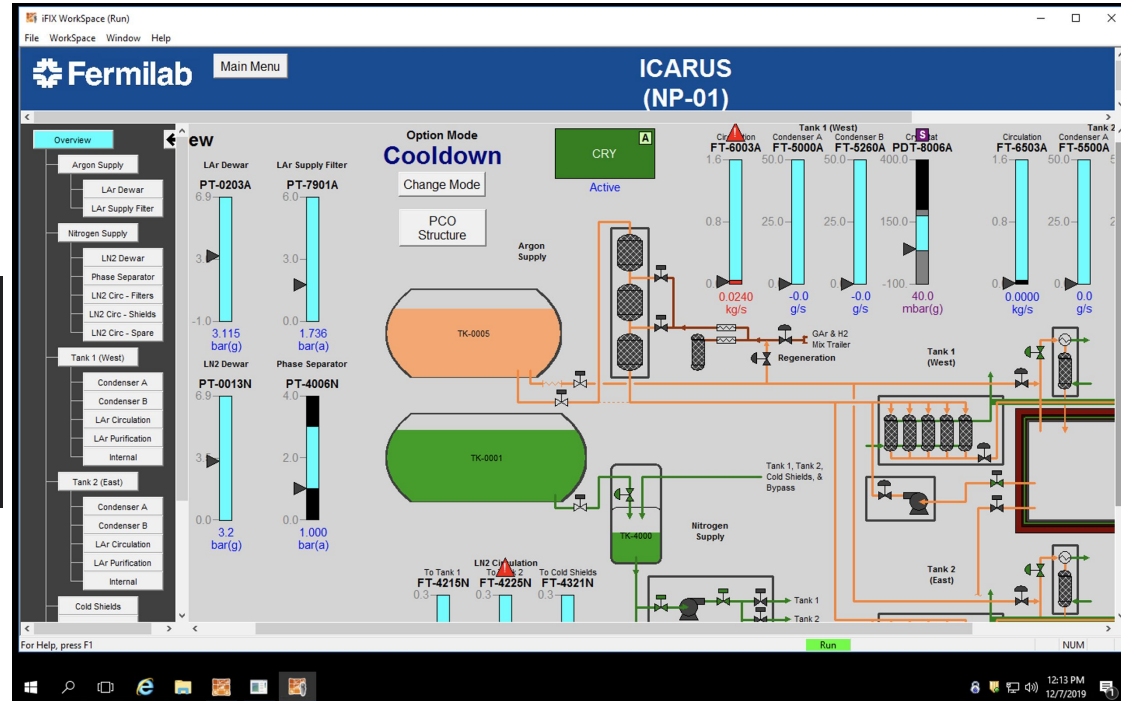
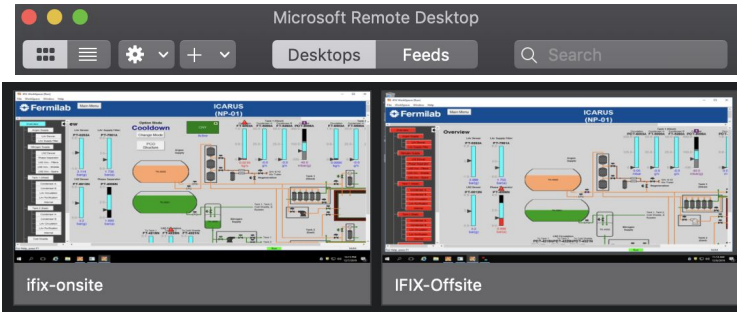
EPICS Already tested this week in ROC-West but final version still in under development

Summarizes iFix with relevant metrics to check during shifts

Cryogenics

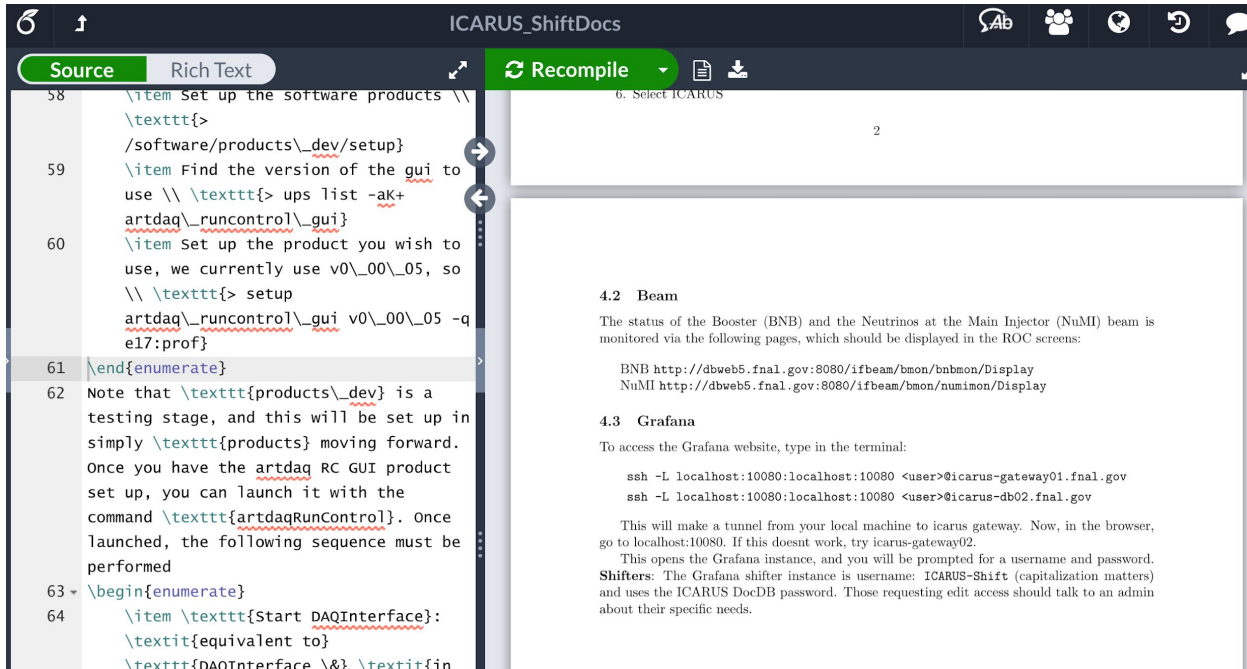
iFix RDP connection

Connection to PPD-iFix servers



Documentation

Control room master document



The screenshot shows a document editor window titled "ICARUS_ShiftDocs". The interface has a dark theme. At the top, there are tabs for "Source" (selected) and "Rich Text". A "Recompile" button is visible. The "Source" tab shows a list of items with LaTeX-style markup. The "Rich Text" tab shows the rendered HTML output, including a section titled "4.2 Beam" and "4.3 Grafana".

```
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\texttt{>  
/software/products\_dev/setup}  
59 \item Find the version of the gui to  
use \texttt{> ups list -ak+  
artdaq\_runcontrol\_gui}  
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Wikis

— — —

We need info from sub-system experts about what they need shifters to check

Pointing us to documentation to populate wiki will be incredibly helpful

ICARUS [List of Acronyms](#)

ICARUS operations [Main page](#)

The screenshot shows the 'ICARUS List of acronyms' page. At the top, there is a search bar and a navigation menu with options like Overview, Activity, Issues, Spent time, Gantt, Calendar, News, Documents, Wiki, Files, and Settings. Below the navigation, there are icons for 'New wiki page', 'Edit', 'Watch', 'Lock', 'Rename', 'Delete', and 'History'. A link to the main ICARUS wiki page is provided. The main content is a table of acronyms and their full names.

BNB	Booster Neutrino Beam
CRT	Cosmic Ray Tagger
DAQ	Data Acquisition
DCS	Detector Control System
DQ	Data Quality
DQM	Data Quality Monitoring
EVB	Event Builder
ICARUS	Imaging Cosmic And Rare Underground Signals
NuMI	Neutrinos at the Main Injector
OM	Online Monitoring
PMT	Photomultiplier Tube
SBN	Short Baseline Neutrino
TPC	Time Projection Chamber
VST	Vertical Slice Test

The screenshot shows the 'ICARUS operations' Wiki page. It features a navigation menu with options like Overview, Activity, Issues, Spent time, Gantt, Calendar, News, Documents, Wiki, and Files. The page content includes sections for 'ICARUS Shifts', 'What to do while on shift', 'Main page for shifters', 'Shift bulletin board', 'Expert bulletin board', 'Expert Contact List', and 'SBN DAQ Documentation'. Each section has a brief description of its purpose.

ICARUS Shifts

[What to do while on shift](#)

Main page for shifters

[Shift bulletin board](#)

Page for revising currently running conditions. Check right before taking over the shift or in the very first minutes.

[Expert bulletin board](#)

Page with things to be aware of by experts.

[Expert Contact List](#)

List of experts and contact information

SBN DAQ Documentation

The following links are in constant update. Please make sure to check the most recent versions for troubleshooting.

Main page <https://cdcv.s.fnal.gov/redmine/projects/sbndaq/wiki>

CRT Readout https://cdcv.s.fnal.gov/redmine/projects/sbndaq/wiki/Running_CAEN_DT5702_readout_of_CRT

Useful Links

Electronic Logbook <http://dbweb6.fnal.gov:8080/ECL/sbnfd/E/index>
List of Acronyms <https://cdcv.s.fnal.gov/redmine/projects/icarus/wiki/Acronyms>

Wikis

PRELIMINARY What to do while on shift

PRELIMINARY Shift bulletin board template

ICARUS - **ICARUS operations** Search:

+ Overview Activity Issues Spent time Gantt Calendar News Documents **Wiki** Files Settings

What to do while on shift

[New wiki page](#) [Edit](#) [Watch](#) [Lock](#) [Rename](#) [Delete](#) [History](#)

Before the start of your shift

1. Check that all screens are present and correct, and that there are no alarms. Click here to see what should be in each screen.
2. Talk to the outgoing shifter and find about any issues that occurred during the shift and anything else that you should be aware of during yours.
3. Read the current running conditions and ECL entries for the last 24 hours, even if you were on shift on the previous day. Running conditions can change daily.
4. Log in as yourself on any open ECL pages for speediness. This will save you time when filling the shift forms and reporting issues.
5. Call the main Fermilab control room (x3721) and let them know that the new ICARUS shifter has arrived and inform it of the control room you are shifting from. This is specially useful as people from the main control room might call you to inform about any work that might affect the beam status or the experiment's operations in general.

Throughout the shift

Below is a list of the ECL forms that you should fill out throughout your shift. It is your responsibility to fill out all these forms during every shift. There are also other forms that you should fill out in certain situations and others that will be filled by experts.

Main ECL forms to be filled out during every shift

When	Form	Category	Tag
Before the previous shifter leaves	Shift check-in	General	Control Room, General
Immediately after shift check-in	Start of shift	General	Control Room
Once every hour	IFIX Cryogenics	General	Control Room, Cryogenics
In the last hour of your shift	Shift summary	General	Control Room
After the new shifter has arrived and you have handed things over	Shift check-out	General	Control Room, General

Suggested schedule to fill out main ECL shift forms

Time into shift	Forms to complete
-0:15 - 0:00	Shift check-in
0:00 - 0:15	Start of shift

ICARUS - **ICARUS operations** Search:

+ Overview Activity Issues Spent time Gantt Calendar News Documents **Wiki** Files Settings

Shift bulletin board

[New wiki page](#) [Edit](#) [Watch](#) [Lock](#) [Rename](#) [Delete](#) [History](#)

Don't forget to read both the **TEMPORARY** and **PERMANENT** conditions

Colour guide for this page

[Current Running Conditions](#) [Temporary Conditions](#) [New and Permanent Conditions](#) [Attention](#)

General comments from the Run Coordinators

Run Coordinator	Until (Date)	Phone Number
Name Surname	January 1st, 8am	(xxx) xxx-xxx

Current Running Conditions

This current running condition item
Blablaba

Temporary Conditions

This temporary condition item
Blablaba

New and Permanent Conditions

This new and permanent condition item
Blablaba

Other items

CUT FOR TIME: Some info about state of ECL and shift assignment algorithm which don't fit into this talk but are still useful. See backups

Conclusions/To Do

- Have run DAQ and several of the monitoring tools, ECL, etc. from the CR machines.
 - Will do more testing on monitoring tools when we have new computers
- As things come together, more testing from off-site ROCs is necessary. Off-site ROC liaisons need to contact us.
- We need your help:
 - Once shifters are known, we need to know who is on-site
 - Need to know if certain off-site experts/shifters (and locations) need access to some things like iFix
 - We need to know sub-system on-call experts and their info
 - We need to know what needs to be monitored/how. -> **Documentation.**

Backup

The following are items where members have help with. However, they **don't** fall into the responsibilities of the group.

To document any work being done or being carried out at the FD and for shifter's activity, such as filling the different shift forms.

Tags available for easier browsing, such as **Installation**, **Vertical Slice Test**, **Caution**. Please use them (click **Add** and then **Update tags**). Contact us if you need another tag to be added to the list.

SBNFD: Short Baseline Neutrino Far Detector Version: 8.1.2
Electronic Logbook
Logbook Members Projects Shifts login

Entries
(sorted by Created) [Sort by Updated](#)
Search
RSS [Show Sticky Entries First](#)

Who is on shift now

Category: (all) subcategories Filter Words: Search
Quick search: Run

< newer
collapse all expand all
older >
auto-refresh

Legend for symbols: Private entry, Entry has newer comment, Threaded entry, Sticky entry.

10:02	Cryogenics [hope]	Status of vacuum pumpdowns	As of this morning, the following vacuums are reached (one pumpd
09:29	Cryogenics [hope]	Status of the Regeneration System for Fil Filter	This morning, I completed verification of the mech
08:30	CRT [chilgenb]	north wall commissioning 11/19/2019	Today we worked at FD only for the afternoon, People present a
18:39	General [howard]	Control Room Run Info	Stopping run for night. To close out for the night I am stopping the ru
18:30	DQM [howard]	Monitoring	Monitoring stopped itself again. The DQM process stopped itself again. This time again it
17:59	Installation/CRT [tboone]	CRT Installation	CRT We did a noise scan of all FEBs for 120 seconds each at thresh
17:31	DQM [howard]	Monitoring	DQM process killed (somehow) We noticed the run was still going but the DQM process s
16:54	General [dmendez]	Control Room Cryogenics	ICARUS cryogenics IPiX ready in ROC-West Screen located behind
16:41	General [wketchum]	Control Room	First data taken from the ROC-W control room Running and monitoring!

ECL

<http://dbweb5.fnal.gov:8080/ECL/sbnfd/E/index>

As of version 1 of the shifter manual (Claudio Montanari), slide 5, I've created **three shifts per day**, from **Monday to Friday**. I have, however, readjusted the suggested schedules to assign **8 hours per shift**.

Each shift overlaps by 15 minutes with the next, to allow the incoming shifter to arrive, receive relevant information from the outgoing shifter and to take over.

SBNFD:Short Baseline Neutrino Far Detector
Shift Scheduler

Logbook Members Projects **Shifts**

Calendar
Shifts for December 2019

week view <November 2019 December 2019 January 2020>

Week Day Week Swing Week Night

Filter

Mon 25	Tue 26	Wed 27	Thu 28	Fri 29	Sat 30	Sun 01
Week Day Mon-Fri 07:45-16:15 Shifter (1.0)						
Week Swing Mon-Fri 15:45-00:15 Shifter (1.0)						
Week Night Mon-Fri 23:45-07:45 Shifter (1.0)						

ECL

<http://dbweb5.fnal.gov:8080/ECL/sbnfd/E/index>

-
- Some **forms** already exist for shifters to fill out during shift-taking, such as:
 - Shift check-in
 - Start Shift
 - Shift check-out
 - Other possibilities:
 - Run Status
 - Beam status
 - Sub-system experts will have to feed more information about what needs to be checked/how often/etc.

Shift assignment algorithm

A **NOvA** original from **Gary Feldman**, who granted use for **ICARUS** and **SBND**

- Logic generally understood but need to go through it in more detail.
- Tested code with files used for real life shift assignment
- Will need to know calendar, shifts per day, point system, institution quotas, priorities, etc to test usage with ICARUS specifics.