Cruising checklist
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Intensity Checklist December

Bunch pattern / intensity	mainly 25ns_2220b_2208_1940_2036_96bpi_24inj
Start date	20-SEP-2016 08.53.04.910966
End data	30-OCT-2016 23.09.43.672715
Fill numbers	82 fills from #5313 - #5484; ~321h stable beams; ~9fb-1
Comment	Intensity cruise at 2220b,including MDs, revalidation and intensity ramp-up after TS2, ion setup and further degradation of MKI2
Next intensity	end of PP run 2016

Issues	
MKI2D	Further degradation of MKI2D, 27.11. PM, indicated by delays out of tolerance.

Issues noted at dumps

Dump statistics		
Dump caused by	**# of dumps**	**Comments**
Programmed dump (EOF)	41	
Fault of BPM IR6 (BPM IR6)		
Fault of LBDS (LBDS)	2	Self triggering of MKBH B/B1 (01.10.) and MKBH B/B2 (04.10.) requiring replacement of GTO stack.
Operator fault (OP)	3	
Controlles fault (CO)	2	
Orbit excursions (Orbit)		
Fault of Orbit feedback (FB1)		
Fault of Tune feedback (FB2)	1	
Beam losses (Beam loss)	2	
Fault of BPM system (BPM)		
Electrical network glitch (EL Net)	3	
Water fault (Water)	2	
Fault of BLM system (BLM)	1	Unexplained signal in one card at 3R1
Fault of SIS (SIS)		

Review of different categories

- MP3 (ZCh)
  - Two beam dumps due to the QPS trip of RCBXH2.R1. The problem was solved during TS#3.
- Interlocks (MZ)
  - Frequent failures of FMCM_ISA related to missing converted FGC buffers (supsected configuration change in nfs access). Non-blokcing but might mask out a real failure of the analysis module. Being addressed with CO experts.
  - During fill 5483 Goniometer did not stop while being moved during channelling MD due to problem of interlock logic. Tbc and discussed in MPP.
  - 3 dumps by electrical perturbations
  - Successful test in TS#3 of new 24bit version od DCBCT, which would also eventually help solving current limitation of increased noise on B2B channel.
  - UFOs: 4 occurrences, 3 of which triggered by EXP BCM one in MQ.21L2

Review of different categories

- RF
  - *Not filled in (-:*
- BI (Chrstos, Stefano II, Chen)
  - BLM internal sanity check: Some issues with one channel in the dump line (part of the system, but not part of the interlocked channels) - to be fixed if possible during EYETS.
  - BLM thresholds: Implemented 'Unification of MBRC families' (ECR-0055) during TS2, only temperoray MF change for RP alignment after TS2
- Collimation (Stefano I)
  - At the edge of 3 month validity, as last Loss Map set done at the beg. of June.
  - Some fields not completed, this means OK?

Review of different categories

- Operation, orbit and feedback (Jorg)
  - All OK
- Beam Dump (Chiara)
  - During MKBH reliability run observed an errtaic event which triggered the two adjacent generators. Reason for this "parasitic" coupling under investigation. See details here https://indico.cern.ch/event/587075/contributions/2367792/attachments/1370065/2077480/MKBH_generators.pdf

Review of different categories

- Injection (Wolfgang)
  - Both MKIs with reduced pulse length of 3 us (96b) to avoid flashover in MKI2 during softstart; sufficient for the anyway reduced bunch train length due to TIDVG limits
  - MKI2D strong spark during softstart at ~20 kV (03/10); due to open circuit at magnet input; following vacuum spikes; as preliminary mitigation softstart voltage increased; first entry box exchanged; then magnet D starts being delayed wrt to other waveforms (27/10); eventually full magnet replaced during TS (31/10)
  - vacuum activity during MKI2 softstarts; temperature blocking injection on 20/10 due to swapped cables during entry box exchange

Review of different categories

- Heating of equipment (Benoit)

Heating of Equipment	Comments
Heating of ALFA	max temperature 24 C
Heating of AFP	max increase of 4 C up to 22 C
Heating of BSRT	max increase of 0.5 C up to 23 C
Heating of Collimators (TCP)	two probes show unusual behaviour
Heating of Collimators (TCS)	TCSG A5R3 B1 increases by 4C and reaches 30 C. All others are stable.
Heating of Collimators (TCTP)	
Heating of Collimators (TCDQ)	increase by 2 C
Heating of Collimators (TCL)	TCL B5R3, D6R7 and B6R7 higher. TCLIA temperature up to 90 C, due to MD with lower emittance.
Heating of BGV	
Heating of MKI	Mike warned us that 2 probes were inverted by mistake after an intervention on MKI2D. MKI8D reached 50 C.
Heating of TDI	vacuum below 5e-9 for both TDIs
Heating of beam screen	
Heating of ALICE beam pipe	increase by 1 C
Heating of TOTEM and neighbouring vacuum	temperature of non cooled devices below 50 C
Heating of LHCb VELO	
No unexplained heating of other equipment observed.	increase by 2 C for crystal goniometers. MKD ok. vacuum increase at BGI remained stable below 1e-8 mbar. Labels installed by BE-BI on the outside of the tank did not reveal significant temperature increase after a few physics fills. To be confirmed.
Variation of bunch length within the usual range.	
Variation of beam spectrum within the usual range.	
No additional non-conformities in vacuum observed (RF-fingers, etc.)	another vacuum spike similar to the spikes that triggered the Xrays in TS2 occurred near the finger non conformity in 6R8 (on Oct 24th around 17:00).


YEAH IF YOU COULD JUST STAY VIGILANT
THAT'D BE GREAT