



ISR reception and tests

Status report



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Chambers reception

- ❑ Only one chamber shipment since last report:
 - ❑ Torino, 3 MB4, 16/02/05, for YB+2.

- ❑ Total of chambers at CERN = 159
 - ❑ 125 chambers at ISR
 - ❑ 34 already installed YB+2, last MB2 was installed last week

- ❑ All them passed through alignment bench.



Chamber reception



Torino MB4s arrival & download

15/03/2005





HVB replacement

- ❑ One of the main activities at ISR during last 2 months was HVB replacement in chambers for YB+1
- ❑ Teams from Aachen, Madrid & Legnaro present at ISR for this task in several periods.
- ❑ Chambers already replaced:
 - ❑ 9 MB1 (+ 2 MB1 Chimney came from AA with HVB5)
 - ❑ 9 MB2 + 1 MB2 Chimney
 - ❑ 11 MB3 (2 of them for YB0)
 - ❑ 2 MB4/10
- ❑ Replacement still missing for YB+1 surface installation:
 - ❑ 1 MB3 chimney
 - ❑ 2 MB4/4
 - ❑ 2 MB4/9-11
 - ❑ 6 MB4 Torino



HVB replacement. STATUS

- ❑ After substitution all chambers go through standard certification procedure (HV tests & trending, cosmic tests & reparation), and in many cases it was like starting from scratch...
- ❑ Alberto, Marcos Fernandez & myself taking care of this task during last months (with eventual help of replacement teams when present).
- ❑ Status of chambers:
 - ❑ 17 chambers ready (8 MB1, 5 MB2, 3 MB3, 1MB4/10), kept under HV, being dressed.
 - ❑ Rest of chambers are kept under HV, have been tested AT LEAST once with cosmic rays, still to be certified.



HVB replacement. MB1 status

	Sector	HVB5	Tested	Certified	#cosmic rounds	#SL opened	FE Z cabled
MB1							
11	2	nov-04	1	1	3	3	1
37	3	feb-05	1	1	2	1	1
51(Ch)	4	AA	1		1	1	
19	5	feb-05	1		2	2	
38	6	nov-04	1	1	2	6	1
36	8	nov-04	1	1	2	1	1
22	9	nov-04	1	1	5	8	1
23	10	nov-04	1	1	2	2	1
25	11	feb-05	1	1	1	0	1
35	12	feb-05	1	1	1	0	1

- MB1 certification is more advanced than any other type (replacement started sooner)
- Scaler tests of Aachen team turned out to be very helpful
- Chimney chamber was tested for the first time last week (final HV cabling)
- Additional disconnected half I-beam MB1C38 (sparks)



HVB replacement. MB2 status

	Sector	HVB5	Tested	Certified	#cosmic rounds	#SL opened	FE Z cabled
MB2							
39	2	feb-05	1		2	3	
35	3	feb-05	1	1	2	1	
54(Ch)	4	feb-05	1		1	1	
36	5	feb-05	1		2	5	
38	6	feb-05	1		2	4	
25	8	feb-05	1	1	2	2	
20	9	feb-05	1		2	3	1
40	10	feb-05	1	1	2	2	1
18	11	feb-05	1	1	3	5	1
21	12	feb-05	1	1	2	2	

- One FE profile (MB2C18) was damaged by accident, substituted by another one coming from a spare. Must be fixed.
- 4 wires broken by accident during replacement.
- Displaced wire was found (leading to inefficient channel)
- Chimney chamber closed without 1 HVB 8 channel



HVB replacement. MB3 status

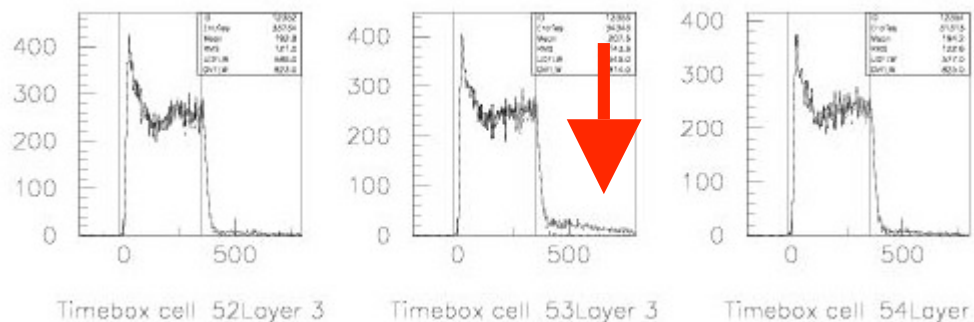
	Sector	HVB5	Tested	Certified	#cosmic rounds	#SL opened	FE Z cabled
MB3							
46	2	feb-05	1		1	2	
42	3	feb-05	1		1	0	
XX(Ch)	4						
26	5	nov-04	1		2	2	
40	6	feb-05	1	1	2	1	
28	8	jan-05	1	1	2	2	1
6	9	jan-05	1		1	1	
34	10	nov-04	1	1	2	0	
20	11	nov-04	1		2	2	
22	12	jan-05	1		1	1	1

- Second cosmic round for MB3s is in progress
- Some chambers are under study of HV behavior (Frequent spikes wire-ground in HV monitoring files)



Problems

- ❑ Some bad connections were not observed at first cosmic tests because electrodes (strips / cathodes) were still charged, hence those cells were working properly. Problems arose after some time for self-discharging.



Chamber must be fully discharged before substitution



Problems

- ❑ Several FE problems found (shortcut in channels of HVCs, noise, bad address...)
- ❑ Exchanged components:
 - ❑ 11 HVB
 - ❑ 7 FEB
 - ❑ 5 HVC
- ❑ Some external leaks found, easily fixed with glue
- ❑ 7 HVB had to be removed because of faulty contacts (mainly wires). Mistake in QC of HVB.
- ❑ External HV cabling connections can induce additional problems if not done properly...

➤ **Some traveler files were not updated or mistaken.**



HVB replacement. Statistics

□ Problems statistics

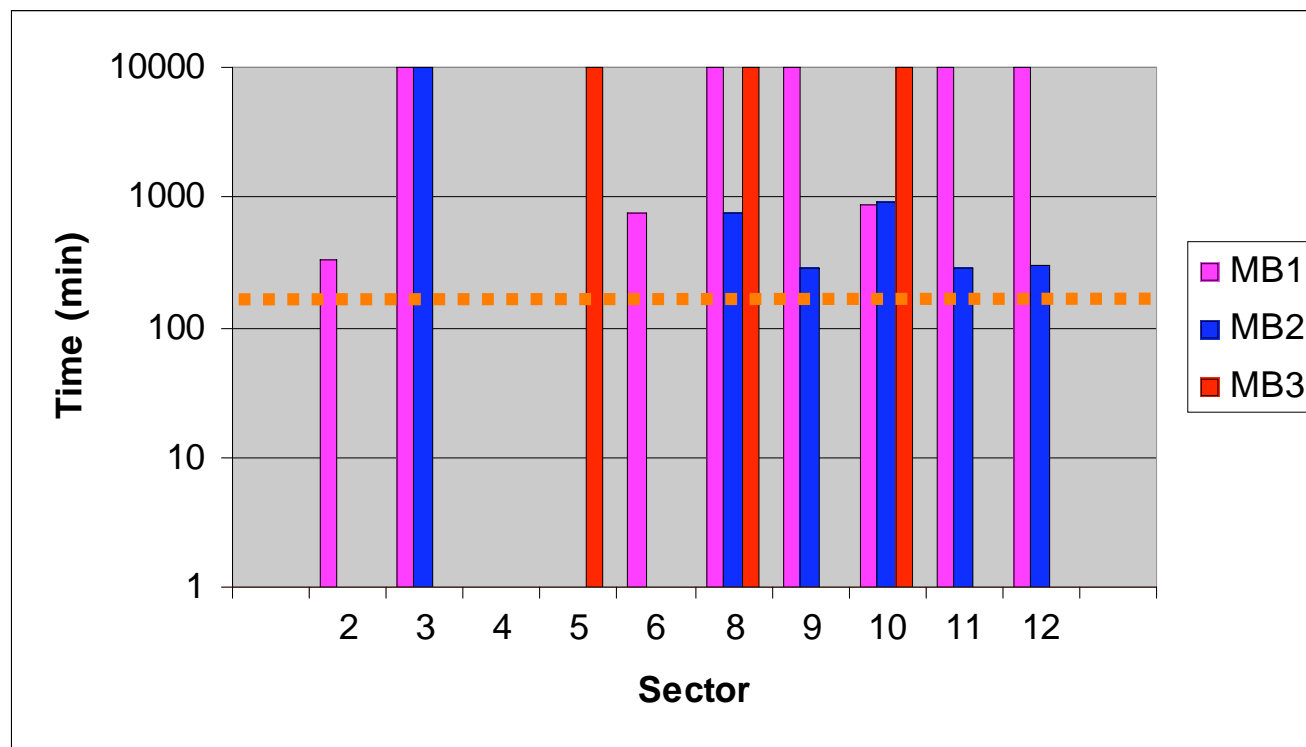
Problem	Number of interventions				%
	MB1	MB2	MB3	MB4	
Disc. pin	7	14	7	3	46.7
FE problem	3	4	3		15.3
Bad cathode	5	3		1	13.6
Bad HVB	1	4	2		10.6
Sparks	2		3		7.6
Others	3			1	6.2

Number of screws ~ 2250



Gas tightness

Time constants certified chambers for YB+1





Dressing

- ❑ **Chambers for wheels YB+2, YB+1 and YB0 equipped with PADCs.**
- ❑ Alignment, HV cables, gas piping, gas manifolds in almost all chambers (except spares & some MB4s).
- ❑ After certification of chambers with HVB5, Theta FE is dressed for MC connections.



Current status & plans

- ❑ Problems found were mainly disconnected pins.
- ❑ Now we are in a very advanced stage of chamber certification for YB+1. Hopefully the current experience will help making smoother and more efficiently the replacement of remaining chambers.
- ❑ Testing & certification will be finished on time. This will not add any delay to the installation.
- ❑ MB4 Torino cosmic tests will start as soon as chamber certification of chambers for first YB+1 installation rounds is a bit more advanced. Cosmic bench is being prepared for housing them.