JADE LOG BOOK X Band 12593 - 13406

Ein Brunnen-Erzeugnis

JADE LOG BOOK

Nr. X

R 12593 - 13406

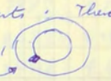
Run	Date	Start	Stop	at Run Start I+	at Run Start I-	D.T. (%)	Time (sec)	Records out	All x10^6	To reg. x10^6	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 Fn>66eV	T2 B:1 17 2Ti Eo 2tr.

ON/OFF N50	MIP	TOF	<L> x10^30	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Fv Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

13.11.82 Continuation of dayshift, Dietrich, Olsson

Obs Triggen bit 31 was taken out from R12582 onwards, see previous Run book
After inspection the cavel was found OK. Contact problem? After putting in again, all seems OK.
∴ Trigger bit 31 on again in R12593 onw.

16:00 Motomura, Yamada
After RUN 12596 PKR tried to increase the beam energy. Beams were lost!
22:00 Beam energy reached 17.9 GeV & the beams were lost.

14.11.82 T. Nozaki & [illegible] on shift.
02.00 Shot break An inquiry at PKR quickly removed the "Shot break" - message
00.15 Start injection
1.00 Beams are at 17.995 GeV, but do not go higher. A call to PKR: Transmitter down, Beam on the verge of Loss, they are trying tricks.
1.45 Hough, they are up at 18.495 and still some beam in the ring!
1.47 Beams lost! Merde!
2.30 17.995 reached again! 2.43 See entry for 1.47.
2.45 Conference with Mark-J about further politics. Inquiries reveals that PETRA has several transmitter problems, ~~and the RF power is limited~~. The transmitters drop out at higher beam energies for reason unknown, but may be easily reset. The dropouts generally cause beam loss at " " ".
3.19 ~~see 1.00~~ 18 GeV crossed!
3.21 See 1.45
3.23 "Luminosity Run". Great, but background still high and unstable, 2-5 Volts
Another defective BP discriminator faked higher background
3.42 Run Start with hope A note to LG-Experts: There is a row of 8 mod blanks, visible in the Cylinder View, 
~~4.45~~
4.45 Speedy dying of beams, until the message "Switch off ..." appears.
4.50 Attempt to draw Standard Histograms gave ~~a short~~ blank sheets only. What is wrong with the Gould? The toner bottles is still full. Decide: An Expert should be called around 8^00.
5.50 17.972 GeV! 5.53 18.50 GeV,
7.01 Run 12598 ~~Stop~~. No copy of the run summary due to the defect of the Gould plotter.
8:00 McClenn and Takeshita on shift
9:29 Mark J said: it takes long time for Injection of e^t.
10:20 RUN SUMMARY CAN BE PRINTED ON ~~OUT PRINTER~~ console BY RUN-SU FAR LUN = 1 (default) = 74 : TEKTRO — But it takes long time (~3min).

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To reg. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit2 $E_1 > 6$ GeV	T_2 Bit 17 $2T: E_2 \cdot 2$
2														
Run EXP 23														
12593	13.11.82	16^{08}	17:04	7.19	7.43	14.5	3091	8002	804	116	2853	9675	832	3400
12594	"	17:05	17:55	5.71	5.85	14.9	2960	8002	771	115	2640	10432	725	3862
12595	"	17:55	18 57	4.83	4.87	9.8	3676	8002	957	94	2701	10176	799	3028
12596	"	18:57	19:m	4.04	4.08	8.9	129	278	33	3	101	336	24	103
12597	14.11.82	3.42	4:47	7.09	7.85	9.5	3757	7806	977	92	2896	9282	820	2462
12598	"	6.00	7:01	8.06	8.27	10.5	3688	8002	959	101	2970	9586	895	2698
12599	"	7.03	8:20	6.29	6.34	7.7	4620	8002	1202	92	2981	9960	835	2228
12600	"	8.24	8:50	4.83	4.79	10.3	1421	2565	370	38	908	3260	240	958
12601	"	10:01	10:54	6.35	6.37	12.6	3173	8002	826	103	2873	9784	753	3154
12602	"	10:58	12:06	5.00	4.95	9.5	3997	8002	1040	99	2731	10559	711	2915
12603	"	12:06	12:51	4.36	4.26	7.0	2676	4441	696	49	1592	5662	450	1219
12604	"	13:34	13:52	2.06	8.20	243	1053	3477	273	66	1236	4218	263	1793
12605 12606	16/11/82			Rubbish + Throw away				79						
12605	14-11-82	16^{36}	16^{37}	7.29	7.43	40.6	190	623	49.5	201	195	818	33	411
12606	"	17^{57}	17^{57}	2.82	2.90	6.9	28	79	7.4	.5	25	55	4	22
12607	14/11/82	17^{46}	18^{09}	8.36	8.37	16.2	1202	3352	313	51	1141	4056	289	1417
12608	"	18^{52}	19^{04}	6.04	8.11	693*	656	1802	170	118	555	3200*	108	2234*
12609	"	19^{05}	20^{30}	5.71	7.59	10.2	5072	10,002	1319	134	3744	12361	995	3291
12610	"	20^{31}	21^{13}	4.31	5.72	7.2	2506	4219	652	47	1565	5243	394	1078
12611	"	~~21.57~~ 22	22^{47}	7.85	8.19	12.7	3151	8002	819	104	3047	9096	779	2560
12612		22^{47}	0.0	6.26	6.49	9.	4222	8297	1098	99	3112	10355	827	2415
12613	15.11.82	0.01	0.46	4.92	5.02	6.6	2666	4142	693	45	1561	5441	408	980
12614	"	1:30	2:19	8.01	8.13	13.8	2885	8002	750	104	3066	8953	755	2735
12615	"	2 20	3:16	6.38	6.49	11.1	3368	8002	876	97	3069	9493	751	2506
12616	"	3 17	4:14	5.18	5.19	7.7	3441	6194	895	69	2358	7598	591	1538
12617	"	4.51	4.58	8.15	8.44	20.7	356	1155	92	19.2	403	1273	82	465
12618	"	6.23	6.28	5.00	5.36	9.2	196	347	50	4	115	430	24	131
12619	16.11.82	5:53	6:22	6.52	5.26	2.7	1700	3006	442.3	42.7	760	4776	123	257
12620	"	10.02	10.38	—	—	1.6	2092	2043	544	8.8	361	1636	51	18
12621		11.19	14.13	—	—	-2.7	10454	10002	~~1573~~	42.3	2061	7816	392	105
12622	"	14 20	14:50			1.8	1764	1729	459	**	368	1314	77	21
12623	"	15:01	16.04	—	—									
12624	17.11.82	4:17	4:37	8.03	7.41	8.4	1178	2127	306	25.8	540	2916	135	237
12625	"	4:38	6:32	6.49	6.97	5.0	6806	8002	1772	89.3	2224	11516	523	766
12626	"	6:32	6.43	3.83	4.57	3.8	642	598	167	6.3	162	861	42	56

scaler overflow

N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T2 Reg FV Fr. (%)	Σ Bhabha (B+NB)	MH	Ebeam	Remarks
	ON/OFF	ON/OFF										3
ON	ON	ON	2×2.15	2×6.65	~~164.28~~ ~~457.63~~ 150.98	IBM	1.5	59	120	7	18.497	Tano ha regulated all triggers again at 18.500
"	"	"	2×1.01	2×2.98	170.24	"	1.5	58	54	2	18.498	They count rate at 18.500.
"	"	"	2×0.74	2×2.71	175.66	"	0.9	57	50	2	"	
"	"	"	2×0.12	2×0.02	175.70	"		59	0	0	"	
"	"	"	2×2.17	2×8.14	191.98	"	1.45	55	162 ~~1495~~	4	18.500	
"	"	"	2×2.33	2×8.60	209.18	IBM	1.5	57	205	5	"	
"	"	"	2×1.39	2×6.43	222.04	"		57	135	8	18.503	
"	"	"	2×0.96	2×1.36	224.76	"	1.0	57	26	0	18.503	beam lost
"	"	"	2×2.52	2×7.99	240.74	IBM	1.4	57	161	4	18.500	
"	"	"	2×1.77	2×7.09	254.92	"	1.2	57	127	4	18.500	
"	"	"	2×1.30	2×3.47	261.86	"	0.8	56	68	1	18.495	
"	"	"	4.44	4.67	266.53	"	1.6	60	42	3	18.497	beam lost ↓ tagging still working correctly
												Rabbish Run.
"	"	"	3.15	0.60	267.13	"	-	60	4	0	18.50	← LG volts ON, but not used in. Data assumed OK.
"	"	"	1.12	0.03	267.06	"	-		0	0	18.50	Beam Lost
ON	ON	ON	4.79	5.76	272.82	IBM	1.6	57	70	3	18.500	Beam Lost
"	"	"	1.41*	.92	273.74	"	2.0	69*	5	0	"	H hung - not trigger.
"	"	"	2.79	14.16	287.90	"	1.2	57	132	9	"	
"	"	"	1.85	4.65	292.55	"		57	61	1	"	Beams DUMPED.
"	"	"	4.16	13.11	305.66	"	1.5	58	152	6	"	
"	"	"	2.28	11.74	317.40	"	1.2	58	115	8	18.5	
"	"	"	1.49	3.97	321.37	"	1.0	60	44	0	18.5	Beam dumped
"	"	"	5.04	14.53	335.90	"	1.5	58	161	2	18.485	
"	"	"	3.37	11.34	347.24	"	1.2	59	130	2	18.495	
"	"	"	2.21	7.59	354.83	"	0.9	57	69	3	18.495	Beam dumped
"	"	"	5.76	2.05	356.88	"	1.6	58	27	0	18.495	Beam lost
"	"	"	1.22	0.24	357.12	"	1.5	63	5	0	18.495	Beam lost
"	"	"	1.85	3.14	~~360.26~~ 357.26	"	0.8	56	5	0	16.500	Beam lost / Low magnet-pickup
on	on	on	—	—		Tape F11 211	0	0	0	0	—	Cosmic B=29706
on	off	on	—	—		"	0	0	4	0	—	"
on	off	on	—	—		Tape F11 216	—	—	—	—	—	" Run stopped.
						"						LG-HV: wrong
on	on	on	5.15	6.06	363.18	IBM	0.9	55	3	1	17.995	Run stopped
ON	ON	ON	2.71	18.41	381.59	IBM	1.0	51	26	2	18.008 → 17.995	
ON	ON	ON	1.79	1.15	382.74	IBM	0.4	55	1	0	17.995	

Run	Date	Start	Stop	at Run Start: I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rec. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 $E_A > 66$ eV	T2 B:1 17 $2T \cdot E_A \cdot 2$ tr.	ON/OFF N50	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

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14.11.1982

10:58 ZBM LINK FAILED — AS printing RUN-SUM.

WE CAN LOOK AT "R" BY ~~TOO~~ LOGON RT
@ ~~(MI) XSECT~~ (MI)XSECT
CMI)XSECT (see JDAS 3.7)
> DRAW * → THEN ...

12:37 MARK J ask if new fill at 12:50 is OK with us — I say "yes", but apparently there is a problem due to PKR having lunch! — now PKR agree to have lunch after new filling is ready.

13:30 New fill has been ready for ~10 mins, but tagging LG read-out tests will ~~just~~ underway — now finished. However, background is still rather bad we had to wait a few more minutes while the BP voltage stabilised. Switched on at 1.6 V.

13.37 From run 12604 the tagging system is working correctly. No multiplication has to be applied to the online lumi anymore ||

16^{00} 14/11/82 Pearce & Reuerdolt on shift.

We inherit nothing but hopes. There has been no beam for ~ 2 hours. PKR are currently attempting to inject.

16^{24} 18.5 GeV achieved with $I_+ = 7.7$ ma, $I_- = 7.97$ ma. Beam pipe sum = 7 volts !.

16^{34} Start Run 12605. Y volts tells us that all LG/BP volts are zero, stop Run. Background has gone crazy, so we power down for a bit. PKR must be fiddling!

Phone PKR: Kohaupt says: Suddenly Petra got unstable without human interference. They were however able to stabilize the machine again.
18.5 GeV is at the moment the ultimate limit. Kohaupt expects the transmitters to fail at any time.

Takeshita comes back to help trace the YVOLTS problem. — We push in the multi pin socket in the back of the FLUKE DVM in Rack 19. That seems to fix it. But after 79 events of run 12606 the beams are lost!
I clamp the cable of the socket (with a nylon cable tie) so that gravity doesn't pull it out.

5

17^{46} Stable beams again @ 18.5 GeV. Start run 12607.

18^{09} Soft ID trip due to high currents

18^{10} Beams lost.

Run 12608: Dead Time is very high — This seems to be due to poor beam conditions, but beam pipe current was reasonable (Notice $I_+ < I_-$). Dead Time was >70% for a short time also on run 12609. Also luminosity was low for the circulating currents. The extra events are in $2T \cdot E(4) \cdot 2$ TR cal.

20^{50} Mark J ask for new fill at 21^{00}.

15.11.82

0^{00} Dietrich & Warming on shift
we have beam !!

5^{00} - Short-break. Sunderausfall

7^{00} energy saving

8^{00} Glandorning & Naroska on Shift

8^{50} Magnet tripped without alarms. There is a fault in the DC-limit unit (8000A). Mr. Pellat will bridge it for the moment → only single safety till the box is repaired.

9^{45} Magnet current 4400A

11.00 beams lost at ~18.4 GeV, resistant injection
TSO terminal shows wavy picture. RI notified. wolf
Gould plotte broken, Helmuxain of Nord has been working
Tape unit being repaired.

11 30 Big powe dip on whole Desy net.
Try to reset alarms, crates etc. Muon crate has no 12 V is that ok?
— checked, p-crate & disk test run for the system. All ok RS

K finds that pump for magnet has to be changed.
pump has been exchanged; we may run up the magnet again.

15^{00} Rolf Falst brings news! PETRA has lost a transformer ∴ Cannot go above 17.5 Gev for a few days. Since CELLO have background trouble there will probably be a shutdown TOMORROW about 17:00 – 19:00 so they can improve shielding. HEP

15:05 The Magnet seems to be OK now.

16:00 Becker & Takeshita on Shift

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·t2 E₁ > 66eV	T2 B·t 17 2T·E₄ ·2t₄

6 15.11.82

15⁰⁰ - 16³⁰ Test of ID with lower magnet field 6000 - 4400 A. There is a problem with cell 18.2. Probably we can work with 6000 A. // No low current runs without experts! // Rdy.

18⁰⁰ Call of R Felst: The shutdown starts tomorrow at 7.00 (- 19.00).

21:35 PETRA IS NOW REALLY INJECTING. MAGNET IS GOING TO 7500 A.

16.11.82 Zorn + Bethke on shift

0⁰⁰ rundown magnet to 6000 A in order to take data at lower field

7²⁰ PKR tries to fill at 2×16.5 GeV, but they always loose beams.

7¹⁰ short break. Senderausfall. rundown magnet to 2000 A

5⁵³ Beam really at 16.5 GeV. started run 12619 (Magnet = 6000 A

several errors occur: main crate 10 missing. not resetable
HV wrong: TOF chan 1 = 406 instead 2750 → rewrap manually
Yspy: TOF (E⇒HV!)
Trigger input I (5), output I (5)

6²⁷ 10-Trip Anode-current, due to beams lost
after that → "Start lost Zeit"
It has been a short shift!

⇒ don't run with reduced magnet-field without calling 10-experts ⇐
(Minimum field is anyway 6000 A)

8²⁰ all people leaving; no shift present Because of shutdown. call Yamada in case of trouble

9⁰⁰ We (RDH + Rdy) try again to run at lower magnetic field. Magnet current turned slowly down to 4600 A. No current fluctuation observed in cell 18.2. Start Cosmic Run (# 12620) at 10⁰². z-vertex reduction off. B = 2970 Gauss.

Start Commands :

	F8
READ OUT PATTERN:	77714 B
μ-RANGE:	Ø
DEFAULT TRIGGER SOURCE:	NO
TRIGGER SOURCE:	3007 B
TRIGGER ACTION OVERRIDE:	Ø

Write on tape only.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

7

16.11.82

11⁰⁰ Hagestedt + Yamada continue cosmic run with a low mag. field.

10⁴⁰ H. Mills fixed a bug in the ~~xxx~~ event display programm. (after the run 12620)

11²⁰ run 12622 started after changing the tape

15⁰⁰ DPAS error 44 timeout branch 3 crate 2 muon chambers Run ran stopped

run 12623 starts well

15²⁷ alarm 10 trip run paused & continued after wait

15⁵⁸ again ~~~~ " + } wire # 105

The run is stopped.

16⁰⁰ W. Bartel & H. Mills on shift

Cosmic run stopped.

18³⁰ Please note: Run only with full field (7500 A) RDH

21⁰⁰ PETRA injecting - well stoked up!

21⁰⁶ PKR request magnet raising - Immediately the beam is lost - Oh Dear.

21⁵⁵ Beams lost again after reaching 18.5 GeV due to bad vacuum in the cavities

23⁰⁰ Max Energy now 18.0 GeV vacuum has to improve before they can go higher.
Switch on counters.
Cello has an improved shielding and the Petra crew is trying to optimize the beam conditions for Cello.

23¹⁵ still optimizing
Cello is now much better off with the new shielding wall. They think they may be able to switch on (18 GeV 6.5 or 7.3 in b).

23²⁵ beams lost.
Something gets too hot in the CELLO area smoke is coming out of the CELLO shielding.
We run down our magnet

23⁴⁵ The last mini β quadrupole at Cello got too hot. Part of the insulation of the coil started to melt. Smoke came out of the magnet. People are investigating the damage.
For tonight we should have one person on shift. Else We have to wait for further decisions by the K- and Petra groups.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·t2 E₁>66eV	T2 B·t 17 2T·E₂·2τ

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

23⁴⁵ Magnet switched off: Isolator off
Computer off
switched to run down
~~the brake is still~~ Brakes off

17.11.82
Rowe, Kawamoto

4:16 LUMINOSITY RUN STARTED

R 12624 * YSPY ERROR 4. / Trigger 1 input missing ; ∅
at 4:28
4:3m

stop Run at 4:37 — discovered I'd left "stop run cable" out. Start new run.

R12625 : Ebeam = 18.008 at Run start, and changed to 17,995 at ≈4:45
(4:38)

5:28 ⇒ Trigg-1 input missing ; ∅ } what is this?
5:43 "

6:47 ENERGY SAVING TIME after R 12626
Magnet current ⇒ 500 amps.

8⁰⁰ Baines, Yamada
"Energy saving time" surprises us on a holiday. But PKR is sure about it.
9¹⁰ magnet current is raised to 7500A. It has always been like this W.Bartel

Note: Pressure drop in the Inner Detector is very big in this period (4.7%/month, 1.3ℓ NTP/Row).
We have to refill before high energy data taking continues.

9⁴⁵ During ramping beams lost at 17.36eV. We decrease our magnet current to 6000A. Rej
10³⁰ new filling ready
11⁴⁰ ID trip (wire # 14.)
BP counter #1 has no hit. (missing in the BP hit map)
Standard histogram was tried. But NORD did not go beond ~~mbista~~ μ-ch. histograms
simply showing - N-50 histogram in progress -. * Second trial after the next run worked properly.

17.11.82 (cont'd)

12⁴⁰ A call MARK-J:
The burnt mini-β Q-mag. at CELLO will be repaired tomorrow morning during the normal energy saving time (7⁰⁰ ~ 9⁰⁰)
13⁰⁷ ID H.V. went down without an alarm.
13⁰⁹ Mark-J called saying "They are playing with the TASSO magnet current."
13⁴² Beams dumped.
14⁴⁷ New Fill ready Stay at 6000Amps till further notice RG.

16⁰⁰ Eichler & Kobayashi
16¹⁰ Since the short power fail on 15.11.82 (11³⁰) HV values for LG counters have never been resetted and they were actually wrong. It explaines why Bhabha events are so few for Run 12619 ~ 12630. LG-HV are resetted now.
16⁴⁵ Beams off for the energy saving time.
22³⁰ New fill ready. BP-current very unstable between 3-10Volts. Call PKR they are still optimizing background.
22⁴² Start run. BP-counter 21 gives high current. Take it out.
Also BP-counter 1 is ~~now~~ not checked in T1-input (changed with SPY-MASTER). This counter 1 gives no signals. Since it is not used for the trigger and is not read out, we can forget about it.

18.11.82 0⁰⁰ Glendinning & Steffen

01⁰⁰ Channel 20 in "ToF-mean-Tdc II" histogram is ~ zero. Tell Beate in the Morning.
01¹⁷ Beams lost. ID didn't trip!
01⁵⁸ Message appears on PETRA-TV: "Restart 5 AM" (Computer breakdown)
05⁰² Message becomes "Restart 9 AM" !! (Power supplies breakdown)
05¹⁶ Realize that the Magnet has been on all this time → wind down to 500A.
*** Note that it should be put back to 6000A until enough data taken at that field. (50,000 events)

08⁰⁰ Meier and Marshall
08⁰⁰ Still "restart 9.00 AM"
09:00 The lead door at -z door side has been removed in order to put more lead onto it. Muon people should have a look at the rates in the outer layer μ-chambers when Petra is back.

Run Exp 23	Date	Start	Stop	at Run start I_+	at Run start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To reg. $\times 10^6$	T1 Acc. sum.	T2 Acc sum	T1 Bit2 $E_1 > 6$ GeV	T2 Bit 17 $2T \cdot E_4 \cdot 2tr$
12627	17.11.82	10^{31}	11^{43}	7.21	8.41	12.0	4149	8002	1080	129.9	1734	10892	412	824
12628	17/11/82	11^{45}	13^{04}	5.60	6.60	8.2	4745	8002	1235	100.7	1860	10888	468	762
12629	17/11/82	13^{05}	13^{47}	4.39	5.23	6.4	2045	2542	532	34.2	630	3632	169	215
12630	17/11/82	14^{47}	16^{04}	8.44	8.55	8.1	4479	8002	1166	96.6	1996	10742	476	891
12631	"	16^{07}	16^{44}	6.27	6.28	6.5	2225	3421	579	37.5	1321	4282	365	799
12632	17/11/82	22^{42}	0^{02}	7.73	7.81	7.7	4528	8002	1177	90.3	3086	9659	842	2192
12633	18/11/82	00^{02}	117	5.91	5.96	5.7	4431	6381	1152	656	2567	7569	720	1331
12634	18/11/82		Run	summary	lost		~600							
12635	forget it!			after 2 min.	Beams lost									
12636	18/11/82	22^{43}	23^{20}	7.46	7.87	15.5	2178	4927	556	87.9	1709	7408	445	2493
12637	19/11/82	0^{07}	0^{19}	2.18	2.60	11.4	654	1170	170	19	429	1732	113	473
12638	-"-	Time outs												
12639	-"-	4:41	5:22	6.16	6.62	19.7	2394	8002	623	123	1624	7057	404	2209
12640	-"-	5:22	5:24	LG.	time	outs								
12641	-"-	5:27	5:43	5.34	5.76	14.5	946	3077	246	36	627	2646	57	758
12642	-"-	5:47	5:48	chambers	trip									
12643	-"-	5:57	6:45	4.36	4.78	7.3	2687	6458	699	51	1349	5405	367	1143
12644	"	20:41	21:15	7.14	7.02	9.0	2007	4106	522	47	1408	5169	381	1291
12645	"						9events	lost						
12646	"	21:19	22:23	6.47	6.36	6.8	3577	5749	930	63	2179	6977	581	1332
12647	"	23:06	00:10	7.49	7.81	8.9	3832	8002	997	89	3043	9528	844	2416
12648	20.11.82	0:11	0:30	6.04	6.14	22.3	970	1347	252	5.6	528	1596	146	330
12649	"	0:31	1:45	5.68	5.96	5.8	3847	5639	1001	58	2164	6803	633	1287
12650	"	3:01	3:24	7.38	8.22	11.2	1186	2932	308	34	1217	3304	286	632
12651	"	3:54	4:11	6.05	6.72	6.5	1028	1825	267	32	770	1970	239	392
12652	"	5:26	6:37	7.13	6.76	10.4	4229	8002	1100	114	3260	9304	830	2071
12653	"	6:38	8:01	5.72	5.46	5.4	4869	"0"	1267	69	2716	8308	759	1295
12654	"	9:18	9:52	6.62	6.69	6.8	5246	3343	509	348	1398	3711	378	709
12655	"	10:45	11:59	7.42	7.51	7.3	4442	8002	1156	84.5	3145	9287	871	1975
12656	"	13:19	14:37	6.98	7.23	7.4	4577	8002	1190	88	3079	9495	893	2107
12657	"	14:37	15:12	5.52	5.63	6.1	1893	2896	493	30	1113	3520	310	657
12658	"	15:41	16:10	3.62	3.85	4.8	1592	1702	398	19	710	2224	169	1806
12659	"	17:06	17:07	7.54	7.36	11.4	20	73	5	0.6	19	58	5	25
12660	"	18:11	18:30	6.93	6.95	8.0	1107	2024	288	23	889	2379	240	537

N50	ON/OFF MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Bhabha Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T_2 Rej. Ev (%)	Bhabha [B+NB]	M.hal	E_{beam}	Remarks
on	on	on	5.13	21.30	404.04	IBM	1.0	53%	26	3	17.996	(B = -3877 gauss) I_{mag} = 6000A
ON	ON	ON	3.79	17.98	422.02	IBM	0.7	54%	27	6	17.995	"
on	on	on	2.51	5.14	427.16	IBM	0.5	54%	5	0	17.995	☆ LG-HV = wrong
ON	ON	ON	6.10	27.71	454.47	IBM	1.0	52%	34	3	17.995	"
"	"	"	4.06	9.03	463.50	"		56	79	1	"	"
"	"	"	5.44	24.63	488.13	IBM	1,2	54%	243	8	17.995	
ON	ON	ON	3.66	16.23	504.36	IBM	0.8	54	179	6	17.995	Beams lost.
							1.5			≥2	17.8	reduced magnet field 6000A / beam crashed
"	"	"	5.29	11.53	515.89	IBM	1.5	62%	119	3	18.000	MI-16 Zvertex now 300mm cut
"	"	"	3.43	2.24	518.13	"	1.2	62%	27	1	18.000	
"	"	"	3.70	8.85	526.98	"	~1	15%?	85	3	18.000	
"	"	"	3.84	3.16	530.14	"	~1	12%	28	0	18.000	stopped by no triggers
"	"	"	2.04	5.48	535.62	"	~0.7	10%	69	4	18.000	
"	"	"	3.16	6.37	541.95	"	1.4	55%	67	3	18.000	Gaspressure increased, I_{mag} = 7500A
							1.0					
"	"	"	3.22	11.52	553.47	"	1.0	54%	118	3	18.000	Beams dumped
"	"	"	5.02	19.25	572.72	"		54%	222	8	18.000	
"	"	"	3.17	3.08	575.80	"	0.75	54	31	0	18.000	high dead t. mon is due to Time Bit 9 DLS
"	"	"	2.89	11.12	586.92	"	0.9	53	128	4	17.982	Beam dumped
"	"	"	6.24	7.40	594.32	"	1.4	54	73	2	17.982	
"	"	"	5.21	5.35	599.67	"	1.0	52	62	4	17.982	Beams dumped
"	"	"	4.31	18.21	617.88	"	2.0	55	192	2	17.982	
"	"	"	3.01	14.66	632.54	"	0.7	53	151	7	18.004	
"	"	"	4.50	8.80	641.34	"	0.7	53	106	4	18.000	Beams lost
"	"	"	4.06	18.03	659.37	"	1.3	53	215	4	18.000	Beams dumped.
"	"	"	3.86	17.66	677.03	"	1.2	53	224	5	18.000	
"	"	"	3.14	5.94	682.97	"	1.3	54	70	3	18.000	
"	"	"	1.87	2.86	685.83	"	0.8	60	26	0	18.500	
"	"	"	5.70	0.11	685.94	"	1.5	53	0	0	18.489	Beam lost
"	"	"	5.31	5.88	691.82	"	1.3	59	69	2	17.993	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 En>66eV	T2 B:4 17 2Ti Eq 24v

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Rej. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

12 18.11.82

9.50 Magnet fault, reset not possible, reason unknown, we called K
Checking the TDC channel 20 which was missing in Mean TDC II
it was fixed without changing anything. I do not understand it.
Please call me if it goes to 0 again! B. Naroska.

11.30 K-group fixed magnet ~~DC overload protection for magnet has been repaired as well.~~

14.26 Magnet current back to ~~75~~ 6000 A. PETRA starts injection

15.28 CELLO called. They want to run ½h with only e^- and ½h with only e^+ to study their background. Since energy-saving-time is close and it is not expected to get much luminosity before that, we finally agreed to the CELLO suggestion.

15.44 8.9 mA ~~pos.~~ electrons with 16 GeV produce ~10 V at the BP-meter!

16⁰⁰ Hills + Bethke on shift.

Following decision of today's JADE meeting, the MIPROC-16 Z vertex cut is set to 300mm. (Defined in SETCL as well) HEH

16⁵⁰ Magnet lowered to 500A

~18³⁰ Big debate over request from CELLO for 1½ to 2 hours e^+ background tests. TASSO say YES, Mark-J don't have an opinion (they don't even know if they co-ordinate or not). We need reduced field data b.i. say NO - we give a maximum of 1 hour.
MARK-J phone back - they say they co-ordinate (previous guy was new - but didn't say so)
R. Felst phones us back and agrees.

21⁵⁵ beams ok. BP-voltage ~ 5..10V unstable. Reason: spiann's channel 21. Plugged it out → BP = 1.5V stable. Taking data now. 2 Muhads in the first 3 minutes.

22⁰⁰ Nord >hands still without reason. Reload it. No levels hang - just everything stopped.

22⁰² beams lost. Levels 13, 3 and 0 were on

22⁵⁰ YSPY complains that T. bit zero has hits when claimed to be OFF. I see no reason why this should be so, hence I 'turned' it back on. Mistake maybe - reversed.
We notice several inner ring cells are empty in some events.
We then find this has happened before

13

23²⁰ In order to investigate we stop run 12636 and make some test runs.

0⁰⁰ Error located, but not repaired: DL8 # 1 (Cell 1 Ring 1, 1st DL8).
Error occurs, when this DL8 has hits; the whole crate is then not read out.
Even after changing this DL8. We decide to run with DL8-start-cable plugged out. So only ½ cell is missing. Heinzelmann will try to change crate-controller in the morning, when we have taken enough data at reduced magnet-field.

19.11.82

0⁰⁰ Dieckmann + Heinzelmann
During refill we decide to exchange Crate Controlles BE5 Cr1.
→ Time out errors. We finally exchange the Crate and find a rubber band squeezed into the Camac plug. → Time out errors are gone but hole in wire map is still there. We decide to leave the hole and continue data taking with low mag. field. (wires 16-55 Ring 1 are missing)

Problems left for the next shift. ① Hole in wire map
② Z-vertex is not calculated by fi-proz after RUN 12637
③ Hist TOF ~~HIT~~ Multiplicity ~~HEAP~~ empty

8⁰⁰ M. Minowa + A. Wagner

8⁴⁵ Since Run 12638 all computers seem to be in bad shape. Nord 10 prints out EXP 8, RUN ... instead of EXP 23 RUN 12638. TOF and Z-vertex HISTOGRAMS funny. No Z-vertex rejection but rejection flag on.
Found error log device of N10 almost full (many memory errors have occurred). Clear device

8⁴⁵ LG-HVs reloaded. (M. Minowa)

9⁰⁰ Rebuild JDAS for safety, reload all miproc's.

9¹⁷ Mark-J information: Transmitters south will be connected again, beam expected ~ 10^4 at full energy.

11⁴¹ Still no beams
In the mean time: - TOF delays reset to 63 ns, following orders of B.N (upper delay was 62 ns, lower delay was 15 ns)
- 1 DL8 (wires 24-31) replaced.

12⁰⁰ "HF-Sender störung"

Inner Detector: Gas added. Pressure 4 bar. Last Run of the old fill was # 12643
We will try to keep pressure constant (by adding gas each day) for the rest of this running period.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.12 E_n>66eV	T2 B.1 17 2T. E_n .2tr.	ON/OFF N50	MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	M11	Ebeam	Remarks

19.11.82

14:00 Yesterday's search for strange missing DL8s in event display and subsequent module changing we should have looked at actual event. Hits were there. Problem came if first wire (#0) fired – then it skipped to benchmark. This originates from late summer when the ancient Monte Carlo reformatter was removed. Old MC had first ID wire as 1 and threw out # ≤ 0 Hence BUG. Now fixed. HEM.

14³⁵ Why didn't anyone see the hole in μ chamber timing map / hit map / singles rates histos ??? (see standard histos. for 6 am 19/11/82

because 1) there were even worse problems
2) all data from run 12638 – 12643 are questionable anyway due to computer problems — see pg 13.

15³⁷ Burger (H-J) called saying that Cello wants whole day Tuesday (between energy saving) access to add shielding. Apparently we have also requested 2h access on Tuesday for RAL-engineers

15⁴⁰ Magnet to 7500 A, injection + ramping has started;
this terminates the running at 6000 A.

16⁰⁰ Finch & Warming on shift

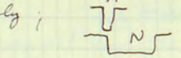
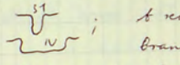
16²⁸ when PETRA was cycling the magnet current through its minimum (equivalent energy 4.80 GeV) the display of the PETRA-TV was squeezed and distorted, at the same time our line printer reported "magnet fluctuation". Maybe both events are correlated?

19⁰⁵ run up the magnet again to 7500 A

Herr Krehbiel is trying hard to fix a problem in the trigger box.

19⁵⁵ Herr Krehbiel switches on and off crates
NORD crashes with an not ending list of "error 37, IOR error adr 50371 level 1"
we stop and restart NORD ? problem understood: Krehbiel had a program running, which tried to read and write into this crate

20.00 Beams lost

20.00. Problem in Trigger-Loc solved. Apparent effect: It was impossible to write any data into the box.
The cause was finally localised to a defective crate controller, from which the pulse S1 came too early;  instead of  ; A record controller had two missed contacts at its branch connector. A third one seems to work after plugging the rear mini LAM grader on, following Covdi's & advice.

20.40 new fill ready, hardware ready, we start a new run

20.50 YSPY reports "DL8 gives hits when claimed to be off 0"
we ask Howard about it, he explains that it was taken out from Y-SPY yesterday and has to be put in again

21:15 Run 12644 stopped by IBM multibus problem – soon cured
⇒ energy is 18.00 GeV because of a defective transmitter

21:30 I had the impression of the lights getting dimmer for an instant
at the same time: JDAS error LG - - -
JDAS error μproc out of sequence
JDAS error timeout -- TOF...

22:00 Yamada is coming in to check LG → it is all OK.
Runs 12644, 12645 - have hole in histogram 'Forward counter mean ADC at No 18.
⇒ Beatle suggested pulling cable out of ADC & pushing back in again - which we did.

22.24 Mark J decides to dump beams

22.55 On-line xsect has got one stupid point in it: all counters have overflowed.

23.00 New fill ready in < 10 mins'
Forward counter mean ADC hole still there.

23 57 Standard Histograms taken, Run 12647, 18 GeV

Saturday, 20. Nov. 1982

0⁰⁰ T. Nozaki and H. Rieseberg on shift.

0¹⁰ Run 12648 started.

0³⁰ Stop the Run, because of DL8 timeout in # 130

1⁴⁵ Beam pipe current alarm was switched off for the moment because it was was caused by some spurious source. NO "Jet chamber high current" message appears on the color TV screen.
Stop for refill.

2⁵⁵ New fill ready
Start Run 12650

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 E>66eV	T2 B:t 17 2T: E>.2tr	ON/OFF N50	MIP	TOF	∠L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

16 20.11.82

3.20 Problems with display
Display busy etc ..
Then Terminal became inactive. This cured by the off-on procedure
But Display still not accessible
We stop Run, EXIT ..RT, ... Note: Run Nr on Main terminal; Run ..Q terminated
It appears
JADE DATA ACQUISITION WITH ; TASK and 2 Buffers

TASKS
Avail 3 a 7 5 ⌐ 5 Ø ⌐ Ø ⌐ ⌐ ⌐

We reload the Nord. → Same DATA ACQUISITION trouble

Again Whole procedure. Message on Line printer is normal
But on Main Terminal funny Messages as before
Nevertheless we try to start a Run, and it works, also histogram display works.
May be a problem of the main console only.

TIME 3.0e.0' DATE D/0;/
EXP RUN IBM TAPE EVTS
6 ⌐ 1 Ø +

Colour TV and Runsum and display are correct.

see also page 13 at 8.45

4.10 Beams lost. Run 12651 terminated

Note: There are a few more holes in the Muon single rate map (see hist # 43)

5.20 New fill ready. R 12652 started

Observation: When working in the DISPLAY BY NUMBERS Mode the run got stuck by no triggers. I go BACK-TO-MAIN: Then the computer could release the message JDAS READOUT ERROR: TIMEOUT brand 2 crate 5, and the run continued
Is this possible?
Time out in brand 4, crate 3 is DL8 Nr. 67. Repared (?) by push

Several times during this shift: YSPY Error: Trigger 1 input present when off: Ø. Has Is this the same as reported at 20.50 on the preceding page? (origin) This is noise on a broken counter.

17

Histograms: Muon single rate is normal again ← it is o.k. for run 12653
New hole in TOF Mean TDC II

The shut down request (cable) from the BP-rate meter is in again during this fill. Now it behaves well again

6.38 R 12653 started / 8.01 stopped — ofer Rowe, Becker on shift
8.50 Rebuild ZDAS steering program to cure problem with experiment G,R,Q etc. RAE

Run-summary of R 12653: RECORDS OUT = 0 !
Histograms seem normal

9.18 Run 12654 started
9.52 " " stopped - Beams lost

13.19 Starting the run 12656: Display problems ("Exp. G"...) again !

15.12 Stop the run: NORD-Problems: ZDAS again loaded.
15.44 Start run, energy → 18.5
Reformat job started

16.00 Komamiya & Takeda on shift
16.30 ~~RING~~ RI-HB was done during injection. (LG) HV values are set.
17.10 Beam lost IP-trip.
17.15 Problem on transmitter. '18.5 GeV' is possible only after the beam currents decrease to 3mA, ie. at the ~~beginning~~ start of a fill: 18.0 GeV.

18.00 Howard arrives - just as Ralph leaves - together a search of ZDAS was made looking for a suspected routine call with fewer than the actual number of parameters. Two calls to ZCIP1 were found with only 5 parameters - and it writes to the 6th - this goes anywhere! One of these was when a run is paused. We managed (by looking at segment) to pause a run, see that a suspected word in $FIO was cleared and the faults appeared. The word was reset by hand and all worked!
The subroutine calls were altered in ZDAS. This fault must have been built in for years and the destroyed location changed as various modifications were made and hence the effects were different.
(Buy a decent compiler!) late AVSUCCESS! HEM & RAE

18 RUN	DATE	START	STOP	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	Tφ reg. ×10⁶	T1 Acc sum	T2 Acc sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·22Tr.
12661	20/11	18 33	19 09	6.43	6.44	6.4	2135	3254	556	36	1416	3993	415	718
12662	"	19 18	20 30	5.26	5.49	5.6	3531	4252	919	52	1671	5532	464	1063
12663	"	21 28	21 49	7.87	7.69	10.0	1253	2261	325	33	995	2809	272	705
12665	22/11	22 24	23 32	6.18	6.44	10.8	3942	8002	1025	110	2890	11720	675	3569
12666	22/11	23 33	00 25	5.10	5.32	8.1	2853	4848	742	60	1792	6993	464	1735
12667	23/11	1 14	2 11	7.48	7.56	12.7	3436	8002	894	113	2959	11233	753	3510
12668	"	2 12	3 23	6.24	6.31	9.6	4238	8002	1103	105	2970	11434	768	3022
12669	"	3 28	3 30	5.04	5.09	0.0	0	44	0	0	0	0	0	19
12670	"	3 38	4 15	4.92	4.97	6.8	2231	3367	581	39	1321	4698	369	1020
12671	"	4 52	5 56	7.61	7.61	11.6	3482	8002	906	105	3101	10337	777	3235
12672	"	5 56	6 07	6.22	6.21	11.0	653	1343	170	19	525	1760	138	448
12673	24/11	6 21	6 24	7.64	7.76	6.3	113	174	29	1.9	68	179	28	35
12674	24/11	6 35	6 47	4.60	4.92	3.7	1060	624	174	6.4	240	804	76	618
12675	24/11	11.40	12:09	7.04	7.81	12.2	1216	2981	316	38.6	1129	3391	276	968
12676	"	12.49	13:08	5.49	6.26	8.5	1026	1448	267	22.0	746	2392	205	574
12677	"	13.27	13:57	4.92	5.66	7.3	1623	2433	424	31.1	940	3289	239	704
12678	"													
12679	"	14.03	15:33	4.29	5.13	7.8	5324	6348	1386	109	2408	8787	610	1736
12680	"	16 43	16 50	5.58	5.54	9.3	440	Records on 0 713	114	10	267	895	72	224
12681	"	20 20	21 44	5.6	5.8	6.7	4925	6696	1282	85	2697	8973	706	2093
12682	"	22 44	0:38	5.6	5.8	4.7	6750	7446	1756	82	3101	9407	805	1~~2~~413 (413)
12683	25/11	3:33	4.11	5.2	5.4	4.2	2133	2363	554	23	1089	2489	294	445
12684	"	4.15	4:31	4.6	4.2	4.9	928	1066	241	12	424	1358	123	285
12685	"	4:34	5:01	4.3	3.5	4.3	1314	1405	341	15	588	1722	139	253
12687	"	5.50	5.50					no events						
12689	"	15.50	16:45	5.3	5.8	6.2	2916	3839	759	47	1546	5012	382	1020
12689	"	19:53	20:33	5.6	5.7	6.4	2335	3311	608	39	1302	4449	332	869
12690	"	21:04	21:04	6.0	5.6	0.0	0	47	0	0	14	0	4	5
12691	"	21:11	21:26	5.6	5.2	7.0	823	1220	214	15	453	1544	114	386
12692	"	21:26	22:32	5.1	4.7	5.3	3527	4156	918	45	1667	5272	437	534
12693	26/11	23.52	0:06	5.64	5.75	6.3	836	1161	217	13.6	3462	1410	127	253
12694	"	00:40	00:42	5.6	5.76	10.8	81	136	20.9	2.3	35	175	5	44
12695	"	01:16	03:20	5.6	5.9	5.0	6940	8002	1801~~8~~	90.3	3301	9837	887	1451

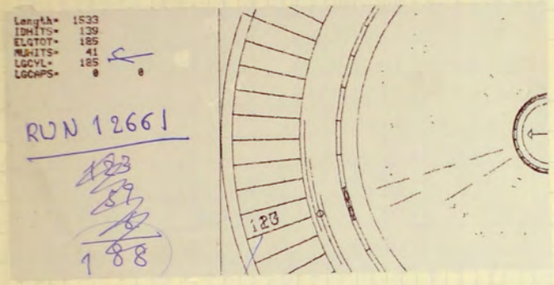
N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM / TAPE	BP [V]	T2 Rej. Ev. Fr. [%]	Bhabha Σ	Multi Had	Ebeam	Remarks
ON	ON	ON	4.73	10.11	701.93	IBM	0.7	59	104	2	17.993	
ON	ON	ON	1.98	7.00	708.93	"	1.0	59	68	2	18.493	Beams dumped
ON	ON	ON	5.39	6.75	715.68	"	1.1	61	81	2	17.989	Beams lost
ON	ON	ON	3.93	15.51	731.19	"	0.9	61	176	3	18.000	
ON	ON	ON	2.85	8.15	739.34	"		60	95	2	18.000	
ON	ON	ON	5.05	17.36	756.70	"	1.3	61	191	3	18.000	
ON	ON	ON	3.70	15.68	772.38	"	0.9	61	145	8	18.000	
ON	ON	ON	0.00	0.00	772.38	"	0.8	0	0	0	18.000	DL8 changed
ON	ON	ON	2.65	5.91	778.29	"	0.7	61	76	1	18.000	
ON	ON	ON	5.11	17.80	796.09	"	1.2	61	190	5	18.000	
ON	ON	ON	4.16	2.72	798.81	"	1.0	59	45	3	18.000	
ON	ON	ON	—	—		"	1.1	56	4	0	18.500	Beam lost
ON	ON	ON	—	—		"	0.7	56	14	02	18.500	~~Beam lost~~
ON	ON	ON	4.49	5.46	804.27	IBM	1.75	60	60	2	18.500	
ON	ON	ON	3.17	3.46	807.73	"	1.10	~~60~~57	44	1	4	
ON	ON	ON	2.39	3.89	811.62	"	!	61	78	3	"	~~forget this run, Ewarthill raised~~ forget this run, Ewarthill raised
ON	ON	ON	1.54	8.19	819.81	IBM	.9	60	66	2	19.000	
ON	ON	ON	3.03	1.33	821.14	?	1.3		20	1	19.00	~~Records out = 0, thruput screen stays intact~~ to IBM Did go to IBM
ON	ON	ON	2.35	11.56	832.70	IBM	1.5	59	116	3	19.000 →18.981	Run ended at PKR request.
ON	ON	ON	1.96	13.34	846.04	IBM	1.4	59	107	7	19.000	
ON	ON	ON	2.37	5.06	851.10	IBM	1.2	58	56	4	19.000	~~IBM EFN~~
ON	ON	ON	1.68	1.56	852.66	IBM	0.9	58	12	0	19.000	Ended due to IBM Link error no events in Run 12685
ON	ON	ON	1.33	1.74	854.40	TAPE F41136	0.7	58	13	0	19.000	no events
ON	ON	ON	2.55	7.43	861.83	IBM	1.4	60	73	2	18.981	Beams lost
ON	ON	ON	2.97	6.94	868.77	IBM	1.3	58	61	5	18.981	"
ON	ON	ON	0.0	0.0	868.77	IBM	1.2	0	0	0	18.981	IBM trouble
ON	ON	ON	2.82	2.32	871.09	TAPE F41130	"	59	19	1	"	IBM down
ON	ON	ON	1.5	6.71	877.80	IBM	1.1	58	50	2	"	Beams dumped.
"	"	"	3.29	2.75	880.55	IBM	1.2	58	33	0	"	Beams partially lost, then dumped
"	"	"	1.48	0.12	880.67	"	1.4	59	1	0	"	Beams " " " "
"	"	"	2.33	16.14	896.81	"	1.4	58	147	5	18981	beams lost

Run	Date	Start	Stop	of Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 Fn>66eV	T2 B:+17 2T: Eq·2tr.	ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

[From RUN 12659 a cluster of noisy lead glasses dissappeared due to an exchange of trigger buffer board. (H. Takeda) ??]

19⁰⁰ To Haward Mills.
The numbers of ADC data sometimes overlap as seen in the figure below

Please check it.



This is rather sad. If anyone sees such an event please SAVE it (under Miscellaneous) so I can investigate HTer

19¹⁰ Standard histograms are checked.
z-Vertex distribution looks better.? (no peaks at ±300 mm)

21.11.82

0:00 Zorn + Bethke on shift
~0:30 "short breath". PETRA-vacuum Leakage! "It may take some time" (voice of PKR).
So we run down the magnet to 500 A.
1:50 Magnet-current run up to 1200 A automatically; No reaction, if I type new current 500 on main console. Only after "1500", he runs up very slowly and realises it.
Now command "500" is obviously ignored. So I run down manually. → Even this doesn't work ("computer off").
I use "reset 1mn down" to go to "0" Amps (otherwise it doesn't go), run up manually to 500 A and leave it! see comment next page

3:10 Now PKR shows: "Restart 21.11.82 ca. 1500
(Vacuum problems in cavity)
No need to stay here. Magnet at 100 A, seems to be stable. Tschüß!

8⁰⁰ ~ 16⁰⁰ Heuer + Yamada
A very quiet and peaceful Sunday morning shift!

Magnet current problem:
The effect that the magnet current goes up from ~500 A to ~1500 A without human interference is with us since more than a week. Pellat tries to find the bug. It is difficult however because it does not occur so often. At several places he has installed automatic recorders.
How to overcome the problem:
Use 'reset 1mn down' button to run the magnet down. Afterwards the computer control is working again.
W.B artist

15¹⁰ Mark J phones: PKR has replaced the cavity window, but found another leak in the same area. Minimum time to repair ~2 hrs.

16⁰⁰ Dubin on (Glendinning are on shift.
21⁵⁰ PKR phone – another cavity has become broken
⇒ There will be NO beam before 7 am tomorrow ⇐
only one Person should be here.
22⁰⁰ Dubin on shift

0.00 SCHEHANN ON SHIFT
SHIFT JUNGES BECAUSE OF PETRA-BREAK (CAVITY PROBLEMS)
04.00 Back on watchdog shift ---- (yawn' ....)

08.00 Finch and Kuhlen on shift
We learn from Mark J that Petra has many problems: two windows breaking and an overheating T piece. We also learn that we too are coordinating!
Petra TV – Restart IPM – we go to Software meeting!

14.17 (Glendinning) Started a MUEV-TEST run, got to 127 events (1Hz trigger) when got "WORD SO BUSY". stopped the run and examined the Muon histograms → empty (!!) tried to restart MUEV-TEST and when replied YES to "OK to start run?" got the following junk:-
-MEMORY OUT OF RANGE AT 101236 -
101236/ 16163130012 LDR 13, 0012, 03, 14
MEMORY OUT OF RANGE

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 F_n>66eV	T2 B:+17 2T·E_q·2tr.	ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

LAST START ADDRESS 154066
LAST MEMORY REFERENCE ADDRESS 37765C11065
LAST DATA TO/FROM MEMORY 2454040000 1
BREAKPOINT REGISTER 1 (BP): 077140
" " 2 (BQ): 100000
BREAK CONDITIONS SET:
/STORE REFERENCE/
*EXIT

It then asked for NORDSO program <NSTODAR> so I hit return and let it load, but said NO to 'OK to start run'. Tried to look at other MU-histo's but got ERROR -1 for the Hitmap, etc. tried to restart MUEV-TEST → OK after giving NSTODAR again
looked at MU-HITMAP and got error -1, surprise, suprise jammed up again at trigger 127.
→ Phoned Howard, who says he will come.

I just tried it and it worked! HEO

15:00 Now we start out took to 19.00
16⁰⁰ Dieckmann & Takeda on shift

21⁰⁵ Magnet to 7500 A
23⁴⁵ Mark-J suggested to increase energy and we agreed as a "coordinator". But Machine people are hesitating to increase beam energy. And they suggest to stay at 18 GeV tonight.

23/11/82
00⁰⁰ Whittaker & Matsumura on shift.
00.32 New fill
3:30 DL8 dayed to correct problem in 8 was starting at 968.
6.07 Energy saving shut down - magnet current reduced to 500 amps.

Note added afterwards – there were a few occurrences of YSPY error TRIGGER 1 INPUT PRESENT WHEN OFF. Histograms looked normal.

08:00 Glendinning & Zorn on shift.
08:55 Temporary Access for inspection of our μ-chamber jammed layer.
10:00 μ-chamber roof inspection completed. Inform PKR that we are OK to restart. – however, they have vacuum problems.
11:00 Magnet current up to 5000A. → 7500A
12:21 Still only 2 kmA electrons, I⁻=0. Phone PKR, they say they need better vacuum – in about ½ hour (?).

13:31 we have beam @ 84 mA but BP current is ~25 mA. PKR say they will try & improve.
13:44 Beams lost – no data taken.
13:54 Phone PKR. they say TASSO's magnet was run down and now they have trouble with the synchrotron – 'water not ok' (?) maybe ½ hour break.
~13:00 Note → There will be a run with Celle in charge starting 23 h today (23 Nov) and ending 7 h tomorrow (24 Nov) a run to improve bl.g. Message comes from L. Criegee – R. Feist informed.
14:07 Magnet down to 1000 A.
14:13 PETRA TV changes to "Break" Restart ca. 16 h. Phone PKR & they say trouble with magnet cooling on synchrotron.
15:45 Magnet current ~~was~~ drifted off from 1000 to 1170 A. The magnet current was lowered and then brought back to 1000 via computer.

16:10 Finch & Steffen on shift.
PKR says: Synchrotron water leak (may come up until 17²⁰)
but little chance of getting Luni until 17²⁰

21:21 Looks like decent currents in PETRA - ran magnet up to 7500 A

21.55 PETRA is still 'optimizing'. Beam pipe contr shows 1.5 V. But it fluctuates and we don't dare to start running.
Stable condition are not guaranteed up to tomorrow morning 7 h.
So we will not take data.

24.11.82

0:00 Uwe Schneekloth & Kawamoto

1:00 **RI-HB was made during injection. [LG-HV reload]**

2:00 New fill complete, 18.5 GeV, with the message "BACKGROUND OPTIMIZATION"
Beam pipe current is ≈ 2.5 V I_+ = 7.52, I_- = 7.55

3:05 Beampipe 0.7V I_+ = 3.45 I_- = 6.41 « d, still background optimization
Beam pipe current sometimes more than 10 volts.
still ~ unstable.

6:15 New fill, Luminosity RUN available.

Run	Date	Start	Stop	at Run Start: I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To reg. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 $E_+ > 66$ eV	T2 B:+17 2T: $E_+ \cdot 2\tau_+$	ON/OFF N50	MIP	TOF	$\mathcal{L}$ $\times 10^{30}$	$\int \mathcal{L}$ dt Bhabha Run	$\int \mathcal{L}$ dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

6:21 RUN 12673 start. a few minutes after, Inner detector HV was down due to over current → beam loss. 7 mA ⇒ 4 mA

RUN 12674 start. Error message: YVOLTS : TAG MFR 63, CH = 1 - 2 3 ;
Luminosity was not calculated. (this error also exists in RUN 12673)

stopped at 6:47 for PETRA ~~injection~~ energy saving time
magnet to 500 A

~~08 00~~ Heuer + Glendinning on Shift

9[15] Magnet back to 4700 A.
11.00 Tagging HV-Power supply MFR 63 resetted U.M.
11:38 Fill ready! waiting for optimization.
11:40 BP: 1.75 V, ID rather clean, rate ~ 4.5 Hz (deadtime 13%), current 7.8/7.0 mA
11:50 I phone Tasso and Cello. Both have high background
12:10 Run stopped because of problems with a DP-crate: fan failure
The fan-unit has to be exchanged, but I have to get a spare unit from EPOS
12:50 New run started after replacement of the fan-unit
13:15 Timeout branch 4 crate 14, can't fix it → call Matrimma.
13:26 Matrimma here: just started a new run & problem went away! (I'd forgotten that trick)
13:35 PKR phone - they want to INCREASE ENERGY - phone the other experiments and they agree (just about)
13:37 "NO TRIGGERS" - fix by pausing & un-pausing (phew that was close!)
13:56 "NO TRIGGERS" AGAIN, but fortunately PKR says "Switch off the HV" anyway (Pause doesn't work)
Now they try to ramp up the energy.
14:00 We run at 19.000 GeV/beam !! What a shift crew !!
14:10 NO Triggers → followed Krebbiels menu and arrived at level 5 - reset OK as prescribed.
14:30 Cello cannot run at 19 GeV at the moment, they could just run at 18.5 GeV and 4-4.5 mA.
At 19 GeV they see an increase in Synch. rad.
Tasso can just run at 19 GeV and the present currents (4-4.5 mA).
We have no background problems: ID draws very low current, deadtime ~6% !
The chamber looks very clean: ~30-40 Synch. rad. hits in barrel e⁻e⁻-events

15:10 Shd histograms ok. There is only a hole at ~200 in the μ-chamber map. I. Calendinning investigates.

15:24 (Glendinning) Investigations complete - the gap in the hit map is quite OK (?) its due to dead inner-layer chambers.

16[00] Stephens, Feltl on shift

16[35] $E = 19.0$ GeV, $I_{e^+} \approx I_{e^-} = 5.8$ mA, $V_{\text{beam probe}} = 1.3$ V good conditions
But run summary (12680) says no records out, though output to IBM and IBM busy was seen!
also 20 Bhabha events and 1 muon candidate were found, strange, try to get experts!

21:43 Run 12681 ended at PKR request.
R.J. Heuer (on call for inner detector) is at Tel. 82 87 54

Yvvy error message: "Trigger 1 Input present when off; 0" cant find anything wrong on the input display, is also not clear to us what the message wants to say, decide to ignore it

23[45] Streamer message no trigger bits (Bhabha) up on other TV

25/11/82
~~00[00]~~ Whittaker and Minowa on shift

00[35] Currents down to 3.25/3.31 luminosity 118 asked for new fill - TASSO reluctant but agreed.
00[39] PETRA display still shows our HV on when it has been run down.
GOULD printer o/p very faint some digits illegible. - repeated end of run summary.
02[25] PETRA having injection problems due to previous shift having changed the injection energy.
03[30] Finally made it - injection completed.
04[10] "No trigger byte" "Faulty part 11" came up on the colour display - What does that mean? It went off after about 30 seconds
04[12] High voltage was reduced to be trifted off - no warning lights or alarms - no warning lights in racksade. Also the run-stop cable was unplugged. This was replaced. The HV was switched on again with no problem and a new run started. Run 12683
From the event display the HV was on at event 1777, last event was 2363 (7.D)
Is there a connection between the "No trigger byte" messages and the loss of HV?
04[35] IBM error 54 - HV trifted out again - no alarm no lights. What is going on?
IBM will be down for about 15 minutes - switched to tape. Run 12685 got lost.
04[51] HV trifted out again - switched back on again
04[53] "No trigger bits" message flashed up on colour screen for 10 seconds.
We have been getting "No events for n seconds" messages quite frequently - not only when the HV has trifted off.
In view of the ~~loss~~ nearly 3 hour injection time TASSO wanted to hold the next fill till after energy saving time. MARK J didn't since currents are low already. Have asked for a new fill at 5.0 and we are keeping our fingers crossed.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 E₁ > 66 GeV	T2 B:+17 2T: E₄ ·2+	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

25/11/82 contd.

05 54 Injection complete - ran up the HV — lost the beam ran down the HV!
06 45 Injection complete 19 GeV/c — lost the beam. Didn't have a chance to watch the HV on ever!
06 50 Energy saving time — Magnet run down to 500 amps.

08:00 H Mills, T Hagestedt on shift

9 00 Magnet runs up and then down by itself. People are said to be working but no sign of them
9 15 'short break' - Petra magnet power supply problem. ↳ they are there though!
9 20 PKR request our magnet up - Magnet men say they will do so.
9 30 Our magnet back on - PKR say their problem lasts a while. We lower magnet to 5000A
9 55 'Power Supply Error' - restart 10:30 appears - we run down to 2000A
10 09 'Machine Interlock error " 11:00
10 50 " " " 11:30 ???
11 25 'Machine Interlock Defect 12:30 Typical day shift!
12 38 " " 17.20
13 22 I phoned PKR - K group are said to have 'found' the fault and are working on it
13 40 14.00
15 50 Beams ready - Screen says 18.981 GeV. PKR claim that's 19 GeV
16:00 Kobayashi and Nozaki on shift.
16:40 PKR try to increase energy to 19.3 GeV.
16:45 Stop run 12688. Switch off HV. Energy up to ?
16:48 Beams lost.
16:50 Energy saving time. Magnet current 1000 A
19:30 Run up magnet to 7500A.
19:50 New filling ready, Start run 12689
20:35 Beams lost
21:00 New filling Beam energy at 18.981 GeV
21:04 IBM down. Stop run 12690
21:11 Run 12691 on tape.
21:25 IBM recovered, Run 12692 start. Events to IBM.
22:25 We take a new filling. $I_- = 3.23$, $I_+ = 3.70$ mA. $\mathcal{L} = 1.2 \times 10^{30}$ cm⁻²s⁻¹
22:40 Beams dumped. TASSO and CELLO wanted to keep the beams, MARK J and JADE want a new filling
22:45 PKR said that they try 19.3 GeV at the next filling.
23:50 PKR gave up to increase the beam energy after they fail once.

26/11/1982

0.00 Ball, Meier
0.05 Most of beam lost. End of run 12693.
Beams dumped.
00:38 New fill ready. Start run 12694. Still just 19 GeV.
00:41 Beams being steadily lost ≈ 1mA per minute. End of run 12694.
01:14 New fill. Run 12695.
01:40 ID slow-ans. BP reading OK, so switch on again.
02:16 ID slow-ans " " " " " " "
02:39 " " " " " " " " "
02:59 " " " " " " " " " Must be spikes in beam.
03:20 We convinced PKR to try 19.3 GeV with low currents of 3 mA.
03:24 beams lost → no energy increase
03:59 Start run 12696 with new filling at 19 GeV.
4:18 Beams progressively lost — as above. End of run 12696
4:49 New fill ready Run 12697.
05:21 Beams lost
05:49 New fill. Run 12698
06:23 Reform - Job submitted (→ tape #110) — followed by analysis job.
06:30 Slow - Ans of ID
06:50 Stop for energy-saving
06.51 Magnet down to 500 A
07.04 LG - CAMAC Crate 7 gives 'overcurrent' alarm, reset → o.k.
07.06 CAMAC - Error during magnet reading
07.30 LG - Crate 7 gives again alarm, we informed Tokyo people
07.57 LG - Crate Power Supply exchanged

8.00 Matsumura and Schweekloth on Shift
8:10 Pillet is working on the magnet power supply. The beams up problem is still present.
9:35 Start RUN 12699
10:15 no triggers, Jet chamber HV down, no error, switched on again, everything Ok
10:20 Start RUN 12670
11.00 PKR phoned, they don't want to go to 19.3 GeV till Monday. 19.3 GeV only possible with low beam currents, risk to damage cavity windows.

Run	Date	Start	Stop	Currents at run start I_+	I_-	D.T. (%)	Time [s]	Records out	All $\times 10^6$	T0 reg. $\times 10^6$	T1 Acc. Sum	T2 Acc. Sum	T1 Bit 2 $E_1 > 6$ GeV	T2 Bit 17 2T · E_4 · 2tr.	ON/OFF N50	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Run	$\int L\,dt$ Experiment	IBM Tape	BP [V]	T2 reg. Evt. Fr. [%]	Bhabha	MH	E_{beam} [GeV]	Remarks
28																				896.81							29
12696	26/11/82	04:00	04:18	6.23	6.26	7.2	1033	1704	269	19.3	672	1935	194	44	ON	ON	ON	3.94	4.07	900.88	IBM	1.5	58	39	0	18981	Beams progressively lost
12697	"	04:52	05:21	6.01	6.13	6.0	1709	2416	446	26.8	974	2897	263	527	"	"	"	3.58	6.12	906.00	"	1.5	57	43	0	"	" " "
12698	"	05:51	06:50	6.16	6.21	6.0	3169	4435	825	49.9	1762	5424	488	963	"	"	"	2.74	8.68	914.68	"	1.5	58	65	1	"	energy saving starts
12699	"	9:35	10:17	5.19	5.94	5.0	2285	2691	595	29.4	11 34	3229	310	419	"	"	"	3.06	7.00	921.68	"	1.4	58	65	2	"	ID HV down
12700	"	10:20	10:44	4.43	5.13	16.1	1234	1698	321	51.8	727	1747	197	255	"	"	"	2.18	2.69	924.37	"	1.4	60	11	1	"	faulty LG power supply
12701	"	13:30	13:59	5.74	5.81	7.1	1633	2525	425	30.2	989	3107	299	699	"	"	"	3.21	5.24	929.61	"	1.4	57	59	4	"	" "
12702																											junk Run Summary lost
12703	"	16:44	16:49	2.26	2.21	4.2	155	159	40.2	1.7	51	205	14	35	"	"	"	0.46	0.07	929.68	"	?	57	1	0	19.000	
12704	"	20:41	22:24	5.82	6.15	6.3	5966	8002	1552	97	3004	10489	837	2102	"	"	"	2.52	15.05	944.73	"	0.9	58	175	5	19.015	
12705	"	22:24	23:01	3.53	3.09	5.4	2226	2624	579	31	968	3451	237	653	"	"	"	1.45	3.23	947.96	"	0.7	57	18	0	"	Beam down
12706	27/11	0:12	0:13					JUNK RUN																			
12707	27.11.82	0:15	0:24	5.81	5.62	8.4	549	962	142	12	361	1145	102	307	"	"	"	2.79	1.53	949.49	"	1.5	56	16	0	19.015	
12708	"	0:22	0:56	5.36	5.33	8.6	1921	2893	499	43	1090	3704	299	930	"	"	"	2.91	5.60	955.09	"	1.5	58	56	3	"	
12709	28.11.82	12:27	14:19	4.57	5.39	5.5	6436	7544	1674	91	2893	10205	636	2025	"	"	"	1.48	9.54	964.63	"	1.5	59	117	5	"	
12710	30.11.82	0:25	0:51			4.1	1463	1470	382	16	565	1873	118	295	"	"	"	(1.08)	(1.50)	966.13	"		58	15	0	19.015	TAG HV off at the beginning of RUN
12711	"	1:50	2:19	4.38	4.22	4.5	1513	1654	393	18	898	2040	155	1771 315	"	"	"	1.56	2.35	968.48	"	1.2	58	23	2	"	Beam down
12712	"	4.22	4.38	4.39	4.29	4.4	959	988	249	11	380	1254	83	220	"	"	"	1.63	1.56	970.04	"	1.3	58	17	0	"	Beams lost.
12713	"	6.10	6.37	4.29	4.14	4.0	1579	1581	411	16.5	632	1975	138	283	"	"	"	1.38	2.17	972.21	"	1.3	57	16	0	"	Beams lost.
12714	"							130																			V. Shot Run – off for more Magnet work
12719	"	13:26	13:28																								Tagging system HV off !
12720	"	13:31	14:04	4.39	4.35	4.6	1927	2053	501	22.7	858	2674	200	2459	"	"	"	1.73	3.33	975.54	"	1.4	60	24	4	"	Beams lost
12721	"	15:32	16:34	4.41	4.37	4.58	3610	3782	939	41.9	1560	4869	339	3315 4228 761	"	"	"	1.46	5.26	980.80	"	1.2	59	43	4	"	
12722	"	19:57	21:40	3.35	3.98	3.4	5717	5001	1487	50.9	2119	6359	482	643	"	"	"	1.25	7.16	987.96	"	1.1	58	65	2	19.031	beams dumped
12723	30.11.82	22:28	22:39	4.35	4.18	4.9	645	785	168	20.0	311	912	70	178	ON	ON	ON	3.02	7.95	989.91	IBM	1.0	56	20	0	"	beams lost
12724	"	23:19	23:48	4.32	4.24	5.0	1653	1933	430	21.5	788	2461	193	434	"	"	"	2.59	4.28	994.19	"	0.9	59	51	1	19.037	beams lost
12725	1.12.82	0:47	2:06	4.64	4.44	4.2	4659	4818	1212	51.5	2005	6028	442	915	"	"	"	2.09	9.74	1003.93	IBM	1.4	59	84	1	19.031	terminated.
12726	"	2.09	2.44	2.66	2.57	3.4	2092	1783	544	18.1	750	2333	188	250	"	"	"	1.13	2.36	1006.29	0/6	0.6	58	25	2	19.031	beams dumped
12727	"	3.28	4.23	4.63	4.56	4.5	3114	3393	810	36	1380	4227	344	652	"	"	"	2.22	6.91	1013.20	"	1.4	59	75	4	19.031	terminated
12728	"	4.30	5.02	2.78	2.76	3.6	1910	1702	497	17.7	726	2194	169	257	"	"	"	1.16	2.22	1015.42	"	0.65	60	21	0	19.031	beams dumped
12729	"	14:18	14:52	3.75	4.00	4.6	1992	2221	513	23	930	2733	199	455	"	"	"	2.14	4.23	1019.65	"	1.2	58	40	1	19.031	TDAS ERROR 44
12730	"	15:04	16:32	2.61	2.90	12.4	5136	4026	1337	166	1648	5210	368	575	"	"	"	1.02	5.22	1024.87	"	0.7	59	45	3	"	Stopped, Mead in Catches
12731	"	16:33	16:47	1.89	2.07	3.0	850	704	221	6.6	298	859	68	89	"	"	"	0.77	0.66	1025.47	"	0.5	57	6	0	"	Stuck last
12732	"	20:36	20:41	4.00	4.38	6.2	308	367	54	3.4	149	360	40	408	"	"	"	3.55	0.74	1026.21	"	1.25	48	7	0	19.038	Beam Energy dumped to 19.031 at end
12733	"	20:41	21:59	3.95	4.34	4.2	4427	4504	1152	49	1897	5692	428	813	"	"	"	1.74	7.71	1033.92	"		59	80	1	19.031	Beam energy changed.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E+>6GeV	T2 Bit 17 2T. E+.2T.	ON/OFF NSO	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
12734	2/12/82	1:57	3:40	4.31	4.67	4.7	6153	6486	1601	75	2743	8000	630	1278	ON	ON	ON	1.90	11.67	1045.59	IBM	1.5	58	124	10	18.970	IDAS ERROR 44
12735	"	3:41	4:21	2.64	3.02	3.8	2388	2108	622	24	879	2707	184	319	"	"	"	1.14	2.72	1048.31	"	0.7	58	26	1	"	beams dumped
12736	"	4:55	5:06	4.74	4.88	5.9	599	890	156	9.2	339	998	83	218	"	"	"	3.01	1.80	1050.11	"	1.3	52	24	0	"	IDAS ERROR 44
12737	"	5:07	5:34	4.40	4.56	5.5	1650	2186	430	24	838	2666	221	595	"	"	"	2.81	4.64	1054.75	"	1.0	55	40	2	"	"
12738	"	5:35	6:42	3.83	4.02	4.7	3981	4307	1036	49	1747	5564	445	848	"	"	"	1.97	7.83	1062.58	"	0.8	59	86	1	"	beams dumped
12739	"	11:09	12:21	4.15	4.57	4.2	4224	4181	1099	46	1687	5984	398	734	"	"	"	1.98	8.35	1070.93	"	1.4	58	61	3	"	IDAS ERROR 44
12740	"	12:24	12:27	2.53	3.09	3.8	122	150	32	12	48	155	5	23	"	"	"	1.53	0.19	1071.12	"		44	0	0	"	"
12741	"	12:46	12:47	2.26	2.84	3.7	55	74	15	0.5	30	66	8	6	"	"	"	0.98	0.05	1071.17	"	0.4	54	0	0	"	"
12742	"	13:09	13:10					JUNK	RUN												"						
12743	"	15:36	16:11	5.03	5.34	5.0	2049	2127	533	26	925	2730	216	405	"	"	"	2.65	5.42	1076.59	"	?	62	41	1	"	DLS - repair
12744	"	16:16	16:47	3.1	3.6	3.6	1829	1655	476	17	694	2060	149	212	"	"	"	1.57	2.88	1079.47	"	?	58	18	3	"	Energy-Saving Time
12745	"	20:02	20:03				JUNK	RUN													"	1.0					
12746	"	21:08	21:28	3.8	4.4	5.0	1060	1218	276	14	504	1588	115	283	"	"	"	2.46	2.61	1082.08	"	0.8	59	16	1	"	
12747	"	22:50	23:45	2.5	2.9	4.7	3325	3077	865	32	1260	4039	302	483	"	"	"	1.41	4.70	1086.78	"	0.5	59	38	1	"	
12748	3.12.82	0:22	2:07	4.93	5.01	5.6	6256	8002	1627	92	3212	10071	883	1880	"	"	"	2.93	18.91	1105.69	"	0.9	58	162	9	19.045	
12749	"	2:06	2:35	3.67	3.69	4.7	1614	1852	420	20	756	2272	178	314	"	"	"	2.22	3.58	1109.27	"	0.7	57	25	0	"	
12750 - 12752			JUNK	due to IBM problems																							
12753	"	2:52	3:45	3.28	3.29	4.1	3127	3122	814	34	1283	3971	320	529	"	"	"	1.75	5.47	1118.74	TAPE F11118	0.7	58	40	6	"	beams dumped
12754	3.12.82	11:39	12:50	5.03	5.05	8.3	4195	5935	1091	91	2346	7510	449	2006	"	"	"	2.19	9.18	1123.92 (5.74)	IBM	0.9	60	88	5	19.045	
12755	"	13:52	14:21	3.36	3.14	4.2	1734	1725	451	19	908	2202	163	294	"	"	"	1.63	2.82	1126.74 (39.96)	"	0.5	59	24	1	"	beams dumped
12756	3.12.82	15:31	16:47	5.20	5.00	7.1	4506	5443	1171	83	2009	6858	530	1248	"	"	"	2.42	10.89	1136.63 (99.85)		1.2	57	97	5	"	beams dumped
12757	"	19:55	21:30	5.20	5.51	7.0	5589	7435	1454	101	2929	9602	731	2001	"	"	"	2.92	16.32	1152.95 (46.17)	"	1.1	59	172	3	"	New Zero' triggering
12758	"	22:27	23:15	5.10	5.21	6.9	2774	4257	722	49	1689	5166	423	1213	"	"	"	3.61	10.90	1163.85 (10.90)	"	1.5	57	97	3	19.060	Transmitter Trip
12759	"	23:55	1:34	5.04	5.28	6.1	5905	8002	1536	94	3225	9889	817	1915	"	"	"	3.16	18.68	1182.53 (27.58)	"	0.9	58	184	2	"	
12760	4.12.82	1:34																									beams lost during pedestal run
12761	"	2:17	2:23	5.13	5.32	5.4	344	509	89	5	187	587	38	145	"	"	"	3.12	1.07	1183.60 (30.68)	"	1.0	57	9	0	19.060	beams lost
12762	"	3:02	3:08	4.73	5.37	1.9	327	280	85	1.6	222	0	51	0	"	"	"	3.87	1.27	1184.87 (31.92)	"	1.0	0	15	0	19.060	T2 track trigger was OFF.
12763	"	3:09	3:34	4.55	5.16	2.6	1425	1237	371	9	855	507	135	69	"	"	"	3.69	5.26	1190.13 (37.18)	"	0.9	58	58	1	"	" after ~570 ev.
12764	"	3:35	4:51	4.08	4.61	5.1	4543	5394	1180	60	2256	6866	561	1219	"	"	"	2.33	11.58	1201.71 (48.96)	"	0.8	59	110	5	"	beams dumped
12765	"	5:20	6:23	4.63	5.60	5.8	3736	4807	972	56	1817	6363	441	1360	"	"	"	1.41	7.13	1208.84 (55.89)	"	1.0	59	74	3	"	beam dumped.
12766	"	7:33	7:37	4.09	5.21	15.9	258	470	67	1	177	488	20	147	"	"	"	3.03	0.78	1209.62 (0.78)	"	0.9	59	5	0	19.075	beams lost
12767	"	08 16	08 57	4.88	5.15	6.4	2332	3362	606	389	1321	4165	353	916	"	"	"	3.37	7.85	1217.47 (8.63)	"	0.9	58	71	2	—"	IBM ERROR 54 - RUN TERMINATED.
12768/9	IBM PROBLEM			—	RUNS		LOST	WITH	NO	EVENTS	WRITTEN.																
12770	"	09 06	10 42	4.17	4.33	5.2	5681	6767	1478	77.4	2740	8684	679	1495	"	"	"	2.10	11.95	1229.42 (20.3%)	TAPE F1112	0.8	60	124	3	—"	BEAMS DUMPED
12771	HOST	—	TOF	MICROC		NOT ON	—	HOWARD	RE-LOADED																		

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Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (sec)	Records out	All x10⁶	To reg. x10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 E_n>66eV	T2 B:t 1/7 2T: E_n·2tr	ON/OFF N50	MIP	TOF	<L7> x10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

26.11.82 contd

11:30 ~~ADC~~ Crate Branch 2 Crate 7 Overload Alarm

Yamada, Takeda have exchanged Power Pack, Ventilator.

13:30 new fill, start RUN 12 701

13:59 RUN terminated, ADC Crate Branch 2 Crate 7 Overload Alarm, Yamada, Takeda repairing

14:00 PKR phoned, Beam energy is 19.000 GeV, 18.981 incorrect display

16:00 Heizelmann & Takeda, Peter

16:45 LG ~~HV~~ power supply problem fixed at last.

1) Wiener Power Pack was wrong.
~~Tempora~~ For the time being, SEN power supply is used for crate #6 of LG ADC.

2) During investigation, one ADC module was damaged in Crate #6. (ADC #64 counted from the left).
ADC board was exchanged.

3) One ADC chip was dead (fast clear did not work)
↳ replaced and OK. ADC #6 ch #3 (counted from 1)

H. Takeda.

19:00 Energy saving time started just after we started data taking.
Magnet current 1000 A

19:05 magnet current 7500 A

20:40 new filling

22:45 Many ADC chips were replaced. They were damaged due to (~20) a power supply problem today. ~~Shit~~ Scheiße !! 糞ぉぉ

27.11.82

➡ Comparison between online Lumi and Lumi from FASTSEL (Barrel Bhabhas).

{ Run 12675 → 12682
Ebeam = 18.0 → 19.0 GeV }

$\mathcal{L}_{online} = 47.23\ nb^{-1}$

$\mathcal{L}_{FASTSEL} = [47.87 \pm 6.34]\ nb^{-1}$ M. Minowa.

27.11.82

5:00 Dickmann and Takeshita ON shift

1:05 ? ⟷ BEFOR RUN 12708 LG-HV ALARM — One of the HV-power supply is over current. (LG-Barrel #5)
We failed 3-times to reset. But Minowa succeeded. : one LG-counter must be broken.

1:56 ID HV OFF SLOWLY.

1:58 Beam lost → "Short Break" (turned out to be quite long)

2:50 Magnet down to 1000 Amps

4:40 on TV RESTART 7:00 AM

7:50 Magnet to 500 Amps / PKR said they are still investigating vacuum problems.

8.18 call to PKR. They ~~th~~ say: Vacuum problem with a HF window; Most likely no beam before 19,00

8.25 Magnet totally off, following Bartels Phone instructions (up to "Emergency off").
We agree that somebody should look in once in a while in case of alarms or smouldering fires etc.

we don't see any new broken counter in the LG hit map Run #12709 is compared with 12675. S. Yamada

16.00 T. Nozaki & Powe on shift

21.10 PKR phones us to tell that they have difficulty ~~[illegible]~~ to reach high energy ≥18 GeV/c. There will be no luminosity run until tomorrow noon. Cello group is checking their detector using the present DORIS beams. Just beam gas events are used for check.

28.11.82

0:00 Becker & Wiedl *)

*) see Log-book IX, p. 149 (one never should make absolute predictions)

We decide this probably during shift

0:06 PKR phones to make sure that somebody is available in case they want to restart PETRA. Their preliminary estimate for that are ~5–7 am.

6:30 Inner Detector alarm (HV off) : Reset alarm in the Kuckucksack
Buzzer does not stop – Alarm reset (21) – Optical alarm signal does not stop.

8:00 S. Yamada & H. Mills on shift

Restart 9:15 ..... Another disaster shift – Linac II is broken
" 10.15

12:10 Beams ready but background too high

1:20 Soft ID trip

1:44 " " "

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 E_n>66eV	T2 B:t 17 2T: E_q ·2t·	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰ Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

Mark J estimate ~47 $^{NO^{-1}}$ at 19.015
Tasso ~ 25 $^{NO^{-1}}$
Cello not much
We 33
105

They can switch on at low efficiency at start-up but so low efficiency that they don't switch on.

14^{10} Beams lost

15^{10} Short break – phoned PKR – They say they fear that a cavity window in the North area may be broken

Run magnet down to 500A
After a few minutes the magnet current starts going up (cold fault)
Magnet then refuses to respond so we run it down by the control panel

23.11.82 Clarke + Heinzelmann
16.00. Cavity window broken restart at NOON 29.11.

19^{45} Magnet spiller Kühlung switched off, but Heatshield still on
R. Felst

19^{30} Check
23^{00} -"-

24.11.82
0:00 Matsumura
4:00 Becker
8:00 Kobayashi
9:30 Replace fuse in Rucksack Camac-Crate (T2-trigger constants could not be written)
10:00 H. Mills phoned PKR – they say earliest possible time is later this afternoon.
11:55 I.D. Alarm when no Beam, no Volts etc. Reset
12:18 " "
13:20 PKR say they are ~~reducing~~ improving the Vacuum in area where window broke
16:00 A small amount of lead shielding was added this morning around the beampipe at the −z end, between the shielding box over the mini-β quad and the lead wall between the muon arches. We hope this may reduce background in the +x,−z layer 5 muon endwall chambers.

16^{00} M^{c}Cann & Narodka a shift. No beam expected before 19^{00}.

16^{00} Cello magnet is' broken

19^{30} "Injection" appears on TV screen. When I ask PKR if they want our magnet up during injection, they don't seem to be very sure, but say "YES" anyway. However, the magnet control box registers a fault and it can't be raised — K group called.

No beam, not even a little, screen says "INJECTION"

23^{00} Called PKR, they say it may last some time, before they get any luminosity. After this window crash they have to do a lot of work, apparently. But magnet should stay on.

00.00 Kawamoto & Clarke

00.20 E = 19.015 GeV e⁻ 4.31 e⁺ 3.93. Beam pipe 5 → 10 V!
00.24 Start run 12710 BPr 1.0V; Dead time 4.1%.
HV for TAG was off at RUN start. Powered on soon manually.
00.55 Beams lost, ID tripped
01.50 Start run 12711 BPr 1.2V
1:17 Beam lost

05.15 'Short Break' announced.

0645 Energy saving time, magnet run down to 500A, 07.45 magnet current fluctuating; CAMAC error on reading MUX channel not set; after this magnet run down to 0. All lights on 'proton supply control unit' dead. — now OK (Pillat was working on magnet)

08:00 30/11/82 R. Felst & H Mills

10:10 Beams ready – we run magnet up & it strikes at ~3850 A. Call H. Pillat
10:55 Beams lost
11^{00} The transformer driving motor did not get enough "AnBrohren" due to bad resistor
Mr. Pillat fixed it, it's working again
11^{49} LG HV read-out trouble → loose connection of control driver at balcony. (H.T.)

Run	Date	Start	Stop	at Run Start: I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rec. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 $E_e > 66$eV	T2 B:1 17 $2T: E_e \cdot 2$tr.	ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

12[15] good killing ready, but can't start a run because of error during
load glass pedestal

13[25] Started Run 12719. Tagging system on +Z (Tingside). Turned it on (stopped run)

14:00 Rang round for I_L @ 19.015 We 45
Mark J 70
TASSO 48

14:04 Beams lost - Trouble with Transmitter WR again, lower Magnet
One more complete filling and maybe we have 50[nb⁻¹].

15[40] ID ran down slowly for no obvious reason

16:00 Minowa and Hellenbrand on shift
16:34 RUN 12721 stopped
Energy ramped to 19.037, beams lost
16:45 Magnet to 500 amps (Energy saving time)
19:05 Magnet to 7500 amps
19:56 start run 12722 Ebeam = 19.031 GeV $I^+ = 3.35$, $I^- = 3.98$ mA Bp = 1.1 volt.
20:50 4) YSPY DETECTED ERROR
" "Trigger 1 input present when off"

21:30 $I^+ = 1.80$, $I^- = 2.10$ mA $L = 0.71 \times 10^{30}$
request a new fill.

~~3 3 5 0~~

23:50 Short break announced. reason: 1 transmitter should be replaced, takes ~20 min

00[00] 1.12.82 Steffen & Dietrich.
1:15 checked standard Hist., normal.
2:03 # 12725 ended JDAS error 44 Time out in CRATE 1 BRANCH 12
2:09 # 12726 started everything starts OK
2.45 4) YSPY detected Error. We checked standard Hists. and found nothing

2.45 We requested a new filling. ($I^+ = 2.31$, $I^- = 2.22$ mA)
4:00 20-Trig at Run 12727
4:30 Run 12727 ended JADAS-Error 44 Time out Crate 1 Branch 2
4:31 Run 12728 started all o.k.
5:30 PETRA - Klystron Defekt. Restart not before 9[00] o. clock. Magnet down to 100 A

8:00 Barthl + T. Nozaki on shift
8:15 Klystron SL defekt. Restart ca 11.00
18:30 ~~Injection~~ Injection started. Krystron SL was exchanged.
13:08 beam accelerated to (19 +ε) GeV Run beams lost.
14:00 19.031 GeV reached with 5.03 on 4.84 mA
high background 1.5V
14:18 Start run 12729
mean ADC for TOF ~ 78 very high (already in previous runs)
14:30 JDAS READOUT ERROR 99 DMA time out
TIMEOUT branch 6 crate 6 : ID Berg 3 > PÜ
JDAS READERROR 53 System crate watching flag on PATH = 000000
15:02 STOP the Run
15:04 Start new run 12730. The problem occurs.
15:09 No trigger problem.
Error level 5. reset and restart works.

Mark J 52 nb⁻¹
JADE ~~39~~ 41 nb⁻¹
TASSO 44 nb⁻¹

16[00] Olsson, Finch
15:04 Run 12730 stopped due to time outs. New run (12731) - problem gone away.
16[45] Start last exit, Magnet to 500
17.40 1 Tagging ADC changed K.H.
19.20 Power Pack Serial link Rucksack broken again. No sparks any more. A provisorium with a freerunning Camac Crate has been arranged, with only the units for triggering active. The Pressure reading is inactive and has been commented out in MAGNET. To consider: Replace the Nimcrate in Rucksack with adaptors and use one large crate, e.g. the present freerunning one.
N.B. The stak of crates on the balcony is deplorable! deplorable?

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·t2 F1>66eV	T2 B·t 17 2T·E4·2tr.

ON /OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Rej. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

20⁴⁰ At new fill the beam energy was 19.038, instead of 19.031. After complaints, PKR changed it. Run 12732 has this beam energy change at the end (short run, ~560 ms).

e)

21·20 e) YSPY detected error message - but nothing appears on any terminals, we look at the standard histograms but can't see anything. (Maybe the wrong T1 input channel)

21·25 We now have our 50 nb⁻¹ at 19.031 GeV. Next energy shall be 18.970 GeV

21 30 YSPY is supposed to write on terminal 48, but is not doing it. Please check, Howard! Sorry, it should be 49. we now changed it.

22·00 Beam dumped

23 30 "Kurze Unterbrechung", Magnet down to 500

24⁰⁰ PKR still trying to inject

0 ²⁰ Chrin and Nozaki on shift.

0 ²⁵ Magnet up to 7500 A. "Injection" on the screen.

0 ³⁵ "Short Break" again

1 ⁵⁶ Start run 12734 at Beam energy 18.970 GeV.

3 ⁴⁰ JDAS ERROR 44 Stop run 12734 and start run 12735

4 ²⁰ Stop run 12735 ← 4²² YSPY detected error. "TRIGGER 1 INPUT PRESENT WHEN OFF"

4 ⁵⁴ New filling ready start run 12736.

5 ⁰⁵ JDAS ERROR 44 DMA Time out

5 ²⁶ Start new run. No errors.

5 ⁰⁸ "HV WRONG" on color TV. LG/BP Power supply 23 HV=1.886 should be 1.867.

5 ³⁵ JDAS ERROR 44 DMA Time out

Start new run.

5 ⁴⁹ YSPY detected error. "TRIGGER 1 INPUT PRESENT WHEN OFF"

6 ⁴⁵ Beams dumped Magnet 500 A.

8⁰⁰ Takeda + Schneekloth

8 ¹⁵ Message from PKR (Mussfeld HF Specialist)
Last night it was not possible to go beyond 18 GeV because of limited RF-power. During the day the power will be gradually increased so that higher energies will be possible tonight. Thus we could continue the energy scan upward after the 18.970 point is finished.
Wilhelm

11 ⁰⁹ Fill completed successfully Start Run 12739

11¹⁰ HV WRONG LG/BP Power supply 23 HV = 1.886 should be 1.867

Terminal 36 broken - YSPY operates on 48 as a temporary measure (in electonics room) Hen

12²⁰ Timeout branch 6 crate 6 I.D. Ring 3 > P1
System crate watching flag on PARM = ØØØØØØ (OCT)
DMA timeout
Timeout branch 2 crate 1 : Latches
↓
RUN stopped. (12739)

RUN 12740 started. But again timeout error! → stop.
started RUN without writing Data no error

12 ⁴⁶ Start RUN 12741
12 ⁴⁷ DMA timeout, Timeout branch 2 crate 1: Latches Run stopped

13 ¹⁰ beams dumped
14.30 YSPY back on 36

15 ³⁵ Beams ready.
RUN 12743 started
timeout branch 6 crate 3 → only once

15 55 Error DL8 giving no response: 165 ~ 171
Hole in the wire map.

16.00 Takeshita + Meier on shift

16.30 Lumi-Values:

Mark J	: 57 nb⁻¹
Jade	: 34 nb⁻¹
Tasso	: 34 nb⁻¹
Cello	: —

→ next filling should have old energy of 18.970 GeV

17:18 19.045 GeV Feist said "At 22:00 or 23:00 we can go to higher energy 19.045 GeV"

18:20 Camac Crate Readback serial link was exchanged. Ventilator from the old one is now in the new one. J.O.

18.54 Pressure reading program is disconnected from YMAGNET.

19:20 Magnet start to goto 7500. Now Injection

19:50 Beam lost at 18.5 GeV

Run	Date	Start	Stop	of Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 F1>66eV	T2 B:1 17 2T: E0 :24v

2.12.82

20:10 Injection – lost at 18.885 GeV.

21.04 Run 12745 is junk because a cable for the T2-mask in the Rucksack was wrongly connected (upside down)

21:30 READOUT ERROR 44: TIME OUT Br4, Cr4 (ID.RING2) — RUN PAUSE
We ~~touched~~ disconnected and connected CAMAC dataway and Branch highway, but failed. — Run stop
we disconnected "START" signal cable and found No 1 DLB is wrong. → cured.

3.12.82 Petersen + Schneekloth

0.22 new fill, Start RUN 12748 beam energy 19 045 GeV

2:06 start RUN 12749

2:35 IBM trouble restart of IBM
trouble with the gould plotter bad copies!

3:45 beams dumped

4:30 PKR has problems with the feed back control system they have to go into the ring

5:00 restart at 9⁰⁰, magnet current down to 500A

8:00 G. Zorn and H. Rieseberg on shift

10:00 still problems with feed back kicker system : RESTART 11 AM

Both Tektronix 4014 Terminals stuck, Reload Nord Herr Masbender improves the Gould plotter

10⁴⁰ Magnet to 7500

11³⁵ New filling ready

11⁴⁰ Run 12754 started

12⁵⁰ Run stopped for Trigger fiddles. Krabbel, Ohrenschmidt, 6.2

Barrel Sum down to 300 MeV possible, below noise starts
Barrel Septant Or is possible down to 100 MeV, with Tag and Tof veto
∴ A trigger T1 accept; with Tag, ≥1 Barrel Septant and <1 TOF is possible, has a low rate.
Purpose: Trigger on wenks $\rightarrow \pi^0, \eta, \eta'$

13⁵¹ Continued with normal trigger conditions, Run 12755

Run	Date	Start	Stop	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

3.12.82

14.20 Stop for beam dumps 19.045 GeV JADE 40 nb⁻¹
Tasso 26 "
MarkJ 46 "
Cello 4 "

14²⁵ New filling ready, start Run 12756

16⁰⁰ H. Mills & A. Finch on shift ... all quiet on the (North) western Front!

16.47 Beams dumped Luminosities at 19.04 GeV JADE 50 nb⁻¹
MARKJ 58 "
TASSO 25 "
CELLO 6.5 "
139.5

TOTAL = 139.5. so decide one more fill at this energy

16:55 Magnet down to 7500

19.00 Magnet back up to 7500

19.00 New trigger bit installed: Following Prof. Zorns suggestions ~~Barrel Se~~
(Barrel-Septant-OR) .and. TAGG .and. (Zero ToF-Counters) on Bit 15
in short BS-OR * TAGG * <1T

19⁵⁵ We start running. Rate on new trigger fairly low (~1%)

Discussed with all experiments next fill will be 19.060

20¹⁵ No events- Trigger box RED LAMP on- cure Just gave GREEN lampon! Pressed a few buttons & it all worked again

PKR agree to ramp to 19.060 at ~~22.30~~ 21:30

21³⁰ Energy raise - they promptly loose most of the beam

22²⁵ New fill at 19.060 ready

23.01 Submitted reform job Gould is in pretty poor state. Goes faint if not used.

23¹⁵ Sender aus fall!

23.25 Magnet fluctuating ±5 Amps - Cured by taking off computer, then putting back on.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E_n>66eV	T2 Bit 17 2T. E_n 2tr.

42 4/12/82

00[00] Steglen + Kobayashi

2[23] When run 12761 was stopped by >STOP command, the TV didn't, and the new run could not be started.

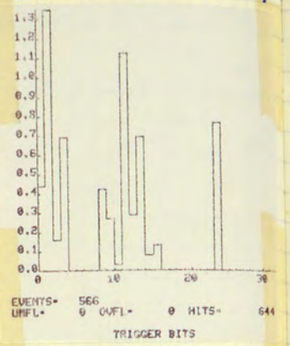
3[05] Power supply for T2 track trigger in Rücksack was OFF

3[20] T2 track trigger was OFF again ~~at~~ at ~520 ev. in run 12763 while the power supply was OK. Stop the run and restart new run makes it back.

6.[55] Dsl for new Energy 19.075 and fill.

Was it the CAMAC-PS or the Euro-Crates? → CAMAC.

main terminal showed the run was stopped but. So we reloaded the program via EXIT - RT ZDAS ... in run 12762. →



08[00] HEDGECOCK & DECKMAN ON SHIFT?
Tried to fix the missing ADC readout at the two muon counters. The ADC fitted turned out to be worse. Refound the faulty unit.

16[00] Matsumura + Schneekloth

			17[30]
16[30]	Mark J	52 nt	58
	Cello	(4 nt)	
	Tasso	≈ 30 nt dec. not know	~40
	JADE	47 nt	52
17[12]	ID Trip ×2		150

17[27] start RUN 12775
19[00] short break, problems with Linac, next energy will be 19.090 GeV
20:30 beams lost after injection
23:50 injection problems, beams always lost at 19.060 GeV, 5 times!

5.12.82

0[00] Kuhlen + Kleine
1[00] BP + chamber current ok at beginning of run, but trigger rate and dead time very high due to trigger bit 17. After a bit correction trigger rate + dead time at normal values, BP current reduced by about 20-30%.
1[45] JDAS error: Linecard branch 2 crate 5 (LG-ADC)
Control plotter in phantastic condition: Copies are white. After some fiddles the copies get visible.
2[10] Run 12776: Run Summary shows, that "T1 accepted ≠ T1 for all bits. The sums are equal. Standard histograms look ok, only z-Vertex has an additional ear ≈80.
One thing in the Trigger 1 input histogram puzzles me: The last entry of the EQ's is very low since a long time. In the "Operators Manual" this is marked as a bad example. Is it now bad or not?
2[55] Time out branch 6, crate 4 (2x)
4[30] This time T1 Sum shows ×××, whereas the #'s for the bits seem to be ok. I decide to reload ZDAS for the next Run.
4[40] time out branch 7, crate 2 (μ)
6[10] filling ready. We cannot switch on because one of the LG power supplies shows overcurrent. Minawa comes.
6[40] Fortunately they lost the beams.

8[00] Kawamoto + A Wagner
R.D.H + M Minowa are replacing LG power supply
we can't run for the time being
Machine energy 19.968 GeV, but only on display due to problem in PKR.
9[30] beams dumped, variable life-time. PKR must fix some things.
10[30] beams again, but still LG problems

11[08] LG HV power supply is now (almost) OK. A power supply and a HV distributer were exchanged, and HV were adjusted. ~~[illegible]~~, we have one LG counter ~~with HV~~ (RING 14 - WAND - 21) without HV applied ~~due~~ for the moment ~~to~~ a broken distributer output channel.

11[44] finally we start run, only to find T_2 problem (with Camac power supply on rucksack). After exchange of fan all works (for the time being).
12[01] YPY-error message: "Trigger 1 input present when off: 0"
12[30] new filling requested
16[00] Bethke, Wriedt
17.00 Trigger-Set hang-up level 5
17[20] Very sad for a nice fill at 17:30 & worst a new energy step
Mark J: 68 nb⁻¹
Tasso: 55 nb⁻¹
JADE: 43 nb⁻¹
CELLO: ?
17:25 beams lost, ID-trip
MARK J wants 5 min. access

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr.(%)	Bhabha Σ	Mll	Ebeam	Remarks

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E_T > 66 GeV	T2 Bit 17 2T. E_T > 2 GeV
12772	4/12/82	11 37	12 11	4.77	5.00	5.0	1965	2321	511	25.7	984	2845	269	491
12773	"	12 18	14 01	4.12	4.25	4.3	6121	6347	1593	69	2676	7954	671	1073
12774	"	15 12	17.26	4.35	4.89	4.4	7625	8002	1985	87	3237	9952	785	1439
12775	"	17.27	18.01	2.69	3.35	3.7	2035	1934	530	19	804	2342	206	253
12776	5/12/82	1:05	1:57	4.37	4.82	8.6	2963	3976	771	66	1444	6137	267	1769
12777	"	2.43	4:12	3.11	3.30	5.0	6534	7474	1700	86	3119	9526	737	1516
12778	"	4.34	5.18	3.10	3.29	4.4	2620	2743	681	38	11542	3397	274	468
12779	only Beckstab													
12780	no T2 triggers		due to crate problem on Rucksack / very short run											
12781	5.12.82	11:44	12:32	3.11	2.81	5.2	2804	3093	729	38	1219	4038	261	583
12782	"	14:26	15:53	4.95	4.99	6.8	5120	8002	1332	90	3558	9175	675	1585
12783	"	15:54	17.27	3.33	3.04	6.7	5393	5523	1404	94	2396	7777	505	955
12784	"	21:09	– forget it				time sets – data	Br. 6, cr. 4						
12785	"						3066							
12786	"	21:31	22:23	2.93	3.02	4.7	~~5590~~	3112	798	38	1234	4164	250	516
12787	6.12.82	04 31	04 42	3.11	4.00	4.7	967	1060	251	11.7	392	1329	82	196
12788		Junk												
12789	"	12:17	13:36	3.20	4.32	15.1	4164	8002	1084	163	3453	8755	464	2082
12790	"	13:36	14:17	2.57	3.58	8.5	2379	4179	619	53	1605	5772	302	989
12791	No events													
12792	6.12.82	20:04	20:06	5.02	5.48	91	84	288						
12793	"	20:07	20:10	"	"	9.2	145	293	37.8	3.5	102	315	21	443
12794	"	20:13	21 36	4.94	5.40	7.5	4970	8002	1293	97	2937	9639	720	2102
12795	"	21:37	23:16	3.99	4.33	7.9	5629	8002	1464	116	2971	10286	762	2022
12796	"	23:16	0:11	2.94	3.31	5.6	3301	4013	858	48	1491	5394	321	1062
12797	7.12.82	1:43	2:52	4.24	3.98	6.7	3940	~~0~~ ?	1024	69	2233	7611	481	1506
12798	"	2:54	4:07	3.34	3.15	6.9	4409	6503	1147	79	2445	9261	500	2093
12799	"	5:47	6:26	5.18	5.31	25.3	2328	0	605	153	3401	8911	396	3211
12800	"	6:27	6:47	4.39	4.43	13.9	1141	3152	297	41	1282	3799	206	993
12801	7/12/82	10:27	11:05	2.56	2.83	5.0	1843	2015	480	24	797	2720	146	392
12802	7/12/82	1 EVENT												
12803	7/12/82													
12804	"	20:41	21:35	4.82	5.31	8.4	2723	3961	769	60	1223	4859	301	1196
12805	"	21:40	23:22	3.74	3.40	5.7	6102	7705	1588	91	2546	~~18~~ 9237	552	1702
12806	8 "	1:26	3:56	4.56	4.86	5.6	6593	8002	1716	96	2756	10348	641	2352

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	∠L7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp.	∫L dt Step	IBM/TAPE	BP [V]	T2 Reg. Ev. Fr. (%)	Bhabha Σ	M.H.	Ebeam	REMARKS
	ON	ON	ON	3.39	6.66	1232.81	(23.97)	IBM	0.87	58	62	1	19.075	Run started to change ADC on FADMC
	"	"	"	2.06	12.63	1245.44	(36.60)	-"-	0.76	58	114	6	-"-	Beams Dumped
	"	"	"	2.11	16.06	1261.50	(52.66)	-"-	0.83	57	156	8	19.075	
	"	"	"	1.36	2.77	12.64.27	(55.43)	"	0.5	57	18	0	"	
12776	ON	ON	ON	1.48	4.37	1268.64	4.37	IBM	1.7	63	47	1	19.090	beams lost
	ON	ON	ON	2.26	14.79	1283.43	19.16	IBM	0.9	60	135	2	19.090	
	"	"	"	1.56	4.09	1287.52	23.25	"	.65	58	46	0	"	beams dumped
	"	"	"					"	1.2				"	
								"					19.090	no valid data
	"	"	"	1.00	2.82	1290.34	26.07	IBM	0.7	59	29	1	19.090	
	"	"	"	2.32	11.89	1302.23	37.96	IBM	1.6	60	121	4	19.090	
	"	"	"	0.98	5.31	1307.54	43.27	"	0.8	60	53	4	19.090	beams lost
													A 104	128 - time sets ; no data
													–"–	
	ON	ON	ON	1.05	3.21	1310.75	~~3.70~~ 3.21	IBM	0.65	61	19	1	19.104	beams dumped
	"	"	"	1.42	1.37	1312.12	4.58	-"-	0.97	58	18	2	19.105	Beams lost
	"	"	"	1.33	5.34	1317.46	9.72	"	0.85	65%	55	1	19.705	
	"	"	"	1.05	2.52	1319.98	12.24	"	0.70	65%	23	1	"	Beams dumped
	IGNORE THIS RUN							IBM			0	0	19.105	JUNK RUN PULSER was on TAGG HV off very short run
	"	"	"	0	0	~~0~~	~~0~~	IBM	1.2	59	1	0	"	
	"	"	"	2.54	12.62	1332.60	24.86	"	1.2	59	131	3	"	
	"	"	"	1.53	8.60	1341.20	33.46	"	1.0	59	112	4	"	
	"	"	"	0.94	3.11	1344.31	36.57	"	0.9	59	24	3	"	
	"	"	"	1.91	7.53	1351.84	44.10	FH1129	0.7	61	74	3	"	RECORDS OUT = 0
	"	"	"	0.89	3.94	1355.78	48.04	IBM	0.6	62	40	4	"	beams dumped
	"	"	"	2.38	5.55	1361.33	53.59	IBM	1.6	67	49	1	"	
	"	"	"	2.14	2.44	1363.77	56.03	"	"	64	18	1	"	beams dumped
	ON	ON	ON	0.87	1.60	1365.37	1.60	IBM	0.7	62	14	0	19.120	
														JUNK (Beams lost)
	"	"	"	1.40	3.80	1369.17	5.40	"	1.5	56	25	0	"	last ~~part~~ of the data with 0 beam-energy
	"	"	"	0.84	5.93	1374.30	10.53	"	1.4	56	57	6	"	first part of the data with 0 beam energy
	"	"	"	1.65	6.94	1381.24	1747	"	1.6	57	70	1	"	

Run	Date	Start	Stop	at Run Start: I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rec. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B.t.2 $E_n > 66$GeV	T2 B.t.17 $2T \cdot E_t \cdot 2t_r$	ON/OFF N50	MIP	TOF	$\int L\,dt$ $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

5.12.82

19:50 "short break"

18.00 "break, restart 18.30" We ran down magnet to 2000 A

18:30 " -"- " ca. 19.00"

19:00 Injection is started, magnet back to 7500 A.

20:00 New energy (19.105 GeV) reached, but very short life-times, finally beams lost.

21:30 DL8 problems that caused time-outs

22:15 We ask for a new fill, the currents of the present one are pretty low.

22:50 LG-HV-(RING 14-W-21) is OK Now! (See P43) T. Kawamoto

LG HV system ~~was replaced~~ is now repaired to the ~~broken~~ condition before the HV power supply and distributer break down [5/12/82 AM 6)

23:40 "Break, trouble with transmitter"

0:05 Hedgecock + Krehbiel on shift. Call to PKR; they say "Trouble with transmitter safety interlock, it's often shutting down, but window temperature o.k. They try again and will know more in 15 min.

0.48 Still trouble with K-mitter. They (PETRA) don't know how long. So we run the the magnet to 1000 A;

$0^{3^{20}}$ PVK says they are almost ready and ask us to run magnet to normal operating current.

$0^{3^{25}}$ Injection started!!

$0^{3^{55}}$ Ramped to 19.104 GeV and then beams were lost

$0^{4^{30}}$ We start run 12787

~~0~~4 4.48 Beams lost.

If Gould Plotter should fail, get Run Summary before starting another Run on Nord-Printer. Enter Run-Summary-Subcontext, RUN-SO-FAR; LUN: 1;

There is possibly something wrong with the Endcap sum 4 level. Trigger 1 input histogram - level 4 in both EC[-] has the lowest of all rates! This corresponds with the low rate of Trigger ~~17~~ 13 DUM levels are properly set. Further investigation during ff E-S-Time. Are there any controls programmed if higher bits are set without the lower? May be Gate too late

5.35 Ramping up

5.50 All goes well to 19.080 GeV, then the beams get lost and at a high rate. They suggested to run with 1.5 mA of positrons, which did not even trigger our TΦ. After some coordinating the we decided to let Petra have another try. PETRA says, they 8 inserted ~~the~~ a new optics file from the former shift, which lacked proper tuning. So they must try to correct or improve it.

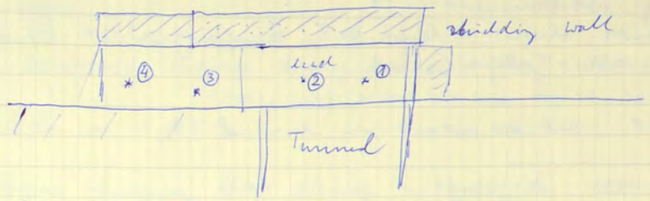
6.48 E-S-Time begins. We run down the magnet to 500 A.

8^{00} Mc Carron + Peterson.

10^{00} magnet up to 7500 A

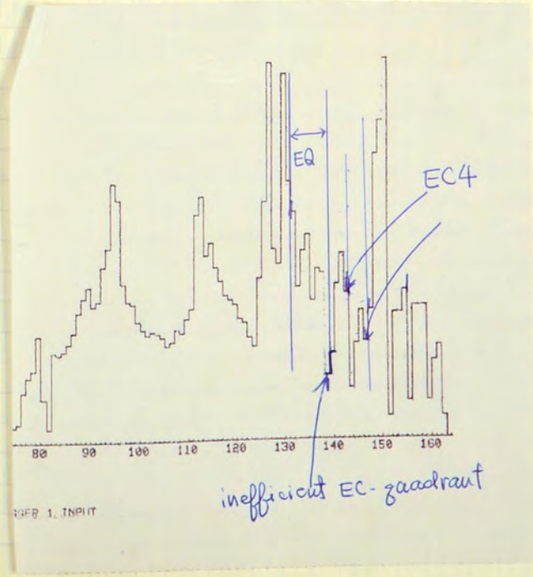
Please write readable letters

9^{00} Dose meters placed ~~over~~ close to the tunnel exit at -2



Stand: $\int L\,dt = 1310\ nb^{-1}$

11^{00} One third of ~~8~~-th end-cap quadrant lineav sum was found to be dead. The effect to the end-cap luminosity ~~with~~ would be quite small, because the total energy trigger saved the events (Since run ~ 12476). H.T & M.M



Concerning ~~EC~~ EC4 triggers

Timing was checked with pulser and OK.
Let's see with the beam.

↳ Timing with the beams was also OK. Thresholds were OK.

To Mr. Krehbiel "Please check the strobe unit" or the units after it.

11^{58} CAMAC Crate on Rucksack found again tripped (see also 5.12.82 11^{44} and notes before) Rö

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.t2 Fn>66eV	T2 B.t 17 2Ti Eb·2tr.

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12¹⁰ Nord date has January rather than December. Everything else seems ok. A1 4:30 this morning it was ok. Reloaded Nord and all looks fine. -HEI

12¹⁵ new filling start run 12789 at 12:17

12³⁰ Standard lists show (a) dead DL8 Riesberg called (b) Trigger bit 4 has very high rate - Takeda Called.

12⁵⁵ DL 8 # 164 replaced. OK from about event 5000 on (Runs 12789)

13⁵⁰ a) YSPY ERROR, but no output on terminal 36

1600 Murphy + Minowa on shift
Heuer is working ~~for~~ against DL8 problem.

1915 End of energy-ramp. Magnet up to 7500 A.

19²⁰ After repairing the fan unit which was lying around at EPOS since 2 weeks (unrepaired!) and after replacing a power supply the DL8-crate works again (I hope!). I cannot test it, since all pulser units are plugged out of the marginal T2-crate.

19⁴⁵ Koehler has repaired something in the T2-Crate, so I can test the questionable DCPT with the pulser. One of them doesn't work - to exchange. Now everything seems to work. RDH

20:10 Tagging HV wrong Main frame 63, reset OK.
Meanwhile I reload the Nord since the Graphics terminal was hanging. Now ok.
Someone must have turned Trigger bit 19 on! (EC1+EC2)[2]×2 Tracks.
Since rate is low, we leave it on.

7.12.82
0:00 Wagner and M. Nozaki on shift
0:10 Beams dumped
1:43 new filling, start run 12797, data taken onto tape F11129
2:25 A Hole in the bit map of L-G endcap is found (# 172) I investigated the signal. → no output. The counter seems to be dead since run 12789.
2:52 RECORDS OUT in the run summary is Ø. (run 12797) Everything appeared to be OK. Did we lost the events?
2:53 Start run 12798, events are written on IBM.
4:08 beams dumped.
5:44 new filling ready

ON/OFF N50	MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fn.(%)	Bhabha Σ	MH	Ebeam	Remarks

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5:54 JDAS READOUT ERROR 44 TIMEOUT BRANCH 3 CRATE 2 : Muon Chambers
6:07 YSPY DETECTED ERR. TRIGGER 3 f/p missing ST14 GP5
6:30 Number of RECORDS OUT in the run summary is again Ø. (run 12799) but OK for run 12800
Must be pressing START-RUN too fast!
6:50 Beams dumped, run down magnet to 500 A.
Note: the background condition during the last filling was quite bad, see histograms.

8:00 Baines & Steffen on shift.

One additional shielding block placed on top of the Q11-table at -z

10²⁷ RUN 12801 STARTED
11⁰⁵ RUN 12801 STOPPED FOR NEW FILL, PROBLEM WITH DESY "TRANSM. IN WEST DROPOUT", CONTINUE WITH OLD FILL IN RUNS 12802, BEAMS LOST, RUNS 12802, 3 ONLY HAVE TURN.
15.00 Fault in EC[4] level was obviously an oscillating output of the NIM-Threshold control. Cured by soldering capacitors in. In the time before (as long as the histogram looked like this) the hits of EC[4] can be regarded as purely accidental! Kalbfell

EC[4]

16:00 - 24:00 Heller Imond + Pehe

17⁰⁰ magnet down 500A
19⁰⁰ magnet up 7500A
20⁵⁰ new filling $J^- = 4.70$, $J^+ = 4.40$ beam pipe current 1.7 V!
21¹⁵ The beam energy on our colour TV is 0.000! We phoned with PKR they say it's an error of their computer and try to fix it. But some of our data ~~must be~~ are probably usable with energy 0! We set the beam energy by hand. Runs 12804-805 E_b = 19,120 GeV

8/12/82
00·00 FINCH & OLSSON ON SHIFT
1·25 New filling ready
2·10 Run paused while PKR optimise. We had detector alarm due to optimization. No warning was given! Tasso agree that optimisation is no good. We ask PKR to stop it. Both stable beam then somewhat better lumi
2³⁰ Very frequent anode current alarms, always across 021. Occurs as well without HV on.
2³⁵ Mark J, PKR want Orbit Correction, we agree.
5³⁰ DL8 77 exchanged against 390. 87:5. First Fan failure, OK after switch off, on.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 Fn>66eV	T2 B:t 17 2Ti·E4·2tr.

6:45 Beams dumped for energy saving
Magnet down to 500 A. Got hanging at 1080 Ampere.

7:20 We had 12 ID alarms in 7 hours; 4 of those alarms without ID high voltage on.

7:40 " " 18 " 7,5 " 8 " " "

Observation: Anode current Osci. display shows structure → ⊥ → ⊤. Waves going through!

8:00 Rieseberg & Takeda on shift

9:18 Magnet up

12:23 Beams lost at 19 GeV

R. Feld: Tomorrow, Dec. 9, access for Mark J 7-11 a.m.

We have a slow disturbance on channel 21 of the anode current which comes from the chamber. Our wond procedure (HV voltage off-on) does not help, and a RC-smoothing would make the safety nearly inefficient because of the long time constant needed (a few hundred ms). I am afraid we have to live with this problem!
The waves on the scope occure by a harmless noise pick-up
Rbg

13:03 New filling ready at 19.120 GeV I+ 4.9, I− 5.4 mA BP = 1.24

13:16 run 12810 stopped, due to ID read out problem.
Mr. Rieseberg is trying to replace the fan unit of power crate.
Runs 12811 Wires 1048-1103 missing, Run 12812 Wires 1056-1071 suppressed, DL8 faults

15:10 Run 12813 ended because of beam loss
No standard histog. print, Gould is weak

16:00 Chrin + Bethke on shift
waiting for a new fill.

16:40 ran magnet down to 500 A. Because no new fill possible before energy saving!

17:10 Obviously magnet run up above 500 A → 1040 A without any message! This is hardware!
Set new current 450 on main-control-terminal. Nothing happens! ~~But after some seconds~~
~~Change~~: Also manually no reaction. Told with R. Hedgecock. We decided to leave it as it is until 19:00 and then try to "reset" if nothing else helps.

19:00 run up magnet to 7500 A (starting from 1040); it works now (by computer).

20:00 beams ok. started run 12814

20:25 "no events" trigger problem level 5 → after instruction all o.k.

20:45 standard histograms o.k. (no plotting possible, gould-plotter-output like invisible ghost-diagrams).

9/12/82

0:00 Baines and Takashita on shift

12:33 ID-HV TRIP in RUN 12816

1:06 RUN 12816 STOPPED WITH IBM ERROR, the IBM DATA DISK is 68%. → DUMP

ON/OFF N50	MIP	TOF	LL7 ×10³⁰	JL dt Bhabha Run	JL dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

1:30 After RUN 12816 we can't link with IBM. "WAITING FOR IBM LINK" IBM BUSY.
We Tried several times to link NORD with IBM, but failed with NO TRIGGER BITS and YPARA 5.

02:24 RUN 12822 STARTED, SUCCESSFULLY LINKED TO IBM R
RUN 12817 TO 12821 are JUNK RUNS.

04:00 RUN 12823 WITH NEW FILL

0428 at RUN 12823 NORD CRASHED. — RELOAD, REGISTAR LIGHTS NOT FLASHING, LEVEL 00, FLICKERING

8:00 SCHIEHANN #FEEDBACK

13:00 ID ~~ALARM~~ ~~TRIPS~~ WITH EVERYTHING OFF ADDRESS 27. RESET.

13:04 PWR desk ok to turn up magnet to normal level.

13:59 ID ALARM. Nothing yet switched on. ADDRES 27

14:00 PWR computer indicates "SWITCH ON HV".

14:07 ID alarm. Same address.

Tried to switch a ID Trip HV input reset - then on || Run down with no alarm switched back on when no reason indicated.

Run 12826 started at new energy.

ID Trip address 70 data 30.6. Have to turn On | continue.

1435 ID Trip – address 21 Reset and continue.

During shift, I changed ADC for forward muon chamber. Hole at #18 disappeared. CH

16:00 Lewer + Yamada
Magnet tripped off. Room temperature to hot. Switched extract fan to auto and fans came on.

16:15 Petra shows shut break – so nothing will happen before 19:00. I turn magnet to 2500 A since Petra wants to make beams for Cello at 7 GeV

0.18 pmrad

16:45 Reg + RDH make the anode current measurement of channel 21 ~~more~~ less sensitive. The alarm frequency should be very small now.

19:10 Spark alarm ID with HV off. Find Crate HV gone, also 3 other crates (4534) in the Bunker are off. I find 1 fuse gone in the distributor box – replaced by the last spare.

19:40 Filling ready, start run. Conditions look ok

21:00 Std. histograms look ok.

22:40 (#ANALYSE) was done.
PS. # 124 is now submitted. Since the previous Job 4 was waiting with a low priority the old one was canceled by us. After checking ~~the~~ the missing file number in the F22MIN.MUHA.--- we submitted ~~the~~ another analysis job by changing the series no. from 124 to 123 in the #ANALJCL. Now #124 and #123 are waiting in the med.-class. Before doing (#ANALYSE), be sure JADE KONT is left!

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records Out	All $\times 10^6$	To rej. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 Bit2 $E_1 > 6$GeV	T2 Bit 17 $2T \cdot E_4 \cdot 2t_4$
52														
12807	8/12/82	3 55	4·31	2.75	3.10	3.6	2101	1005	546	20	787	2908	194	303
12808	"	5·31	6·46	4.69	5.07	5.5	4102	4997	1066	59	1982	6450	778	1327
12809		only parameter setting events - no run sum												
12810	"	13.11	13:15	4.79	5.28	9.0	168	328	44	3.9	117	408	21	133
12811	"	13:24	13:34	4.63	5.11	11.6	565	1899	147	16.9	391	1472	80	506
12812	"	13:39	13:46	4.45	4.93	9.3	370	790	96	8.9	251	908	62	278
12813	"	14.01	15:10	4.20	4.66	9.2	3856	6620	1004	93	2289	9402	575	3140
12814	"	20:02	21:20	3.77	4.29	8.9	4546	5386	1183	105.8	2104	7162	485	1648
12815	"	22:15	0:01	4.58	3.73	6.6	5842	8002	1519	109.7	3104	10591	712	2642
12816	9/12/82	0:01	1:07	3.51	3.22	4.9	3647	4141	948	46.3	1738	5311	427	1061
12817	"	02 24	3:33	4.87	5.22	7.9	3990	6260	1038	734	2479	7666	598	1843
12823	"	04 00		5.04	5.31			NORD	CRASHED					
12824	"	0433	06:36	4.58	4.82	4.4	7283	8002	1896	82.6	3441	9393	587	1121
12825	"	06:36	06:47	3.34	3.49	3.9	505	570	131	5.1	264	584	53	64
12826	"	14 17	15 37	4.01	4.62	7.4	3370	5028	878	64.5	1817	6929	453	1889
12827	"	1942	21 21	5.42	5.41	6.1	5970	8002	1553	95	3263	9642	878	2084
12828	"	21 22	22 33	4.03	4.11	4.7	4241	4490	1103	52	1977	5353	478	651
12829	"	23 00	23 16	5.39	5.31	9.2	847	1485	220	20	542	1993	151	654
12830	10.12.82	23:59	1:53	5.16	5.28	5.0	6673	8002	1736	87	3535	9425	921	1420
12831	"	1:53	2:47	3.75	3.80	4.1	3153	3346	820	34	1457	3851	335	437
12832	"	3 30	5.07	5.07	5.15	5.1	5767	7066	1500	77	3035	8379	796	1348
12833	"	5.14	5:46	3.74	3.74	4.4	1840	2019	473	21	848	2426	224	343
12834	"	5:46	6·23	3.46	3.45	4.4	2128	2345	553	24	970	2778	265	351
12835	"	[illegible]	13.02	4.83	4.99	1.6	773	542	201	3.3	462	0	104	0
12836	"	13.04	13.21	4.58	4.74	1.5	877	574	228	34	496	0	108	0
12837	"	13.21	14.10	4.38	4.52	5.4	2929	3595	762	40.8	1452	4564	355	924
12838	JUNK													
12839	"	20 07	22 03	4.91	4.99	5.4	6831	8002	1778	95.8	3286	9861	843	1696
12840	"	22 04	22 13	3.51	3.59	4.1	498	534	130	5.4	223	624	49	112
12841	"	22 51	23 44	5.15	5.21	8.3	3170	5514	825	68.8	2053	6946	549	1878
12842	11.12.82	8:59	9.01	4.71	4.81	6.8	126	198	32	2	67	235	15	55
12843	"	9 08	9 10	4.53	4.63	2.6	70	182	18	1	68	136	20	139
12844	"	10:02	11 46	4.88	5.00	5.6	6235	8002	1622	90	1531	9924	786	1905
12845	"	11 47	12 14	3.42	3.50	2.3	1632	1304	424	10	810	865	197	169

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle \cdot 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	Step $\int L\,dt$	IBM/ Tape	BP [V]	T2 Rej. Ev %	Bhabha Σ	M.H.	Ebeam	Remarks
53														
"	"	"	"	0.88	1.85	1383.09	19.32	IBM	0.6	58	20	2	19.120	Beams dumped
"	"	"	"	2.11	8.67	1391.76	27.99	"	1.0	59	83	2	19.120	Beams dumped for energy scan
ON	ON	ON	ON	2.33 ~~2.39~~	0.39	1392.15	28.38	IBM	1.2	59	6	0	19.120	
"	"	"	"	2.95	1.67	1393.82	30.05	"		6	13	0	"	
"	"	"	"	2.92	1.08	1394.90	31.13	"	1.1	53	10	0	"	
"	"	"	"	2.33	8.99	1403.89	40.12	"	1.1	59	81	2	"	Beams lost
"	"	"	"	1.88	8.56	1412.45	48.68	"	1.0	59	76	5	19.120	beams lost
"	"	"	"	2.57	15.00	1427.45	~~63.18~~ 15.00	"	1.2	58	156	6	19.135	
"	"	"	"	1.88	6.85	1434.30	21.85	"	0.7	59	60	3	"	IBM DSK FULL - DUMP
"	"	"	"	2.57	11.84	1446.14	33.69	"	~~0.6~~ 1.5	57	89	6	19.135	beam lost
"	"	"			~2		~36	"	1.0				"	NORD CRASH
"	"	"	"	2.48	17.50	1463.64	51.19	"	0.9	56	128	7	"	
"	"	"	"	1.62	0.82	1464.46	52.01	"	0.6	54	9	0	"	beam lost
"	"	"	"	~~2.51~~ 2.17	7.31	1471.77	7.31	"	0.97	59	69	1	19.150	BEAM LOST.
"	"	"	"	3.52	21.03	1492.80	28.34	IBM	1.3	57	180	9	"	
"	"	"	"	2.30	9.77	1502.57	38.11	IBM	.75	58	82	1	"	
"	"	"	"	2.14	2.66	1505.23	40.77	IBM	1.2	60	24	3	"	beams lost
"	"	"	"	3.12	20.83	1526.06	61.60	IBM	1.25	57	180	3	19.150	for
"	"	"	"	2.15	6.71	1532.85	68.39	"	0.7	57	72	2	"	beams dumped
"	"	"	"	2.38	17.21	1550.06	17.21	"	1.15	57	159	6	19.165	run stopped due to IBM power failure
"	"	"	"	2.01	3.70	1553.76	20.91	TAPE FAILURE	0.7	57	41	1	"	" ; IBM on the air again
"	"	"	"	1.82	3.88	1557.64	24.79	IBM	0.7	55	43	2	"	beams lost, Totalausfall
"	"	"	"	3.33	2.57	1560.21	27.36	IBM	0.8	0	21	0	"	T2 Trade trigger was off
"	"	"	"	2.99	2.62	1562.83 1570.1	2.98 30.25	IBM	0.9	0	19	0	"	
"	"	"	"	2.48	7.27	[illegible]	[illegible]	IBM	0.85	57	64	3	"	Beam lost
														Beam lost + Nord hangup
"	"	"	"	2.57	17.55	~~15~~87.65	54.80	"	1.0	57	164	5	"	
"	"	"	"	1.84	0.92	1588.57	55.72	"	0.9	55	5	0	"	Beams lost
"	"	"	"	3.22	10.53	1599.10	10.53	"	1.3	57	85	2	19.180	Beams lost
ON	ON	ON	ON	3.29	0.41	1599.51	10.94	IBM	1.1	58	1	1	"	~~Beams lost~~ Time out Prob.
"	"	"	"	3.63	0.25	1599.76	11.19	"	1.0	35	2	0	"	Beam lost
"	"	"	"	2.75	17.12	1616.88	28.31	"	1.0	56	153	4	"	NO FD BANK D for last components
"	"	"	"	2.09	3.41	1620.29	31.72	"	0.8	58	28	2	"	

Run	Date	Start	Stop	at Run Start: I_+	at Run Start: I_-	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 E_0>66eV	T2 B:+17 2T: E_0·2tr.

54

21[00] The Gould Plotter is again in terrible condition. It always gives the IDTK error message when you want to copy something. Then one has to fiddle around and waste ~5 pieces of paper to get a triple copy.

10.12.

0[00] Rouse, Wriedt — My ultimate shift!

5:07 IBM power failure ⇒ we write to tape

6:30 We run down magnet to 500 A after "Niederwerfen"

7:55 Magnet switched itself off. Leave action to next shift. ← K-group is checking the magnet.

8[00] Diekmann, Kobayashi

8[21] Message on TV: BREAK, TRANSMITTER PROBLEM, RESTART 11[00] AM.

13[21] CAMAC crate for T2 track trigger in the Rucksack was found to be tripped.

14[10] Beam lost

14[58] After Refill we started Run, then again Beam Lost (after 1 min) and Nord (computer hangs). (STOP light is on and CONTINUE doesn't work) Maybe a coincidence due to very short ~~Power~~ Main Power fail? We restart the Nord.

16[00] NOZAKI & HEDGECOCK. Short break. Run magnet down to 1000 A.

19[30] Run up magnet to 7500 A

19[54] Build on the high voltages appear on TV screen?

20[20] Checked standard histograms. All look to be OK.

21[25] JDAS ERROR 44 — TMEAN BRANCH 5 CRATE 1 ID RING 1 (8 TIMES) PAUSE/SHAVE CABLES/CONTINUE

22[10] Noticed an DL8 is dead. Probably occured at above point. Will start investigating, beam was lost. Changed DL8 for wires 32-40. See sheet in run summary book next to Run sheet 12840

22[45] New filling ready E_0 = 19.180 GeV The hole in the hit wire map has gone.

23[00] Look at standard histograms. They look OK.

YSLY = TRIGGER 1 PRESCR WIRES OFF = ALFRED TWICE.

11.12.82

0:00 Hellenbrand, Kawamoto

5:20 We have no beam, due to vacuum leak problems (for >5 hours) (indicated gaps near)

Restart is announced to be at 7.

Anode current channel 21 : change of sensitivity 0.18 → 0.34. Next Run will be # 12835 Rlg

Run	Date	Start	Stop	at Run Start: I_+	at Run Start: I_-	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 E_0>66eV	T2 B:+17 2T: E_0·2tr.

ON/OFF N50	MIP	TOF	∫L dt ×10³⁰ Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

55

8[00] Glendinning + Kawamiya on shift.

ON LINE R (LG lumi) is about 20%~30% ~~lower~~ than R(ON LINE Lumi)
⇒ ON LINE Lumi is 20%~30% lower

8[50] Luminosity run

9:05 JDAS ERROR 44 Latch

9:10 " { 44 Latch + DL8 + ... ; 53 System crate watching flag on PARM = 000202 (oct) ; 47 MP-16 start pulse noisy or T2 crate offline

9:16 Beams lost - not much data taken there!

10:05 New filling - JDAS seems to be working now.

~~Too~~ no ID-BANK for run ~~12843~~/12845 (last some events) because of {soft-jetch. trip and 'stop cable' was out}

12[40] New filling (∈ we asked TASSO for a new fill)

14[05] Checked standard histograms all o.k.

13[25] TASSO Mark-J want new energy, We agree with changing the energy.

15:36 Energy up to 19.195 GeV

16[00] Coords + Rucksack on shift.

16[45] Beams dumped.

A question to the lead glass experts: There is a consistent dip in P Histogram Trigger 1 input, BG9 for several runs. What do they think about.

20[00]~~[30]~~ COORDS know into MILES.

~~[30]~~ TASSO want to dump but can't because of synchrotron problem. 8[00] Triggers stop. Level 5. Pushed, WHITE etc

20[35] ~~[35]~~ DUMP. — They doubt: still synchrotron problem.

20[48] ~~[48]~~ — PKR go to 19.622 with 2.7 + 2.7 mA.

21[00]~~[00]~~ TRIP — its the Lead Glass. — Takeshita coming to fix it.

Hall doors opened - temp in Rucksack said to be 32°

21:10 LG HV power supply (right 3)(distributor 16,17) ~~also~~ fall down. Restart again (by pocorsw) Takeshita

22[50] Check visually three the STD HISTOGS All seems OK. Not printed because rate is so low.

23[15] Muon Crate 10 went missing for a long time Waggled cards in CRATE 10. — see Muon book.

23[50] Synchrotron now repaired so can dump the beams & hope for better luminosity.

Run	Date	Start	Stop	at Run Start I+	at Run Start I-	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E₁ > 6 GeV	T2 B:4 17 2T. E₄ · 2T₁
56														
12846	11.12.82	12 15	12 24	3.41	3.49	4.2	1102	1174	287	12	468	1395	123	212
12847	"	13:29	15:12	4.98	5.06	5.5	6171	8002	1605	88	3010	9773	733	1983
12848	"	15:12	15:36	3.90	3.84	4.9	1392	1661	362	17.9	663	1922	162	272
12849	"	15:40	16 47	3.57	3.60	4.3	3972	4222	1034	44	1729	5012	430	669
12850	"	17 24	19 06	5.18	5.26	5.8	6054	8002	1576	91.8	3106	10,033	825	2174
12851	"	19 06	20 37	3.71	3.73	5.8	5434	5744	1414	82	2414	6895	604	994
12852	"	20 51	23 25	2.75	2.73	3.9	8154	7711	2122	82	2913	9705	615	~~647~~ 1149
12853	"	23 29	23 46	1.47	1.23	3.6	990	882	257	9.3	367	1052	79	107
12854	12.12.82	02:06	03:48	4.30	4.15	11.0%	6054	8002	1574	173	2996	10.542	675	2460
12855	--	03:48	05:14	3.41	3.24	5.5	5131	6340	1334	73	2431	8515	574	1704
12856	--	05.51	07:21	4.79	5.08	6.8	5363	8002	1395	95	2977	10221	755	2592
12857	"	07 22	09 13	3.71	3.91	5.2	6635	8002	1727	90	3055	10209	783	1924
12858	"	09 14	09 17	2.85	2.98	4.3	217	235	56.5	2.4	83	288	17	45
12859	"	09 46	10 14	4.96	5.05	6.2	1575	2301	410	25.4	898	2694	246	643
12860	"	10 17	11 16	4.41	4.46	5.6	3471	4518	909	50	1754	5592	452	1199
12861	"	14 54	16:27	4.85	5.07	5.4	5551	6816	1444	77.5	2778	8206	711	1558
12862	"	16:29	17.54	3.64	3.74	4.3	5063	5333	1318	57.3	2147	6376	473	828
12863	"	18:27	18:30	4.81	5.01	9.3	158	369	41	4	130	395	27	138
12864	"	18:41	19:37	4.54	4.71	7.3	3283	5178	854	63	1863	6532	486	1767
12865	"	19:40	20:03	3.73	3.82	6.2	1331	1846	346	21	667	2402	168	544
12866	"	20:11	20:11											
12867	"	20:25	20:35	3.30	3.35	5.4	615	774	160	8.7	288	1006	74	190
12868	"	21:17	21:18											
12869	"	21:57	22:03	4.19	4.27	5.6	302	707	79	4.4	151	515	43	125
12870	"	22:06	22:09	~~4.07~~ 3.96	~~4.14~~ 4.00	~~5.8~~ 5.3	~~201~~ 117	~~528~~ 292	~~52~~ 30	~~3.1~~ 1.5	~~11.6~~ 7.2	~~368~~ 175	26	~~140~~ 99
12871	"	22:12	22:14	4.00	4.01	5.3	81	221	21	1.1	43	141	13	38
12872	"	22:16	22:19	3.94	4.00	4.8	~~137~~ 120	292	30	1.5	72	175	20	40
12873	"	22:23	22:39	3.85	3.91	5.2	904	2030	235	12.3	449	1442	116	288
12874	"	22:51	23:11	3.55	3.59	4.4	1116	1279	290	12.6	507	1496	132	239
12875	"	23:13	23:43	3.33	3.37	4.2	1800	1845	468	19.5	723	2257	167	306
12877	13.12.82	4:31	4 38	4.27	4.47	9.3	350	~~202~~ 130	41.0	8.4	232	862	58	334
12878	"	5:18	6:47	5.13	5.22	7.0	4888	6308	1271	88.8	2379	8095	601	1927
12879	13.12.82	10 53	12 56	4.79	4.77	4.6	7331	8002	1909	88.7	3227	9826	766	1588
12880	"	12 57	14:00	3.20	3.16	3.6	3763	3400	980	35.2	1428	4172	338	446

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	STEP	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
57																	
12846	11.12.82	12 15	12 24	ON	ON	ON	1.77	1.95	1622.24	33.67	IBM	0.8	55	22	1	19.180	beams dumped
12847	"	13:29	15:12	"	"	"	2.80	17.29	1639.53	50.96	"	—	54	164	5	"	
12848	"	15:12	15:36	"	"	"	2.25	3.13	1642.66	5409	"	0.7	52	26	1	"	stop to increase energy
12849	"	15:40	16 47	"	"	"	1.73	6.88	1649.54	6.88	"	0.70	54	76	0	19.195	beams dumped.
12850	"	17 24	19 06	"	"	"	2.75	16.64	1666.18	23.52	"	1.2	56	170	4	"	
12851	"	19 06	20 37	"	"	"	1.83	9.94	1676.12	33.46	"	.7	56	94	2	"	~~beams dumped~~ Rej. dead T
12852	"	20 51	23 25	"	"	"	0.41	3.31	1679.43	3.31	"	.7	56	81	2	19.622	
12853	"	23 29	23 46	"	"	"	0.20	0.20	1679.63	3.51	"	.4	56	3	0	"	beams dumped
12854	12.12.82	02:06	03:48	"	"	"	1.95	11.80	1691,43	45,26	"	0.9	58.	121	4	19.195	
12855	--	03:48	05:14	"	"	"	1.35	6.93	1698.36	52.19	"	.7	58	79	2	--	Beams dumped Run should be stopped when Eb changes
12856	--	05.51	07:21	--	--	--	2.82	15.14	1714.40	62.29 @ 4.845 5.64 @ 4.210		1.1	55	143	7	19.195	energy changed 3/3 through the run
12857	"	07 22	09 13	"	"	"	1.71	11.37	1725.77	16.41		0.8	56	116	6	~~19.215~~ 19.210	
12858	"	09 14	09 17	"	"	"	1.60	0.35	1726.12	16.76	"	0.65	56	6	0	19.210	BEAMS DUMPED
12859	"	09 46	10 14	"	"	"	2.89	4.55	1730.67	21.31	"	1.07	53	46	1	—"—	RUN STOPPED TIME OUT
12860	"	10 17	11 16	"	"	"	2.23	7.75	1738.42	29.06	"	0.8	55	85	0	—"—	BEAM LOST
12861	"	14 54	16:27	"	"	"	2.66	14.75	1753.17	43.81	—"—	1.06	56	151	6	—"—	
12862	"	16:29	17.54	"	"	"	1.66	8.41	1761.58	52.22	"	0.8	55	84	1	—"—	Beams dumped
12863	"	18:27	18:30	"	"	"	3.34	0.53	1762.11	~~52.35~~	"	1.0	50	10	0	19.225	JDAS error
12864	"	18:41	19:37	"	"	"	2.41	7.91	1770.02	8.44	"	0.9	55	88	5	"	JDAS error
12865	"	19:40	20:03	"	"	"	1.91	2.54	1772.56	10.98	"		57	30	1	"	"
12866	"	20:11	20:11				0	0						6	0	"	JDAS error very short run
12867	"	20:25	20:35	"	"	"	1.58	0.97	1773.53	11.95	"		57	13	1	"	"
12868	"	21:17	21:18														JDAS error
12869	"	21:57	22:03	ON	OFF	OFF	2.66	0.8	1773.61	12.03	"		Ø	8	Ø	"	"
12870	"	22:06	22:09	"	OFF	OFF	2.43	~~0.44~~ 0.42	1774.10	12.52	"			~~4~~ 3	Ø	"	"
12871	"	22:12	22:14	"	OFF	OFF	2.10	0.17	1774.27	12.69	"			1	Ø	"	"
12872	"	22:16	22:19	"	OFF	OFF	2.03	0.24	1774.51	12.93	"			4	Ø	"	"
12873	"	22:23	22:39	"	OFF	OFF	2.23	2.02	1776.53	14.95	"			26	Ø	"	"
12874	"	22:51	23:11	ON	ON	ON	1.73	1.93	1778.46	16.88	"		54	16	1	"	"
12875	"	23:13	23:43	"	"	"	1.50	2.70	1781.16	19.58	"		55	30	0	"	" Beams dumped
12877	13.12.82	4:31	4 38	ON	ON	ON	2.30	0.80	1791.96	20.38	"	—	53	9	0	"	BEAM LOST
12878	"	5:18	6:47	"	"	"	2.52	12.30	1794.26	32.68	"	1.08	57	110	4	"	beam dumpd - energy saving
12879	13.12.82	10 53	12 56	"	"	"	2.02	14.80	1799.06	47.48	"	0.8	59	~~136~~ 190	4	"	
12880	"	12 57	14:00	"	"	"	1.31	4.93	1803.99	52.41	"	0.8	56	529	1	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	at Run Start D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_n > 66 GeV	T2 B:17 2T: E_n ·2tr.	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰ Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

12 · 12 · 82 00:00 Darvill & Zorn on shift.

02:00 Petra has beams at 19.195 GeV and we start to switch on the high Voltage

02:10 Many failures with muon Crate 10 – after about a thousand resets of the button with results that lasted 2-10 seconds Jim pushed the button a couple of times and we have no more problems!

02:15 Triggers stop – we look at the instruction sheet and find that the problem is at level 1. Pause/continue the run brings things back to life.

02:28 IBM Transfer Error (oct): 000054 Suberror: 140000 Error cnt: 000002
Try IBM link again – yes worked

02:53 YSPY Error No 4 – accepted – we now look to see what it means. OK. So now we know.

03:18 Trigger box hang-up – level 5 – cured by pushing red, white and green buttons.

03:46 Run 12855 started

04:28 YSPY error No 4 Trigger 2 output missing 141 we accept the error and allow more – seems o.k

05:16 Beams dumped for new filling

05:49 Great! our new filling is ready already and we start run 12856

06:41 Tasso rang to say that at 6:50 they intend to ramp up to the next energy. The TV display will inform us when.

06:58 We notice that the energy is now 19.210 GeV! We thought they were going to tell us!

08:00 Hedgecock + Heinzelmann
Trigger 1 Input present when off: 0 (YSPY)

10:14 JDAS ERROR 44 TIMEOUT BRANCH 5 CRATE 1 ID THEN LATCH ERROR. Stopped run 12859
Tried test run. – continued.
The tests with TASSO's and CELLO's synchrotron radiation absorbers will start on Tuesday 14th at 7:00 and take about 24h "no beam".

11:20 Brüngers – KURZE UNTERBECHUNG appears on TV. Magnet problem – Restart 14:00 HRS

14:50 RUN MAGNET TO 7500 A SWITCH ON HT.

16:00 New shift Becker + Minowa

16:20 Colour TV a bit odd – It says N50 hist being drawn but in wrong position. Rebuilt YCLRTV and all is well. HEIT

17:20 TO ALL SHIFT PERSONNEL:
The compressor which drives the gas circulation in the muon chambers has failed. At present, the singles rates are about normal but it's possible that some change from the normal situation may be seen within a few hours — If anything worries you, call up the person on call. However, don't be alarmed

if you see a drop in the rate on the μchamber hitmap. The compressor will be replaced in the morning.
Hugh McCann & John Baines.

17:40 TASSO phoned: a new fill in ~ 10 min.

18:30 JDAS READOUT ERROR 44, 53, 45 – Run 12863 stopped
↳ branche 2 crate 1
" 6 " 6
Start again – o.k.

18:50 Magnet fluctuations 4.837 kG.

19:35 JDAS READOUT ERROR 44 (branch 6 crate 6) – Run 12864 stopped
Start again – o.k.

20:00 JDAS · read out ERROR 44 DMA timeout
44 timeout Branch 6 crate 6 : ID ring 3 > Pi
53 System crate watchdog flag on PARM = 000000 (OCT)
44 DMA timeout
44 timeout Branch 2 Crate 1 : Latches
44 time out
— run 12865 stopped

20:05 NORD restarted

20:10 run 12866 started

20:13 The same errors happened again

20:15 Call Eichler : He is coming

20:22 run 12866 stopped
Branch 2 crate 1 was initialized by hand · (Z)
run 12867 started, seems ok

21:17 JDAS error – same thing –
start a new run
We get the same errors for every run.

23:27 TASSO request a new fill at 23:45
∫Ldt at [19.225] GeV ≒ 18 nb⁻¹ (~~TASSO~~ JADE) Loss due to the JDAS ERRORS.
≒ 25 nb⁻¹ (TASSO)

13.12.82 Still problems with Camac/Nord
Change crate controller branch 6 crate 6 which is always beginning of trouble

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_n > 66eV	T2 B:1 17 2T: E_n :2tr	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰ Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv (%)	Bhabha Σ	MH	Ebeam	Remarks

00:00 Zochara & Ehrin on shift.

00:45 No beam. Vacuum problem in Petra's West Region.
3:50 Injection.
4:29 Run 12877 Started, 19.225 GeV.
4:38 " " Ended. BEAM WAS LOST. (Also had to reset jet chamber anode current).

5:15 Run 12878 Started, 19.225 GeV.
6:05 Error: 4) YSTV Detector Error. "Trigger 2 Input present when OFF". Instructions — To ignore.
6:10 Standard histograms appear O.Kay.
6:40 Jet Chamber tripped — Reset. O.Kay.
6:45 Run 12878 terminated — ENERGY SAVING.
6:55 Reducing magnet current from 7500 → 3000 → 1000 → 500 Amps. (Easy does it now!)

To new shift personnel: Please note information on the bottom of page 58

8:00 Kuhlen & Steffen on shift.

9:58 high energy run is cancelled. Vacuum break down problems in PETRA do not allow any running at the highest available energy. So we continue with the scan.

8.00 Steffen and Kuhlen on shift
10.50 Run 12879 started at 19.225 GeV
12.55 Run 12879 stopped automatically. → Run 12880 started

16:00 Pearce & Dreckmann on shift
16:50 Magnet to 500 A (Energy saving)
19:00 Magnet to 7500A
19:57 Weiletaking Std. Histogram, beams dumped
23:35 No Trigger Problem "level 5" occured. Procedure proposed of sheet on Colour TV cured the prob

14.12.82
0:00 Nozaki + Eichler on shift

1:18 ~~Beams dumped~~ "Switch OFF HV" and "Injection" on the screen, but the fill is kept because of the trouble with DESY. Started Run 12886.
2:43 beams dumped
6:45 New record at 19.255 GeV. 0 HH with 12.1 nb⁻¹.
Magnet to 500 Amps.

08.00 Tuesday 14/12/82 Rolf Heuer & Fred Loebinger
No beams access till tomorrow.

Pillat & Co working on the magnet.
Magnet → 0 (via reset rundown) & Isolator OFF.

NB CAR DRIVERS: Access road to N.W. HALL will be closed early tomorrow, probably for the whole day.

15/12/82 0.14 Nozaki
Nothing on Petra screen.
I phoned PKR: nothing will happen during the night. There are still problems with the magnet power supplies. Repair will continue tomorrow morning (Wednesday). So they are only waiting for vacuum.

3.40 Riesberg here. It is snowing, I think we can not observe the solar eclipse at sun rise (8:30), Max at 9.35:
◉ 40% ~1/10 sec
4.02 Short power break on at least two phases
Krekbiel Alarm Unit: UP 1 flashing and TOF+BP Alarm
JADE Colour TV: dark Exit, ESC, RT ... o2
PETRA TV: dark

Please check all HT's before re-start!

4.50 No further problems. I set the interlock of the experiment

15.12.82 08.00 Clarke + Dreckmann
To next shifts: Watch T2 Trigger!
16.00 Hellenbrand & Takeshita on shift
16 — Now Injection
16.45 many power failes were there, TOF, BP, T2 CAMAC crate, LG Linear sum etc ...
17.00 Magnet 7500A

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit2 E1>66eV	T2 Bit 17 2T1 E4 2T4	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	∫L dt Exp Disp	IBM/ TAPE	BP [V]	T2 Reg Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
62																												63
12881	13.12.82	15:26	15:41	4.82	4.87	7.1	784	1058	204	14.5	396	1308	84	308	ON	ON	ON	2.85	2.23	1806.22	2.23	IBM	7.0	60	27	1	19.240	
12882	13.12.82	19:24	19:58	4.76	4.95	5.9	2043	2566	532	31.5	984	3306	251	752	"	"	"	2.55	5.21	1811.43	7.44	IBM	1.0	57	53	0	19.240	Beams dumped
12883	13.12.82	20:39	22:30	5.01	5.12	5.0	6642	7782	1728	86.7	3062	9528	750	1780	"	"	"	2.34	15.57	1827.0	23.01	IBM	1.05	55	136	5	19.240	
12884	13.12.82	22:59	0:41	4.92	5.10	11.0	6061	8002	1577	173	2912	10245 ~~705~~	703	2644	"	"	"	2.10	12.72	1839.72	35.73	"	1.05	55	111	3	"	
12885	14.12.82	0:41	1:18	3.30	3.24	5.0	2165	2501	564	27.9	926	3263	213	661	"	"	"	1.35	2.92	1842.64	38.65	"	0.7	56	26	1	"	~~Beams dumped~~ ///
12886	14.12.82	1:25	2,44	2.96	2.88	4.9	4752	5464	1236	60.9	1970	7312	407	1490	"	"	"	1.04	4.96	1847.60	43.61	IBM		56	51	1	"	beams dumped
12887	14.12.82	3:10	4:19	4.86	4.90	4.9	4124	4841	1073	52.1	2007	5553	514	934	"	"	"	2.60	10.71	1858.31	54.32	IBM	1.2	55	101	3	"	change energy
12888	"	4:26	5:33	3.64	3.54	3.8	2983	3898	~~1037~~ ~~3873~~	39.9	1605	4640	383	491	"	"	"	1.40	5.56	1863.87	5.56	"	0.8	55	69	0	19.255	
12889	"	6:06	6:46	4.82	4.78	5.6	2352	3111	612	345	1203	3674	280	721	"	"	"	2.78	6.53	1870.40	12.09	"	1.2	54	55	0	"	beams dumped
12890	15.12.82	16:53	16:55	2.02	2.16	0.6	105	42	27	0.2	24	CAMAC Power Failure 0	5	0	"	"	"	0.57	0.06	JUNK		"	1.5	0	1	0	"	beam lost test all power supply
12891	"	20:11	21:02	4.99	4.91	8.3	2962	4840	770	64.3	1776	6556	377	2154	"	"	"	2.66	7.88	1878.28	19.97	"	1.2	59	57	2	"	beam lost
12892	"	21:44	22:44	4.52	4.91	5.1	3438	4232	893	459	1886	4378	457	677	"	"	"	2.21	7.60	1885.88	27.57	"	1.2	~~656~~	62	2	"	T2 TRIGGER missing
12893	"	22.46	0.07	3.36	3,72	15.1	4440	4852	1154	173	1853	6141	413	1189	"	"	"	1.10	4.88	1890.76	32.45	"	—	56	43	1	"	beams dumped
12894	16.12.82																										"	JUNK RUN
12895	"	2:40	3 24	4.71	4.84	6.9	2475	3754	643	44	~~1388~~ ~~577~~	4758	328	1244	"	"	"	2.41	5.96	1896.72	38.41	IBM	1.0	57	52	2	"	Beams lost
12896	"	4 34	4.36	4.86	5.2	8.5	135	267	35	30	80	313	20	112	"	"	"	2.75	0,37	1897.09	38.78	"	1.2	55	2	1	"	Beams lost
12897																												JUNK, no events
12898	"	5:28	6:09 ~~4.80~~	4.80	4.93	6.9	2234	3515	580	40	1292	4280	307	1645	"	"	"	2.45	5.48	1899.57	44.26	"	1.1	55	44	2	"	
12901	"	6:23	6:53	3.54	3.79	5.7	1758	2314	437	26	852	2956	189	616	"	"	"	1.55	2.73	1900.30	46.99	"	0.85	56	24	1	"	Beams dumped
12902	-"-	9:21	9:27	4.75	4.97	6.5	163	259	42	2.7	98	292	18	55	"	"	"	3.40	0.55	1900.85	47.54	"	1.1	56	1	0	19.255	
12903	"	9:32	9:42	4.56	4.81	4.9	635	775	165	8.2	336	869	76	138	"	"	"	2.66	1.69	1903.51	50.20	"	—	56	19	2	"	Beams lost.
12904	"	11:50	13:20	5.28	5.41	4.9	5375	6363	1399	68	2638	7391	621	1146	"	"	"	2.18	11.74	1915.25	11.74	IBM	1.0	~~56~~ ~~416~~	~~114~~	6	19.270	Beams lost.
12905	"	14:11	14:32	5.02	5.16	5.—	1228	1547	319	16	681	1616	156	344				2.84	(3.48)	—	—	"	1.2	54 ~~38~~	38	1	"	T2-trigger power went off.
12906	"	14:33	14:37				~~205~~ ~~411~~	141												JUNK RUN		"				"	~~Beams lo~~ T2 power went off.
12907	"	14:38	14:43	4.11	4.31	5.5	~~308~~ ~~616~~	423	80.2	4.4	168	462	33	127	"	"	"	2.32	0.71	1915.96	12.45	"	—	52	5	1	"	Beams lost.
12908	16/12/82	16.22	16.51	4.64	5.03	6.5	1729	2503	451	29.3	916	3114	292	760	ON	ON	ON	2.56	4.43	1920.39	16.88	IBM	1.3	56	32	2	"	Beams dumped
12909	16/12/82	19.55	21.23	4.78	5.55	5.3	5253	6417	1366	72	2631	7611	580	1293	ON	ON	ON	2.13	11.16	1931.55	28.04	IBM	1.2	55	93	3	"	Run stopped for Energy increase test → Beams lost
12910	16/12/82	23.21	23.40	5.01	5.12	7.4	1108	1738	288	21	658	2127	164	494	ON	ON	ON	2.64	2.92	1934.47	30.96	IBM	1.1	57	24	0	"	Beams lost
12911	17/12/82	0:17	2:09	5,07	5.18	4.7	6589	7547	1714	81	3057	8937	730	1294	"	"	"	1,87	12.35	1946.82	43.31	"	1.2	55	120	6	"	Run stopped because of DMA ~~time out~~
12912	"	2:11	2:18	2.74	3.00	3.9	~~456~~	~~449~~	118	4.5	171	546	30	57	"	"	"	1,20	0.55	1947.37	43.86	"	0.5	56	3	0	"	Beams dumped
12913	"	3:02	3:24	4.82	4.04	6.6	1283	1876	333	22	724	2236	185	493	"	"	"	2,33	2.99	1950.36	2,99	"	1.0	55	30	3	19.285	Run stopped because of DMA time out
12914	"	3:26	3:57	3.99	4.17	5.4	1800	2300	468	25	882	2762	201	500	"	"	"	1,82	3.28	1953.64	6.27	"	0.8	54	21	1	"	"
12915	"	3:58	4:25	3.41	3.60	5,0	1549	1900	402	20	732	2272	179	318	"	"	"	1,30	2.02	1955.66	8.29	"	0.7	54	20	0	"	"
12916	"	4:26	4:42	3.06	3.26	4.4	995	1073	259	11	415	1344	97	209	"	"	"	1,00	1,00	1956.66	9.29	"	0.7	56	10	1	"	Beams dumped
																				8.93 1766.59	8.95 19.22							

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All x10⁶	To reg. x10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_n>66eV	T2 B:1 17 2T: E_0 :2tr.

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15.12.82 19:16 Injection
20:20 TOF-HV error MFR 54, chan 16 : manually reset.
21:01 Beam lost, RUN 12891 end
22:30 NO TRIGGER 2 OUTPUT/INPUT ← very low trigger rate Trigger bits 19/28/29/30 missing
22:41 STOP RUN 12892
switched on camac crate and started a new run, everything O.K.
23:00 NO TRIGGER — TRIGGER BOX Level 5 error
power failin of Rucksack-CAMAC crate in which T2 TRIGGER Modul is then.
B2 Cave full

16.12.82 0:0 Clarke & Takeda on shift.
0:40 RI-HB (Lead Glass HV bit setting) was done during injection.
0:49 Short Break starts. (~~due to~~ "replacement of broken feed-back system)
2:30 New fill ready.
RUN 12894 started. but "Error in serial branch ~~not~~ initialization" on the printer. Switched off and on the power of the crate at the rücksack.
2:40 RUN 12895 started.

To H.Mills.
Two funny events were stored with file names "FUNNY1" & "FUNNY2", in which the numbers of ADC counts were overlapped.
Please check them.
H. Takeda

3:24 Beams lost
3:36 TV screen of PETRA faded away.
Later we found that the power supplies of LG linear sum were down. Maybe short power failure around here.
3:40 HV reset for lead glasses.
5:30 ID trig
6:08 Time out of ID → stop the run 12898
(branch 4 crate 7)
5:11 The conversion lamp of DL8-94 is always ON.
We pulled it out and pushed it in. → Works!!
(How good the system is!)
6:23 RUN 12901 started.
(RUNS 12899~12900 lost ; no events)

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	LL> x10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

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!! GOULD plotter has been in a bad state for a long time.
It is very hard to read run summary. Please repair it.

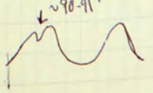
17⁰⁵ Energy saving time.
Magnet → 3000 A → 500 A

8:00 SCHEHANN, YAMADA
Message from TASSO (G.Wolf): Collimator did not do any harm. Chamber current decreased by ~30%. TASSO is still suffering from bad vacuum. Beam steering had hardly any influence on the background rate i.e. most of the dist is produced locally by beam gas. No information yet on the number of random hits and their φ-distribution in the chamber.
CELLO: background did not get worse. They observe 20% lower current in the chamber. Vacuum still poor.
W. Bartel

8⁵⁵ Petra injection
9⁰⁵ Set magnet to 7500 A
9¹⁸ RUN 12902 started
9²⁴ ~~stopped~~ RUN STOPPED, ID stays out
9³⁰ RUN 12905 started
9⁴⁰ Beams lost, RUN 12905 stopped
14³⁰ During the run 12905. T2 crate in the Rücksack had a power failure. ← 17:30 Main cable interchanged

16:00 Thursday 16/12/82 Hugh McLaren & Fred Loebinger.

16.15 Stable Beams; continue scan point at 19.270 Gev.
16.51 Switch off → energy saving.

19:10 One linear sum output has been dead (#19 of row sum in LG)
→ chip was replaced.
The dip in T1-input map was due to the dead one.


Please check it when the beams come back → O.K.!
H.T. & T.K.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·t2 E₀ > 66eV	T2 B·t 17 2T: E₀ ·2tr.

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tank pressure

18⁵⁷ Rebuilt YMAGNT after changing it back to read the tank pressure every minute. This is to provide a means to detect fall out of power in T2 - serial link crate in Reichsach. Warning: Power Fail of in crate may corrupt T2 trigger contents (noticeable as sudden change in trigger rate) and if this power failure happens it is necessary to stop run and start a new run*. The contents are initialized at run start only. J.O. *after switching on crate of course!

19.10 Magnet → 7500 A.

19.50 Stable beams : continue scan point at 19.270 GeV.

21.20 Petra going to ramp energy up (for test purposes). They reached 19.624 GeV before beams were lost.

22.40 Petra again tries energy ramping. Reaches 19.655 GeV with 2.3 mA/beam, lifetime ~ 2 hours. before beams are lost.

23.15 Stable beams again: continue scan point at 19.270 GeV.

23.35 Beams lost.

17/12/82

0⁰⁰ Haidt, Kobayashi

1⁵⁵ TASSO (coordinator) wants new filling at new energy. Present luminosity = { TASSO = 48 nb⁻¹ / Mark-J = 50 " / JADE = 42 " }
We agreed to dump the beam at 2¹⁵.

2⁰⁹ JDAS error 44 – DMA time out, Time out branch 6, crate 6 : I.D. Ring 3 >π

7⁴⁰ Magnet ⟶ 500 A.

8⁰⁰ Hughes & Cords

9⁰⁰ PETRA need 40 minutes to remove a power limitation on the Q-Mags (Kohlrupt)
This limitation has been discovered last night. The removal will enable higher energies during the weekend.

9³⁵ Call from W. Bartel : At the end of the next fill PKR wants to ramp to the highest possible energy around 19.8 GeV. We should ask that they stay there for some time that we can do measurements with the Inner Detector.

13.56 Anode Current Alarm (#21, 31.6) without ID H.T. ~~was~~ switched on

16:00 Dietrich, Kawamoto

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Ev.(%)	Bhabha Σ	MH	Ebeam	Remarks

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19:10 PETRA : TROUBLE with septum vacuum magnet power supply out of order
PKR says "not before 9 o'clock".

22³⁰ Restart not before 0³⁰
for this shift only one guy stay here!

18.12.82

0.00 Ball, Naroska
PKR are now trying to make a luminosity filling

0.15 Magnet turned up, 7500 A.

0.35 I.D. Alarm, no beam, no HV on ?!?!?

1.45 Short break appears on Petra screen, troubles with some collimators.

2.55 "Achtung, Petra wird einges Rallet"

04.30 Problem is with a beam shutter sticking. This has been removed & they will try to inject again.

06.00 Colour TV suddenly goes blank, stays a dark green colour for ~ 2 minutes, then returns with a slightly different picture!

07:15 After ~ 90 mins of attempts to get stable beams, now have a 'short break'!

07.30 I.D. alarm, no beam, no H.V. Call 21 again, anode current. Pickup?

08:00 Hinowa, Heier

09:00 Magnet off since beam shutter is broken which causes an interruption of indefinite duration (short break)

Old magnet problem turned up again: The current went up to ~1000 A and got stuck. No longer possible to control the magnet by computer.
Run down the magnet by hand.
Isolator is off now. Before you start again, you have to push the isolator button W. Bartel

16.00. P. Murphy, H. Kowalski

18.20. Start injecting beam.

18.42. 19.285 GeV.

18.45 Start run 12918.
Twistors, branch 5 crate 1. Tag. HV's not on. Stop run.
Run 12919 similarly aborted.
Find that one of the DL8's was not all the way in in that crate. Does gravity point horizontally here?

19.00. Start run 12920. Everything seems to be working.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E₁ > 66 GeV	T2 Bit 17 2T · E₄ · 2t₄	ON/OFF NSO	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks
12917	17/12/82	5:07	6:45	4.88	5.03	5.5	5901	7524	1535	84	2927	9151	732	1951	ON	ON	ON	1.68	9.93	1966.59	IBM	1.1	55	105	5	19.285	Beam dumped
12918, 12919	18-12-82	18.45.																								19.285	Aborted. 13 events rest of these runs.
12920	18-12-82	19.01	19.05	3.31	4.13	5.3	196	300	51	2.7	107	309	20	87	"	"	"	1.27	0.25	1966.84	"	0.8	46	1	1	"	
12921	"	19.15	19.16	2.96	3.33		41	86						2	"	"	"	1.88	0.08	1966.92	"			0	0	"	
12923	"	19.23	19.25	2.81	3.69	5.1	41	121	807,6	35,6	1238	4223	252	632	"	"	"	1.56	0.05	1966.97	"		51	14	0	"	Beams lost
12924	"	21.23	21.	4.90	5.19	28.4	1554	2081	404,8	174,9	718	2368	168	630	"	"	"	1.89	2.94	1969,91	"	1.25	49	27	7	"	
12925–12927	Start plag runs. No run saving																				TAPE F11197						
12928	"	22.00	29.09	3.69	4.10	5.7	393	591	702	5,8	208	657	50	776	"	"	"	1.57	0.62	1970,53	↓		50	10	0	"	Written on tape because of IBM trouble
12929	"	22.12	22.21	3.54	3.95	5.7	548	804	142,7	8,1	287	918	68	189	"	"	"	1.58	0.87	1971,40	IBM	0.9	49	10	0	"	
12930	"	22.22	22.34	3.37	3.79	7.6	667	914	174	13.1	293	1056	69	195	"	"	"	1.35	0.90	1972.30	"	0.82	48	6	0	"	
12931	"	22.44	0.08	2.45	2.80	4.8	4930	5731	1284	61.2	2191	3427	475	1096	"	"	"	1.07	5.27	1977.57	"		55	59	0	19.285	
12932	19/12/82	1.05	1.35	4.76	5.03	6.3	1664	2327	433	27.1	912	1350	218	863	"	"	"	2.36	3.93	1981.50	"	0.92	57	43	3	19.285	BEAMS LOST
12933	"	2.18	3.49	4.84	5.02	7.1	5397	8002	1404	99.3	2798	5045	730	2874	"	"	"	1.95	10.53	1992.03	"	1.2	57	108	2	"	
12934	"	3.49	4.43	3.30	3.56	5.4	3199	3936	832	468	1687	2370	349	1068	"	"	"	1.29	4.13	1996.16	"	0.7	57	42	1	19.285	
12935	19/12/82	5.14	6.43	4.81	5.02	7.1	5230	7992	1359	96.4	1262	10210	682	2707	"	"	"	1.97	10.31	2006.47	10.31	"	1.2	56	87	3	19.300	
12936	"	7.25	7.34	0-91	1.04	6-8	459	658	120	8.1	253	374	51	192	"	"	"	1.19	0.55	2007.02	10.86	"	1.2	58	3	0	19.300	BEAMS LOST
12937	"	8:26	8:44	4.61	5.30	14.8	1005	1448	261	39.	420	1904	95	598	"	"	"	→ 0.17	0.18 not added	2007.02	10.86	"	1.3	53	3	0	19.300	bunch marker defect / no reliable beams
12938	"	12:08	13:49	4.85	4.39	5.0	5950	8002	1547	77	3125	8051	621	1371	"	"	"	1.55	9.21	2016.23	20.07	"	1.1	44	89	1	"	lumi ÷4
12939	"	13:49	2	2.78	3.37	3.8	1048	1227	272	10.3	483	1171	88	132	"	"	"	1.05	1.10	2017.33	21.17	"	0.7	42	8	0	"	lumi ÷1
12940	"	4.53	15.31	4.51	5.07	7.5	2203	2777	572	43.0	81118	3374	264	666	"	"	"	1.83	4.03	2021.36	25.20	"	1-2	55	44	0	"	" ÷16
12941	"	15:33	17.05	3.54	4.04	4.7	5508	6141	1434	67	2667	7157	521	5822	"	"	"	1.24	6.83	2028.19	32.03	"	0.8	55	56	4	"	beams dumped
12942	"	19.37	20.47	4.08	4.04	22.9	4182	8002	1088	248,6	2160	10587	449	4540	"	"	"	0,49	2,07	2030.26	2,07	"	2.7	60	21	1	19.735	
12943	"	20:47	21,18	1,45	1,50	6,6	1844	2632	480	31,9	850	3055	194	678	"	"	"	0,20	0,37	2030.63	2,44	"	0,95	57	5	0	"	beams dumped
12944	"	21:57	23.29	4.93	5.16	6,8	5505	8002	1433	96,9	3128	9893	625	2411	"	"	"	1,59	8,75	2039 38	8,75	"	1.2	56	79	4	19.315	
12945	"	23:30	0:18	3.01	3,15	8.5	2735	3331	711	60,4	1318	4086	275	870	"	"	"	0.87	2.38	2041.76	11.13	"	0,75	56	29	0	"	
12946	20/12/82	0:56	1:42	5.02	5.23	8.5	2722	4638	768	60.0	1784	5629	377	1581	"	"	"	2,14	5,81	2047.57	16.94	"	1.3	56	49	5	"	
12947	"	1:45	1.52	3.71	3.94	8.4	422	696	109	9.3	264	805	53	278	"	"	"	1.59	0.67	2048.24	17.61	"	1.0	53	7	0	"	beam lost
12948	"	2:51	4:17	4.84	4.52	8.4	5173	8002	1346	113.3	3049	9899	684	2547	"	"	"	1.72	8.88	2057.12	26.49	"	1.2	55	89	0	"	
12949	"	4.23	4:33	3.13	3.27	6.5	553	727	143	9.4	287	945	57	195	"	"	"	1.03	0.57	2057.69	27.06	"	0.9	59	6	0	"	
12950	"	5:13	5:34	4.93	4.85	8.8	1255	2270	326	28.7	868	2643	176	797	"	"	"	2.27	2.85	2060.54	29.91	"	1.2	54	26	0	"	Beam lost
12959	21/12/82	14:25																									TOF-Pedestal RUN

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 Eₑ>66eV	T2 B:+1 17 2T: Eₑ·2tr.	ON/OFF N50	MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Ev.(%)	Bhabha Σ	MH	Ebeam	Remarks

19.05 Error message TIMEOUT Branch 2 Crate 7, No Latch Bank.
Crate-Controller exchanged. Did not help. More messages: TIMEOUT
Restart NORD.
Exchange crate controller in crate 6, branch 6. Also found faulty pin in connector to next crate above.
19.45 Run 12923 starts.
20.36 Beams lost.
21.18 Now fill ready
21.28 ID-Alarm. Run Paused. Beams still there. } IBM quite busy. High deadtime because of that.

19.12.82 0.00 0.11 GAINES + NARISMA ON SHIFT

Petra now ramps up energy to go to highest poss.

2.76 mA	238 mA	19.747
2.71	233	838
269	228	844
		847
208 ⤳	242	20.036
		20.039
178	210	043
159	~~189~~	" Lifetime 0.2 hours

19/12/82
01.05 RUN 12932 STARTED WITH A NEW FILL
01.35 BEAMS LOST, ID TRIPPED
2.18 RUN 12933 STARTED WITH A NEW FILL
3.49 RUN 12934 STARTED
5.14 RUN 12935 STARTED WITH NEW FILL AND NEW ENERGY OF 19.300 GeV
6.40 Magnet tripped, "Schnell-Schluß ventil" head closed.
7.15 Magnet works again
7.25 Runs runs again. # 12936
7.34 BEAM LOST

8.00 A. Ball & A. Wagner
8.26 beams again, but Lumi = 0.18 · 10³⁰. PKR has problems with bunch markers. Will probably refill soon.
8.44 beams dumped to refill properly.
10:45 After several unsuccessful attempts at injection & ramping, 'KURZE UNTERBRECHUNG'.
12:08 beams again.

12.50 Problem with DL8 for wires 8-16 (R1, Segm 1). Wires 13-16 = 0. (during runs 12938, 39)
Will try to fix it during next filling. (ok after run 12939)

Run 12938: Rej ev. fr. 44% cf. 55% normally. T1 rates for bits 17, 24, 29 all low by ~30%, but the accept rates look normal. Histograms show no abnormalities. Eventually, we convince ourselves that conditions were simply much cleaner for this run. (some evidence for this from z-vertex distribution)

15.30 Mysterious hang-up 'no triggers'. Green light on, T1 pre-pone light permanently on. Pause/cont doesn't work. Stop run + restart. OK now.
Run 12940 has Rej ev fr. 55% as normal.
16.00 Olsson, Waldt
Wolf phoned from PKR, at end of filling PKR wants to ramp to >90 GeV again. We agree.
We had now 3 Timeouts in 40 minutes. 2 from 10 5:1, 1 from preamplifier 3:2
18.15 Ramping: Now at E = 19.525 lifetime e⁻ >1 hour, e⁺ >6-7 hours 4.6 and 3.9 mA
18.40 We hear from Tasso that PKR has been allowed to "play" till 19.00. They are now at 20.04, with lifetimes of ~12 minutes. At 19.8, there was still lifetime >1 hour. We have expressed our protests.
18.45 Luminosity at 20.04. BP ≈ 8-10 V After waiting, it is down to 3-5 V 0.9 × 0.9 mA
19.30 19.735 GeV BP 2.8 V 4×4 mA Deadtime >70% Lifetime ~1.5 h Lifetime ~20 minutes
Many timeouts from 5:1. Due to high rate YSPY T3 trigger input. Also due to rate
Lumi $0{,}37 \cdot 10^{30}$
3,3 × 3,3 mA DT ~15-20% BP 1,5 V Lifetime ~1,8 h
at this energy the beam orbit passes not the central through the Amzebumps magnets (this has to be so to obtain additional damping), which causes an extraordinary high background
Looking at events: ~150 10 kb/events
20.15 2,6 × 2,6 Deadtime 9% Lifetime 1,8 h BP ~1,2 V Data taking at ~2 Hz
20.20 Felst from PKR: Data taking to continue for 1 hour. Cello + Mark J will study further. Tasso cannot switch on their I.D. We seem to be in good shape.
Furthermore: Their beams are atypic, broad. The background should represent a bad case.
(JADE) X sect opt is first point outside of scale R12942 / Mikael, 21 Bhabhas
Timeouts from 5:1 vanished, with reasonable rates in data taking
R 12943 Timeout from 6:5
21.20 Beams dumped, we shall go back to scan at 19,3 GeV
∴ We have measured R at 39,48 GeV, the highest e⁺e⁻ ECM ever measured by anybody
Its value is 4,6 ± 4,7 (!)
22.00 Continue scan at 19.315 GeV
Timeouts in 5:1 at low but steadily rate

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·12 E₁>66eV	T2 B·1 17 2T·E₁·2t₁	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Ev.(%)	Bhabha Σ	MH	Ebeam	Remarks

20.12.82 0:00 Matsumura and Takashita on shift

0:04 TIMEOUT Br.5 crate 1 — TRIGGER Level 5 error

0:17 RUN 12945 STOP for new fill

TIMEOUT Br.5 Cr.1 5 Times in RUN 12496

" " 13 " 12498

4:40 DL8 (wire # 152~159) was exchanged.

5:40 short break starts

6:48 Magnet OFF & Isolator OFF. — Energy Saving Time starts

at 9:00 we must raise magnet for PKR.

PETRA data taking has ended, but machine study will start until 23.12.82.

8:16 No one comes till now, we leave.

8:20 Message from PKR (Wiland)

During the machine studies the Petra group needs the magnet on. At least until 23[00].

Thus some body has to be at the experiment.

W. Bartel

09:30 Muon system: gas changed to pure Argon

: volts reduced

: all readout crates off (inc. T3)

: start + reset chain disconnected ready for arch movement

: layer 1 chamber signal cables (-x; z; +x; -z; -x) " " " .

16[00] Rieseberg on (magnet) shift

It was decided this afternoon that there will be no continuation of data taking

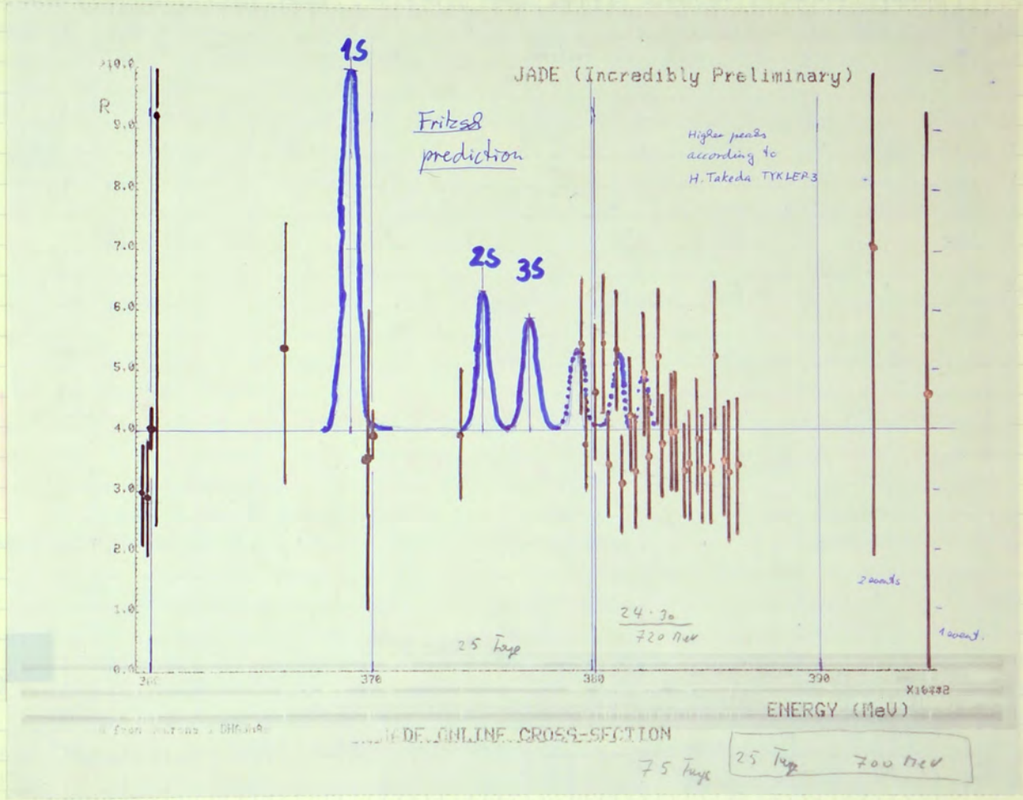
18[00] Runs 12951 – 12958 ID-Pulse

18:30 Stephen also on magnet shift.

23[00] We are not allowed to turn down our magnet since nobody of Celle is there to turn down their magnet! ~23:20 Error in reading DVM of magnet. DVM in overflow.

21.12.82 0:30 Call from PKR (Mr Harms): Now we can switch magnet off R

Just for fun (from a magnet-shift):



end of 1982

1.1.83

0[00] happy new year to all JADE members!

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.t2 E₁ > 66eV	T2 B.t 17 2T: E₁ · 2t₁

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1983

22.3.83 Interlock closed, Ringboard extension work going on, more Argon in μ-chambers,

16^{30} Belkin, v. Krogh, Hellenbrand etc. noticed high temperature for inner detector (36°)

at 14^{00} heat shield water pump was switched on, but temperature of heat shield is normal, Ratlinghöft, no reason for this high temperature obvious

R. Fest

17^{30} no active telephone any more

15.4.83 PETRA starts to set up for luminosity runs

8^{30} try to switch on one magnet, K-experts working, 2500 A wants PETRA

Monday 3⁰⁰ (18.4.83) will the air conditioning of the country room be switched off for about 3 hours. R. Fest

→ The first switch-on of the Inner Detector must be done by an expert. See on call list Rdy

Nord-status

New Nord-50 analysis program installed as default. The pre-Christmas 1982 version is in OLD-N50DAR. Note that this old one does not histogram the new leadglass blocks. The new one still does not allow for higher pulse heights in the new tagging system. The cross-section file has been copied to XS-82 and the default file cleared for the new run. H. Mills

19.30 Petra trying to get filling. I have the impression that there will be no luminosity today.

19.45 ID-Pulser Runs 13061 – 13066

23.00 I leave. Hall, temperature, magnet, everything ok. Not everything: command terminal blocked (HV spark??)

ON/OFF N50	MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

15.4.83

75

23.30^{u} IN PUR we found out that Jade magnet was off.
Reason: K had taken away Freigabe, because their signal showed that our magnet is not running. But the signal is only broken!

16.4.83 0^{00} Matsumura

$3:30$ RUN 13067 – 13085 for Lead Glass-Test (Takashita)

4^{00} Komamiya on magnet shift.
Matsumura is fighting against DL8's. I have nothing to do

8^{00} Mc Cann on shift.
Magnet running at 2500 A.

17. No beam, no injection. Trouble with Linac II, Synchrotron Vacuum trouble.
18.00 (ToF + BP) HV set to disc values. BP HV crudely readjusted from oscilloscope view. (by NAR)
20.00. PKR Information: Air bubbles in the synchrotron. Refuse to give time prognosis.
ID runs ½ Q at full HV, B-4 3kG Rdy

20^{00} Uwe Schneekloth on shift
magnet down to 2500 A
note: last fill got lost ($\approx 16^{00}$), because TASSO's beampipe was heated up to 50° C !
23^{15} beams injected $I_+ \approx 4.5$ mA, $I_- \approx 3.5$ mA
23^{30} " lost, $E = 6.9776$ GeV

17.4.83 0^{00} KAWAMOTO
$\sim 2^{30}$ Beam injected $I_+ \approx 3.1$, $I_- \sim 3.0$ mA LG Logic, timing checked
2^{45} Lost, Ebm 13,009 → OK.

8^{00} Heinzelmann
8^{30} present problems with PETRA: besides much more serious Synchrotron vacuum trouble. May take "some" hours before injecting again.

∼ 10^{00}	$I = 2.86$ mA	$I^+ = 3.07$ mA	at 6.977 GeV	
∼ 10^{20}	2.45	2.98	10.8 GeV	
∼ 10^{35}	2.66	2.82	14.0 GeV	switch on HT ! Beampipe + BV (Magnet still at 2500 A)
10^{40}	Beams lost		power supply failure	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 En>66eV	T2 B:1 17 2T: Eq·2tr.	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

17.4.83

10:55 Start injection again
11:00 $I^- = 3.5$ mA, $I^+ = 3.8$ mA Start accelerating
11:25 3.5 3.5 at. 19.000 GeV Switch on HT. Magnet → 7000
12:00 Beams lost

12.00 L. Becker

14.18 $I^- = 2.94$ $I^+ = 3.22$ at 19.000 GeV
14.32 $I^- = 2.78$ $I^+ = 3.05$ at 20.000 GeV "Lum.-Run"
14.38 = 0 = 0 0 "Short Break"

16.00 G. Dieters

16.42 $I^- = 2,57$ mA I^+ 2.86 mA 20. GeV Lum-Run

17.00 no experts for HO available — problems with Tokio-HV.

17.00 Leadglass HV survey was somewhat disarranged. Rundown cables rotated one position. Why?
Monitor threshold for RDT slightly lowered to -3.55 V, because some units showed yellow state when on. Please check HV setting of unit 1 (LG Barrel 1.) I may have changed on.

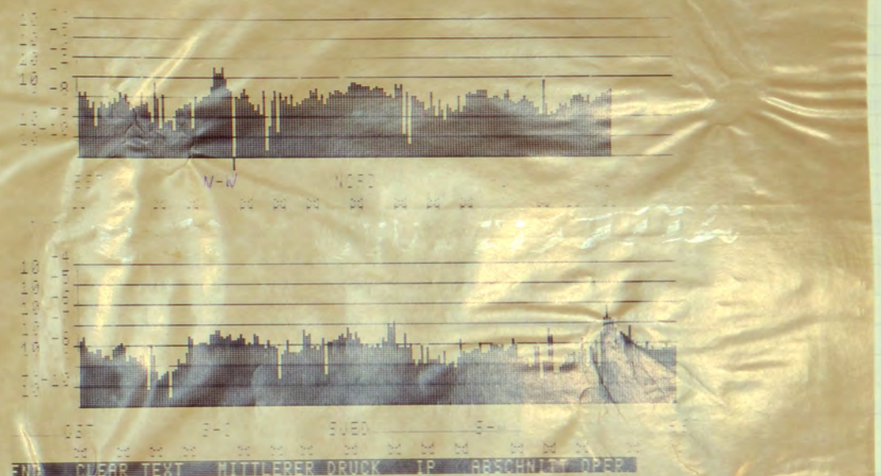
17:30 Beam lost.
CAMAC-problems: Watchdog flag on, DMA-timeout, ...
17:00 YVOLTS: LG/BP POWER SUPPLY ... ERRORS COME, BUT LG HV'S ARE SET TO 1.87–2.0 KV.
I don't understand what had hopped out the monitoring system. Please look into. Takeshita.
expert

18:00 1) ID was on full HV for 10 min., therefore it is no longer necessary to call an ID-expert for switching on! RDH
2) Concerning CAMAC-problems: ID-Pulser-Runs are possible.

Note: Incase there is a reasonable Luminosity Run please call an expert of the Inner Detector (Rdg or S. Bethke) for a check of the I.D. Rdg.

Vertimm in NW very bad!

19 GeV
2x 3,2 mA

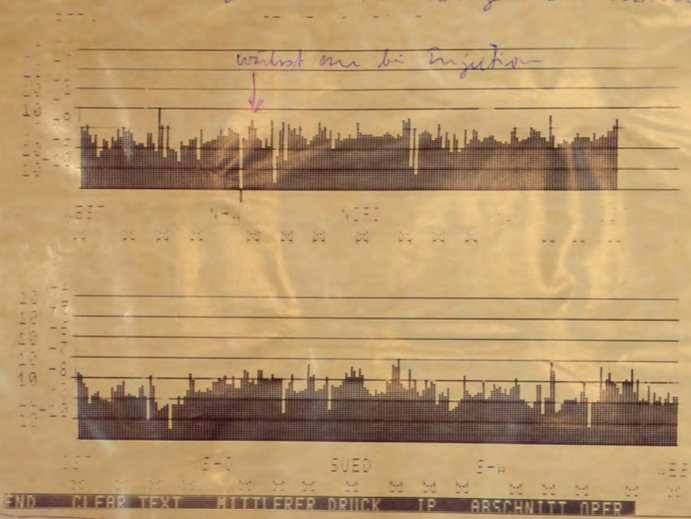


Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit2 E_T > 66eV	T2 Bit 17 2T · E_T · 2t_D	N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM / Tape	BP [V]	T2 Reg. EV Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks
~~13096~~	19/4/83	13:27	13:49	3.1	3.0	8.4%	1240	3394	322.9	26.97	743	2546	247	926	ON	OFF	OFF	—	—	—	F11222	1.5	0	1	0	20.00	
13098	19.4.83	13:58	14:55	2.83	2.76	9.4%	3297	6033	858.3	80.39	2081	7019	781	2567	ON	ON	ON	—	—	—	IBM	1.4		1	0	20.00	
13097	"	22.56	14.55	2.64	3.00	8.2%	4367	8002	1136.7	93.2	3932	8011	1101	2251	ON	ON	ON	0.54	2.35	2.35	"	1.4	52%?	15	1 ✓	20.00	Our first MH !
13092	20/4/83	00:13	00:27	2.16	2.46	6.9%	800	1502	208.4	14.4	652	1388	189	345	ON	ON	OFF	0.49	0.39	~~2~~1.74	"	?	43%?	2	0	"	
13093	"	00:45	00:45	2.02	2.30	—	—	90							ON	ON	OFF										LG Xenon lights were on!
13094	"	00:50	01:40	1.98	2.26	4.7%	2975	4092	774.5	38.7	2523	3765	719	699	ON	ON	OFF	0.13	0.39	3.13	IBM	?	61%?	0	0	20.00	Beams dumped. Only another 47nb⁻¹ made
13095			BAD LG DATA								LG-CAMAC POWER FAILED											1.2					Bad LG data
13099																											
13100	20/4/83	05:27	07:09	1.79	2.11	4.9%	6100	8002	1588.0	77.9	4582	8097	1149	1522	ON	ON	OFF	0.29	1.74	4.87	IBM	1.0	35%	9	0	20.00	
13101	20/4/83	07:09	07:43	1.38	1.63	4.7%	1691	2161	440.0	20.5	1266	2138	298	333	ON	ON	OFF	0,20	0,34	5,21	IBM	?	61%	1	0	20.00	
13102	20/4/83	08:47	08:59	2.37	3.30	7.8%	696	1079	181.3	14,1	521	1298	98	356	ON	ON	OFF	0,53	0,31	5.58	IBM	1.5	60%	5	0	20.00	NO LEAD P. HV.!!
13103	22/4/83							RUBBISH				NO	LG.														stopped - several JOBS 44
13104	"	5.31	6.00	1.62	1.66	5.5	1682	2952	437.5	24.1	2104	1901	247	262	ON	ON		0.10	0.17	5.75	IBM	0.8	54	0	0	20.00	" " " errors
13105	"	6.07	7.12	1.51	1.55	5.6	3870	6963	1007	56.4	5234	4050	573	503	"	"		0.09	0.37	6.12	"	0-6	61	6	0	"	
13106	22/4/83	14.43	15.49	1.72	1.75	4.6%	3825	6941	994.5	45.4	6773	0	568	0	ON	ON	ON	0.15	0.57	6.69	IBM	0.8	0	6	1	20.00	START DATA TAKING WITH NO MAGNET OR INNER DETECTOR
13107	22/4/83	16:00	17:07	1.69	1.73	2.6%	4034	8002	1048.8	27.5	7823	0	670	0	"	"	"	0.10	0.41	7.10	"	?	0	4	0	"	
13108	22/4/83	17:16	17:48	1.51	1.53	3.8	1916	5623	498.4	19.0	5506	0	335	0	"	"	"	0.08	0.16	7.26	"	?	0	1	0	"	
13109	FALSE																	~~0.05~~	~~0.09~~			?					
13110	START																					~~?~~					
13111	22/4/83	18:51	19:29	2.97	3.32	3.9	2221	8002	577.9	22.7	7831	1 (?)	463	0	ON	ON	ON	0.37	0.83	8.09	IBM	?	0	9	0	20.00	THESE RUNS ARE GOOD, EXCEPT FOR THE ONE BAD LG BLOCK.
13112	"	~~19:29~~ 19:51	19:51	2.69	2.99	6.7	1292	8002	336.5	~~22.0~~	7837	0	230	0	ON	ON	ON	0.19	0.24	8.33	IBM	1.0	0	4	0	20.0	
13113	JUNK RUN → HARDWARE WORK IN PROGRESS																										
13114	LOST LINK IMEDIATELY AFTER START									~~0.69~~												1.3					
13115	23/4/83	0:01	0:07	3.49	3.32	0.8%	349	252	9.28	~~643~~	228	0	71	0	ON	ON	ON	0.62	0.22	8.55	F11112	1.3	0	3	0	20.00	Run stopped as JOB Listed is restored.
13116	23/4/83	0:07	2:11	3.48	3.31	0.7%	7418	5000	198.1	14.28	4769	1	1400	0	ON	ON	ON	0.44	3.28	11.83	IBM	?	0%	40	0	20.00	beam dumped
13117	"	3:08	6:32	2.63	3.09	! 19%	12156	7575	1130.9	21.54	7245	0	2021	0	ON	ON	ON	0.27	3.34	15.17	IBM	1.2	0%	37	1	20.00	beam dump.
13118	"	08:12	17:03	2.31	2.20	? 10%	10171	6089	1048.6	16.9	5864	0	1533	0	ON	ON	ON	0.14	1.45	16.62	IBM	2.6	0	12	2	20.00	
13119	"	11:46	12:40	3.86	4.06	0.8%	3248	2372	845	6.9	2226	0	609	0	ON	ON	ON	0.49	1.59	18.21	"	1.2	0	13	0	20.00	
13120/21	"																				~~F11136~~	~~0.85~~					Non existing RUN's (due to IBM Problem)
13122	"	12:52	13:49	2.32	2.54	1.0%	3385	2495	880.6	9.1	2317	0	564	0	ON	ON	ON	0.15	0.52	18.73	F11136	0.85	0	10	1	20.00	
13123	"	14:36	15:33	2.06	2.13	0.6%	3380	1866	879.3	5.2	1794	0	511	0	ON	ON	ON	0.12	0.39	19.12	IBM	0.7	0	2	1	20.00	
13124	"	16:15	19:09	3.46	3.54	0.8	10448	7149	1576.9	20.3	6839	0	2001	0	ON	ON	ON	0.29	3.02	22.14	IBM	1.3	0	26	0	20.00	
13125	"	23:34	1.54	3.13	3.26	−6.6%	8317	4885	-2131?	141	4667	0	1259	0	ON	ON	ON	0.35	2.95	25.09	"	1.2	0	24	3	20.00	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 En>66eV	T2 B:1 17 2T·Eq·2tr.

17.4.83 15^{30} 2 x 3.4 [76eV]

Acceleration to 46 GeV does not change the vacuum 46 GeV beams lost



552 12 45

Note: The water cooling of all collimators is on since the restart after the shut down. W. Bartl

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

17.4.83

20.00 H. Kado.

20,56 $I^+ = 3.21$ mA $I^- = 3.2$ mA 20 GeV

21.00 "LUM - RUN"

1) switch on HV
2) trying to switch on ID leads to alarm (LED #9 on left hand side) S. Bethke was phoned

21,17 most of the beams lost → $I^+ = 0.12$ mA, $I^- = 0.07$ mA 20 GeV
still "LUM - RUN"

21.35 Bethke puts his magic hands on the controls and ... it works!
(but only sometimes - there is still a bug in the system. Bethke plays around in the Rucksack)

21.50 In case the Inner detector does not allow to switch it on:
- go to the Rucksack and check which channel of the alarm register is set
- if it is not HV-input: check carefully the possible reason.
- if it is HV-input: reset with green button (left to register), start ID-run up again with the green start-button (right-hand, on the HV-Motor-box). (**)
This HV-input alarm arises spurious and obviously without any strong meaning.
Be careful!! Reset and try again only in case of this alarm! Don't forget to check the actual beam- and detector-conditions after some time.

(**) This start-(and also the stop-) button are the same as in the counting house to switch on/off the ID.

When you started the ID from the Rucksack panel it works, run up to the counting house and check, whether the beam conditions allow an ID-operation. If not meanwhile, run the ID down immediately. S.B.

22.00 start injection again

23.30 Roger Barlow

1:45 PKR requires magnet current be reduced to 2500A. It sticks at 4400 and cannot be changed from that (by computer or by hand). "Secondary Limit" light is on. Call K-groupe.

2:30 K. come and fix fault. Magnet now controllable again. Set to 2500 A.

18.4.83 800 Petersen

8^{50} magnet down to 500 A
8^{50} switched off DL8's and Nord

Run	Date	Start	Stop	at Run Start: I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rec. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 $E_n > 66$ eV	T2 B:4 17 2T: E_0 :2tr.

ON/OFF N50	MIP	TOF	LL> $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv (%)	Bhabha Σ	MH	Ebeam	Remarks

18.4.83

IBM problems: Any attempt to activate the IBM gets error 54 130000 13-- is not even in list of errors!
TASSO say the link works for them.

12:05 IBM Link now Ok. Problem was due to reorganisation somewhere between our link and the IBM - a new setting was required in our IBM link module.

16:00 YVOLTs program temporarily removed (via RTOFF). This is because YVOLTs claimed lots of errors whilst the LA experts say all is Ok. Program out of action until I get around to understanding it! (HEN) [Systaltests voltage checks]

16[00] R. Felt and J. Chrin on shift starting with no beam at all in PETRA
18[30] CAMAC problems solved by exchanging 2 crate controllers and 1 branch terminator; one pin straightened in a branch cable connector. D.C.

19[20] InnerDetector service: look to the on-call-plan besides the door

trouble switching on ID? Look page 81

20[45] New version of N50DAR program released. This has increased tagging scales. HER

19.4.83

0.00 L. Becker

'Machine studies'

04:00 T. Nozaki
~~Mac~~ "Machine Studies"

8:00 St. Wagner and Kelbenbrand on shift
10:40 3 × 3 mA accelerated to 20.0 GeV
raised magnet to 7500 A
PKR has problems with klystrons (2 are broken)
ID switched on with 0.3 × 0.3 mA
11:05 SWITCH OFF HV
11:20 magnet ⟶ 2500 A

19.4.83

13:20 ₱ 20 GeV $I_+ = 3.15$ $I_- = 3.10$
BACKGROUND 1.6 VOLTS
CHAMBER REASONABLE
TRY TO START RUN → IBM BUSY → TRY NORD ~~150~~ TAPE
TRIGGER WORK ≠ IBM BACK, SO STOP RUN 13087
16.00 Kobriol + Dickinson in shift
18.20 Beam lost Short break. LINAC & Vacuum trouble. Unknown duration.
To ~morrow 8.30 - 10.30 Temporary access !

Because of generally low beam intensities: Attenuators in front of KADO's pickup reduced. 6 db ~~for~~ (Before: 10 db) for positrons; ~~3 db for electrons (Before 3 db)~~ 0 db for electrons (Before: 3 db)

19[00] All the high voltages of LG were changed, so that the gain was decreased to 72% of the previous one. The related trigger thresholds were also decreased by the same amount.

20-23[00] Cords heavily working to cure some recently introduced NORD program bugs, which had led to "BAD EVENT STRUCTURE, NO HEADER," Hangups etc.

23. Regular data taking (to IBM) resumed.
Few times error AC2099 TOF Pw Q, X missing, Some noisy channel in the LG ADC system.
Yamada views the histograms and takes care of things.

20/4/83 0.00 Bowdery & Kawamoto on shift.

20.4.83 0.30 Tried to check TOF counters, something is very wrong with read-out. Have to get H. Miller in the morning to try to find error

0.40 DL8 Number 178 was changed A. Diekmann
1:18 TOF TDC #73 gives no response according to YSPY. We checked the connection of the appropriate cable (#32) in the CAMAC crate after phoning B. Narozka. She will investigate in the morning.
New filling at 1:30.

1:39 YSPY now says that FWD μ counter 9 had no hits. Will investigate if it recurs.
1:40 Beams dumped
2:15 Bee flying around the control room! Anybody for honey? ~~Flew~~ Flew out from somebody's bonnet
It soon flew out the door to the relief of the shift crew.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.+2 E₁ > 66 GeV	T2 B.+1/7 2T. E₀ .2+.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Ev.(%)	Bhabha Σ	MH	Ebeam	Remarks

20.4.83

5:28 LG ADC Crate #6 (middle one) had a faulty power supply so that the crate was drawing about 13A instead of about 11A. This led to current overload alarms. New power supply installed. Runs 13095 – 13099 probably unusable.

6:51 JADE 0.3×10^{30} ? MARK J 0.05×10^{30} TASSO 0.18×10^{30}
Fill should really be dumped now but PKR cannot give a new filling in less than 50 minutes so we will wait a while.

8.00 H. Mills & D. Schmidt on shift

Magnetic tape unit faulty. When a tape is mounted it loads OK but as soon as the first block is read the vacuum dies.

8:45 Beams ready – run started (13102)

8:59 Run 13102 ended. Keys to the machine.

11.30 Checked TOF, changed 1 TDC for counter 31/32. Please check for holes during next run. B.N.

New factor installed for tagging system luminosity – abot 50% of previos value
TV now has BL (Bhabha luminosity) – also in the run summary.
Latest version of Nord-50 program (DI)N50DAR should histogram the tagging system correctly.

16.00 Stephens, Kobayashi

17.0 TV soap restart 17.00 20.00

17.45 " " injection!!

21/4/1983

0.00 Diekmann, Meier

21/4/83 08:00 Baines + Wagner on shift.

8.15 Message from gas people:
There is a large leak in the μ-chamber gas system, which got rapidly worse during the last few days. Baines is looking at the chambers. K. Stephens called in.
RAMPED DOWN MAGNET TO 2000 A TO SAVE POWER
BEAM STATUS → "BREAK"
(12.55 → START INJECTION, SO RAMP MAGNET UP)

16.00 Takashita and Bertel on shift
now Injection and E_B 9.565 GeV! → 20.019 GeV with 2x2.0mA → beam lost.

22.22 NORD RESTARTED BECAUSE ~~OE~~ NORD50 CAN'T BE STARTED.

23.00 Petra problems: (1) On some of the elystrons the body is getting too hot. Experts are being called to solve the problem
(2) It could be that at least in one of the wave guides there are sparks. Kon & Co are contemplating whether the suspected wave guide should be opened to inspect it
(3) The vacuum in the RF-sections N and S is still getting bad with stored beams.

23.00 We run our magnet down to 5000 A.

22/4/83

25.55 Stephens & Bunge on shift [∫ (μS) have been round the μ system with leak detector and found no leaks]

3.44 20 GeV i^- 2.13 i^+ 2.12 raise magnet (hopefully) to 7500 amps

3.51 magnet up beams down!!

4.45 20 GeV i^- 1.78 i^+ 1.74 Bp 1.0 → 2.0 very unstable

4.52 SLAC run 13103 Bp ~1.0 but still fluctuating

5.00 stopped all LG/BP power supplies at zero
all 12 LG Power supplies. Phone Kobayashi because they have been working on LG system for past few days. All remote control boxes were on DISREGARD.

Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 E₁ > 66 GeV	T2 B:+17 2T: E₀ ·2+r.

86 22.4.83

5³⁰ Start Run # 13104. LG ok but other problems. Beamp ~ 0.8
HV Power supply 23 is at zero although it took ok.

6⁰⁰ YSPS says trigger 2 output missing 47, 105, 143, 157, 171, 185

Then JDAS error 44 DMA timeout
" " timeout Branch 6 crate 6 : ID ring 3 > pi
" " DMA timeout
" " timeout Branch 2 crate 1 : Catcher
DMA timeout
timeout branch 2 crate 1 : Catcher
Run terminated.

6⁰⁶ Start again. # 13105 Bp ~ 0.6
Still have P.S 23 at zero.

Try to get histogram but always - Display busy - wait 20x.

6⁴⁵ Mark J want beams dumped at 7.00
YSPY trigger 2 output missing 93, 107, 117, 165, 169, 175, 189, 153
IKR don't want to dump the beams
YSPY trigger 2 output missing 1, 37, 97, 105, 133, 139 181, 185

7¹⁰ Run ended due to several JDAS Errors
44 DMA timeout
" " branch 6 or 6 ID ring 3 > pi
" DMA " "
" " " 2 or 1 : Catcher
53 Sybr crate watchdog flag on PART 000202 (oct)
44 DMA.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SL dt Bhabha Run	SL dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv (%)	Bhabha Σ	MH	Ebeam	Remarks

22.4.83 87

7¹⁵ Mark J request new fill at 7²⁰
7¹⁸ Beams dumped.

8⁰⁰ Yamada + Bethke on shift

Histogram display works again. I don't know how people manage to jam it since I have never managed to! (HBH)
The voltage power supply messages were due to YVOLTS comming back to life (after the Nord reload last night). Messages on white board and PS2 said that YVOLTS does not work for reasons not understood.

10¹⁷ "Short break", for ~2-3 hours. Ran down magnet to 700A
11:00 Run up magnet, because we want to do some tests with jet-chamber.
At magnet-amps ≥ 5000; → Magnet trips with "Vorlaufdruck Primär <".
After pressing reset: Magnet runs up again (Magnet-program still active, obviously).
Stops at ~2600A. Not possible, to run Magnet now up or down. Phoned K-people

14:20 Big disaster: Motor of Magnet-Power-Supply is defective. Obviously there is no hope to repair it or to get a new one over the weekend.

Decision (from R. Felst): rerun without magnet and without ID R13106 – 13145

14:40 Start run 13106 without ID and Magnet Beam: 20.000 currents: e⁺ 1.91 e⁻ 1.94
14:42 Errors from "Yvolts"; reversal channels wrong (YVOLTS should be off?)
TOF-HV ok by definition (B. Naroska changed them slightly)

YVOLTS messages on the LG HV. cope?
Recently LG HV was modified to coop with the higher PETRA energy. "Should be" value are not yet renewed properly. Don't be bothered by the error messages. They will be cured soon. Takeshita, Yamada

16.00 Wagner + Diedrich on shift. Inner detector removed from readout
19⁴⁰ SUDDEN INCREASE IN TRIGGER RATE (UP TO 20 Hz)
TRYING TO LOCATE SOURCE. TAKE LUMI OUT OF
TRIGGER → STILL THERE, ⇒ SEEMS TO COME IN BURSTS.
(TRIGGER WHICH DOMINATES IS TAG · 1 SEPT · <1T, ~~EVEN WITH TAG REMOVED~~!) ?NO
~~FLASH~~
KREHBIEL CALLED.

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_T>66eV	T2 B:1 17 2T·E_T·24

22.4.83

PROBLEM SEEMS TO BE LOCALIZED TO ONE OF THE LEAD GLASS LINEAR SUMS.
21[00] TAKESHITA CALLED IN.
PROBLEM SEEM TO BE IN ONE BARREL LG COUNTER, WHICH ~~BELL~~ APPEARS TO BE SPARKING (#1682, BARREL #2)
TURNED OFF HV TO THIS BLOCK. ←PROBLEM SOLVED

24:00 | 23/4/83 — Chris & Hellfgrand On Shift.

00:00 IBM. Link Down - Write To Tape
00:07 IBM link Up - output ~~collector~~ to IBM.
02:10 Run 13116 Terminated - Short Break.
02:35 Injection.
03:08 Start Run 13117
06:32 End " " - Injection.

08.00 Kado and T Nozaki on shift
08.12 Start RUN 13118
08.42 Trigger 3 I/p missing: ST 27 GP1 ST 28 GP1 — Ebeam = 20 GeV, I+ = 2.3 mA, I− = 2.2 mA
09.11 YSPY Muon digitizers missing No 141
9.39 YSPY reports: Trigger 3 I/p missing: ST 27 GP1 ST 28 GP1
10.05 " " " " " " " "
Muon Digitisers missing: 141
10.33 YSPY same as 9.39 + 10.05
11.00 " " " "
11.15 New set of logging HT's installed, K Meier
11.45 New RM is ready. Start Run 13119. I+ = 3.9, I− = 4.0 mA.
12.09 YSPY same as 9.39 + 10.05
12.39 IBM ERROR 44 SUBERR(oct) 40000 ERR.CNT(OCT): 000000
stop the run. restart with the MT. F11136
12.44 JDAS READOUT ERROR 44 Timeout branch 2 crate 5 leadglass ADC's.
MUON CRATE MISSING # 8.
Now IBM is completely down.
13.11 YSPY same as .....
13.36 " " " "
" Muon Digitisers missing: 141
13.48 Beams dumped

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	<LL> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	M11	Ebeam	Remarks

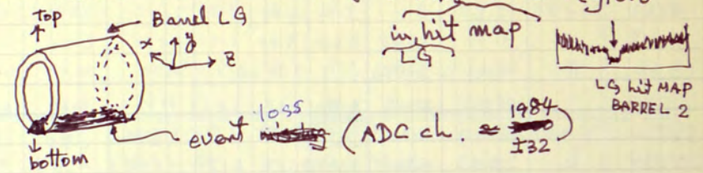
23.4.83

14.36 new Fill · 20 GeV, I+ = 2.03 mA, I− = 2.09 mA
15.07 YSPY: Trigger 3 I/p missing: ST 27 GP1 ST 28 GP1
15.36 Beams dumped

16:00 Knies, KAWAMOTO

17.45 ~~Inner detector alarm~~, without HV on ID! reason: Anode current in Rucksack Panel
19:09 Beam lost: stop RUN
19:20 Inner det. alarm came again, anode current alarm (ch 21, data ~32). ?!
19:40 cooling problems North right report is on the way

20: MISS-CONNECTION of ~~BB~~ LG Barrel linear sum output (#54, 62) was found after RUN 13124. It seems it began at RUN 13115 after the ~~fight~~ fight against the sparking LG counter (see P87-88). This miss connection had effects to Energy trigger. the most prominent result was the lack of events at the region indicated in the figure:



Now, the connection is OK! (probably)

24.4.83

0[00] Takeshita + Komamiya
2[00] Run Summary looks funny.
[Nord 50 monitoring seems to be crazy.
TØ all., TØ accept, TØ reject } ... have sometimes negative sign.
dead time
I think monitoring is Ok- The run takes so long that the scalers may overflow! then
3[20] ~~[illegible]~~
4[00] Muon crate #13 missing
cannot be reset. → PLEASE PHONE AUSTIN
4[25] YSPY DETECTED ERROR.
Muon digitisers missing 141 ~ 153
4[45] MARK J ASKED ABOUT NEW FILL. WE AGREED.
6[50] Now filling but the beam current is only 1.9 mA
This value is as small as ~~the final value of the~~ previous filling when they dumped the beams.
WE ASKED NEW BEAMS!

Run	Date	Start	Stop	at Run Start I^+	at Run Start I^-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To reg. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B.t 2 $E_T > 66$ eV	T2 B.t 17 2T. $E_T \cdot 2t_v$
13126	24/4/83	3:41	4:52	3.0	2.8	0.8	4011	3121	1043	8.8	2998	0	745	0
13127	"	6:47	7:52	2.0	1.9	0.6	3910	2233	1017	6.2	2154	0	616	0
13128	"	11.23	13.51	3.88	3.84	0.8	8970	6528	2319	18.8 read from Panel	6079		1963	
13129	"	14.28	16.31	4.11	4.14	1.0	7334	6437	1909	18.6	6064	0	2071	0
13130	"	18.31	20:13	3:16	3:33	0.9%	6062	4552	1578	13.9	4281	1	1518	0
13132	"	20.30	21.83	2.46	2.46	0.8	3139	2350	818	6.5	2246	0	764	0
13133	25.4.83	03:40	06.48	3.57	3.57	08	11302	8002	11353	23.3	7536	1	2213	0
13134	"	06:48	07:19	2.41	2.41	0.8	1786	1305	464	3.7	1234	0	386	0
13135	"	08:36	09:34	3.23	3.25	0.6	3437	2288	894	7.0	2115	0	635	0
13137	"	17.21	17.32	3.62	3.61	1.2	631	647	164	1.8	595	—	136	—
13138	"	17.33	17.52	3.53	3.52	0.9	1073	935	279	2.6	869	—	184	—
13139	"	18.01	19.38	3.33	3.28	1.0	5816	4781	1514	14.5	4488	—	1165	—
13140	"	22.23	22.46	3.60	3.52	1.2	1340	1486	352	4.2	1387	—	312	—
13141	"	22.47	1.23	3.43	3.34	0.9	9358	7855	2434	22.4	7456	-	2080	—
13142	26.4.83	2.47	3.	3.72	4.08	1.2	2150	2295	559	6.5	2113	—	526	—
13143	"	3.33	4.48	3.40	3.53	1.0	4531	4215	1180	12.1	3949	—	1101	—
13144	"	4.41	6.04	2.74	2.88	0.9	4444	3871	1171	10.9	3651	—	1044	—
13145	"	06:56	09:09	3.77	3.87	1.0	7959	7423	2070	21.3	6939	—	1832	—
13146	26.4.83	18:49	20:23	3.80	3.86	7.0	5621	8002	1462	102	4191	8017	1092	2426
13147	"	20:23	20:51	1.55	1.80	1.5%	1660	1238	432	6.6	1015	46	318	35
13148	26.4.83	21:59	22:52	3.40	3.48	6.8%	3187	4202	828	51.5	2435	5284	631	7209
13149	26.4.83	22:52	0:32	2.90	2.93	5.6	5971	8002	1553	83.3	4505	8179	1370	1640
13150	27.4.83	0:33	0:44	2.34	2.36	5.1	646	834	168	8.5	479	795	152	142
13151	27.4.83	1:50	3:13	3.94	4.05	7.6	4963	8002	1292	98.1	4272	8792	1760	2466
13152	27.4.83	3:14	4:45	3.19	3.27	9.5	5465	8002	1421	134.6	4523	8211	1364	1900
13153	27.4.83	4:46	5:34	2.57	2.63	5.6	2840	4017	739	47.6	2369	3743	729	707
13154	27.4.83	6.28	7:50	4.12	4.17	7.9	4919	8002	1280	101.0	4224	8850	1784	2487
13155	27.4.83	7:51	8:27	3.27	3.32	6.9	2137 3257	3259	556	38.6	1805	3345	572	846
13156	27.4.83	10:40	10:40	4.00 4.04	3.66	7.9	1372	2300	357	28.1	1118	2517	346	697
13157	"	12.57	12:53	4.06	4.04	7.2	102	165	26	1.9	77	167	21	45
13158	— ABORTED													
13159	27/4/83	15.59	17.07	3.01	2.70	7.0	4067	5937	1058	74.0	3176	6609	1002	1805
13162	"	19.10	20.51	3.26	3.26	5.8	6021	8002	1565	91.0	4312	8725	1366	1750
13163	"	20.52	21.39	2.30	2.34	4.8	2858	3568	743	36.0	2037	3498	705	515

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/TAPE	BP [V]	T2 Rej. Ev Fr. (%)	Bhabha Σ	MH	E_{Beam}	Remarks
13126	ON	ON	ON	0.31	1.24	26.33	IBM	1.2	0	12	1	20.000	Beam dumped, MARK J REQUESTED NEW FILL
13127	"	"	"	0.17	0.68	27.01	"	1.1	0	8	1 cosm	20.000	"
13128	"	"	"	0.56	5.95 ~~4.593~~	32.96	"	2.0	0	52	5	20.000	"
13129	"	"	"	0.58	5.14 4.24	38.10 37.20	"	7.8	0	45	2	19.993	beams lost.
13130	"	"	"	0.42	2.75	40.85	"	1.5	0	24	2	20.00	stopped by BN to do some tests
13132	"	"	"	0.27	0.92	41.77	"	0.9	0	8	0	20.00	Beams Dumped
13133	"	"	"	0.43	4.69	46.46	"	1.7	0	41	1	20.000	
13134	"	"	"	0.31	1.03	45.49	"	1.2	0	9	1	20.000	beams dumped
13135	ON	ON	ON	0.46	1.58	47.07	"	1.5	0	8	1	20.000	beams lost.
13137	"	"	"	0.79	0.57	47.64	"	1.5	"	5	0	20.000	
13138	"	"	"	0.66	0.69	48.33	"	?	"	6	0	"	
13139	"	"	"	0.47	4.69	53.02	"	?	"	41	1	"	don't believe lumi?
13140	"	"	"	0.70	0.80	53.82	"	1.2	"	7	0	"	
13141	"	"	"	0.46	4.64	58.51	"	1.1	—	41	2	"	
13142	"	"	"	0.79	1.95	60.46	"	1.5	—	17	3		
13143	"	"	"	0.54	1.83	62.29				16	1		
13144	"	"	"	0.36	1.83	64.12		1.0		16	1		Beams dumped
13145	"	"	"	0.55	5.95	70.07	"	?	0	52	3/55	20.000	Beams lost
13146	"	"	"	0.48	2.71	2.71	"	1.5	61	22	2	20.015	Partial beam loss during run
13147	"	"	"	0.45	0.46	3.17	"	1.5	57	4	0	20.015	beams lost IP on again
13148	"	"	"	0.12	1.48	4.66	"	1.5	61	13	0	20.015	possible high voltage changes
13149	ON	ON	ON	0.47	2.52	7.18	IBM	1.2	61	22	1	20.015	
13150	ON	ON	ON	0.32	0.0	7.18	IBM	1.1	60	0	0	20.015	Beams dumped
13151	ON	ON	ON	0.83	5.39	12.57	IBM	1.65	61	47	0	20.015	
13152	ON	ON	ON	0.51	2.98	15.55	IBM	1.35	61	26	0	20.015	
13153	ON	ON	ON	0.39	1.03	16.58	IBM	1.15	60	9	1(0)	20.015	Beams dumped
13154	ON	ON	ON	0.84	4.47	21.05	IBM	1.7	61	39	1	20.015	
13155	ON	ON	ON	0.64	1.61	22.66	"	1.4	60	14	0	20.015	← once 19.998 GeV Beams lost
13156	"	"	"	0.84	1.15	23.81	"	1.7	59	10	0	"	Beams lost
13157	"	"	"	0.79	0.00	23.81	"	1.8	61	0	0	"	Beams lost
13158	— ABORTED												
13159	ON	ON	ON	0.39	2.29	26.10	IBM	~1.5	62	20	1(0)	20.015	Beams dumped
13162	"	"	"	0.39	2.87	28.97	"	1.4	61	25	0	"	(runs 13160 + 13161 were tests of complink)
13163	"	"	"	0.30	0.69	29.66	"	~1.4	60	6	0	"	Beams dumped

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_n > 66eV	T2 B:1 17 2T: E_n ·2t…

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24.4.83

7 30 Mark J informed us that.
PKR cannot dump the beams because of synchrotron problem.

7 50 ID Temperature too low, switched off "Zetro".

09:40 Muon crate 13 problem was induced by fault in local VDU. Now seems OK on test runs. AB,
Forw. Muon trigger 24 (coincidence with Forw. Chambers) changed to FMu-Card Output 6
(All Counters included, Collinearity ±1, but not on same side of Beam)

11.44 YSpy - Trigger 3 Input Missing ST 27 GP 7 ST 28 GP 7
Again at 12.09

12 57 Same, plus "Muon Digitizers Missing 14 7"
Error without it " " " comes ca every half hour.

13.50 New fill on Request of Mark J. (However the Beam was still nice)
Run summary: Deadtime ~1.0 % ! (0.8 % on TV)

14.25 New fill ready! This time really fast!

16 30 Stephens & Junge on Shift.

19 28 Run 13130 started i^+ 3.16 i^- 8.33

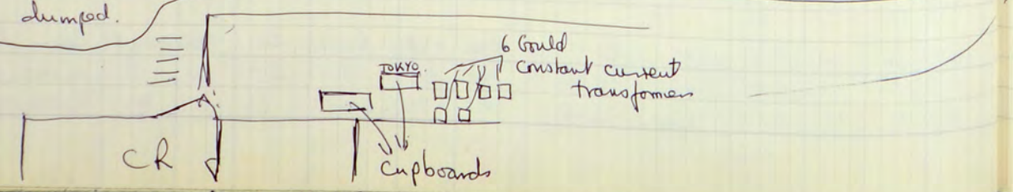
20 00 JOAS R0 error 44 Timeout by 3 cr 2 μ chambers.

Beate N arrives and later cries - she's worried about the Forward counters. She stops run 13130 to do some test runs to try and understand the "zero" in Trigger 1 input (65-80). B decides it's software and leaves it to HEM.

~~20 24~~

20 29 Run 13132 started i^+ 2.44 i^- 2.44
‖Run # 13131 is RUBBISH‖
21 00 Mark J phone b announce new fill in 20 mins plus short access to change power supply.

21 20 Beam dumped.



22 50

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_n > 66eV	T2 B:1 17 2T: E_n ·2t…

ON/OFF N50	MIP	TOF	LL> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(Y.)	Bhabha Σ	MH	Ebeam	Remarks

24.4.83

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On the balcony are 6 Gould constant current transformers. These are switched on, and thrown on top of them was a considerable quantity of black PVC. Both the transformers and the PVC had become extremely HOT. This was found purely by chance. I suggest the "owners" of these transformers make it OBVIOUS that they are switched on and therefore avoid the possibility of more flammable material being placed on top of them.

23 50 Short Break. on TV

25.4.83

24 00 Dittrich & Ball on shift.

01:30 Following some futile attempts at accelerating beams, 'kurze unterbrechung'. PETRA magnets off + grounded to fix problem.

2.30 Beams ready $I^+ = 2.73$ mA, $I^- = 3.46$ mA
2.34 Beams lost.
3.30 Beams ready $I^+ = 3.6$ $I^- = 3.6$ Lum. Run
4.30 Reform Tape submitted, Analysis-Tape submitted
06:45 Run 13133 ended, start run 13134
06:50 Mark J suggest new filling at 7:15. Agreed.
07:18 Stop run 13134. Run down H.V.
08:00 YAMADA & DARVEEN on shift.
08:35 beams ready - 3.24 mA e⁻ 3.22 mA e⁺ at 20 GeV. run 13135 started
09:37 beams lost
09:59 The missing "Injection" has changed to 'short break'
The machine group is investigating why beams were lost. (13135) They don't know how long it takes. ⇒ Now they know: less than ½ hour (10:58)

14:05 New test version of Nord-50 program mode - (DI)N50DAR which should cure Beate's FWD TOF problems. (HEM)
14:40 another 'Kurze Unterbrechung' power supply failure and a sandor failure - might start again ~15:30
~1600 ID temperature too low 'Zetro' was switched off S.K.
16.12 Tagging counter #75 is now plugged into channel 0 of the ADCs — it didn't work before, so I don't expect it to spoil anything - if channel 0 of the ADCs works we shall know that it's an ADC fault

Run	Date	Start	Stop	of Run Start I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To reg. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B.+2 $E_n > 66$eV	T2 B.+17 2T. E_n .2tr.

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25/4/83

16.00 Whitaker and Naroska on shift. "Short breaks" in progress, but injection is going on. Derek Daniell asked to watch channel 72 and note in the log if it goes dead.

17.15 Beam is on 20 GeV.

19.40 Beam dumped due to fire in tunnel! False alarm; probably
The alarm came from the tunnel between us and NO (Cell 6), it was station 2 (there is a panel near the entrance). It was reset, now Petra will continue.
Hall very warm, we open door.

21.00 Tried to find out what is the lumi in Petra; after discussions with experts in Tasso (Kück) and Mark II (Schulz, Burgess) the following situation emerged:
On Friday Feb 20. (6^h in the morning) Jade magnet on
all 3 experiments had more or less the same luminosity. It was calculated over a long period

	$\int L dt$ [nb^{-1}]	sec	
Jade	2	7800	$2.5 \cdot 10^{-4}$
Mark J	3.67	13560	$2.7 \cdot 10^{-4}$
Tasso	~3.1	~13000	$\sim 2.4 \cdot 10^{-4}$

Today, Jade magnet off:

Mark J	7.29 ± 0.7	8220	$\approx 8.9 \cdot 10^{-4}$
Tasso	1.8 → 4.8	7700 → 7870	$6.7 \cdot 10^{-4}$ → $6.1 \cdot 10^{-4}$
Jade	1.2	1700	$7.1 \cdot 10^{-4}$

Unfortunately our high statistics value is unbelievable as the beam was dumped and forward lumi and Bhabhas are nearly a factor 2 different. (into our apparatus?)

22.15 Beams ready again. $I_+ = 3.59$, $I_- = 3.50$

26/4/83

0:00 Matsumura, Mills
YVOLTS program now works again.

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	$\int L dt$ $\times 10^{30}$	$\int L dt$ Bhabha Run	$\int L dt$ Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

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26.4.83

6.00 Stop run for new fill
6.15 Beams still in PETRA - phone Mark J to ask why - they don't know - then they ring back & say they puzzled about sore - say PHR will dump soon. Lucky we aren't in any hurry!

Studies ~~during~~ during the night show that the 'Jamming Display' syndrome is due to the event display but exact details are still mysterious. Probably a timing problem when a display is aborted. Once the event display jams up the histogram display will also.

8.00 W. Bartel & D. Daniell

09:09 Beams lost.
09:29 Tagging lead glass signal cables interchanged & try to locate fault in ~~channel 75~~ channel # 75.
The signal cables interchanged were the multi way ribbon cables between ADCs and connector interface box
ADC channels 48-72 also interchanged with 73-97.
10:00 Problems with one magnet in the transport channel between the synchrotron and Petra.
12:00 Now there are problems with transferring e^+ from PIA to DESY.
13 18 As a result of a message from Gareth Hughes I have changed the divide by 16 to divide by 5 on our tagging logic. DCW
13:40 We get an inner detector alarm when the inner detector was not switched on — I guess this is just some spurious electronic pick-up.
14:40 another ID alarm! - still switched off.
15.30 magnet powered again, everything seems to be O.K. and the reason for our trouble has been just the motor, the armature current (Amperestrom) is now lower than before suggesting that the motor has been "weak" already before.

16.00 Schmidt / Bethke on shift

Inner detector included in readout and YSPY.

17.45 Still no beams. Problems with PIA and Doris.
18.00 Injection - Run up magnet → it works!!!
18.49 Beams ready. $E = 20.015$ $I^+ = 3.8$ $I^- = 3.8$

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All x10⁶	To reg. x10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·12 E_+>66eV	T2 B·4·17 2T: E_+·2tr.	ON/OFF MIP	ON/OFF TOF	LL7 x10³⁰	SL dt Bhabha Run	SL dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks
															N50											

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26.4.83

20⁰⁰ Partial beam loss: → 2x2 mA
PKR wants to study something before refill.

19⁰⁰ LG HV READ ERROR HAPPENED. REAL – VOLTAGES ARE O.K.
PLEASE IGNORE LGHV ALARM, ONE OF DISTRIBUTERS SEEMS TO BE BROKEN. (Takeshita)

20⁵¹ Stop run for a new fill

22⁶⁵ Run 13148 may contains loss events, because the high voltage ~~was~~ might have changed during the run for some minutes (~5). Therefor we stopped the run.

27/4/83

0.00 Kobayashi / Kado on shift 27/4/83
1.48 new fill ready – start run
3.03 YSPY : Trigger 3 I/p missing : ST 28 GP 2
3.20 suddenly Trigger box hangs up (reason unknown) after pressing "reset run", "start run" it works again.
4.00 All the LG HVs have been checked to be all right (T.K.).
5.20 new fill ready – but Beam pipe current too high (1.95 V) – PKR trys to optimize
6.26 start RUN # 13154

(PETRA currents now always > 2mA/beam during data-taking
≈ Pick-up Pre-Attenuators changed to 10dB for e^+-Signal and 3dB for e^--Signal
(previously 6dB for e^+ and 0dB for e^-) HK.

6.44 Beam pipe current now 1.6 V

8.00 Heinzelmann & Takeshita on shift
8⁰⁵-8¹⁰ energy reading on display and TV screen 19.998 instead of 20.015 GeV. PKR claimes 20.015 is the correct energy.
8²⁵ DMA Time OUT : branch 2 crate 1 : Latches ← Power failure (OVER LOAD : -6V was wrong)
8³⁸ RUN 13155 STOPED Power supply was changed to new one.
8⁵⁰ Beams lost.
10³⁸ RUN 13156 STARTED
11⁰² BEAMS LOST
12⁵⁰ RUN 13157 STARTED AND BEAMLOST then RUN 13157 TERMINATED.
13 45. Beams partly lost during accelation, they go to 20.015 GeV nevertheless. She improve their optics file. Let them have it! Is good for our future. ca 1.3 mA/beam.

Crate-Controller, which was in MU-Crate (Stand. Eng), and thought to be faulty, put back in its place. Fault could not be reproduced in Test Setup. PIOSLOT works o.k. in Muon Crate.

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Wednesday 27/4/83

16⁰⁰ CC 6:7 exchanged, data taking working again.
16.00 Loebinger + Weber on shift
16:54 As from 16:30 channel 0 of ~~ADC~~ ECTT mainframe 63 (Tagging System) was at 53V. This has now been reset to 1343V DCP
17.00 Run stopped for beams to be dumped.

Integrated luminosities so far: JADE: 26 nb⁻¹ MARK J: 51 nb⁻¹
TASSO: 27 nb⁻¹ CELLO: 14 nb⁻¹

17.30 Finger trouble – pressed Nord power off button by mistake! Power back on, error log emptied and everything seems Ok. (HEH)

19.05 New beams Run 13162 started
Error message on printer: YPARA 2: ERROR = MUON system
CRATE = 0 STATUS = 000414 (OCTAL)
.. .. 5
.. .. 6
This message was also at start of previous run.

Muon system working perfectly, so ignore this message.

21.30 Beams dumped.

28/4/83

0.00 Whittaker and Glossop on shift
Automatic feeding of paper on Gouldplotter not working. Mr. Haase to be notified
There is a hole in TOF Mean ADC at ~40: B. Naroska to be notified owned by itself.
02¹³ Hangup in trigger box, no events ... : Start R 13166, works Ok again.
R13166 gives same YPARA 2 error message as above
03-05 Petra has sender problems since the beamloss at 03¹⁴.
06 Serious problems announced by PKR. We take Magnet down to 1000 A. No beam expected before 8⁰⁰.

8⁰⁰ Knies u. Kleen
13⁰⁰ SL dt-status: Jade 44 nb⁻¹, Tasso 45 nb⁻¹, Cello 20 nb⁻¹, Mark J 80 nb⁻¹!

Synchrotron radiation: We have ~100 hits in the chamber at $I_{e^+} = I_{e^-} = 3$ mA
Compared with the 19 GeV-Runs last year the Anode current normalized to the machine current is around a factor 3 higher.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E1>66eV	T2 Bit 17 2T1 E4>2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/TAPE	BP [V]	T2 Rej Ev Frac. (%)	Bhabha Σ	Multi-hadron	Ebeam (GeV)	Remarks
98 Exp 24																											99
13164	28/4/83	00.07	1.37	4.17	4.08	8.7	4781	8002	1243	108	3870	9643	1059	~~44804~~ 3032	ON	ON	ON	0,80	3,90	33.56	IBM	1.85	62	34	1 (4)	20.015	
13165	"	1,37	2.14	3.28	3,11	10.9	2151	3373	559	61	1750	3860	~~483~~	~~5240~~ 1177	"	"	"	0,63	2.52	36, 08	"	1.4	62	22	1	"	stopped with hangup in Trig box.
13166	"	2.14	3,11	3.00	2,83	6,5	3356	4900	873	57	2674	5209	744	1158	"	"	"	0,55	1,72	37, 80	"	1.3	61	15	1	"	Beams lost.
13167	"	11.11	12.26	3.46	3.85	7.1	5035	7357	1311	93	3701	8619	1003	2343	ON	ON	ON	.73	5.28	43. 08	"	1.4	61	46	1 (2)	20.015	
13168	"	12.38	13.54	2.82	3.19	6.6	4505	6547	1172	77	3434	7318	989	1977	"	"	"	.55	2.06	45. 14	"	1.1	61	18	0 (1)	"	Beams lost ID trip.
13169	"	15.14	16:09	3.97	4.15	7.3	2995	4790	7786	57	2583	5216	591	1318	"	"	"	0,58	2,06	47.20	"	1.5	61	18	0	"	
13170	"	16:17	16:21	2.65	2.66	22,5	210											0.32	0		"			0	0	"	very short. error in DL8
13171	"	16:26	17:19	2.62	2.63	6.6	3127	4623	814	54	2551	4740	663	919	"	"	"	0.42	1.72	48.92	"	1.0	60	15	0	"	beams dumped. total ∫L=118.99 (Exp 24) 83/84
13172	"	20:12	21:23	3.87	4.11	10.4	4266	8002	1110	115	4140	9351	908	3035	ON	ON	ON	1.09	3.22	3.22	IBM & TAPE	1.5	63	28	0	20.030	MT data for HEM.
13173	"	21:24	22:50	3.15	3.46	7.2	5164	8002	1343	96	4322	8405	1123	1994	"	"	"	0.78	3.10	6.32	IBM	1.3	60	27	1	"	
13174	"	22:51	22:55	2.61	2.87	6.5	219	347	57	3.7	177	351	56	89	"	"	"	0.56	0.34	6.66	"	1.2	58	3	0	"	
13175	"	23 11	23 34	2.50	2.75	6.3	1372	1953	357	22.3	1038	2084	259	419	"	"	"	0.57	0.82	7.58	"	1.1	60	8	1	"	
13176	29.4.83	0 36	1 55	4.04	3.78	8.6	4683	8002	1218	104	4210	9163	1017	2646	"	"	"	1.13	4.59	12.17	"	1.75	62	~~40~~	0	"	
13177	"	1 55	3 21	3.36	3.14	6.9	5746	8002	1338	93	4360	8543	1089	2065	"	"	"	0.79	3.45	15.62	"	1.50	61	30	0	"	
13178	"	3 22	3 54	2.77	2.57	6.3	1854	2738	482	30	1507	2877	403	594	"	"	"	0,63	1.67	17.23		1.25	60	14	0	"	
13179	"	5 05	5 48	3.93	3.95	9.2	2474	4435	644	59	2275	2067	529	1556	"	"	"	1,18	2,53	19,76	IBM	1.80	61	22	1	"	
13182	"	6 23	7 35	3,25	3,28	8.2	4331	8002	1126	92	3817	7476	939	1869	"	"	"	0.76	2.76	22,52	F11/113	1.50	61	24	0	"	data written on Tape
13183	"	~~7 42~~	8.31	2,73	2,75	6.7	2922	4772	761	51	2521	4485	619	999	ON	ON	ON	0.54	1.26	23,78	F11/114	1.3	60	11	2	"	data on Tape Beam Dump
13184	29/4/83	9.52	11.05	3.57	3.87	8.3	4346	7307	1132	94	3838	8184	870	2461	ON	ON	ON	0.98	2.53	26.31	IBM	1.7	61	22	0	"	
13185	"	11.54	12.52	2.68	2.92	6.6	3514	5302	914	60	2934	5548	727	1215	"	"	"	0.54	1.84	28.15	"	1.6	61	16	0	"	Beam dumped
13186	29.4.83	15.32	16.45	4.00	3.80	9.1	4327	7687	1126	102	3801	9195	924	2977	"	"	"	1.11	4.71	32.86	"		62	33	0	"	B. lost
13187	"	18.48	20.02	4.13	4.23	19.3	4137	7216	1093	211	3638	8540	1055	2926	"	"	"	0.89	3.22	36.08	"	1.9	62	24	1	"	B. lost
13188	"	21.32	21.42	4.27	4.36	13.6	571	1168	148	20	585	1384	119	535	"	"	"	1.52	0.80	36.88	"	1.8	63	~~7~~	0	"	
13189	"	21.47	21.57	4.10	4.13	11.6	583	1250	152	18	632	1398	122	514	"	"	"	1.41	1.03	37.91	"	1.8	60	9	2 (1)	"	
13190	"	22.02	23.10	3.95	4.03	10.7	4103	8002	1068	115	4254	8890	881	2856	"	"	"	1.07	3.68	41,59	"	1.7	62	32	0	"	
13191	"	23.11	0.27	3.31	3.38	7.9	4528	8002	1178	93	4469	8312	1113	2278	"	"	"	0.75	3.90	45.49	"	1.5	61	34	0	"	
13192	30.4.83	0.28	1.03	2.76	2.82	7.2	2103	3382	546	39	1848	3592	484	880	"	"	"	0.54	0,80	46.29	"	1.3	61	7	0 (3)	"	Beams dumped
13193	30.4.83	04:14	05:20	4.07	4.58	11.7	3924	8002	1021.1	119.4	3912	10176	830	3824	ON	ON	ON	1.32	5.20	5.20	IBM	1.75	64	41	3 (1)	20.045	
13194	"	05:29	05:56	3.35	3.80	8,3	1611	3206	491	34.9	1515	3051	376	931	"	"	"	1.35	2.42	7.62	"	1.4	49	21	1	"	
13195	"	06:09	06:49	3.04	3.45	7.3	1984	3179	516.1	37.7	1674	3480	431	915	"	"	"	1.09	1.27	8.89	"	1.4	61	11	0	"	BEAM LOST
13196	30-4-83	08:15	09:49	3.41	3.90	7.3	5159	8002	1343	97.7	4137	9020	1051	2414	"	"	"	1.14	5.52	14,41	"	1.5	61	48	1	20.045	
13197	--	09:49	10:37	2.76	3.16	10.9	2822	4329	734	80.0	2373	4386	603	1145	"	"	"	0.87	2,76	17,17	"	1.25	59	24	0	"	Beams lost
13198	"	11:69	~~13:66~~ 14:49	4.12	3.29	8.3	4644	8002	1208	100.8	4195	8790	1077	2634	"	"	"	1.29	6.56	23,73	"	1.6	61	57	0	"	
13199	"	13:07	14:29	3.44	2.72	7.3	4936	8002	1284	93.8	4398	8428	1175	2290	"	"	"	0.82	3.57	29,30		1.4	61	31	1	"	

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.t2 E_T>66eV	T2 B.t 17 T_i E_a·2t_r	ON/OFF N50	MIP	TOF	LL> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg EV Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

28.4.83

13.51 AB temporarily on shifts
Beam lost, ID trip (nothing to do with me, honestly!)
Run 13168 ended.
Since we are now convinced of the good performance of roof layer 3 ~~chambers~~ muon chambers fixed during Summer I have removed permanent enable on T3 streets 6,7,8,9 group 3. The TRIGGER 3 INPUT histogram will reflect this change.

14.50 HT of Tagging System changed according to special wishes of G. Hughes

16.00 Yamada/Finger on shift
16.08 Run # 13169 terminated because of trigger problems
2 chips in the EC1 linear sum were broken since ~4 hours (?) ago (according to Heuer.) They are now replaced.
16.25 CAMAC ~~a~~ time out error in DL8 CRATE #7. DL8 module was slightly ~~pulled~~ pulled out and pushed in again. It worked. Run 13170 was terminated due to this error and restarted
17.15 Beams dumped.
From the next filling energy will be increased.
M-J (coordinator) claims $\sum_{\text{all exp}} \int \mathcal{L}\,dt > 200\ nb^{-1}$. They collected 20 Bh candidates at 30.015 GeV ($R_{M-J.\,online} = 4.7$) We have only 10 candidates.

18.00 LG. EC1. had a dead chip (for 8ch sum) in the 2-nd quadrant. Repaired after Run #13171.
EC.Q triggers were checked during the run 13171. (EC1Q) has less triggers than (EC2.Q). But all 4-quadrants are nearly eaqually less. The dead chip for (8ch-sum) can't explain the effect. It could be due to the beam. If I^+ & I^- were almost same. But is the positron beam more spread than electron beam?

~20.05 New filling ready: $E_b = 20{,}030$
Run # 13172 is recorded also on TAPE, which is requested by H. Mills for his prog. development.
Heuer visited. He found that the beam is hitting our collimaten on −z side.
It explaines why ~~of~~ we have more hits on the +z EC.

23.10 JDAS READOUT ERROR 44: BRANCH 3 CRATE 2 muon chambers.
-repeated- : We could not do anything. Simply stop & Run restarted
(Nothing ~~was~~ looked wrong with the μ-crates.) It worked.

29/4/83 Kawamoto, Feist on nightshift

from Saturday 30.4. 23.00 – Sunday 1.5. 20.00 machine shift without magnet
" Sunday 1.5. 20.00 – Monday 2.5. 8.00 " " with magnet
Monday 2.5. 8.00 – Tuesday 2.5. 18.00 access to remove superconducting cavity

Monday 2.5. 10.00 rf power, air conditioning for JADE R. Feist

3.30 Mark J asked for new filling at 3.50 has now 25 nb⁻¹ whereas we have only 16 nb⁻¹
5.40 IBM-down, after several trouble and retrading third write error tape (RUN 13182)
YSPY : MUON DIGITIZERS MISSING. ----- Tape [F11/173]
7.40 IBM is/are still down; RUN 13183 with data writing on Tape [F11/114]
5.00 μ-crate 11 missing, can't reset it neither up nor downstairs, wait for expert

8.00 h Lacking & Hardt on shift
8.01 Crate 11 fixed (fuse had blown).
MARK J asks for new filling at 8.30 h
08.30 Beams dumped.
09.50. New fill start run 13184 → down limit to IBM which is now fixed
11.05 Run stopped for Messrs. Narusken & Krehbiel to investigate timing.

Checked timing of latches. TOT counter latch was adjusted, the gate is now approximately 10 nsec late (but not unsafe for triggering). gate 60 nsec long, earliest pulse ~15 nsec after start of gate.
Lumi checked
LG barrel and total energy checked.
HV of counter #36 + adjusted to 2500 V.
Mark J asks for new filling at 12.45 h
12.50 Beams dumped for new fill.
13.10 "TROUBLE WITH PIA/LINAC 2".
15.30 Finally new beams. start run 13186

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.t.2 Fo>66eV	T2 B.t.17 9Ti Fo.24r.

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15.20 False permanent enable, struck 21 group 2. Found in crate 11 FPB. – probably caused during last nights problems with this crate. Replaced FPB. OK now. AB.
EOS

16 00 Bethke, Becker

17 30 Short break (~ 1 hour), magnet current = 4000 amps
17 55 PKR wants magnet back to 7500. They solved their problems (cavity repair).
18 46 Start Run
19 20 Big dead-time due to "IBM busy". Up to 70%. After some time phoned IBM-operator. Started link again → ok.
21 42
Colour TV does not work – Run terminated
21 47 Continue run without CTV. Call to H. Mills
22 02 Broken program YCLRTV re-installed
In case this happens again: look to line-printer printout and JDAS Oper. Manual page 28 and appendix A5!
22 55 PKR phoned: After this fill they want to have Petra for studies; this will last 1..2 hours.
23 16 Because the currents are still high, (2×3.4) we want to run for ~ 1½ hours, in agreement with the other experiments.
23 00 YSPY: Trigger 1 output; 1 channel low in TBG (Top Barrel group)
later in T1 input: hole in BG. After pushing cable in Camac-crate (latch); seems to be cured.

30.4.83 0 00 RIESEBERG & J. WAGNER

Phone from Mark J:
0 48 JADE 46 nb⁻¹, Mark J 83 nb⁻¹, Tasso 52 nb⁻¹, Cello 30 nb⁻¹ Σ = 211 nb⁻¹
→ Beams will be dumped at 1° (see above), this is the last fill at this energy 20.030.
1 00 Beams dumped
Now beam studies 1.7 mA e⁻ at 20.030 GeV
2 55 Injection starts
4 08 New filling ready at 20.045 GeV
5 54 RUN 13194 STOPPED FOR REPAIR WORK ON IDC. DL8's.
DL8 # 50 (wires 400-407) exchanged. When I cleaned the contacts of this DL8 before Run 13194 I introduced another fault: Dispersion (low rate) in the last wire map of all wires (384..439) in this crate (B4C1). Also pairing timing. Problems also in Crate B4C4 (wires 552-607) since I touched this by mistake !!

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	LL> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

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6 09 Run 13195 started : Histograms ok
6 49 Beams lost
08:00 Darvill & Schwarzlich on shift
08:15 Beams ready, Run 13196 started.
09:25 run paused for background optimisation. I.D. switched off
09:32 Run continued. I.D. back on again! beampipe current ~~1.50~~ monitor now indicates 1.35V
09:47 Run 13196 ended 13197 started
9:50 Tried to submit 'ReForm-Job' for

F22YEN.JADE.EXDATA07.G0137V00 to → F11LHO.JDATA08.REFORM.G0148V00
↳ existing! F11BEK.FASTSEL.DS148

Job Failed because: JADEOL.R007G137.RF08148 not found
(STER RUTHCALL, Dataset not found on main processor)
10:06 Trigger problem. Level 5. solved by usual procedure – pushed red, white and green buttons in that order – everything works again.
10:15 Display terminal thinks its busy when it manifestly is not! KHM solves the problem by initiating task battle game and exiting before starting!
10:35 Beams lost – I.D. trig.
11:46 New filling ready Run 13198 started. This handwriting is much too big!!
13:07 start RUN 13199
13:42 ERROR 2 – MAGNET FLUCTUATION – Present value 7504 (DUM) acknowledged error, no further action taken at present.
14:06 JDAS READOUT ERROR 44 – TIMEOUT branch 3 Crate 2 : muon chambers. – just one occurrence, seems to be continuing normally. My understanding of the JDAS book is that I don't have to do anything, yet.
14:28 Run 13199 ended Run 13200 started. I don't expect this to be a long run – I think there will soon be a new filling.
15:05 Beams lost. We had just agreed with Mark-J to have a new filling at 15:20!

16.00 Bremen / Bonn
still Injection
17.15 short break
19.25 Run 13201 started 19.50 some practical joker had exchanged the green & red caps of the small beam indicator.
19.39 inner detector trip due to partial loss of e⁺ beam, run stopped.
19.46 Run 13202 started.
Frequent (14 times/min) message No trigger bits: What can it be? { Trigger Bits unduly reset or False LAM interrupt or Clobbered Readout structure.
Unable to find experts. What do they think if they read this??? One has to look at such events

Run	Date	Start	Stop	at Run Start I^+	at Run Start I^-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To reg. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_A > 6$ GeV	T_2 Bit 17 2T. E_A .2 to	ON/OFF N50	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T_2 Reg. Ev Fv.(%)	Bhabha Σ	MH	E_{beam}	Remarks
13200	30.4.83	14:29	15:05	2.85	2.23	6.2	2071	3055	539	33.6	1768	3078	485	718	ON	ON	ON	0.65	1.50	30.80	IBM	1.15	61	13	1	20.005	Beams lost
13201	30/4/83	19:25	19:39	4.06	4.18	11.3	828	1547	215	24.4	727	1846	165	654	"	"	"	1.78	1.27	32.07	IBM	1.75	61	11	0	"	Trip in beam pipe current
13202	30/4/83	19:46	21:09	3.20	3.92	8.3	4958	8002	1290	107.4	4257	8936	1105	2527	"	"	"	1.18	4.37 (2.53)	36.44	IBM	1.6	62	38	2	"	
13203	30/4/83	21:09	22:36	2.65	3.27	7.2	5197	8002	1352	96.9	4391	8917	1146	2101	"	"	"	0.80	4.88	38.97	IBM	1.2	61	22	1	"	
13204	30/4/83	22:37	22:57	2.20	2.72	6.3	1208	1723	314	19.8	957	1794	271	405	"	"	"	0.63	0.58	39.55	IBM	1.05	61	5	0	"	
13213	11/5/83	0:42	0:45	3.13	2.61	12.7	158	404	41	5.2	195	438	24	130	ON	ON	ON	2.92	0.35	39.90	IBM	1.5	61	3	0	20.045	
13214	"	0:49	1:46	3.09	2.59	9.4	3342	6354	870	81.7	2990	7806	479	2009	"	"	"	2.83	3.45	43.35	"	1.2	61	30	0	"	Beams lost
13215	"	2:24	3:13	2.35	3.52	11.2	2892	5419	752	63.9	2275	7466	1161	2729	"	"	"	4.10	5.52	48.87	"	1.6	62	48	2	"	IBM-Link lost
13216	"	3:31	4:01	2.26	2.26	6.6	1803	2484	469	30.8	1124	3242	239	765	"	"	"	1.80	0.81	49.68	TAPE	0.9	61	7	0	"	
13217	"	4:57	5:44	3.76	3.90	17.3	2770	5546	721	125	2198	8522	596	3760	"	"	"	4.88	5.82	5.82	IBM	1.7	65	51	2	19.990	New Energy
13218	"	7:40						~300 ??														1.7					Summary Lost, Need hung up
13219	"	7:58	9:18	3.15	3.63	8.8	4740	7833	1247	109	3485	10386	962	3783	"	"	"	3.55	8.74	12.56	"	1.4	62	51	0	"	
13220	"	9:24	10:49	2.67	3.09	7.9	5137	8002	1337	105	3723	10180	973	2783	"	"	"	2.51	4.11	16.67	"	1.3	61	36	2	"	
13221	"	10:50	11:43	2.29	2.66	7.3	3141	4755	817	60	2297	6060	594	1531	"	"	"	2.00	1.94	18.61	"	1.1	62	17	2	"	Beams dumped
13222	"	13:06	14:13	3.54	4.20	12.3	3920	8002	1021	126	3246	11323	935	4358	"	"	"	5.10	8.79	27.40	"	1.6	62	77	2	"	
13223	"	14:14	15:38	3.38	3.60	9.8	4463	8002	1162	113	3459	10757	939	3677	"	"	"	3.68	6.62	34.02	"	1.3	64	53	2		
13224	"							~2900							"	"	"		~2		"	1.2				"	Need dinner
13225	"	16:26	18:03	2.16	2.30	7.9	5020	8002	1307	102.8	3729	10066	996	2864	"	"	"	1.88	4.11	3.8-13 (+2)	"	1.1	61	36	0	"	
13226	"	18:03	18:53	1.98	2.12	7.3	2570	3933	669	49.0	1872	4860	518	1265	"	"	"	1.38	1.14	39.27 (+2)	"	1.0	62	10	1	"	bunches no longer triggering (beam current too low)
13227	"	22:54	23:08	4.02	4.25	13.8	736	1777	192	26.5	702	2409	160	922	"	"	"	2.49	1.84	41.11 (+2)	"	1.6	62	15	0	"	No triggers stop run + restart
13228	"	23:20	23:47	3.56	3.77	12.8	1549	3326	403	51.5	1456	4452	318	1506	"	"	"	2.43	3.20	44.31 (+2)	"	1.5	62	28	0	"	TOF readout error, run stopped
13229	"	23:48	0:41	3.54	3.75	16.4	3146	8002	819	135	3479	11245	676	3861	"	"	"	2.26	5.02	49.33	"	1.4	63	44	1	"	
13230	12.5.83	0:41	1:52	3.13	3.28	9.7	4135	8002	1076	105	3899	9832	847	2584	"	"	"	1.79	6.39	55.72	"	1.4	62	56	2	"	
13231	"	1:53	2:06	2.68	2.84	8.1	727	1277	189	15.4	609	1462	74	371	"	"	"	1.42	0.91	56.63	"	1.3	59	8	0	"	DL8 problems, beams dumped
13232	"																										Very short run
13233	"	3:13	3:26	4.13	4.19	10.7	765	1934	199	21.3	698	1911	162	608	"	"	"	2.86	3.08	59.71	"	1.4	42	27	0	"	Run stopped by TIMEOUT
13234	"	4:04	4:58	3.64	3.69	10.4	3165	5988	824	85.5	2946	7039	436	1960	"	"	"	2.14	9.13	68.84	"	1.4	61	80	2	"	beams lost, ID Trip
13235	"	5:57	6:40	3.89	4.08	13.5	2581	4993	671	90.8	2303	6296	579	1935	"	"	"	2.36	6.29	6.29	"	1.4	61	55	0	19.984	New Energy
13236																											Very short run
13237	"	6:55	8:09	3.38	3.56	11.1	4434	8002	1153	128	3919	9582	972	2543	"	"	"	1.76	8.23	14.52	"	1.3	61	63	0	"	
13238	"	8:09	9:04	2.87	3.01	9.1	3302	5897	859	78	3079	6880	679	1668	"	"	"	1.50	4.34	19.46	"	1.2	63	39	1		
13239	"	9:56	10:37	2.88	3.31	10.5	2386	4521	621	65	2216	5435	591	1572	"	"	"	1.84	4.80	23.46	"	1.4	62	35	0	19.984	Trigger hung up
13240	"	10:46	11:48	2.87	3.30	12.2	3577	6296	931	113	3220	7374	748	1838	"	"	"	1.46	4.34	27.80	"	1.2	62	38	2	19.985	

Run	Date	Start	Stop	of Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·I·2 Fn>660V	T2 B·I·17 2T·Eq·2tr.

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30.4.83

21:09 run 13203 started
22:37 run 13204 started
22:57 stop for machine studies. magnet current down to 0 and switched off.

1.5.83 19:30 Darvill on shift.
Having already spoken to PKR early this afternoon it was clear that they did not need our magnet at least until 20:00 and maybe not then. Called in at P.K.R. again on my way there to let them know that someone would be here if they needed the magnet, at that I was told not to on the extension number I had already given them.
23:52 John Baines is now here, no-one has yet asked for magnet current, so I'm going home! DP

2/5/83
~~0~~0:00 John Baines on shift. PKR says they do not need our magnet until after the Monday shutdown. I am trying (without much success) to telephone Petersen. WHERE IS THE TELEPHONE MANUAL ANYWAY !!!!

3/5/83
13:30 RON 13205 – 132~~15~~12 Le test ; data were written on MT. (Takeshita)

18³⁰ Ambrus + Barkel

Problems when running up the magnet by computer:
The DVM is read but no setting command arrives at the setting unit (ML lamps off)
Switch off crate, shake setting unit, New interface and branch cable.
It works again, however, an error message appears on the screen when the preset value was reached: 'No Q-response from register'
Next time setting went ok.
conclusion: contact problems in magnet CAMAC-crate or with electronics.
~20⁰⁰ Delayed start due to H_2O-problems in the TASSO area
Our magnet is at 500 A.

4/5/83 0²⁰ Takeshita on shift
Now Magnet is at 500 A.
4⁰⁰ Haidt on shift
Nothing happened

Machine Studies till 9/5

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

4.5.83

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8⁰⁰ Ball, Schiemann.
Phone PKR: No 2 min needed before weekend. Magnet needed this evening; presently it's at 500A, so we still need a watchdog I think. Wolf Bartel suggests, however, that hourly checks are sufficient, provided a constant phone-number is kept in the log-book. So, mine is 3561 ! (SCHEHANN 3139)

16.00 Darvill on shift.
There are things I can do here for my half of this shift, so I'm staying in the counting room for most of my time, ~~then~~.
17:23 B. Naroska called to say that P.K.R. say they won't want our magnet until 08:00 tomorrow. There seems, therefore no point in having anyone here, so I shall leave shortly. If needed I may be contacted on 2792 or any of the ~~TASSO~~ following numbers. 3469, 3560, 3561.

20:00 KAWAMOTO

20:06 To the next shift: Sorry! I tried to call you to say that there is no need for you to come tonight, but got no answer. P.K.R. has the number of my room, which is very close to them, and if they need someone during the night they can call me. This seems better than your having to stay all night for nothing, or having to come back. I am staying in WWH IV, Z: 12 opp ~~2792~~ 2792.

5.5.83
0.00 Diedrich
Magnet still at 500A
4:00 Heintzmann. Magnet 500A
4:20 leave again.

18.00 Phoned PKR They will not need the magnet for tonight.

20⁰⁰ Home tel. No. was informed to PKR. Yamada.

6.5.83
8:00 Kobayashi
Phoned PKR: Magnet is not needed this morning.

15.45 Spitzer
PKR: No need for magnet at least until 11 p.m. tonight.
18.00 MATSUMUR. PKR don't need magnet until ~~24:00~~ at least Sat 08.00

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·t2 F₁>66eV	T2 B·t 17 2T· E₄ ·2tr.

8:00 | 7/5/83 | Chrin on shift ⇒ Phased P.K.R. No magnet needed for all of today !!.

Informed Takashiro & Dietrich, but unable to contact Yamada.

10:00 everything quiet and ok V. Barthl
16.00 Nichts besonders Yamada.

23.55 7/5/83 D.Cords a still , PKR phoned to switch on the magnet.
24.20 Magnet switched on 7500 A
– Mag. check PRMS to. -4.840 ± 0.01 by using F5-button

8.5.83
0.00 KAWAMOTO

Rain drops in the JADE hall



4.00 Bethke watching magnet. He (the magnet) still seems to be there.
7.10 Now I know, that really somebody needs me: PKR wants Magnet to 33% → 2500 A
8.00 Olsson
12.00 Narodka, magnet on 2500 A, everything is quiet (in contrast to party last night!)

16.00 Clarke/Zachore
23.30 Magnet switched off – no need for night shift. (If needed F. Foster on 2702)

9/5/83 8:00 Kobayashi & Chrin on shift

Phased P.K.R. No magnet needed until at least 16:00 hrs.
left phone No. with PKR just in case!

16.00 Dieckmann, Bolle.
19.30 PKR request full magnet power of 7500 A. Magnet switched in.
19.40 Nord restart

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

9.5.83

Tuesday "Spätschicht" √ 15.00 – 23.00 (10.5.83) is going to provide luminosity for experiments again.

E_g-schedule: 1) finish E_g = 20.045 GeV, 2) go to E_g = 19.970, 19.985 GeV since MARK J

get R = 5.6 (2σ away from ⟨R⟩) at 20.00 GeV (or do we but without ID.)

0.00 | 10-May-1983 H. Mills Magnet watching
4.20 " K. Lambers "
8.00 10/5/83 G. Pearce "
12.00 D. Cords

16.00 Minowa and Kubben on shift

16.50 ID-electronic debugged. 4018's changed: starting wire 104, 520, 1056, 1160
1 Crate-controller changed
several bugs in crate-controllers repaired by pushing, rubbering connectors, putting cables off and on (branching cables and cables to LAM-coders; those are really very shaky !!)
G. Bethke

17.00 PETRA ≙ 19.700 GeV with $I^- \triangleq 4$ mA, $I^+ \triangleq 3$ mA. Energy is still increasing.
17.03 Beams lost at 19.8 GeV, now $I^- = 1.0$ mA, $I^+ = 1.3$ mA
18.30 Threshold settings for Tokyo lead glass were checked. OK
19.25 AUSFALL SYNCHROTRON !
19.42 takes still one hour.
20.25 Sprious alarm from ID happened three times during this shift, while HV was OFF.
indicators { HV-input / LD 10 } were ON.

22.05 Beams, background optimization, HV of beampipe counter set to dish values. Now LG HV being loaded.

22.07 beams lost! $2 \cdot 10^{30}$

Run	Date	Start	Stop	of Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 F₂>66eV	T2 B:+17 2T: E₆·2tr.

10.5.83

For the next time when there is beam:
CHECK timing of prepulse on N10 histogram TOF/Spare 5.
Compare to folder labelled TOF.
If it has changed more than ≈ 10-20 TDC channels, do something.
(Phone PLR and ask them to change it back!)

22 55 beams ready
background ~1.8 ▽
try to switch on ID
(immediately got alarm (Sprians! HV input and LD 10)
reset + retry did not help.

0 00 11 May 1983 Meier and Takeda on shift

0 33 Beams are ready. BP current ~ 3 ▽
One cable of BP monitoring was pulled out. BP ~ 1.5 ▽
Start data taking.
ID timeout branch 5 crate 6. → stop the run.

TOF timing was checked and it looked OK ~~at least~~
~2 ns difference from the runs 13202 and 13168.

0 49 Start a new run (13214).
Timeout trouble was fixed by Riesberg.
1.45 Beams lost
3 15 IBM link trouble. So that we stopped the run 13215.
At the same time NORD hung up.
Discussion with the IBM-Operators didn't help. They claimed that they do not know anything about the JADE Online Job and a restart is not possible. → Run 13216 goes to tape
3.30 IBM-Error message disappears from Color-TV. We decided to continue with writing to tape for the present run

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Rej. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

11.5.83

4 10 { JADE 49.7 nb⁻¹ at E_b = 20.045 GeV
MARK-J ≈60
TASSO ≈49
CELLO ?

We decided to change the beam energy to 19.970 GeV.

19.970 GeV

4 50 Beams are ready. Start run 13217.
5 35 Several timeouts branch 4, crate 4
5 45 ID slow-ons caused by unstable beams → beams lost
7 50 Nord died again → Reload

8 00 - 11 00 Petersen and Takeshita on shift
9 15 R. Nawrath fixed TDC II #14
still a factor ≈ 2 between forward run and B run
10 00 ZDAS READOUT ERROR 62 - AC2099 TOF-1 Q.X missing stn = 19 subadr. 0

Please Note: A comment like "Nord died" just does not help at all to trace the problem - to take any action more information is needed - did control terminal just die, Did Nord 10 hang on a fixed level etc IHEP

13 00 New Filling finished, Run 13222 started
13 05 ID HV slowly down without any alarm.
13 25 JDAS Readout Err. 62 AC2099 TOF-1 Q.X missing stn 19, = Sub. 3 2×
13 40 all LG counters HV are checked to be OK.
14 45 ID anode over current.
74 00 Action against "NO Trigger bits"; Gate for TOF-Latch shortened from 66 to 60 nsec and TOF-Veto → Trigger 14 fed via a faster path
problem seems to have gone away.
YHMON Test ~~Pattern~~: TDC's: All Peaks seem to have gone up 6 channels ≈ during break, since end of april.
14 00 JD anode over current

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 F₁ >66eV	T2 B:t 17 2T: E₀ ·2tr.

11.5.83

16⁰⁰ Bairer & Steffen on shift
16¹⁵ Nord died restarted. (Level 14, protect Ring 3)
16²⁰ start run 13225
17³⁰ Problems with Synchrotron: no new fill is possible. we continue running with the old fill
19:52 bunches not triggering, run stopped. (beam lost)

19:05 Following several hangups I decide to rebuild system during fill. (HEM)

From now on a new online luminosity scaler factor is used for the colour TV Asummary. This lowers the old value. (HEM)
The IBM JAM message on T36 will only appear if time > 3 seconds
22:54 run 13227 started.
23.10 no trigger was accepted. Tried to reach Krehbiel (no response)
the start of a new run cured the problem
23:46 JDAS ERROR 62 TOFI error Q, X missing. appeared 3 times
run stopped AC2099 microprocessors reloaded

23:48 run 13229 started.

0⁰⁰ 12.5.83 Bowdery + Schneekloth
0³⁸ start RUN 13230
1⁵² start RUN 13231
≈1⁰⁰ JDAS Readout error 44 – Timeout branch 4 crate 7
2⁰⁶ Run stopped, start Run 13232, same error
2²⁰ beams dumped
2:30 Magnet fluctuation. Used computer to reset current to 7500A from 7200A.
Took a long time because SERVO LIMIT light was nearly always on,
Rücklauf < 35° light also on but in the hall, the Rücklauf meter reads 60°.
We dont understand this.
3:10 New fill ready. Timeout problem did not reappear so our disconnection and reconnection of the branch cable may have cured the fault.

		← Bhabha lumi: should be OK
JADE	57 nb⁻¹	~~(but the luminosity scale factor changed → 30 nb⁻¹ ?)~~
MARK J	69 nb⁻¹	(micro β seems to be working well!)
TASSO	19 nb⁻¹	(they had computer problems: estimation if they had been running = 28 nb⁻¹)
CELLO	15.5 nb⁻¹	

	ON/OFF N50	MIP	TOF	∠L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(x)	Bhabha Σ	MH	Ebeam	Remarks

3:15 We have seen several cases of
JDAS ERROR 62 TOFI error Q, X missing
Does not seem serious so we ignore it for the moment

YSPY says DL8 #92 is giving no response. It sits in BR4 CR7. Very suspicious!
3:25 TIMEOUT on BR4 CR7. We call Rüsseberg. He will come in and fix the problem.
4.04 DL8 connections cleared and we're off again!
4¹⁵ Reform job submitted VENTAPE #143 to Reform #159
Analysis " " Fastsel #158
4:57 beams lost, I D trip
next fill at 19.985 GeV

JADE	68.8	nb⁻¹
MARK J	81	
TASSO	65,2	
CELLO	30	
	245,0	

6:26 This is a good fill. We have $\mathcal{L}_{corr} \approx 2.6 \times 10^{30}\,cm^{-2}s^{-1}$ TASSO & MARK J have similar values but CELLO have only got $1.2 \times 10^{30}\,cm^{-2}s^{-1}$. Very odd.
We spoke to PKR and they have started lumi-optimization.
6:45 TIMEOUT in BR 4 CR4. We cleared the backplane connection of 2 DL8's in the crate and the problem looks as though it has gone away

8⁰⁰ Felst Komamiya
put new paper into the plotter
10⁰⁰ S. WAGNER replaces R. Felst
10³⁵ LOST T1 TRIGGER. STOP RUN 13239.
TRIED TEST RUN → PROBLEM WENT AWAY.
PROBLEM RECURRED → PHONED KREHBIEL & HE GAVE US FIX.
11⁴⁵ DL8 PROBLEMS IN BRANCH 4 CRATE 7 (NOTE → SAME AS ON NIGHT SHIFT)
DL8 CONNECTION RUBBED → O.K.
12²⁵ TASSO asked for new filling but PKR have trouble on synchrotron (vacuum)
12⁴⁸ BEAMS DUMPED
13²⁰ NEW FILLING READY
13⁴⁸ NORD 10 HANGS UP. No reaction of any terminal to any key, but lamps on Nord still flickering
Protect Ring mostly 2, occasionally 3, 2 Level 00, sometimes 08
RESTART NORD 10 → EVERYTHING LOOKS O.K.

YHIMON Histogram bookings were lost. Can't they be saved on disc?
Its not easy - YHIMON is a 'Fixi' anyway.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 E₁>66eV	T2 B:t 17 2T. E₂ ·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/TAPE	BP [V]	T2 Rej. Ev Fr. (%)	Bhabha Σ	MH	E Beam	Remarks
13241	12/5/83	12 25	12 51	2.35	2.71	8.0	1580	2839	411	33.0	1457	3224	365	747													
13242	"	13 21	13 50						633	258	1605	4810	393														
13243	"	14 09	15 12	3.38	3.61	10.8	3763	8002	980	106	3749	9537	891	2737	ON	ON	ON	1.93	7.43	40.47	"	1.5	59	65	1	"	
13244	"	15 17	16 24	2.92	3.12	10.3	3997	8002	1040	107	3949	9545	788	2456	"	"	"	1.41	5.62	4609	"	1.4	62	34	12	"	
13245	"	16 25	17 40	2.55	2.73	8.2	4485	8002	1167	96	4052	9310	894	2124	"	"	"	1.01	2.63	48.72	"	"	62	23	1	"	
13246		17 41	17 41	2.22	2.37		only	12 pedestals	· PETRA	Refil																	
13247	13.5.83	0 32	1:52	3.74	4.18	11.1	4690	8002	1220	135	3413	10749	795	3203	"	"	"	2.04	8.69	57.41	"	1.8	61	76	3	"	
13248	"	1:58	3:22	3.13	3.51	10.7	4930	8002	1283	137	3731	9938	820	2543	"	"	"	1.47	7.10	7.10	"		61	62	2	20.000	New energy
13249	"	3:22	4:50	2.66	2.99	7.2	5217	8002	1358	97	3928	9606	934	2080	"	"	"	0.99	4.47	11.57	"	1.25	67	39	3	"	
13250	"	4:50	5:09	2.26	2.55	6.7	1153	1739	299	20	859	1944	209	463	"	"	"	0.77	0.57	12.14	"		60	5	0	"	Beams dumped
13251	"	6:04	7:15	4.22	4.16	11.2	4176	8002	1087	121	3399	10825	922	3693	"	"	"	1.95	8.98	8.98	"	1.9	61	78	3	20.059	NEW ENERGY.
13252	"	7:15	8:31	3.60	3.40	9.1	4479	8002	1166	106	3697	10048	946	2877	"	"	"	1.32	5.91	14.89	"		61	56	2	"	
13253	"	8:32	9.27	3.08	3.02	24.8	2848	5508	741	183	2050	9361	562	4380	"	"	"	0.84	2.40	17.29	"	1.35	66	17	1	"	paused because of H.V. BP
13254	"	15:43	16:28	4.02	4.30	16.1	2520	5289	656	105	2141	7684	481	2746	"	"	"	—	5,30	22,59	"	1.55	63	46	2	"	new fill; started from tracent in DL8
13255	"	16:35	17:30	3.47	3.73	14.3	3381	8002	879	125	3552	10773	672	2394	"	"	"	1.72	5.76	28,35	"	1,3	62	50	1	"	
13256	"	17:33	18:28	3.15	3.39	13.7	3473	8002	903	123	3602	10264	762	2231	"	"	"	1.46	4.84	33.19	"	1.3	62	42	2	"	
13257	"	18:33	19:46	2.77	2.98	8.9	4606	8002	1198	107	3748	10078	973	2880	"	"	"	1.12	6.68	39.87	"	1.2	63	58	1	"	
13258	"	19:50	21:10	2.39	2.57	8.1	4948	8002	1287	104	3724	9843	942	2649	"	"	"	.81	3.80	43.67	"	1.1	62	33	1	"	
13259	"	21:14	22:04	2.06	2.22	7.5	3213	5049	836	62	2444	6162	624	1603	"	"	"	.62	1.96	45.63	"	1.0	62	17	2	"	
13260	"	22:34	23:35	4.74	4.72	30.8	3104	8002	807	248	2760	13347	829	6937	"	"	"	2.17	5.35	51.62	"	2.0	65	52	1	"	
13261	"	23:32	0:29	4.11	4.09	16.5	3383	8002	880	145	3324	11339	862	4588	"	"	"	1.89	6,22	57,84	"	1.75	64	54	2	"	
13262	14.583	0:29	1:26	3.56	3.54	13.2	3360	7556	874	82.6	3270	10071	774	3664	"	"	"	1.18	3,23	61,07	"	1.5	62	28	0	"	
13263	"	1.27	1:30	3.13	3.11	10,6	117	289	305	32	131	292	29	110	"	"	"	1.15	0,12	0,12	"	×1.4	56	1	0	20,074	new energy, DL8 problems
13264	"	2.16	2:25	2.82	2.79	10.7	563	1470	146	15,7	551	1468	142	461	"	"	"	0.99	0,46	0,58	"	"	63	4	0	20,075	
13265	"	2.25	2:32	2.76	2.73	10,0	368	677	95,6	9.5	308	946	74	339	"	"	"	0.93	0.23	0,81	"		65	2	0	"	beams dumped
13266	"	3,20	4,18 ~~4,73~~	~~4,78~~	4.81	25,4	2953	8002	768	195	3035	12437	814	5530	"	"	"	2.10	6,92	7,73	"	2V	65	60	0	"	
13267	"	4:18	5:10	3.96	3.46	17.3	3058	8002	796	137	3324	11375	869	4463	"	"	"	1.66	600	13,73	"	1,5	63	52	0	"	
13268	"	5.10	5:49	3.51	305	17.5	2017	4911	525	92	2084	6874	568	2543	"	"	"	1.39	3,58	17,31	"	1.4	63	31	3	"	
13269	"	5:48	6:19	318	2.54	13.5	1788	4108	465	628	1834	5513	461	1804	"	"	"	1,11	1,73	19,04	"	1.4	62	15	2	"	beams dumped
13270	"	7:04	7:25	4.37	4.60	30.2	915	2063	238	717	796	3152	196	1404	"	"	"	1.95	1.27	20.31	"	1.7	65	11	0	"	
13271	"	7:26	8:15	4.40	4.05	20.2	2953	8002	768	154	3509	11128	801	4389	"	"	"	1.79	5.29	25.60	"	1.7	64	51	0	"	
13272	"	8:16	9:11	3.53	3.57	14.7	3335	8002	867	128	3643	10593	953	3726	"	"	"	1.28	438	29.98	"	1.5	63	38	3	"	Senderausfall
13273	"	10.14	11.05	3.92	4.26	18.1	3009	8002	782	141	3845	9997	776	3631	"	"	"	1.61	4.96	34.94	"	1.6	63	43	1	"	
13274	"	11.05	11.17	3.48	3.79	19.4	672	1681	175	34	779	2127	185	762	"	"	"	1.44	0.81	35.75	"	1.5	61	7	0	"	beams lost

Run	Date	Start	Stop	of Run Start I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rec. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 $E_T > 66$ GeV	T2 B:t 17 2T: $E_T \cdot 2$ GeV

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16^{00} S. Yamada, St. Wagner

18^{00} R. Felst replaces St. Wagner, short break, maximum at the synchrotron

CELLO $\sim 40\,nb^{-1}$, JADE $\simeq 48{,}7\,nb^{-1}$, MARK J $= 51\,nb^{-1}$, TASSO $= 49.3\,nb^{-1}$

21^{15} short break → break magnet down to 4000A

23^{40} injection starts magnet back to 7500A, but failed for unknown reason get K-people,

13.5.88 Kawamoto a Chrin on Shift

0^{30} Magnet at 7500 A again

0^{40} I.D. Voltage suddenly went "off" - without any audio alarm.

0^{41} I.D. Voltage restored.

0^{50} VSIV ERROR - Trigger 3 I/p missing ST28 of 2

1:58 New Run Started 13248 with ~~at~~ Ebeam = 20.00 GeV

2:28 No Triggers (level 5)

2:29 Back to Normal. by STOP RUN RESET EVENT START RUN on Trig. box.

4:25 VSIV ERROR - Trigge 3 I/p Missing ST 28 Of 2 - again.

6:09 Run 13256 started with Ebeam = 20.059 GeV, since total Petra dump at 20 GeV > 200 nb⁻¹

8:00 Pearce and Weber on shift

9.06 Run 13253 paused because I.D. tripped without obvious reason: PKR says: transmitter ~~sender~~ trip. They try to fix it: B.P. 45 Volts!

9.17 Paused again because of I.D. trip. Riesberg finds trouble in "Rucksack", is trying to fix it.
I.D. High Voltage Supervisor error. We cannot switch on under this condition. Matsumura called to repair it.

9.41 Run stopped.

9.58 I.D. still not fixed. Beams dumped for refill
In fact beams lost. Refill cannot be made due to a problem with the synchrotron. There is a possibility that they may need to replace a vacuum chamber (~ 4hrs) but no decision has yet been made.

12^{00} ID High Voltage Supervisor is now repaired. A 16Ω resistor in the D_3-input monitor was replaced by H. Matsumura. Loss of luminosity time fortunately only 17 min.

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	LL7 $\times 10^{30}$	SL dt Bhabha Run	SL dt Exp	IBM/ TAPE	BP [V]	T2 Rej EV Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

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13.27 After PETRA - "Short radiation" now "Injection"
Run up magnet to 7000A → magnet trip. Controll panel says "fault"
call Pillat. Discussion: Not enough pressure in waterline from cooling pond"
Probable reason: heat exchanger needs cleaning. Temporary cure by valve adjustment

14.40 Magnet at at 7500A

Suspicious Crate-Controller Jaeger, Inv. No 35-7452 passed all rigorous tests.
Maybe the number-switch was not properly latched. (This is a weak spot!) Next time you find a Wachelhantalt, switch the switch back and forth and put the desired number properly to the centre of the window! Feel the ratchet action! (lamp in Branch Controller watch the online)
→ Controller put into BR 7 Cr. 5. The one which was in there had a recessed contact.
Maybe hidden source of trouble. Ilse.

15.43 After trouble with synchrotron, PETRA finally works again.

Run 13254 has test version of Nord-50 program. HEM

Trigger 3 I/p streets 21 - 24 (pots missing — HV. overload on corner station fixed Tobains.

16^{00} Olsson, Spitzer (1st shift ever!)

16.25 Reason for trouble with different Lumis at JADE and PLUTO hopefully found. It was caused by a broken Fan-Out which produced crazy rates. The Fan-Out was damaged because for some reason the Fan of the corresponding crate was switched off. — We had to change the Lumi-Constant again (change from Run 13255 on)

Prev. value 9.61
New Value = 5.74

16^{40} Time out in BY; CRY rubbing contacts on DL8 helps. R13255 without problem.

18^{30} Several TBC triggers (Lumi, Tagx TBC, Septum) are high. The thresholds (normal at 6 GeV) were raised for 9 GeV and then to 10 GeV

22^{00} End of a long fill, the synchrotron has head troubles, now repaired. We have now 45 nb⁻¹

Mark J 44,5 Tasso ~ 39 and Cello 31 nb^{-1}

22^{30} Now fill ready ~4,8 × 4,8 mA. Dirty fill, we start off with 2V BP and ~30% D.T. The high triggers are 2T × E(Y) × 2TV, Hobs with "Background. The Tagg triggers from before are now reasonable, exception Tagx TBC. Cello and TASSO have high, but acceptable background. We waited on the development of this fill...

24^{00} Schaeidoth, Kuhlen not coming!

14.5 0:29 start RUN 13262

1:10 MARK J 64, TASSO 56, CELLO 40, JADE 56 nb^{-1} ε 220 nb^{-1}, ask for new fill at 20,075 GeV

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 F₁>66eV	T2 B:+17 2T·E₄·2tr	ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

14.58 125 Error 44, TIMEOUT Br 4 Cr 4, cleaned connections, doesn't help, same error
130 RUN stopped, DL8 exchanged (Nr 75) ⇒ OK again.
2:16 Soon afterwards message about ("MP start pulse missing or TP Crash offline", but all TP I/O is there in histograms. "System crash wakeup flag on"
Soon again afterwards Tolbiac message: YPARA II: Bit error in BA2:7 (Lead glass)
Then dump and new fill. Meanwhile the CCcontroller was checked with PIOSL-program and found OK. Hit map of lead glass also OK, E-sums also. We await new fill and next run.
3²⁰ R13266 started and no YPARA error message.
again high dead time >20% and dominance of 2T·EC4)·2Tr and Tagg TBG.
3⁴⁵ "Sender ausfall at Petra. Background high a factor 10, 10 sibal alarm. PKR will repair in a few min.
4 18 start RUN 13267
5 09 start RUN 13268
5 14 Trigger 3 I/O missing ST 28 GP 2
5 32 high BP ≈ 10V, ID HV down, pause Run
5 48 no triggers, start new Run 13269, OK again
7:04 new fill, start RUN 13270
7 08 high BP current, ≈ 10V. ID HV down, pause Run
7 12 continue Run
7 20 no triggers, start new run 13271, working again
8:00 Nozaki, Meier
10:15 Reform Job YEN151 → REF167 submitted
11.08 Several Readout Errors 62 From TOF-µP AC2099:
TOF-1 Q,X missing stn = 19 subaddr = 5 (0,1,7,4...)
Problem disappears

13.22 High rates from Tagging-Triggers strongly decreased by removing the 'inner ring' of the Tagging System from the Trigger:



Accidental Luminosity Triggers are reduced now to almost zero (< 5%)
All Tagging-Triggers as small as they should be.
→ This means that the Online-Lumi is too small and the scale factor has to be readjusted. It will be done when HEM is back (probably Monday) ←

14.54 integrated Lumis for 20.075 GeV
JADE: 48 nb⁻¹, CELLO: 28 nb⁻¹, MARK: 51 nb⁻¹, TASSO: 42 nb⁻¹
Σ = 169 nb⁻¹ → next filling with old E_B

16⁰⁰ Mc Cann + Warning on shift

18⁰⁰ Integrated luminosities are now

	nb⁻¹
JADE	61 ~~87~~
MARK J	68
TASSO	53
CELLO	37
TOTAL	219 ~~287~~

– so we consulted all experiments and PKR about raising the energy.
NOTE PKR say it is more convenient to raise the energy during a fill (or, rather, to start raising it) because it's difficult to get to the new energy immediately. Thus, if the beams were first dumped before attempting a rise in E, time would be wasted.

~~19.05~~ asked PKR for a new fill at 19⁴⁵
19²⁰ PKR has problems with PIA → no new fill soon, so we continue the present run
20⁰² beams lost – "restart ca 22⁰⁰" problems with PIA
23²⁰ phone call by Beate: something is wrong with a modulator of PIA, the experts are working on it, but they are ~~free~~ away "git" from solving the problem, may be PKR starts machine studies with electron beams only

0.00 15/5 Baines and Kado on shift

2,00 "short break" PKR has no idea how long "short" means
2,45 new fill ready
3-00 start Run
→ JOAS READOUT ERROR 44 – TIMEOUT branch 7 crate 4, 5, 6
" 2 " 3, 1

we phoned Jan Olsson, – reloading the NORD, did not help –
again ERROR 44 branch 2 crate 3
then always branch 7 crate 5
Olsson: at 4¹⁵ only 745 Time out. Nothing to be seen on DL8's. Test Crate Controller (PIOSL) OK. Start Run: all OK!
P.T.O. etc.

after 400 events, again Time out from 2:1 DMA Timeouts, later AC2099 TOF-1 QX missing

Run	Date	Start	Stop	at Run St. I_+	at Run St. I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To req. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B.t.2 $E_+ > 66$ eV	T2 B.t.17 2T. $E_+ \cdot 2\tau_+$	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Bhabhas Run	$\int L\,dt$ Bhabhas Exp	IBM/ TAPE	BP [V]	T2 Rej. Evt. Fr. [%]	Bhabha Σ	MH	E_{Beam}	Remarks
124																											125
13275	~~14/05/83~~	12:51	13.48	~~4.03~~	~~4.49~~	18.1	~~3364~~	8002	875	159	3095	12062	798	3724	ON	ON	ON	1.48	7.96	43.71	IBM	1.65	64	69	1	20.075	
13276	"	13.48	14.54	3.77	3.91	12.6	3932	8002	1023	129	3190	11745	1005	4445	"	"	"	1.13	4.61	48.32	"	1.55	64	40	1	"	
~~13277~~	~~"~~	14:54	14:50	3.24	3.35	12.1	~~3318~~	6656	862	104	~~2828~~	9490	936	~~3522~~	"	"	"	0.84	2.79	51.11	"	1.45	64	43	1	"	
13278	"	16:17	17:13	4.29	4.38	22.4	3347	8002	871	195	2796	12999	937	6566	"	"	"	1.17	~~3.42~~ 3.65	56.06	"	2V	65	49	2	"	
13279	"	17:13	18:13	3.72	3.80	15.7	3538	8002	920	145	3178	11916	977	5031	"	"	"	0.93	4.96	61.72	"	1.6	64	43	1	"	
13280	"	18:23	19:27	3.16	3.22	13.0	3790	8002	986	128	3350	11681	1125	4924	"	"	"	0.71	4.87	06.97	"	1.4	64	43	0	20.090	
13281	"	19:29	20:05	2.72	2.78	10.5	2140	4114	556	58	1800	5540	620	2106	"	"	"	0.60	1.36	6.93	"	1.2	63	17	0	"	
13282	15/05/83	3:00	—																			1.8					only 10 – 20 events → see page 123/126
83/84/85																											
13286	15/05/83	4:26	4:29	3.30	4.03	12.1	188	400	48.9	5.9	137	600	37	258	"	"	"	1.45	0.12	7.05	"	?	62	7	0	20.090	
13287	"	4:38	5:44	3.20	3.92	12.0	3928	7954	1021	123	3353	11440	990	4318	"	"	"	1.06	7.05	14.1	"	1.3	64	61	3	20.090	beams lost
13288	TOF CALIBRATION!																										
13289																											
13290	"	11:02	11:06	4.06	4.16	5.5	195	210	50	2.7	45	315	6	217	"	"	"	1.82	0.0	14.10	"	1.75	62	0	0	"	stopped because of Time out error at Br. 7 – Cr. 6
13291	"	11:09	11:15	3.99	4.10	12.3	368	651	80	9.8	255	913	84	1458	"	"	"	1.65	1.62	15.72	"		64	14	1	"	"
13292	"	11:16	11:16	3.99	4.04	11.5	28	69	7	0.8	22	72	17	121	"	"	"	1.99	0.0	15.72	"		55	0	0	"	"
13293	"	11:19	11:20	3.91	4.01	11.9	24	81	6	0.7	27	80	5	115	"	"	"	2.41	0.0	15.72	"		54	0	0	"	" 35
13294	"	11:27	11:30	3.83	3.93	12.7	90	319	23	2.9	88	260	18	135	"	"	"	1.72	0.23	15.95	"		24	2	0	"	
13295	"	11:33	11:49	3.79	3.89	13.9	585	1091	152	21	422	1647	127	632	"	"	"	1.39	0.69	16.64	"	1.4	65	6	0	"	
13296	"	11:51	11:52	3.54	3.57	12.3	23	107	5	0.7	41	69	7	54	"	"	"	0.81	0.23	16.87	"		30	2	0	"	
13297	Junk																										
13298	"	12:29	12:33	3.27	3.30	10.7	203	427	52	5.6	169	560	48	246	"	"	"	1.26	0.35	17.22	"		62	3	0	"	
13299	"	13:02	13:11	3.05	3.08	11.2	451	840	117	13	346	1203	110	428	"	"	"	0.80	0.35	17.57	"		65	3	0	"	
13300	Junk																										
13301	"	13:17	13:21	2.95	2.98	10.3	56	175	14	1.4	69	135	16	175	"	"	"	1.16	0.0	17.57	"		43	0	0	"	
13302	~~"~~	~~13:21~~	~~13:22~~	~~2.94~~	~~2.97~~		Junk																				
13303	"	13:58	14:13	2.74	2.77	10.4	889	1654	231	24	708	2194	231	761	"	"	"	0.75	1.27	18.84	"		65	11	1	"	
13304	15.5.83	16:45	17.51	4.41	4.5	16.7	3176	6675	826	138	2495	10420	773	4560	ON	ON	ON	1.36	5.89	24.73	"	1.4	65	51	3	2009	stopped because of Time out at Br. 2. cnt. 1
13305	"	17:54	18:12	3.10	3.29	12.4	1006	2101	262	32	817	2853	227	1154	"	"	"	1.00	2.20	26.93	"	1.3	62	19	0	20.09	"
13306	"	18:19	18:45	2.94	3.13	11.5	1560	3152	405	46	1286	4413	404	1655	"	"	"	0.88	3.44	30.17	"	1.3	64	28	2	"	
13307	"	18.46	19:20	2.77	2.95	14.5	2030	4404	528	76	1694	6110	486	2304	"	"	"	0.74	1.96	32.13	"	1.7	65	17	1	"	beam stopped
13308	"	19:56	20:10	4.29	4.60	27.0	829	2026	216	58	704	3359	249	1875	"	"	"	1.66	2.54	34.67	"	1.6	66	22	2	"	beam instability and timeouts.
13309	"	20:21	20:24	4.02	4.31	39.2	197	547	51	20	156	906	55	602	"	"	"	1.4	0.35	35.02	"	1.7	64	3	0	"	"
13310	"	20:31	20:33	3.91	4.19	24.4	102	298	26	6	90	449	22	293	"	"	"	1.95	0.81	35.83	"	1.7	63	7	0	"	"

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 E₀ > 66 GeV	T2 B:t 17 2T: E₀ ·2tr	ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

Cont. AC2899 error doesn't repeat, Run 13287 now at 1650 events without problems.
∵ Problem is not reappearing with high frequency. Decision (Olsson): continue till morning, then Cords/Olsson discuss it in daylight.

5.42 Suddenly beams lost, ID. trip, Magnet fluctuation and DDAS ERROR 44 - Timeout branch 5 crate 6 all at same time! also PETRA-TV is dark
Run # 13287 stopped
PKR says their computers hang up and they lost control, but they don't know how this could happen.

6.30 PETRA-TV works again
"Injection"

8:00 Ambrus & Kobayashi

10.45 Changed TDC in Station 19, Crate 1. Please note whether "missing Q, x, etc." still comes!!!

Did 2 TOF calibration runs!

11:04 Found LG linear sum power was OFF → Switch it ON immediately (at ~200 nb⁻¹ in Run 13290)

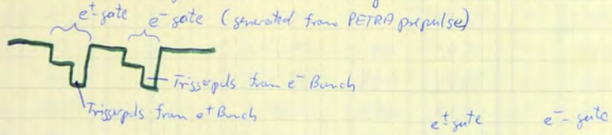
11:06 ~ 14:00 We suffered from DMA Time out error at Branch 7, Crate 6. Narvaska, Heuer, Olsson and Cords came and ~~tried~~ tried to cure it. ~~They exchanged~~ Finally when they exchanged the position of Branch Coupler, the error seemed to die away.

14:13 Request for new filling. Collected luminosity at the present energy ...

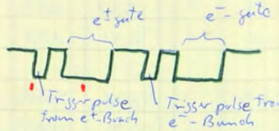
> 20 nb⁻¹	TASSO
35	Mark-J
~40	Cello
18.8	JADE

new Display on Beam-Crossing-Monitor installed !
(this is the plug-in scope in the middle of rack # 1)

channel 1 shows the pick-up signal from one of the new pick-up stations.
(so don't worry about the clean signal)
channel 2 shows the test-signals from beam-X-ing unit 1. It should look like:



if it looks different, e.g.



this means, that the PETRA Prepulse is wrong (see also page 110 in this logbook). In this case phone PKR to adjust it.
(The difference between the leading edge of the first trigger pls and the middle of the first gate puls gives the time-shift.)

HK

16⁰⁰ Dittrich & Mc. Cann on shift

16⁴⁰ New fill ready. Run 13304 started

17²⁰ LG HV errors. Takeshita called: he will check the system, but suspects that the "errors" are spurious.

17²⁵ McCann:
Since Friday evening, some (but not all) INTERMITTENT "MU CRATE MISSING" errors ("large" means ≫ 20 for a run of 8000 events). I believe this was due to a faulty contact and is now fixed. PLEASE KEEP AN EYE OUT FOR THIS ERROR:- IF THE NUMBER GETS LARGE AGAIN, RING THE ON-CALL MUON EXPERT.

17⁵⁰ For the second time in this run, significant loss of beam has occurred, causing a JET chamber trip. BP current remains high, > 3 V, for some time.

18⁰⁰ HV-WRONG ERROR WAS TENTATIVELY FIXED BY TOUCHING THE READ-OUT CONNECTOR. (TAKESHITA)

18⁵⁵ $\int L dt$ ($E_0 = 20.09$ GeV)
CELLO 43 nb⁻¹
MARK J 49 nb⁻¹
TASSO ≥ 20 37 nb⁻¹ Problems?
JADE 31
Total > 143 + 17 = 160 nb⁻¹
} Next filling will be ~ 19¹⁰ (hopefully).

20¹⁵ BP current goes up to ~ 2.5 "V" and we get timeouts - but no ID alarm. Switch off ID and complain to PKR.
20²⁰ Start run 13309. BP ~ 1.7 "V"
20²³ More timeouts - in various crates. Also BP goes up to ~ 1.9.
21⁴⁰ We got to 8002 events in one run !! This was after switching BR 7 CR {6 7} off-line, power off, and back on after last time-outs.
21⁴⁵

$\int L dt$. ($E_0 = 20.09$ GeV)
JADE 46 nb⁻¹
CELLO 47
MARK J 64 nb⁻¹
TASSO 52
TOTAL 209 nb⁻¹

→ GO TO 20.105 at 22⁰⁰.

22⁰⁰ $\int L dt$ (JADE) = 48 nb⁻¹.

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To veg. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 $E_n > 66$ eV	T2 B:t 17 2 T. E_n 2 tv
13311	15.5.'83	20:39	21:33	3.82	4.10	21.7	3233	8002	841	183	2885	13284	959	6874
13312	"	21:33	22:04	3.33	3.58	16.1	1832	4206	476	77	1637	6349	527	3088
13313	"	22:09	22:36	3.05	3.29	9.6	1565	2988	407	39	1395	3619	445	1305
13314	) 13315 ,	133	16	– GET	IMMEDIATE	TIMEOUTS	AFTER	PARAMETER	SETTING					
~~13319~~	~~16.5.83~~	~~01.09~~		~~4.21~~	~~4.33~~									
13317	16.5.83	01:00	01:09	4.32	4.44	18.2	210	~~855~~	54	9.9	165	672	62	335
13319	16.5.83	01:09	02:13	4.21	4.33	13.6	3799	8002	987	135	3300	11636	1146	5379
13320	16.5.83	02:13	03:22	3.56	3.66	11.5	4116	8002	1069	123	3392	11035	1193	4543
13321	"	03:22	04:21	3.50	2.97	9.3	3494	6382	908	85	2340	8230	1060	3854
13322	16.5.83	04:57	05:57	4.27	4.41	14.6	3589	8002	934	136	3216	11759	1122	~~5760 5224~~
13323	16.5.83	05:57	07:01	3.63	3.75	12.7	3822	8002	995	127	3418	10998	1173	4809
13324	17.05.83	12:08	12:35	3.33	3.29	9.6	1563	2310	407	39	954	3247	424	1317
13325	17.05.83	12:35	14:08	3.15	3.12	11.8	5524	8002	1434	170	3380	10804	1119	3940
13326	"	14:08	14:40	2.64	2.60	6.6	1827	2498	476	32	1126	3335	361	943
13327	"	14:46	15:22	2.47	2.43			8636			information	lost	!!	
13328	"	15:23	15:38	2.31	2.27	6.0	852	1168	222	13	601	1291	196	310
13330								559	forget this run					
13331	"	18:35	20:49	4.30	3.66	10.7	4386	8002	1141	112	3140	11348	1023	4549
13332	"	20:49	21:29	3.65	3.08	9.7	2386	4079	621	61	1670	5644	533	2097
13333	"	21:30	22:34	3.34	2.80	8.4	1627	5856	944	79	2610	7803	790	2507
13334	"	23:01	24:05	4.39	4.34	13.5	3813	8002	992	134	3233	11278	990	5073
13335	18/05/83	0.06	1:17	3.73	3.68	10.9	4223	8002	1099	120	3387	10948	941	4431
13336	"	1:17	2:06	3.15	3.10	10.0	2917	5073	759	76	2233	6736	665	2496
13337			no events											
13338	"	5.22	5.35	4.06	4.39	14.7	674	1519	175	31	535	2333	187	1191
13339	"	5.36	7.04	3.94	4.27	12.9	4068	7998	1058	137	3084	11421	949	5108
13340	"	7.05	8.24	2.63	3.21	8.4	4739	7640	1234	104	3500	9928	952	3515
13341	19/5/83	10.23	11.22	4.78	4.46	21.0	3533	8002	919	193	2818	12828	840	6833
13342	"	11.23	11.55	4.13	3.84	30.8	1907	3446	497	153	1317	5223	374	2545
13343	19.5.83	1222	13.19	3.58	3.31	11.4	3368	6296	877	100	2707	8935	785	3895
13344	"	14.36	14.59	4.78	4.77	23.4	1338	3088	348	81	1093	4820	339	2469
13345	"	15.06	15.35	4.43	4.42	23.1	1698	3496	442	102	1360	5113	398	2475
13346	"	15.44	16.44	4.01	4.00	13.8	3550	7609	924	128	3059	11041	880	5045
13347	"	16.44	17.51	3.45	3.44	13.9	3956	8002	1028	143	3194	12042	929	5501

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<LL> $\times 10^{30}$	SL dt Bhabha Run	SL dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Tv (%)	Bhabha Σ	MH	Ebeam	Remarks
13311	ON	ON	ON	1.53	8.43	44.26	IBM	1.5	65	73	3	20.09	We made it to 8002 !!!
13312	"	"	"	1.29	3.70	47.96	"	1.3	65	32	0	"	Go to new energy point.
13313	"	"	"	1.00	2.08	2.08	"	1.2	61	18	1	20.105	NEW ENERGY. Run stopped for timeouts
13314								1.5					
13317	ON	ON	ON	1.47	8.81	2.89	IBM	1.5	64	7	1	"	Run 13318 is dummy
13319	ON	ON	ON	1.38	9.49	12.38	IBM	1.5	64	82	1	20.105	
13320	"	"	"	1.05	7.64	20.02	"	1.3	63	58	2	"	
13321	ON	ON	ON	.79	4.17	24.19	"	1.2	62	36	2	"	beam dumped
13322	"	"	"	1.47	8.22	32.41	"	1.6	64	71	1	"	
13323	"	"	"	1.05	7.87	40.28	"	1.4	63	68	1	"	beam lost
13324	"	"	"	??	2.31	42.59	"	1.5	62	20	0	20.105	stopped because of TPC HV errors!
13325	"	"	"	??	5.09	47.68	"	1.4	61	44	4	"	
13326	"	"	"	1.32	2.08	49.76	"	1.2	62	18	0	"	stopped because of energy raising
13327	"			information	lost	~~(corrected)~~		1.1				20.120	NEW ENERGY. Corrected see p 131
13328	ON	ON	ON	1.07	1.27	1.27	"	1.05	61	11	0	"	beam dumped
13330							TAPE F11145	1.85					beam lost
13331	ON	ON	ON	2.33	9.27	10.54	IBM	1.6	62	80	2	"	
13332	"	"	"	—	3.71	14.25	"	1.45	62	32	1	"	Run stopped because tagg. crate tripped
13333	"	"	"	1.48	4.87	19.12	"	1.35	62	42	1	"	beam dumped
13334	"	"	"	2.55	8.23	27.35	"	1.8	63	71	2	"	
13335	"	"	"	1.79	7.07	34.42	"	1.5	62	61	2	"	
13336	"	"	"	1.36	4.06	38.48	"		62	35	1	"	Beam lost.
13337							"	1.8					IBM ERROR 54
13338	"	"	"	2.39	1.74	40.22	F11184	1.8	64	15	2	"	output to Tape
13339	"	"	"	2.00	7.07	47.29	IBM		63	61	2	"	
13340	"	"	"	0.99	4.40	51.69	"	1.4	63	38	1	"	Beam dumped.
13341	ON	ON	ON	2.75	7.88	59.57	IBM	1.9	65	68	1	20.120	
13342	"	"	"	1.99	1.97	61.54	"	1.6	65	17	1	"	
13343	"	"	"	1.55	4.28	4.18	"	1.5	64	36	0	20.135	New Energy.
13344	"	"	"	2.93	3.25	7.43	"	1.8	65	27	0	"	
13345	"	"	"	2.79	5.45	12.88	"	1.6	64	47	1	"	10m deflation
13346	"	"	"	2.48	9.17	22.05	TAPE F11145	1.3	63	79	4	"	
13347	"	"	"	1.78	5.57	27.62	IBM	1.3	63	48	3	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To tg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 Fn>66eV	T2 B:t 17 9T: Fn:2tr	ON/OFF N50	MIP	TOF	∠L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

16.5.1983

00.00 Zachau and Nozaki on shift.
Ask PKR & swap the beam. Ufem Hom Roesberg are working for the Cameo problem.

00.52 START RUN 13318

01.00 TDAS READOUT ERROR 44 Timeout br 5 Cr 1 ID Ring 1 reported.
STOP the RUN. 13318

01.09 START RUN 13319

" Crate Controller in 7:5 probably cause of last dumps missing. Krebbiel should read this!

04:20 new filling, some energy

05:16 ∫L dt
Cello 30 nb⁻¹ Mark J 30 Tasso 37 Jade 21 Total 128 nb⁻¹

06:16 YSIY Trigger 3 2p Missing ST2 ST1. but h.silogram looks like all right.

07:01 Beam lost.

8:00 Barnes & Steffen on shift.
Machine still tries to get new fill.

8:30 ~~10~~ 22 high frequency work at PETRA (scheduled every fortnight)

9:00 Magnet ran down to 2500 A

12:30 YCLRTV & YRUNSM now contain new luminosity constant (0.976×10^{28}) as supplied by K-H. Tiker. HEM.

13:00 "short" break of PETRA (repair of Cavity in PETRA ring): should go on soon.

15:20 Again: start break of PETRA (repair of transmitter): should go on in ~30 min

16:00 Spitzer & Chin on shift

19:18 Magnet current ⇒ 7500 A.

19:28 Well, we really thought they were gonna make it this time! But no - beam lost! Mag Current ⇒ 5000 A.

17/5/83 00⁰⁰ D. Cords & H. Mills on shift

3³⁰ Our magnet trips. Rang PKR to inform them and they said they were down until 9 am any way & no hurry to repair it.

Since no PETRA and no magnet, the shift crew leave telephone number with PKR & retreat home.

8⁰⁰ Ambrus Zachau on shift. 8⁴⁵ Fault: Vorlaufdruck Primär C; can be reset
9⁰⁰ Magnet on → 7500 A; PETRA had problems with the powersupply during the night
12⁰⁰ PETRA ~~stunned~~ is finally running! Start run 13324.
12¹⁰ TAG HV problems.
13²⁰ ∫L dt
CELLO ≈ 44
TASSO ≈ 48
MARK J ≈ 52 Σ = 189 < 200
JADE ≈ 45
13³⁰ TAG ~~Crate~~ down / (switching off and then on works)

Run 13327 ended prematurely - strange goings on - Eventstructure clobbered, IBM online errorcheck 2, IBM event count started from 1 again. Tried to start next run & although Nord did not hang, the run would not start. Reloaded Nord and all worked. (HERE)

16⁰⁰ Haidt + Hewe

18⁰⁰ Beams on, IBM down till 19⁰⁰
background a bit high: 1.9 V
18¹³ beams lost during background optimization
20³⁰ Std-histograms checked: OK but Gould-Plotter needs TANGA for maintenance!
21³⁰ Tagging-Crate down → switched on again
23⁰⁰ Reform Job submitted

24⁰⁰ Minowa, Becker
1⁴⁰ ANALYSE-JOB submitted
2⁰⁶ Run stopped, ~~ID status~~ Beam lost
2⁴⁶ REFORM JOB submitted

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rec. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 $E_n > 66$ eV	T2 B:t 17 ϑ: E_n :2t

ON/OFF N50	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T2 Rec EV Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

3 18 PETRA : Break ($\frac{1}{2}$ .... 84 ?), (back to ecurbs)

3 55 Run down the magnet to 3000 A.

4 50 Run up → 7500 A

5 12 Beams ready BP ≅ 1.9 V

5:20 IBM ERROR 54
Write Run 13338 to M/T.

5:38 IBM up again stop Run 13338

6:20 ID trip (slow), Pause run 13339
Cannot turn on again : alarm = HV INput ⊕ LD 10
Call Heuer
The problem was cured without doing anything by Heuer.

7:05 Lumi at 20,120 GeV

CELLO	32 nb^{-1}	(?)
TASSO	35 nb^{-1}	(computer trouble)
Mark-J	54.6 nb^{-1}	
JADE	47.3 nb^{-1}	
Σ	168.9 nb^{-1}	< 200 nb^{-1}

7:23 YSPY Trigger 3 I/P missing : ST29 GP2

7 38 CELLO proposed new filling, other exp. agree (PKR : in 10 min)

08.00. Wednesday 18/5/83. Thomas Hagestedt & Fred Loebinger.

08.15 PKR says there are refill problems . ∴ We will not dump beams until they are sure they can refill.

08.20 Beams dumped for new fill / Standard histogs checked – O.K.

09.20 Problems with injection SHORT BREAK

10.20 New beams, start run 13341

10.50 Integrated luminosities at 20.120 GeV.

MARK J	62
JADE	56
TASSO	38
CELLO	38

Σ = 194 nb^{-1}

11.40.

MARK J	71
JADE	61
TASSO	50
CELLO	44

Σ = 226 nb^{-1} . New energy (20.135 GeV) requested.

12.20 New energy 20.135 GeV. Start run 13343.

13.20 e⁻ lost

14:15 Cross-section display binning altered. This should now cope properly with the 15 MeV steps. (HEM)

14.16 new run

15.00 stop Cards with IBM job on on other ##

15.05 new run Krehbiel's trigger boxed jammed twice.

15.25 Error messages : ~~HP~~ H5 : MP16 analysis incomplete 44=1 and ; H6 : MP16 event out of sequence 44=1 occurring when pause/restart at peak difficulties

15.30. IBM off (sounds serious) — we go to tape : Run 13346 on Fil 145

15.50 IBM back up but we continue this run on tape.

16.00 Baines & Takeda on shift

16.15 TV says that all IBM machines are down.

16.33 IBM back again.

18:20 ~~New filling was proposed at~~ New filling at 18 45

19:21 SHORT BREAK – INTERLOCK BROCHON, RESTART IN ~½ HRS TIME.

21:00 POWER SUPPLY PROBLEM . ½ hours more. PKR suggests to keep the magnet on.

21:40 New fill ready.

21:52 ID tripped (SLOW TRIP)

22:49 run 13350 started.

134 RUN	Date	Start	Stop	Run Start I+	Run Start I-	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 reg. ×10⁶	T1 Acc. Sum	T2 Acc Sum	T1 Bit 2 E₁>6GeV	T2 Bit 17 2T E₄ 2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Bhabha Run	∫Ldt Exp	IBM/ TAPE	BP [V]	T2 Rej. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
13348	18/5/83	17:50	18:50	2.96	2.95	7.8	3479	5452	904	70	2523	6947	689	2290	ON	ON	ON	1.50	5.22	32.84	IBM	1.0	61	45	0	20.135	Beams dumped
13349	"	21:43	22:49	4.62	4.52	17.7	3652	8002	950	168	2788	12450	863	6602	"	"	"	2.60	7.66	40.50	"	1.65	64	66	0	20.135	
13350	"	22:49	23:55	3.96	3.86	14.6	3880	8002	1009	147	3031	12657	875	6418	"	"	"	1.65	5.22	45.72	"	1.5	65	45	1	"	
13351	"	23:55	1:08	3.44	3.36	10.7	4359	8002	1134	121	3423	11097	964	4816	"	"	"	1.63	5.92	52.82	"	1.2	63	45	1	"	
13352	19/5/83	1:09	1:34	2.95	2.87	9.5	1498	2540	390	37	1107	3419	322	1296	"	"	"	1.47	1.28	55.02	"	1.2	62	9	0	"	Beams dumped
13353	"	2:03	2:42	4.89	4.31	14.9	2256	4967	587	88	1967	7074	585	3606	"	"	"	3.06	6.38	61.40	"	1.7					IDM ERROR 14
13354																					TAPE						
13355	Dummy																					1.5	63	49	0	"	
13356																											
13357	"	2:53	3:14	4.30	3.78	28.8	1277	4067	332	96	863	3037	258	1405	"	OFF	OFF	2.23	2.79	64.25	TAPE F11105	1.5	0	20	1	"	output to tape
13358	"	3:14	3:39	4.07	3.57	22.5	1467	4567	382	86	1015	3297	362	1442	"	OFF	OFF	1.96	3.02	67.27	IBM	1.4	0	23	2	"	
13359	"	3:42	4:47	3.80	3.73	10.2	3845	6650	1000	102	3012	8898	885	3480	"	on	on	1.82	6.73	74.00	"	1.3	63	50	2	"	
13360																			×2.00			1.15				20.15e	Run summary lost due to hard disc crash
13361	Dummy																					1.65					
13362	"	6:43	7:48	4.29	4.36	15.4	3824	8002	995	154	3115	11739	911	5964	"	"	"	2.55	8.95	9.75	"	1.65	64	67	1	"	
13363	"	07:49	08:58	3.15	3.19	11.4	4173	8002	1085	124	962	10730	1039	4686	"	"	"	1.96	860	18.35	"	1.45	63	74	4	"	
13364	"	09:00	09:48	3.14	3.18	9.6	2892	4915	753	723	2273	6359	662	2533	"	"	"	1.29	3.74	22.09	"	1.2	63	34	2	"	Beams dumped
13365	"	13:25	14:31	4.66	4.04	16.6	3771	8002	981	163	2865	12306	913	6659	"	"	"	2.26	8.83	30.92	"	1.9	64	76	2	"	
13366	"	~14:45	~15:30	~4	~4														~7.7	38.69		1.4					NORD TROUBLE Runsum lost
13367	"	15:52	17:14	3.42	2.92	9.0	4908	8002	1277	115	3586	10555	1068	4216	ON	ON	ON	1.2	6.16	44.85	IBM	1.2	62	53	4	20.150	
13368	"	17:15	17:17	2.90	2.46	8.4	121	207	31	2.6	68	249	32	114	"	"	"	0.98	0.12	44.97	"	1.2	55	1	0	"	Beams dumped
13369	"	19:41	19:56	4.55	4.67	24.1	882	2030	229	55	674	3547	230	2177	"	"	"	1.89	2.09	47.06	"	2.0	67	18	0	"	BEAMS DUMPED
13371	"	20:51	21:50	4.82	4.77	31.4	3571	8002	929	292	2625	15389	858	10065	"	"	"	1.97	8.25	55.31	"	2.0	69	71	2	"	
13372	"	21:51	22:51	4.14	4.11	14.5	3558	7282	926	135	2804	11091	893	5668	"	"	"	1.92	5.58	60.89	"	1.6	~~68~~ 64	48	1	"	
13373	"	22.55	0.01	3.56	3.53	13.0	3961	8002	1031	134	3083	11726	929	5888	ON	ON	ON	1.50	4.89	4.89	IBM	1.5	63	42	1	20.165	
13374	20/5/83	0.02	0.54	3.07	3.03	11.1	3113	5600	810	89	2390	7730	766	3329	"	"	"	1.22	3.72	8.61	"	1.3	63	32	3	"	Beams dumped
13375/6	Dummy																OFF					2.0					
13377	20/5/83	1.50	2.31	4.52	4.40	X35.2	2409	5120	627	220	1722	8723	536	5497	ON	ON	OFF	1.85	3.61	12.22	IBM	2.0	87	31	2	20.165	
13378	"	3.16	4.24	3.63	3.52	12.9	4066	8002	1058	136	3241	11508	1017	5469	ON	ON	ON	1.67	6.98	19.20	"	1.5	63	60	2	"	
13379	"	4.24	4.30	3.08	2.98	10.8	313	583	81	8.8	240	774	71	327	"	"	"	1.36	0.47	19.67	"	1.3	62	4	0	"	
13380	"	4:29	5:27	2.69	2.59	4.8	2346	5148	753	737	2257	6756	684	2910	"	"	"	1.25	4.66	24.33	"	1.2	62	40	2	"	
13381	"	6:07	7:05	4.53	4.45	X33.1	3452	8002	889	248		14333	861	2538	"	"	"	1.99	6.75	31.08	"	2	68	58	1	"	
13382	"	7:06	8:06	3.90	3.83	17.4	3585	8002	934	162	3065	12080	977	6542	"	"	"	1.87	5.82	36.90	"	—	64	50	4	"	
13383	"	8:06	8:13	3.36	3.30	15.0	394	892	103	15	364	1147	109	598	"	"	"	~~1.42~~ 1.46	0.12	37.02	"	—	59	1	0	"	There is no run # 13384
13385	"	8:20	9:25	3.26	3.19	11.1	3873	7502	1009	112	3345	9872	999	4401	"	"	"	1.45	4.54	41.56	Tape F11049	1.5	62	39	1	"	

Run	Date	Start	Stop	at Run Start: I+	at Run Start: I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 Fa>66eV	T2 B:4 17 Ti Fa·2tr.	ON/OFF NSO	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

19.5.83 Ambrus + Peterson on shift 0^{00} - 8^{00}

1^{00} YHMON sampling

1^{05} Runi at 20.135 GeV

Mark J	52 nb⁻¹
Tasso	30 nb⁻¹
Cello	18 nb⁻¹
JADE	52 nb⁻¹
Σ	150 nb⁻¹

1^{34} run stopped for new filling

2^{00} new filling ready

2^{43} IBM down write run 13357 on tape

3^{40} MICROS MP-11 and TOF were change from "on" to "off" during the tape run
We don't understand why this happened!

4^{40} Runi at 20.135 GeV

Mark J	75 nb⁻¹
Tasso	60 nb⁻¹
Cello	25 nb⁻¹
Jade	73 nb⁻¹
Σ	233 nb⁻¹ ⇒ next energy

5^{58} We cannot stop the run, the JDAS console does not react. We tried to restart JDAS but it does not work. We tried to reload Nord. Get ring violation error phoned to H. Wills. He tells us to restart broken RT program (ZDAS)

08:00 Ball, Haidt

09:30 Request new fill at 09:45

09:46 Stop run 13364 to allow new fill

10:15 'Short break'

13:25 New fill ready. BP ~ 1.9 but stable. amber beam pickup light on.
Start run 13365.

13:55 timeout B2 (C5) kB ADC's,

15:30 Nord problems after attempt by HEM/AB to start Mizuko ~~MM~~ prog. HEM & D.C. investigating.

15:52 Problem fixed. Run 13367 in progress. Run summary for 13366 lost. Online Mills calculates luminosity from scalers,

16:00 TAKESHITA ≠ S. WAGNER

16:20 MARK J ~~PROPOSED~~ NEW FILLING, THAN ~~EXPECTING~~ INST. $L \sim 0.6 \times 10^{30}$ AND VERY HIGH BACKGROUND.
BUT WE ~~DID~~, CELLO AND TASSO ARE GOOD. SO WE CONTINUE AT LEAST 30 min.

Note For day shift
Following telephone call to IBM it is believed that the computer break planned 8.00 - 11.00 Friday morning will also affect the experiments.
Hence - write to tape!

19:40 AFTER LONG FIGHT TO THE TRANSMITTER PROBLEM, NEW FILL AND RUN 13370 STARTED.

19:50

CELLO	20~~22~~25 (?) nb⁻¹
MARK J	45
TASSO	42
JADE	45
	154 nb⁻¹

19:56 VERY HIGH BACKGROUND — ID HV WAS SLOWLY DOWN. — PART OF BEAMS LOST.

CELLO	48 nb⁻¹
√MARK J	60
TASSO	55
√JADE	60
	223 nb⁻¹ ← ASK FOR NEXT ENERGY

$23^{\underline{49}}$ W. Bartel & F. Lochinger on shift

0.00 Friday 20/5/83 " " still " "

0.53 Beams dumped.
Change TDC 4 in crate 4 station 6 as requested by Beate.
Get TOF error: 4 PARD 12 TOF2 AC2099 no response
switch off AC2099
d.control #~~12~~13 on TDC-Spectrum #2 is clear.

Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 E_n>66eV	T2 B:+17 ΔT: E_n·2+v	ON/OFF N50	MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

All YKRON - histograms are empty, we suspect it has to do with the fact that we switched off the TOF-mipros. ok that was it.

02.15 JDAS error 56 - TOF BANK wrong length = 360 (dec).

03.15 Data taking resumed.
For 1 hour we were hunting around TOF - TDC's.
Replaced the one with 11 etc
" " " " 9 etc
We suspect that the TDC's are ok, it was the crate which was giving trouble.
We leave 13 dead as it is. We don't dare to touch the TOF-TDC's again, because we are afraid of losing another hour of data taking (had several more JDAS errors 56 during this abortive work).

03.55 TOF #13 working again
changed discriminator

04.30 Yet more TOF TDC's fail — channels 12 & 53.
We replace the TDC containing both these channels, reload the AC 2099 and it's all O.K. again

8⁰⁰ ~16⁰⁰ Rieseberg, Yamada on shift
8¹² IBM busy. no link.
The run 13383 was teminated "automatically" while trying "pause/continue". Why?
RUN 13384 does not exist. (very short ? & did not acquire the IBM link.)

IBM is going to be down until 11⁰⁰. MT will be used.

9⁴⁵ JADE 43, Tasso 46, Mark J 52, Cello ~~35~~ 43. Agree to refill at 10³⁰
10¹⁵ PKR informs us that there is a vacuum leak in the south. Refill will be later, about 11³⁰.
10³⁰ Stop Run 13386, Beams dumped, Magnet to 2500
SHORT BREAK
12¹⁵ Call PKR: Vacuum is in order now, but a ventilator has to be exchanged in the ring
12³⁵ IBM's AA and CC are on

12.50 Beate Naroska runs a TOF TEST (Run 13387 to IBM). ~~But it turns out that it is not clear how the TOF TDC's were exchanged last night. Possibly a faulty unit with a bit transformed error was installed once more.~~ NO! We took the last TDC's available and even changed the small cables, which seems not to be normal and gave me to some confusion
U. Ba.

13⁴⁰ Injection started. magnet current is set to 7500A again.
14²⁰ PKR has error signal from one of the magnet groups (pilotbeam)
15⁰⁰ SHORT BREAK for at least 1 hour. Then BREAK:
"DEFEKT in Magnetstrom - Interlocksystem" Magnet 2500A

New Nord-50 program under test. If you reload Nord please type (DIT)N50DAR when it asks for Nord-50 program to load this instead of default UNLESS there is reasonable suspicion of a default HE

16⁰⁰ A. Wagner, U. Schneekloth
19¹³ magnet to 7500 A, injection
22⁰⁰ Still no beam. R. Felst enquires in PKR: at ~19.3 GeV a sudden beam blowup occurs which leads to a beam loss. PKR is attempting a diagnosis. No guess when beam will be back.

SATURDAY 21ST MAY 00⁰¹ HEDSECOCK & HAGESTEDT.
~1 01⁰⁰ HT on but "Background optimisation" continuing with large jumps indicated. Waiting for them to stabilize. BP current excessive for switching on ID.
01²⁶ We still have excessive jumps in beam pipe current, also all other experiments. PKR Still investigating.
~1 01³⁰ Start a fill. 13388.
2⁰⁰ soft] detector trip but reset ok
03⁰⁰ MARK J 69 TASSO 71 JADE 60 CELLO 55 Σ TOTAL 255. GO TO NEW ENERGY
AT NEXT FILLING.
04⁵⁷ TWO SOFT ID TRIPS. BP CURRENT FLUCTUATION. PKR INVESTIGATING. RUN PAUSED
05²⁰ RUN STILL PAUSED. BP CURRENT FLUCTUATION STILL BEING INVESTIGATED.
05³⁵ RUN CONTINUES BUT THIS INSTABILITY CREEPS IN AGAIN - PAUSE. ID OFF
~~5⁵⁸~~ continued background 1.0 - 1.5 V
6⁰⁵ Stop & new fill

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To reg. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr$	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T_2 Rej. Ev. Fr. %	Bhabha Σ	MH	E_{beam}	Remarks
140 Run Exp 24																											141
13386	20.5.83	9 29	10 32	2.77	2.72	10,0	3640	6409	948	95	2864	8459	863	3515	ON	ON	ON	1.17	3.61	45.17	FH.135	1.3	62	31	2	20.165	Beams dumped
13387	"	12.52	12 54												~~ON~~	~~ON~~	~~ON~~				IBM	~~1.3~~				~~20.165~~	TOF TEST
13388	21.5.83	01 30	02 40	4.28	4.18	13.1	4106	8002	1069	140	3183	11540	947	5300	ON	ON	ON	2.92	9.66	54.83	IBM	1.53	63	~~23~~	5	20.165	
13389	—"—	02 41	03 56	3.65	3.70	10.3	4446	8002	1157	119	3479	10799	1060	4417	"	"	"	2.29	9.66	64.49	—"—	1.33	62	83	0	—"—	
13390	—"—	03 56	04 05	3.19	3.22	9.5	464	811	121	11.5	348	1062	107	428	"	"	"	1.74	0.23	64.72	—"—	1.23	62	2	0	—"—	NEW FILLING REQUESTED.
13391	—"—	04 46	06 08	4.50	3.72	19.9	1022	2204	266	53	828	3350	272	1937	"	"	"	2.03	2.45	2.45	—"—	1.7	65	21	0	20.180	
13392	—"—	06 53	07 45	4.49	4.39	23.5	1950	4311	507	119	1643	6936	562	3986	"	"	"	2.81	3.61	6.06	—"—	2.0		31	0	20.180	
13393	—"—	18 03	19 15	4.35	3.38	12.6	4318	8002	1123	141	3188	12395	850	5143	—"—	—"—	—"—	2.34	7.11	13.17	—"—	0.75	63	61	1	20.180	
13394	—"—	19 15	20 28	3,87	2.96	10.9	4307	8002	1119	122	3375	11723	982	4352	"	"	"	1.98	9.68	22,85	"	0,7	63	83	1	"	
13395	"	20 28	80 51	3.43	2.60	12.7	1480	2565	385	49	1124	3528	327	1227	—"—	—"—	—"—	1.67	2.33	85.18	"	0.6	62	20	0	—"—	beams lost
13396	"	22 21	23 20	4.34	4.21	26.4	3398	8002	883	233	2646	14407	862	8446	"	"	"	2.18	7.46	32.64	"	0.7	67	64	2	"	
13397	22.5.83	23 20	0 14	3.89	3.77	11.2	2157	3876	561	62	1653	5562	488	2153	"	"	"	1.31	1.98	34.62	"	0,6	63	17	0	—"—	beams dumped
13398	"	2:22	3:01	4.06	4.15	X59%	2306	4943	600	358	1158	12222	370	~~6830~~ 8895	"	—	—	0.76	1.76	36.38	"	0.9	72	16	0	"	beams lost
13399	"	3:55	5:03	4.25	4.12	17.1	3654	8002	950	162	2971	12900	886	~~5793~~	"	"	"	1.55	7.11	43.59	"	.6	66	67	1	"	
13400	"	5:03	5:33	3.29	3.19	11.8	1703	3473	443	52	1411	4891	453	5793	"	"	"	1.91	3.08	~~46.57~~	"	.6	62	19	0	"	
13401	"	5:37	6:53	3.10	3.01	9.1	4559	8002	1185	107	3670	10376	1067	7385	"	"	"	1.61	6.18	52.95	"	.55	62	53	0	"	
13402	"	6:55	7:19	2.73	2.63	82	1290	2177	336	28	1072	2679	319	~~3086~~ 887	"	"	"	1.38	1.78	54.53	"	.45	63	13	0	"	beams dumped
13403	"	10.10	11.09	4.25	3.71	22.2	3527	8002	917	203	2760	12781	942	6562	"	"	"	1.55	5.72	5.72	"	.7	65	49	0	20.195	high dead time
13404	"	11:10	12:16	3.85	3.35	13.4	3936	8002	1024	137	3211	11921	991	5472	"	"	"	1.39	5.49	11.21	"	.7	68	40	1		
13405	"	12.24	12:46	3.43	2.96	11.3	1262	2403	328	37	1025	3358	293	1450	"	"	"	1.05	1.75	12.96	"	.6	69	12	0		
13406	"	12:52	14:05	3.29	2.84	15.6	4387	8002	1140	178	3267	12716	999	6238	"	"	"	0.74	3.25	14.21	"	.6	66	19	0		
13407	"	14:06	15:06	2.89	2.47	8.5	3627	5870	944	80	2753	7562	827	2561	"	"	"	0.97	3.51	17.72	"	.5	62	27	0		Beam dumped. 2h access starts
13408	—"—	19 22	20 44	4.31	3.20	8.5	4882	8002	1270	108	3570	10273	1059	3553	"	"	"	2.42	~~0.34~~	27.06	—"—	0.73	61	80	4	—"—	
13409	—"—	20 44	22 09	3.75	2.73	7.6	5043	8002	1313	100	3343	9373	1265	2941	"	"	"	1.81	8.22	36.28	—"—	0.58	61	79	1	—"—	
13410	IGNORE — VERY FEW EVENTS — ONLY A ~~TEST~~ RUN.																										
13411	"	23 50	0 54	3.88	3.93	18.3	3699	8002	963	176	3045	12877	937	6704	"	"	"	2.23	8.29	44.57	—"—	0,75	65	71	1	—"—	NEW FILLING.
13412	23.5.83	0 55	?.	3.46	3.51	14.4	?.	8000	?.	?.	?.	?.	?.	?.	"	"	"	1.83	5.95	50.52	—"—	0.60	?.	?.	?.	—"—	run summary lost.
13413	"	2.11	3 02	3.03	3.07	9.7	3007	5191	783	75.8	2409	6843	790	2633	"	"	"	1.54	4.44	54.96	—"—	0.52	63	38	2	—"—	Beam lost
13414	"	3.35	4 33	3.95	3.94	X48.7	3422	8002	890	433	2224	17424	742	11690	"	"	"	1.49	4.44	59.40	—"—	0.68	70	38	0	—"—	
13415	"	4.34	4.57	3.31	2.50	27.6	1348	3265	351	96.7	1076	6137	378	3577	"	"	"	1.75	2.10	61.50	—"—	0.61	68	18	0	—"—	
13416			6.19	3.32	3.31	10.0	4511	8002	1174	117.0	3653	10578	1157	3984	"	"	"	1.84	8.18	8.18	—"—	0.56	63	70	0	20.210	new energy
13417	"	6.19	7.14	2.87	2.87	7.2	3265	5043	788	61.5	2533	5965	832	1820	"	"	"	1.53	4.79	12.97	"	0.60	62	41	1	"	Beams dumped
13418	"	7:51	8.43	3.95	3.87	X65.4	3030	6383	789	515.7	1371	16995	449	12962	"	"	"	0.59	1.79	14.76	"	0.6	74	18	1	"	
13419	"	8.52	9.55	3.43	3.45	15.6	3690	8002	960	149.6	2920	10659	1034	2816	"	"	"	1.10	3.39	18.15	"	0.65	57	29	0	"	E(4) = 2 GeV

Run	Date	Start	Stop	of Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rcg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 F₀>66V	T2 B:1 17 2Ti E₀ :2t₀	ON/OFF N50	MIP	TOF	∫L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

06⁵³ NEW RUN STARTED 13892.
07⁰⁵ SOFT ID TRIP – RUN PAUSED – BP CURRENT FLUCTUATING.
07³⁴ BP STABLE – CONTINUE RUN.
07⁴² ID TRIPPED.
JDAS ERROR 44 TIMEOUT BRANCH 2 CRATE 5 L/GLASS ADC's.
RUN TERMINATED – JDAS READOUT ERROR
07⁹⁴ LARGE BEAM LOSS – PETRA WILL BE RE-FILLED.
08:00 Baines + KAWAMOTO on shift
09:05 New fill, but V. high background, beam pipe ~10V at start of fill down to 5V by 09:20, but the e⁻ current is falling steadily and rapidly.
09:41 PETRA has problems with machine resonances, the B-P current reading is still large and fluctuating from 2 → 10 volts. Beate Naroska has gone to PHK control room.
09:48 Beams lost / dumped.
10:00 SHORT BREAK. – transmitter problems. ~~RESTART 12:00~~
11:00 RESTART 13:00 magnet down → 2500A
12:30 Magnet ⟶ 7500 A
~~Injection start.~~
13:07 ~~short break~~
13:00 Muon system gas mixture faulty. Too little ethane. Chambers drawing high currents.
Gas house hourly meter reads ~7% ethane, ~1% ?
μ-chambers volts reduced to standby level, so chambers not operational
Called B2 Notdienst (Hoster), since there are no shift technicians on duty today. JB/AB.
14¹⁵ Magnet to 1000 Amps
Petra shows short break Energy = 0!
Pilot Muon - alarms for several magnets in the East area. People are in the tunnel to investigate the problem. Furthermore one magnet in the transport channel cannot be regulated by the computer system. Only regulation by hand is possible.
No prediction about the length of the break.
14³⁰ T.V. says restart ~17⁰⁰
15:00 Muon system gas mixture: now flushing with excess ethane to expedite return to normal mixture. Estimated time to achieve this: ~8 hours. Until then, muon chambers are not operational. Please call me if there is ~~beam~~ luminosity before 24:00.
AB.

16⁰⁰ Kobayashi / Zeche on shift
18:55 Gas feed to μ-chambers is now correct (90% Ar, 10% C_2H_6). However, the returned gas has only reached ~7% C_2H_6. Unable to operate chambers normally yet.
20:53 Beams lost because of thunderstorm.
21:00 Muon chambers now operating normally.
24⁰⁰ Barlow, Spitzer on shift.
0¹² Currents fallen to ~2.4 mA due to beam loss. Consult other experiments and request new fill
Muon ~~chamber~~ crate 13 missing is happening a lot.
2³⁰ Dead Time enormous – 88% at one time, settled down to a more 50%.
This is due to the bit 17 Trigger (see run histograms). TOF histograms look a bit odd, but not anything simple. It could be that the events really are this noisy – looking at them seems to indicate they are genuine crud, not just an electronics fault. See what next fill looks like before panicing.
3⁰⁰ Beams lost. ID Trip. "Short break"
4⁰⁰ ~~Dead~~ Still too many bit 17 Triggers, but problem much less severe. Dead time down to a reasonable figure (12%)
5³⁰ No Triggers – have to stop run and start a new one.
6⁰⁰ Luminosities

JADE : 50	CELLO : ~~35~~ 40	MARK J : 70	TASSO : 45

Total 205. Decide to ask for energy step at the end of this fill.
6³⁰ We have given up resetting Muon Crate 13. We have done it at least 20 times/person, but now, by the time we get back into the control room, the error message is already on the screen.
Day shift should call expert.
7¹⁵ PKR dumps beams.
22.05.83
8⁰⁰ Bowdery + Heintzelmann
10:05 New fill ready. New energy 20.195 GeV
10:49 Muon Crate 13 Serial card computer exchanged. Hopefully the 'missing crate' problem is now fixed

General comments
1) We notice that even when the BP counters are OFF, there is a non-zero reading on the BP meter in the control room (≈25 V). This appears to be due to feedback from the jet chamber safety box.
2) According to the LeCroy HV supply crate, the Forward Muon Counters appear to be powered up (1500 V) even during injection. Is this true? If so, Is this normal?
FMC are in another crate.

12.25 TASSO has a short circuit in their magnet. They want to investigate so we will run for another 2 hours, then have 2 hours access.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 Eₙ>66eV	T2 B:1 17 2Tr. Eₙ :2tr.

15:06 Beams dumped. Access for TASSO for ~2h.

We run down the magnet to 1000 A (in sympathy with TASSO!)

16⁰⁰ R. Hedgcock, R. Feist on shift

19¹⁷ Limited a HV coneo en.

20 45 At start of Run 13409 NO printer came up with the error.
ERROR 91 IN 34355 AT 64365 ; FORTRAN I/O ERROR.
FILE ERROR N°.: 123
NOT OPENED FOR SEQUENTIAL WRITE.

Data taking seems to be progressing normally.

22⁰⁰ CELLO 20 nb⁻¹, JADE 35 nb⁻¹, MARK J 32 nb⁻¹, TASSO 8 nb⁻¹

asked for a new filling at 22¹⁵

22 30 We contact ~~Howard~~ Mills and restore ZSEQD to eliminate the fault indicated above.

23 50 New filling — start run 13411.

23/05/83

0.00 Kuhlen & Minowa

2:05 „NO events ..." comes up after 8000 events.
Terminals do not respond at all.
Restart Nord and reload ZDAS.
start run 13413 run SUMMARY 13412 is lost.

4:00 Run 13414 very high dead time 40 - 60 %
TCOR 10-15 events/sec
TRIG 5-7 "

but beam pipe ≈ 0.7 volts only
Other experiments have no problems.
PKR say. Vac.(N-W) is good ≈10⁻⁹.
seems the same problem ~~what~~ which happened in Run 13398 (2:30, 22/5/83)

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

23/05/83

4:50
CELLO	46 nb⁻¹
JADE	60
MARK-J	64
TASSO	42
	212

ask for the new energy 20.210 GeV

Ebeam GeV	∫L dt (online Bhabha) nb⁻¹	∫L dt (offline FASTSEL) nb⁻¹	online / offline
20.015	48.92	50.19	0.975
20.030	46.29	54.03	0.857
20.045	49.68	49.08	1.012
~~20.060~~			
19.970	68.84	74.95	0.918
19.985	57.41	48.787	1.177
20.000	12.14	18.79	0.646
20.059	61.07	70.57	0.865
20.075	61.72	61.85	0.998
20.090	47.96	46.77	1.025
20.105	49.76	53.17	0.936
SUM	503.79	528.19	0.954

7.13 ask new filling

8⁰⁰ Barlow, Takeda on shift.
Dead Time now 85%! Call Beck.

- Hit map of end-cap lead glass → more hits on +z side
- TOF multiplicity → too high.

> 2 TOF. 2 Tr. E(4) is the source of the high dead time

8⁴¹ Stop run 13418. Raise LG threshold from 1.5 to 2 GeV | LG HV reloaded (RI-HB)

8⁴² BP current up to 3.5 V — PKR optimized

Run	Date	Start	Stop	of Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 Fn>66eV	T2 B:+17 2Ti Eq :2tr

Now dead time is ~ 30% (a small improvement)

8[50] BP current gain adjusted. Increases signal from ~0.6 to ~1.5V

9[30] Dead Time now ~10%
PKR say they lost a Transmitter earlier this fill, and ~~has~~ restored it (at ~8[42], presumably).
The high background rate may well have been due to the lost Transmitter.
If/when it recurs, ask them what's happening as regards Transmitters.
If it doesn't recur in next fill, put LG threshold back.

11[20] Beams dumped.

12[01] Short Break → Trouble in "Kicker". No (repair) time estimate.

12[31] New fill ready BP ~ 1.6 V
Start RUN 13422. LG Threshold E(4) back to 1.5 GeV
D.T. ~ 10%.

16[00] FINCH & TAKESHITA ON SHIFT

16.52 'Break' - 'Kicker' repair - estimate 1 hour to mend.

18[15] "Kicker reparatur" BIS 20 UHR

20[55] MARK J 46, CELLO 38, JADE 43, TASSO 42 SUM= 169
(New fillings at last!!)

21[09] ID HV SLOWLY DOWN WITHOUT ALARM. BP~1.9V
SOMETIME BACKGROUND BECAME VERY HIGH, BP 2.5V

22[55] MARK J 54.5, CELLO 44.5, JADE 52, TASSO 49.5 SUM= 200.5

23[00] ASK PKR NEW FILL & NEW ENERGY 22.225 GeV

0[00] 24/5/83 H.Mills & J Spitzer on Sh.Pt

0[25] Still no beam - PKR say suddenly nothing works.

2[00] Beams ready at 20.250 GeV - should be 20.225! PKR said that at end of last fill Mark-J requested new energy of 20.250. Mark-J don't understand this. I think some one (PKR?) confused some where, we try again for correct energy.

PKR lower energy by altering magnets. This gets Mark-J excited since they claim hysteresis causes inaccuracy in energy. So its new kill time - - ——

New Fill planned for 7am

Run	Date	Start	Stop	ON / OFF N50	MIP	TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

7:25 New default version of N50 analysis program in use (has been tested over several days)

7:50 New Kill ready. Start run 13431

7:54 Detector good down ready

8:00 Chvin and Kado on shift

8:00 Background ok now, continue run 13431

8:27 no trigger.... → stop run 13431, start run 13432 and.... it works again

10:15 IBM broken, run 13433 stopped, run 13434 goes to Tape F11 139

10:17 OPAS Error 44 - Timeout branch 2 crate 5 Readfast ADC's

10:31 IBM back again, we decide to continue with this run going to tape

11:22 Beams dumped

13:14 "short break"

15:00 PKR says: Injection will start at 15.30

16[00] Kuriki + Kawamura

16[40] Bounce of water leak in DESY restart at ~17:00

17[00] Problems with injection go on

19[05] Injection finished, background on Beam Pipe CRTs too high: No operators in PKR to do background optimization, they are in DORIS ring.

19 40 Beams lost ID spark alarm in Right

20[25] Luminosity:
52.5 / Mark J
41.4 / CELLO
45.0 / TASSO
50.1 / JADE
18.9.0 TOTAL

19[42] beams lost

22[05] next filling ramped up

23 10 Lumi
48.4 CELLO
60.6 MARK J
59.0 TASSO
58.9 JADE
total 217.9 nb⁻¹

At 23[30] Beam energy will be changed to 20.240 GeV without dumping the beams.

Run	Date	Start	Stop	of Run Start I_+	I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rec. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 B:12 $E_1 > 6$GeV	T_2 B:4 17 2T. E_4 2Tr.	ON/OFF N50	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp	IBM/ TAPE	BP [V]	T_2 Reg. Ev Fr. (%)	Σ Bhabha	MH	E_{beam}	Remarks
148																											149
13420	23/5/83	9:55	11:17	3.08	3.10	7.5	4911	8002	1278	96.3	3681	9210	1275	1761	ON	ON	ON	0.83	3.39 0.12	21.54	IBM	1.2	57	29	0	20.210	
13421	"	11:18	11:20	2.71	2.73	5.6	92	121	23	1.3	54	134	17	23	"	"	"	0.69		21.66	"	?	65	1	0	"	Beams dumped
13422	"	12:34	13:50	3.94	3.90	10.5	4429	8002	1152	120	3318	11109	1097	4687	"	"	"	2.04	9.47	31.13	"	1.6	62	81	0	"	E(4) = 1.5 GeV
13423	"	13:50	15:13	3.43	3.39	8.2	4938	8002	1286	105	3899	9618	1191	3229	"	"	"	1.97	9.83	38.96	"	1.3	62	67	4	"	
13424	"	15:13	16:04	2.93	2.89	8.0	2978	4610	775	62	2383	5224	760	1576	"	"	"	1.50	4.44	43.40	"	1.0	61	38	0	"	
13425	"	20:53	22:14	3.97	3.30	11.1	4614	8002	1200	133	3254	11501	1021	5096	"	"	"	1.32	5.96	49.36	"	1.6	63	51	0	"	
13426	"	22:14	23:17	3.50	2.89	8.7	3750	6053	976	85	2762	8058	857	3100	"	"	"	0.99	3.16	52.52	"	1.4	63	27	0	"	
13427	24/5/83	2:19	2:26	3.99	3.98	10.5	405	759	105	11	280	1056	92	469	"	"	"	2.57	(1.17)	0	"	1.8	61	10	0	20.225	ENERGY MAY BE INACCURATE. ~~DUMPT COUNT~~ don't count
13428	"	3:11	4:27	4.02	3.93	10.6	4522	8002	1176	124	3416	11101	1069	4691	"	"	"	2.60	9.25	9.25	"	2.0	63	79	3	"	
13429	"	4:28	5:51	3.50	3.41	8.1	4968	8002	1293	104	3812	9917	1162	3357	"	"	"	2.60	10.42	19.67	"	1.5	61	89	1	"	
13430	"	5:5	7:04	3.01	2.93	7.2	4382	6694	1139	81	3172	7759	1124	2352	"	"	"	1.59	7.26	26.93	"	1.2	62	62	2	"	
13431	"	7:52	8:28	4.07	3.99	16.3	1810	3286	471	77	1338	4541	455	2176	"	"	"	2.37	4.45	31.38	"	1.7	62	38	0	"	
13432	"	8:28	9:41	3.74	3.72	11.3	4299	8002	1179	126	3631	10457	1200	4374	"	"	"	2.03	7.26	38.64	"	1.75	62	62	2	"	
13433	"	9:41	10:20	3.26	3.24	8.5	1658	2915	437	86	1459	3366	464	1221	"	"	"	1.96	3.04	41.68	~~IBM~~ TAPE F11139	1.3	61	26	0	"	IBM broken
13434	"	10:15	11:22	3.08	3.05	7.4	3996	6189	1040	76.7	3206	6977	1095	2081	"	"	"	1.73	6.21	47.89	"	1.2	61	53	3	"	beams dumped.
13435	"	19:28	19 44	4.20	3.94	12.9	1098	2166	286	36.8	850	2982	250	4372	"	"	"	2.26	2.22	50.11	IBM	2.1	61	19	2	"	19.42 beams lost
13436	"	22:10	23 23	3.99	3.99	10.8	4372	8002	1136	123	3300	11115	1078	4492	"	"	"	2.36	10.19	60.30	"	2.0	63	87	1	"	
13437	"	23 40	25.5.83 0:51	3.41	3.40	12.6	4039	8002	1050	132	3158	10465	1013	4483	"	"	"	1.99	8.09	8.09	"	2.0	62	69	2	20.240	Beam energy was increased without dumping
13438	25.5.83	0 58	2:00	3.01	3.00	11.2	4105	8002	1068	120	3157	10072	976	4040	"	"	"	1.65	6.10	14.19	"	2.1	63	52	0	"	
13439	"	2 00	2:32	2.69	2.67	10.7	1909	3666	496	53	1474	4584	435	1728	"	"	"	1.46	1.52	15.71	"	1.8	62	13	0	"	beams dumped.
~~13439~~ 13440	"	3.32	3 57	3.95	3.94	16.9	1373	2977	357	60	1068	4451	402	2304	"	"	"	see note	4.10	19.81	"	1.8	64	35	2	"	— no tagging —
13441	"	3.56	4.53	3.79	3.79	13.8	3352	7142	870	120	2936	10036	953	4866	"	"	"	2.28	6.92	26.73	"	1.5	63%	59	1	"	Beams lost
13442	"	5.27	6.36	4.42	4.38	16.4	3647	8002	949	156	3181	11798	999	6029	"	"	"	2.57	6.80	33.53	"	1.9	64	58	3	"	
13443	"	6.37	7.44	3.90	3.85	11.7	4016	8002	1046	122	3536	10473	1085	4409	"	"	"	2.52	8.56	42.09	"	1.6	63	73	1	"	
13444	"	7:44	8:01	3,42	3,38	10,1	989	1966	258	26	928	2382	281	987	"	"	"	2.20	2.23	44.32	"	1.6	62	19	1	"	beams lost
13445	"	12:24	13:18	3,08	4.11	11.1	3210	5200	835	93	2327	6854	753	2535	"	"	"	2.29	6.22	50.54	"	1.9	62	53	2	"	
13446	"	13:26	14:52	2,75	3.72	~~8.72~~	5118	8002	1333	100	4008	9387	1273	2765	"	"	"	1.86	7,52	7,52	"	1,4	62	64	4	20.255	New energy
13447	"	20 05	20 27	4.52	4.37	11.4	1268	2448	329	37.5	1083	3185	363	1364	"	"	"			13.04	"	1.9	62	47	2	—"—	IBM ERROR STOP, Run
13448	"	20 32	20 41	4.15	4.10	31.5	435	838	113	356	282	1624	85	1009	ON	ON	OFF	3.85	5.52	13.51	"	1.78	70	4	0	—"—	Run to TAPE F11180
13449	"	23 52	0 37	4.09	3.91	11.7	2652	4947	690	807	2003	7230	694	3208	ON	ON	ON	2.64	0.47	13.51	~~TAPE~~						
13450	26/5/83	2:59	4:13	3.85	4.12	10.9	4417	8002	1149	126	3423	11200	1111	4679	"	"	"	2.52	5.05	18.56	IBM	1.8	63	43	1	—"—	beams lost
13451	"	4:13	5:31	3.37	3.62	9.6	~~8002~~ 4609	8002	1215	116	3474	10980	1061	4152	"	"	"	2.73	10.92	29.48	"	2.0	64	93	2	—"—	
13452	"	5:31	5:52	2.95	3.17	8.4	1243	2004	323	27	849	2651	256	911	"	"	"	2.04	7.87	37.35	"	1.4	63	67	1	"	
13453															"	"	"	1.83	1.88	39.23	"	1.3	61	16	0	"	Beams dumped
																											junk run

Run	Date	Start	Stop	of Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:+2 E₁ > 66eV	T2 B:+17 2T: E₀ :24v

23 40 New energy 20.240 GeV.

25.5.83

0⁰⁰ ~ 6⁰⁰ Krehbiel + Yamada

0¹⁵ ID HV trip without alarm

2.30. ID alarm during rundown, (a injection, shortly before reaching "down". Source: HV Input D3.

3.15 ID alarm ~~when in~~ at the very beginning of runup. Yellow LED in Meta control box "U_A paralyzed" was on. Alarms came in the left Alarm-collecting NIM Unit, without plausible source. We called Komamiya. Problem solved by simultaneously pressing Reset in ↑ and Green Start Button.

3.50. Tagging Counter HV on ~~the~~ the e^+ side did not go on when ramping up. We didn't notice it until we saw that the luminosity was not indicated. I went down and turned it manually on. We started a new run. ‖ Tagging people should clean the filters ! ‖ I have ~~seen~~ never seen electronics dying from dust, but sometimes from blocked filters !

4.53 Beams lost. Sender ausfall.

5.30 Shortly after new fill Soft ID trip. (Background to high.) Petra has instabilities. A-Wet läuft weg. I admonished them to show the display ("Background OPT ...") if such is done.

5.45 BP-Current relatively low, ca. 1.7, but unstable; high deadtime 18%. PETRA notices, but does not know the cause. Trigg bit 17 high (2T + E(4) total). Suddenly DT went back to 12 %

6³⁵ JDAS Read error 44. T-out. branch 2 LG-ADC.

7³⁰ Standard histogram examined. TDC bit map shows two rather low bins (#40, #79!). Otherwise they look normal.

8⁰⁰ Heinzelmann, Kawamoto

8:01 Beam lost, RUN 13444 stop

11:32 Some trouble with the machine; New filling not yet ready.

12:30 ~~Trigger~~ Trigger stopped suddenly. ~~Re~~ After "PAUSE" + "CONTINUE" procedure it ~~came~~ again.
RUN 13445 : (according to the instruction on the Trig box)

at the same time a message "JDAS Readout error 44 - TIMEOUT BRANCH 3, CRATE 2 : Muon chamb

When "CONTINUE"ed, a message "JDAS READOUT ERROR 46 - MP-16 out of sequence : YY = 1"

13:02

CELLO	42
MARK J	59.2
TASSO	57
JADE	49.6
	207.8

We shall go to next energy 20.255 GeV.

ON/OFF N50	MIP	TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

14:50. LUMI ≈ 1.8 ×10³⁰, I_+ I_- unbalanced ~~magnetic~~, so, asked new fill.

16⁰⁰ Wiel Will. Ehtaycadi & Maruska on shift.

Mostly waiting for beam.

20.00 Stable beams, background from beam pipe ~2.0, but triggerate low, deadtime low, luminosity high (4·10³⁰). So we think it's ok.

↓ ~11%

Average anode current was ~ 1.2 μA.

Unfortunately lasted only for ~ half hour. Then transmitter was lost, beams kicked out. No refill possible as Desy down. We wait.

23.00 Petra injecting again.

23.15 beams lost at 20.012 GeV.

23.45 beams again. BP ~1.9 - 2.0

26/5/1983

0:00 McCann, Meier

1:50 DESY HF-System broken -> Magnet off

2:58 beams stored again

5:30 Lumis - (20.255 GeV)
JADE : 37 nb⁻¹, CELLO : 22 nb⁻¹, MARK-J : 40 nb⁻¹, TASSO : 35 nb⁻¹, Σ : 134 nb⁻¹
-> next Filling with old E_B

5:45 Reform-Job submitted

8:00 Hellenbrand, Skard

8:10 Beams dumped - break until ~ 17:00 h.

16:00 Dietrich & Mirowski on Shift.

18:30 "long break" magnet down to 500 A

19:00 injektion started magnet up to 7500 A

19 ~~50~~ beams again $I^+ = 4.37$ $I^- = 4.27$ but lost soon.

21~~06~~ "Short Break" due to power supply of the PETRA MAGNET
Run down JADE MAGNET ~~to~~ 500 A

Run	Date	Start	Stop	Currents at Run Start I_+	Currents at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	T0 rej. $\times 10^6$	T1 Acc. Sum.	T2 Acc Sum	T1 B+2 $E_1>6$GeV	T2 B+17 $2T\cdot E_4\cdot 2tr.$
152														
13454	26/5/83	6:28	7.34	4.28	4.26	15.0	3819	8002	995	150	3104	12091	944	5980
13455	26/5/83	7:35	8.10	3.81	3.78	13.7	1534	3017	400	55	1230	4479	335	2062
13456	26/5/83	8:08	8:47	4.05	3.95	!56.6!	2333	5671	607	344	1633	13005	418	8372
13457	"	6:40	7:37	2.86	2.17	!30.2!	3302	8002	859	264	2413	16134	575	9136
13458	"	7:37	8:03	2.39	2.31	20.4	1552	3462	404	82	1139	6496	296	3246
13459	"	8:49	9:59	4.29	4.19	60.1	3418	8002	889	534	2055	18636	574	12726
13460	"	9:59	10:35	3.42	3.33	35.6	2113	7114	549	196	1900	15978	470	10482
13461	"	12.31	13.05	4.25	4.18	30.7	2005	6308	521	160	1571	14442	531	10496
13462	"	14.05	14:57	4.12	3.86	14.5	3128	8002	815	118	2748	11221	976	3063
13463	"													
13464	"	15.04	15.50	3.52	3.28	13.3	2437	5867	635	86	2141	8299	697	2196
13465		16.08	16:53	3.03	2.81	11.1	2672	5464	695	77	2077	7839	746	1727
13466	"	17.31	18.20	3.84	3.74	18.7	2897	8002	754	140	2689	11253	845	2997
13467	"	18.20	19.06	3.43	2.81	19.2	2724	8002	709	136	2730	11322	252	2708
13468	"	19.06	19.53	3.09	2.52	13.1	2791	6937	727	95	2658	9289	225	1821
13469	"	23.02	23:58	2.55	2.36	8.4	3274	5371	852	72	2366	6948	704	1177
13470	24/05/83	02.22	02.38	4.52	4.43	7.7	896	2774	233	42	684	4120	176	2437
13471	"	03:14	03:32	3.93	3.84	23 %	1054	2462	274	62	855	4352	235	2235
13472	"	03:32	06:31	3.74	3.66	14.5	3533	8002	919	133	3077	12832	930	6077
13473	"	04:32	05:35	3.24	3.16	11.7	3773	7542	981	115	3110	11348	968	4697
13474	"	07.06	07:56	4.11	4.11	28.5	2997	8002	779	222	2542	15467	784	8906
13475	"	07.56	8.48	3.65	3.64	18.4	3059	8002	795	146	2831	14086	860	7023
13476	"	8:48	9.15	3,25	3,24	17.6	1557	4066	405	71	1442	6936	460	3360
13477	"	10:37	11:29	4.69	3.93	18.4	3101	8002	807	148	2800	14060	894	7623
13478	"	11:29	12:25	4.18	3.48	16.0	3324	8002	865	139	2971	13294	925	6747
13479	"	12:25	13:24	3.70	3.05	14.6	3507	8002	911	133	3009	13048	927	6159
13480	"	13:24	13:31	3.28	2.68	15.9	370	831	96	15	316	1361	86	656
13481/3	TOF CALIBRATION RUN													
13483	"	17:18	17:24	463	4.64	17.6	271	670	70.7	12.4	219	1209	55	711
13484	"	18:32	19:33	4.17	4.83	14.1	3552	8002	923	129	2847	13041	840	6644
13485	"	19.34	20;45	4.13	4.18	14.4	3970	8002	1032	178	3141	12421	935	5969
13486	"	20:50	21:34	3.44	3.46	10.2	2625	5027	683	68	2108	13481	644	9652
13487	"	23:02	23:26	0.96	4.05	4.8	1397	4275	363	128	869	11303	280	8747
13488	30/5/83	1:02	2:01	4.62	4.58	14.4	3531	8002	919	133	3069	12181	957	6081
13489	"	2:01	3:06	4.02	3.98	12.6	3897	8002	1014	127	3236	12156	1046	5596

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Bhabha Exp.	IBM Tape	BP [V]	T2 rej. ev. Fract. [%]	Bhabha Σ	MH	E_b	Remarks
153												
ON	ON	ON	2.61	7.75	46.98	IBM	1.8	64	66	1	20.255	
ON	ON	ON	2.33	2.94	49.92	IBM	1.7	65	25	1	20.255	
4-	4-	4-	1.29	3.05		IBM	2.0	73	26	0	20.25-	[redacted] problems with TOF for T1, T2 & T3 problems, v. noisy beam!
ON	ON	ON	.94	3.10	7.10	IBM	1.5	69	28	0	20.270	Very energy!
"	"	"	0.90	1.18	4.28	"	?	68	10	1	"	beams dumped
"	"	"	1.25	4.35	8.63	"	2.3	72	37	2	"	
"	"	"	1.54	2.23	10.86	"	1.9	72	19	1	"	beams dumped
"	"	"	1.78	2.12	12.98	"	TOF 2.5	72	18	0	"	beams lost
"	"	"	2.52	7.41	20.39	"	TOF 2.3	54	63	3	"	LG4 threshold = 2.0 GeV
							1.9					Run Summary Lost
"	"	"	1.84	4.588	25.27	"	1.8	60	50	0	"	
"	"	"	1.40	2.94	28.23	FII 210	1.7	61	25	2	"	Beams dumped
"	"	"	1.76	4.23	32.46	IBM	2.3	62	38	0	"	
"	"	"	1.35	3.65	36.11	"	1.9	63	39	1	"	
"	"	"	1.78	3.06	39.17	"	1.85	61	36	2	"	Beams dumped
"	"	"	1.50	3.89	3.89 / 5.77	"	1.50	61	39	2	20.285	
"	"	"	2.38	1.88	[illegible]	"	2.4	69 / 71	19	0	"	BP HIGH → DANGEROUS JETC CURRENT. LG4 Threshold = 1.54 GeV.
"	"	"	2.58	2.36	8.13	"	2.2	66	24	0	"	
"	"	"	2.25	7.19	15.32	"	1.8	65	80	3	"	
"	"	"	1.80	7.27	23.09	"	1.65	64	76	4	"	
"	"	"	1.91	5.54	28.63	"	2.4	68	47	0	"	
"	"	"	1.81	6.13	34.76	"	1.8	67	52	0	"	
"	"	"	1.47	2.71	37.47	"	1.75	66	23	0	"	Beams dumped
"	"	"	2.77	9.08	9.08	IBM	2.2	69	77	1	20.300	
"	"	"	2.20	6.49	15.57	"	1.9	66	55	2	"	
"	"	"	1.72	3.77	19.34	"	1.7	65	32	2	"	
"	"	"	1.37	0.77	20.05	"	1.6	66	6	1	"	Beams dumped
												WRONG ENERGY, due to ramping error
"	"	OFF	3.41	0.93	NOT COUNTED WRONG ENERGY	IBM	2.3				? ?	Beams dumped, wrong energy.
"	"	off	3.63	10.15	30.20 / 39.59 / 40.15	"	2.7	66	86	7	"	
"	"	off	2.51	3.84		"	1.8	65	80	2	"	
"	"	off	2.04	5.66	45.25	"	1.6	64	48	0	"	Beams dumped.
"	"	off	1.06	1.83	47.14	"	1.3	13	16	0	"	
ON	ON	ON	3.07	8.27	8.27	IBM	2.2	64	70	3	20.315	
"	"	"	2.29	10.40	18.67	"	1.8	65	88	0	"	

Run	Date	Start	Stop	at Run Start: It	I-	D.T. (%)	Time (sec)	Records out	All x10^6	To reg. x10^6	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_A > 66eV	T2 B:1 17 2T · E_A · 2tr.

27/5/1983

0^00 Naroska & Kobayashi

There is a short in the power supply for the main Petra magnets. People are still trying to locate it.

3.30 The short was located. It is behind a lot of shielding in West hall. It will have to be ~~run down to~~ repaired in the morning. We run magnet to 0 A and go home.

8^00 Hedgcock & Warming on shift

ask PKR for a status: they are moving shielding blocks in the West hall
no time estimate, looks like no beams today

10^45 restart 11^00 perhaps

10^00 Heuer and Riesberg power up the magnet and start some calibration measurement

12^45 Switch on HV: Background too high: Optimisation.

12^?? Switch off HV requested

13^45 "NOCH EIN ERDSCHLUSS" → another short → another break

17^15 PKR says: experts are searching for the short, not yet localised, but it is the same circuit MAGNET TO 300A

16.00 Nozaki & Weber on shift

Still break.

Inner detector on call - A Wagner until 1800 the H.-H. Hellabrand (world famous Footballer)

7.30 Thermo-couples of PETRA-Magnet-System had leakage currents to ground. K-people fixed it. PKR thinks there could be luminority ~ 1 hour from now

7.47 PKR tried to run up magnet, but got the same trouble as before. So K-people are back in tunnel, trying to locate the ground loop.

23.43 Cooling system of the cavity did not work PETRA Magnet is off.

28.5.83 0^00 Zachara + Heuer

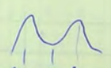
Injection starts

4^30 Beams in the machine! But background too high: 5-10V

4^50 BP: 10V, all others can measure. They try now an orbit correction (= PKR)

5^00 Orbit correction helped a lot: 2.5V now

5^10 BP: 2V, dead time 60%(!), mainly beam gas evts

5^30 Several problems: dead time 50% (z-vertex looks like )

TOF 79 missing
Trigger 3 several inputs missing

Run	Date	Start	Stop	ON/OFF MIP	ON/OFF TOF	<L> x10^30	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

Exchange one LeCroy TDC → TOF 79 ok, but now TOF Mean TDC II (37) missing
Transfer Error at Run Stop: disc transfer error at the Panel
I don't like to restart an experiment at 5^30 !!

6^30 beam increased to 20.270 Gev
Still huge dead time (60%), all indications are similar to the problems 1 week ago. Beate Naroska says, last time it was a Sender problem. PKR tells me, all Sender are on nominal values. So, wait for the new PKR shift crew which might have new ideas.
All TOF-TDCs are ok now.

6^40 dead time drops from 50 → 20 %, also BP-rate decreases. PKR turned "Cavity-Beulen"
T3-Inputs still missing since we can't reach the experts Ball or McCann, but problem seems to be in μ-Crate #11, if I interpret T3-folder correctly. Also T3 μ-digitizers are missing. We finally reach John Barnes, he will come.
μ-problem, T3-problem solved.

8^00 Finch, Meier

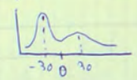
8^05 Nord 10 crashed when we tried to look at histograms
Status: Level 14, Protect Ring 3

8^10 Reform Job submitted

8^27 New Beam, but BP-meter shows 2.3 V, we asked PKR for some optimization → no change, since the Background is stable we switched on

Dead Time at Run Start: 70% !
We phoned the other experiments:
HARJ: normal conditions (eine besonders ruhige Füllung)
TASSO: bad conditions (50% D.T.), but they are running
CELLO: very good conditions (D.T. < 5% !!)

8:56 Our D.T. is still 70%, PKR promised to optimize → pause Run, IO off

9.17 D.T. after optimization: 60%, BP-meter shows 1.8V
z-vertex still looks like: 

9.33 61% of all Triggers are from T2, Bit 17
We complained at PKR again. They said it is probably not a 'Senderproblem' because HARJ-3 and CELLO have good conditions. To check the 'Senders' would need access of about 4h (according to Mr. Hoeme).
So we continue running with high D.T. (~ 55% now)

Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_a > 66 GeV	T2 B:1 17 ΣT_i E_a : 2tr.

9:52 It seems that the D.T. does not depend very strongly on the BP-rate. From the start of this fill the BP-rate went down from 2.3V to 1.7V whereas the D.T. has still the same value of ~60%. This means that it is very difficult for the PETRA operators to see wether their operations are successfull.

10.00 NSO analysis partly switched off → D.T. down to ~ 30%

NSO analysis:		
	Z-vertex	off
	Patt.-Recogn.	off
	Muon-Filter	off
	Histograms	10%

10.34 Muon Digitizers missing: 31, 54, 77, 78, 95, 99, 135, 159

10.45 Run 13460 stopped. Bartel is now at PKR. They will optimize the beams with the present fill.

11.37 Felst, Naroska, Bartel now active! We converted the BP-meter into a TOF-meter since our background seems to originate from particles far away from the beam axis. This was concluded because the D.T. stays at high values (~40%) even with relatively low BP-rates. We now wait for the next Filling

12.27 New Filling ready. The TOF-rate is now a completely unknown measure of the background. This causes problems with the ID since we don't know when to switch on the HT.

Switching on of ID:
As long as we have no monitor for the BP-rate it is essential to watch the chamber current on the scope during ramping of the high voltage. Push the OFF Button if the Ring 1-current becomes more than 2 mA/cell (about 8 mm on the scope)
1240 RBz

13.08 New Filling produced 30% D.T. but NSO-analysis is still switched off (z-vertex on again since it contributes only a little to the deadtime), beam lost after 6000 evts.

13 30 LG E_t & E_b threshold #4 (1.5 GeV) (DVM=1050) was raised to 2.0 GeV (DVM=1440). (from RUN 13462) S. Yamada

Run	Date	Start	Stop	ON/OFF NSO	MIP	TOF	<LL7> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

14.04 New Filling, D.T. now down to 12% probably due to increased LG-thresholds. → Histogram percentage changed back to 25%, Pattern recognition is still off.

14:30 Very bad background in endwall layer 5 muon chambers (see muon listing). Individual chamber currents ~ 4μA for chambers nearest to beam. Approx. 1 hit per event, so not much use for physics! These currents are dangerously high, and near the level where the overload safety mechanism trips. The trip level cannot be raised any further. Consequently, until the background can be reduced, I have disconnected the following chambers: 524, 525, 620, 621, 528, 529, 624, 625 (−x,−z) (−x,+z) (+x,−z) (+x,+z)
SYNAMER CONSTANTS DIGITIZERS 129, 139, 153, 163 A.B. SET AS OFF TO PREVENT CONTINUOUS 'YSFY' MESSAGES
To allow for this, set permanent enables on T3 trigger struct. groups 24.5, 25.5, 32.5, 33.5

14.40 BP-discriminators reconnected to the BP-meter

14.59 The old problem with the histogram and event-display occurred again. As soon as one hits a key on the command terminal 'Too quick! – Display busy – ...' appears → reload ZOAS (Run Summary 13463 lost) why? Just type STOP to stop the run!

15.49 IBM-Link down, IBM-operators will restart Online-Job nothing changed
IBM-error 54 Suberror 140000 → Timeout at MPX station

16.00 H. Krehbiel & H. Mills on shift

16.09 IBM link suddenly returns to life

to 19.30 Another complaint at PKR apparently helped a bit. Deadtime went to 10.7%. Matthiesen was there. He made an orbit correction. However this was at the end of a fill. Hopefully it is better at the next fill.

20.54 Petra has trouble with magnet Power supplies. Drop outs.

22.40 new fill finally up to 20.285 GeV but little beam, 2×2.6 mA.
We measure 8 V BP Signal. Background optim. in PKR.

23.00 Finally a decent signal; 7.5 V; We start. Deadtime 9.3% with high threshold as before and low beam current 2×2.5 mA.

Currently all NSO analysis is on ie Histograms 100% & Pattern Recognition Patt Rec probably yields greatest reduction in NSO time compared with anything else.

23.30 Overwhelming specific luminosity 7.7.13 E28 on display

Run	Date	Start	Stop	at Run Start: I+	at Run Start: I−	at Run Start: D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_A > 66 GeV	T2 B:1 17 2T: E_A · 2T:

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00°° 29/5/83 JUNGE & McCANN . No beams.

01:30 New fill ready. BP reads ~ 7 V. Falls to ~ 3V after 2 or 3 minutes. Then PKR say "Background optimisation". Within another 2 or 3 minutes, it's ~ 2.7 - 2.8 V. Need some more improvement still.

01:45 BP ~ 2.7 still. Complained to ~~PK~~ PKR – they say they are trying to improve the conditions, but without much success.

02:15 Since PKR are obviously not succeeding, we ask them to keep stable conditions for 10 or 15 mins while we switch on (B.P. ~ 2.4)
Several JETC cells have > 2mA in ring 1, but only (!!) about 7 out of 24.
Dead time is high ~ 40.0 %.
LG threshold 4 now back to 1.5 GeV.

02:35 Now have ~ 9 cells with ≥ 2mA in JETC R1.
Decide to switch off and ask PKR to tackle it again.
They say they will try to move the collimators in.

03:10 Now have BP ~ 2.2 V. Try to switch on again. Now get all JETC R1 currents < 2.0 mA. Then get sudden drop in BP to ~1.85V. Now have all R1 currents < 1.8 mA.
Dead time ~ 25%.

03:30 Switch off N50 pattern recognition, as per advice from Howard Wills.
It seems that N50 status doesn't change during a run. Stopped run and restarted with N50 PATREC OFF and D.T. → ~ 15% immediately.

05:00 TOF ADC 39 ill. Wire wiggling doesn't help.

06:15 New fill ready but background problems as after previous fill; BP reads ~ 5 V and ~ 3 V after 2 minutes. Background optimisation brings it down to 2.6 - 2.9 V; some more improvement needed;

06:45 BP ~ 2.5V still not stable now;

07:00 sudden fall of BP to ~ 2.3 V; we try to switch on; 5 JETC - cells have ~ 2 mA in ring 1; dead time ~ 35 %; after 2 or 3 minutes all ring 1 currents ≤ 1.9 mA ⇒ we can go on running.

07:45 D.T. remaining high ~ 30 % (with N50 PATREC still OFF)
∴ → Histograms 25 % to experiment.

Run	Date	Start	Stop	ON/OFF: N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

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8⁰⁰ Matsamura & Takeda on shift

8⁴⁰ ΣL at E_b = 20.285

Mark J	~60 nb⁻¹
Tasso	~50
CELLO	~30
JADE	~30
	170 nb⁻¹

CELLO proposed to increase the energy even though Σℒ ~ 170 nb⁻¹ < 200 nb⁻¹. We opposed to it.

9⁰⁰ CELLO ~~claimed~~ claims that Σℒ ~~is not~~ is 200 nb⁻¹ ~~now~~ now. (JADE ~ 35 nb⁻¹)
The energy will be increased in 10 minutes. ~~(New filling)~~
↳ New filling

10³⁰ New fill ready E_b = 20.300 GeV
B.P. ~ 2.2 V D.T. ~ 18 %

13³³ Short Break started. (Power Supply problem ~ 15 min.)

Camac fan unit was broken for LG-ADC (crate #6) during the short break. → exchanged with a new one.
H.T. & T.K.

16:00 Ball, Schmidt

17:11 New fill ready BP 2.6 V. Ask for background optimisation
Sums PKR can't do any better than BP 2.3V. Start run 13483

17:20 Had buried myself in looking at histograms for this run, took me ≈ 5 mins to notice there had been an ID slow-down! (despite drive lights!). STOP RUN CABLE WAS DISCONNECTED!! at trigger box.
However, we are lucky. Ball on phone to say that there was a mistake in PETRA energy ramping. (Ramped to 15 GeV then down to 12, then up to 20.3). Consequently the energy is probably wrong. All expts agree to dump the fill. Run 13483 has 670 events, some without ID, and all at the wrong energy!!
... not an auspicious start!

18:25 New fill ready. BP ~3V. Ask for further optimisation.

18:31 B.P. ~2.8V but stable. Looks like we won't get anything better, so start run 13484.
Try to start YHMON. Get normal 'YHMON now sampling' message on colour TV. YHMON lists information

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·12 E_n>66eV	T2 B·1 17 2T·E_4·2tr.	ON/OFF N50	MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

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29/5/83

(fmation FG) shows events processed incrementing normally BUT, all histograms are empty (no hits, no under- or overflow). Call Howard Mills, who concludes that it is probably software problem. He will rebuild the program, if necessary, in the near future.

19:17 No contingent left to submit "analysis" jobs.

19:33 Run 13485 started.

19:40 Beate Naroska phones. This apparent YHNON problem is because TOF mipvet in OFF following her tests runs this afternoon. Presumably this also explains why 'stop run' cable was disconnected!

20:37 'IBM error 53' — ring IBM operator. After 168 seconds, link starts working again.

20:44 Run 13485 ended. Start run 13486.

23:00 new fill

BP - 2·3 but dead time ~50%. triggers dominated by 2TF · E(4). 2TF all. (beamgas) triggers. Luminosity very low. Ring hello — they also have v. poor luminosity. Agree to dump fill soon.

23:30 hello then decide to ask for energy increase with rest of this fill.

Stop data-taking: (run 13487). D.T. still 5% $\mathcal{L} < 1 \times 10^{30}$. TOF mipvet switched back on.

30/5/83

0⁰⁰ Takeshita & Warming on shift

1⁰¹ RUN 13488 STARTED WITH NEW ENERGY 20.315GeV.

2⁰² RUN 13489 STARTED.

3¹⁵ suddenly it smells strongly like burning paper or wood, we remember having heard the noise of a short spark about a minute ago, we start searching for it but cannot localise it, after 15 minutes the air conditioning has dissipated the smoke all over the place, so we wait for what might happen next, we could not find a broken fuse either.

3⁴⁰ checked histograms, all look normal

5⁰⁰–5²⁰ COLOR TV DOWN. WE RELOADED NORD10 & REBUILD ZDAS BUT NOTHING CHANGED. — IF YCLRTV crashes rebuilding ZDAS has dissapointingly no effect! HH

RUN 13492 STARTED WITH OUT COLOR TV MONITOR. " FORTRAN RUN TIME ERROR ···· "

7⁰⁰ WE FOUND NO FORWARD MUON ENTRY IN THE HISTOGRAMS.

PREVIOUS 3¹⁵ SMALL "FIRE" WAS CAUSED AT NIM-BIN ~~OF~~ FOR FORWARD MUON DISCRIM, BECAUSE NO SIGNAL FROM DISCR.

WE CHANGED THIS POWER PACK (LACK 1, CRATE 3).

7²⁰ WE PHONED TO H. MILLS TO ~~ASK~~ FIX THE COLOR-TV TROUBLE.

7⁴³ CELLO ASKED US LUMI. THEY HAVE 50nb⁻¹, WE HAVE NOW 45nb⁻¹!

ENERGY WILL BE CHANGED AT THE NEXT FILL.

7⁵⁸ ID HV SLOWLY DOWN

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8:00 Yamada and Schmicke on shift.

8:33 Run 13500 ended. Beams dumped

9²⁰ B Naroska changed TOF ADC (slot #2) during the injection time.

9.26 Run 13502 started. New energy 20.3306eV, new filling.

11²⁵ ID. HV went down without an alarm. No alarm lamp was on. But without pushing the two "reset" buttons we couldn't switch on HV again.

11.36 Run 13503 ended and run 13504 started.

12:34 Run 13504 ended. Beams dumped.

13:06 New filling: Stat Run 13505

14¹⁰ Instantaneous dead time stayed at ~28%. trigger rate ~7Hz

The ~~highest rate~~ trigger rate came from 2TOF·LG_4·2TR.

→ LG_4 threshold was slightly raised to ~~to~~ 1.7GeV (Nominal 1.5GeV) yamada.

15⁰⁰–15²⁰ B. Naroska was at PKR to improve the beam conditions. It worked and improved the dead time by a few %.

16⁰⁰ LG_4 threshold is lowered to the normal value (1.5GeV).

16⁰⁰ Mills + Heuer ('what a formidable combination')

16²⁹ Run stopped to allow energy raise

17¹⁹ New Energy ready 20.345 GeV. Dead time rather high (23%). ID soft trips a few times. Noticed dead time was high (~23%). Turned N50 pattern recognit. off. DT improves - then IBM link collapses. Rubbish comes back - IBM number goes in all directions. Stop run & write to tape.

In meantime 10 beeps soft tripping.

IBM problems - TASSO see Save problem. PETRA values are received Ok. D. Cords investigates at IBM - our messages arrive correctly at IBM but returns pick up garbage. Herr Dells (F58) being called in.

CELLO call to say beam unstable (!!!) Beams dumped & PHR will try again

Run	Date	Start	Stop	at Run Start I+	at Run Start I-	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E>6GeV	T2 Bit 17 2T. E>2GeV
13490	30/5/83	3:07	4:20	3,48	3,44	11.2	4393	8002	1143	128	3378	11974	1068	5017
13491	"	4:57	4:59	4.75	4.74	14.5	86	202	22	3	72	305	20	157
13492	"	5:19	6:21	4,51	4,51	13.8	3747	8002	975	135	3274	12922	1102	6401
13493	"	6:23	7:07	3,88	3,87	12,4	2598	5268	676	84	2253	8217	753	3850
13494		JUNK												
13498														
13499	"	7:15	7:20	3,46	3,45	12,1	291	614	76	9	233	905	79	405
13500	"	7:23	8.33	3.40	3,39	11,4	3816	7762	1018	116	3247	11087	1036	4697
13502	"	9:25	10:27	4,43	4,48	14,2	3707	8002	965	137	3169	12278	1055	6051
13503	"	10:28	11:38	3.85	3.80	12,7	4008	8002	910	133	3321	13966	1062	16234
13504	"	11:39	12;34	3,20	3.28	10.4	3256	5925	817	88	2538	8321	785	10823
13505	"	13:06	14:03	4.82	4.83	18.4	3361	8002	876	161	2992	13064	977	7051
13506	"	14:03	14:57	4.19	4.20	16.9	3186	8002	830	141	3004	11657	986	3507 4075
13507	"	14:57	15:55	3.68	3.69	14.8	3488	8002	908	134	3136	11162	995	~~1577~~
13508	"	15:56	16:29	3.23	3.23	13.2	1991	4214	519	68	1708	6332	586	2856
13509														
13510	"	17:19	17:34	4.18	5.08	23.9	407	1044	105	25	329	1694	101	928
13511	"	17:40	18:30	3.92	4.83	19.9	1304	3458	339	67	1225	6148	433	3534
13512	"	18:49	19:33	4.43	4,50	15.1	2626	6815	684	104	2487	9515	896	3658
13513	"	19:36	20:27	3.96	4.02	13.7	3033	7348	790	108	2827	10137	920	3583
13514	"	20:30	21:29	3,50	3.54	11,7	3531	7812	919	108	2145	10473	1083	3745
13515	"	21:32	21:49	3.08	3.11	10.9	913	1973	237	25	791	2501	266	2254
13516	"	23:35	24:30	4.38	4.34	15.3	3274	8002	851	130	2804	11521	963	4517
13517	31/5/83	0:31	1:29	3.88	3.85	19.6	3452	8002	897	175	2926	11676	1022	4476
13518	"	1:30	2:29	3.43	3.41	12.9	3508	8002	911	117	3131	11344	979	3983
13519	"	2:29	2:39	3.06	3.03	14.4	550	1119	143	20.5	446	1623	139	579
13520	"	2:43	2:56	2.99	2.96	10.5	783	1582	203	21.5	614	2146	200	708
13521	"	6:12	7:09	4.22	4.27	14.3	3417	8002	888	126	2825	11595	955	4512
13522	"	7:10	8:12	3.73	3.77	12.1	3730	8002	970	125	3060	11202	977	4005
13523	"	8:12	9:15	3.29	3.31	10.8	374	7493	967	104	3020	10260	954	3118
13525	2.6.83	23:44	~~0:24~~	~~4.44~~	~~4.50~~	25.6	2195	5771	570	146	1603	9507	591	4568
13526	3.6.83	1:07	~~1:07~~ 2:07	4.57	4.29	14.2	3379	8002	879	125	2744	10539	1002	3902
13527	"	2:08	3:15	4.01	3.75	11.1	3961	8002	1030	114	3001	10636	975	3477
13528	"	3:16	3:31	3.49	3.24	9.3	914	1693	238	22.1	711	2086	225	602

Run	N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SL dt Bhabha Run	SL dt Bhabha Exp	IBM/Tape	BP (V)	T2 Rej. Ev. Fraction (%)	Bhabha B+NB	MH	E beam (GeV)	Remarks
ON	ON	ON	1,76	8,28	24,93	IBM	1.7	65	53	2	20,315	Beams dumped.
"	"	"	4.96	0.59	25.52	"	2.2	63	5	0	"	
"	"	"	2.87	11,11	36.63	"	2,1	65	94	2	"	
"	"	"	2.24	5,91	42,54	"	1,8	65	50	2	"	
"	"	"	1,95	0,71	43,25	"	1.7	62	6	0	"	
"	"	"	1,64	6,97	50,22	"	1,6	63	58	1	"	Beams dumped
"	"	"	2,67	8,87	8.87	"	2,1	65	15	3	20.350	
"	"	"	2,07	6,63	15,50	"	1,9	64	56	1	"	
"	"	"	1,45	5.44	20.94	"	1,6	63	46	0	"	Beams dumped.
"	"	"	3.23	10.87	31.81	"	2.3	66	67	5	"	
"	"	"	2.93	8.52	40.33	"	2.0	~~72~~ 62	72	2	"	← LG_4=1.7GeV at 14:10
"	"	"	2.45	8.40	48.73	"	1.9	61	71	2	"	
"	"	"	1.87	3.79	52.52	"	1.6					← LG_4=1.5GeV again 16:00
							1.5				20.345	Scrags and ok Kill
"	"	"	3.18	0,83	~~52.35~~.83	"	2.3	65	7	0	"	run stopped because ZDT link collapsed
"	"	"	2.95	3.67	~~57.02~~ 4.50	FII 197	2.3 ~~2.15~~	68	31	2	"	Beam dumped due to instability
"	"	"	3.45	8.18	12.68	FM146	2.3	60	69	1	"	← LG_4=1.75GeV from now on
"	"	"	2.90	6.28	18.96	~~HD~~ IBB	2.05	61	53	1	"	
"	"	"	2.34	7.94	26.90	HD172	1,8	60	67	1	"	
"	"	"	1.98	1.30	28.20	HD171	1.6	57	11	0	"	Beams dumped
"	"	"	3.11	7.82	36.02	IBM	2,2	60	66	3	"	
"	"	"	2.31	7.82	43.84	"	2.0	61	66	2	"	
"	"	"	1.92	5.81	~~49~~.65	"	1.8	63	49	1	"	
"	"	"	1.75	0,83	50.48	"	—	63	7	0	"	
"	"	"	1.65	1.07	1.29	"	1.6	61	9	0	20,360	Beams dumped
"	"	"	3.32	10.56	11.85	"	2.2	60	89	2	"	
"	"	"	2,56	8.54	20.39	"	2.0.	60	72	0	"	
"	"	"	2.07	7.85	28.34	"	1.7	60	67	4	"	Beams dumped
"	"	"	2.14	4.75	33.09	FM216	2.5	63	40	1	"	Beams dumped.
"	"	"	3.04	8.90	41.99	IBM	2.2	59	75	2	"	
"	"	"	2.37	7.83	49.82	"	2.0	60	64	0	"	
"	"	"	1.91	1.42	51.24	"	1.7	59	12	0	"	Beams dumped @ new energy.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E>66eV	T2 B:1 17

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18⁴⁰ E(4)-Barrel set to 1.75 GeV (DVM readout 1,26 V) on request from S. Yamada. Please leave that threshold as it is now!

18⁴⁵ New filling: dead time 15%

21⁴⁵ IBM link comes back to life ready for start of next fill.

21⁵⁰ Beams dumped

22¹⁰ 'Short Break'

23³⁵ Beams ready - run 13516 started.
At run start msg on typewriter - error in branch 2 crate 7 bits 177777/177577
According to my list there's no such crate! Hmm

From run 13516 on:
New test version of Nord-50 program. This fills four new histograms with the pickup signals that YHMON used to be used for. This is now automatically done & YHMON need not be used. The histograms appear in the standard histograms- and also under TRIGGERS and NEW-BEAM-PICKUP (displays four).
NOTE - If you reload the Nord you must answer (DIT)N50DAR when it asks for Nord-50 program. This version has been tested for several runs. If it survives the night it will be made into the default HEM

Further note - N50 analysis - Pattern recognition is OFF - everything else on.

31/05/83

0:00 Dieckmann + Minowa

0⁺³ "No Trigger" level 5 error; cured with standard procedure

8:00 Chris. + MATSUHARA

10⁵⁴ Nord-50 - The default version is now the latest. HEM

12:50 SHORT BREAK. ~ PKR say ≈ 1 Hr.

16:00 Magnet down to 5000 A

13:42 " 3000 A

Run	N50	ON/OFF MIP	TOF	LL7 ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg EV Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

31.5.83

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14:45 Magnet at 1000 Amps - restart at 16:00 Hrs.

16:00 Ball, Glasser

17:30 Magnet trip 'Vorolmeh Summenmesser'. Try hand reset - works OK. Run up by hand to ~100A then via computer back to 1000A. Check with MKK1 - they say it is OK.

21:30 'Wiederbeginn frueherstens 23:00'. Hello say serious PETRA power supply problems. Decision whether to restart tonight, or wait until tomorrow morning, will be made at 23:00. Magnet → 100A.

Endwall muon chambers (see P.157) reconnected to H.T. Sysmaster constants +T3 permanent enables modified accordingly. AB.

23:20 PKR say nothing can be done before 10:00 tomorrow morning. Power supply of PETRA dipole magnets broke.

1.6.83

0⁰⁰ Holst, Kawamoto (not shown up) !!!
switched magnet off, left telephone Nr at PKR and went home

0⁸⁰⁰ McCann + Navoska

8¹⁵ Seidel + Mahlke went into the area to prepare additional shielding in front of the μ-chambers.
Visual inspection of the present shielding does not show any obvious holes. It is hard to imagine how synchrotron radiation could be shielded better locally. Thus we have to shield the objects themselves.
W. Bartel

09³⁰ No more beam before 18⁰⁰ today.
Magnet was already at zero Amps.
We are having a holiday.

9:45 The mean temperature of the magnet increased during the off-time from 52°C to 60°C. I ask the magnet people to lower the temperature manually to 45°C Rog

14:50 Request access to install μ chamber shielding. Break interlock -z end.

16⁰⁰ Lead shield 4 mm thick installed at -z on both sides of the beampipe in front of the μ-chambers



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RUN	Date	Start	Stop	at Run Start I+	at Run Start I-	D.T (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E1>66eV	T2 Bit 17 2T. E4 2tr
13528	3/6/83	4:11	4:30	4.82	4.61	13.9	1118	2696	291	40.5	949	3647	314	1279
13530	"	4:37	5.52	4.83	4.79	16.9	3286	8002	856	128	2817	10485	960	3838
13531	"	5:52	6:57	4.24	4.21	11.1	3853	8002	1002	111	3036	10116	1044	3164
13532	"	6:57	8:12	3.68	3.64	9.0	4431	8002	1153	104	3476	9658	1145	2683
13533	"	8:12	9:03	3.16	3.12	8.1	3023	5129	787	64	2419	5869	796	1354
13534	"	11:03	12:05	5.09	5.02	12.0	3599	8002	937	113	3144	9679	1074	3223
13535	"	12:05	13:15	4.39	4.32	10.6	3940	7929	1026	109	3272	9554	1141	2979
13536	"	13.56	13:58				no	data						
13537	"	13.59	14:44	3.42	3.35	8.5	2685	4638	700	60	2035	5529	795	1348
13538	"	15.46	16:39	5.15	5.39	144	3122	8002	813	117	2997	9420	1164	3375
13539	"	16.45	17.46	4.38	4.60	12.2	3459	8002	906	109	3197	9674	1167	3373
13540	"	16.44	18.12	3.80	3.99	11.5	1535	3263	399	46	1416	3775	518	1335
13543	"	19:09	19.55	4.66	5.11	16.8	2667	6370	641	108	2260	8465	856	3470
13545	"	20.22	21;24	3.90	3.80	12.1	3684	8002	958	107	3339	9873	1222	3227
13546	"	21;24	21;34	3.38	3.73	98	532	1050	138	13	467	1283	195	374
13547	"	23;46	0:50	3.95	4.14	12.3	3592	8002	934	115	2700	10589	948	4056
13548	4/6/83	0:50	1:27	3.52	3.68	13.1	2188	4378	569	74	1744	5438	640	1830
13549	"	1:28	1:55	3.27	3.42	8.7	1630	2827	424	37	1299	3406	487	883
13550	"	1:55	2:49	3.10	3.24	8.8	3220	6237	838	74	2546	6440	894	1740
13551	"	3:45	4:04	4.34	4.47	14.8	1138	3377	296	44	934	3450	327	1366
13552	"	4:06	5:04	4.15	4.27	12.7	3498	8002	909	115	2989	10477	1074	3817
13553	"	5:05	6:12	3.65	3.75	9.8	4048	8002	1052	103	3377	9507	1230	2807
13554	"	6:13	7:05	3.17	3.25	8.5	3120	5607	812	69	2595	6392	893	1691
13555	"	8.08	8.28	4.55	4.66	13.3	1104	2562	287	38	932	3252	356	1178
13556	"	9.34	10.30	5.00	5.13	12.2	3371	8002	878	107	3108	9134	1095	2920
13557	"	10.31	11.31	3.75	4.44	11.2	3586	8002	933	105	3511	9033	1305	2837
13558	"	11.31	11.47	3.75	3.84	10.6	955	1951	248	26	880	2260	288	658
13559	"	11.53	11.57	3.58	3.66	9.3	267	528	69	6.5	236	570	75	172
13560	"	18⁰⁰	19.02	3.69	4.82	12.6	3607	8002	940	119	2886	10471	900	3649
13561	"	19⁰³	20.16	3.18	4.21	9.2	4417	8002	1149	105	3338	9587	1166	2708
13562	"	2017	20.34	2.69	3.62	9.0	987	1721	256	23	761	1960	245	505
13563	"	21¹⁵	22:10	4.16	4.26	12.9	3265	8002	850	109	2907	9242	1081	3382
13564	"	22¹⁰	23¹⁹	3.70	3.79	9.7	4082	8002	1063	103	3519	9386	1193	2843
13565	"	23¹⁹	0.05 (5.6.83)	3.20	3.27	11.7	2630	4505	685	80	2093	5123	693	1301

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N50 ON/OFF	MIP ON/OFF	TOF ON/OFF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ Tape	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
ON	ON	ON	3.53	3.09	3.09	IBM	2.5	58	26	2	20.375	beam Opt.
"	"	"	3.37	10.46	13.55	"	2.2	59	88	2	"	
"	"	"	2.57	8.32	21.87	"	2.0	58	70	3	"	
"	"	"	2.21	8.74	30.31	"	~1.8	59	71	1	"	
"	"	"	1.81	4.75	35.06	"	1.6	59	40	4	"	Beams dumped
"	"	"	4.03	14.85	49.91	IBM	2.6	57	125	5	"	
"	"	"	3.04	9.98	59.89	"	2.2	58	84	3	"	
							2.1				20.390	JDAS ERROR 64 TOFBANK length
"	"	"	~~1.99~~ 1.76	4.76	4.76	IBM	2.1	59	40	2	"	TOF TDC channel 75 : Cables I and II exchanged for this run
"	"	"	4.47	12.38	17.14	"	2.9	57	104	4	"	
"	"	"	3.35	~~9.55~~	~~28.72~~ 27.02	"	2.3	57	83	5	"	
"	"	"	2.64	~~4.52~~	31.54	"	2.1	~~58~~ 58	38	1	"	beams lost
"	"	"	2.3	6.90	38.44	"	2.5	59	58	1	"	run stopped because of DIS trouble
"	"	"	3.0	7.85	46.29	"	1.8	58	66	3	"	
"	"	"	2.41	1.07	47.36	"	1.6	60	9	0	"	Beam dumped
"	"	"	2.69	7.97	55.33	"	2.1	56	67	1	"	New fill
"	"	"	2.27	3.57	58.90	"	1.9	58	70	0	"	
"	"	"	2.27	3.21	62.11	"	1.7	61	27	0	"	
"	"	"	1.88	4.65	465	"	1.65	46	39	1	20.405	beams dumped
"	"	"	3.32	3.69	8.34	"	2.4	38	31	0	"	run stopped to cure DIS
"	"	"	2.95	9.30	17.64	"	2.3	59	78	3	"	
"	"	"	2.36	8.70	26.34	"	2.0	57	73	1	"	
"	"	"	1.91	6.08	32.42	"	1.75	58	51	0	"	beams dumped
"	"	"	3.86	4.53	36.95	"	2.4	57	38	1	20.405	Beams lost
"	"	"	3.83	10.73	47.68	"	2.4	56	90	1	"	
"	"	"	3.19	10.85	58.53	"	2.1	57	91	4	"	
"	"	"	2.78	2.74	61.27 rec	"	1.9	59	23	1	"	
"	"	"	2.48	0.6	0.6	"	1.9	59	5	0	20.420	Beams lost / ID trip
"	"	"	2.92	10.27	10.87	"	2.3	60	86	3	"	
"	"	"	2.35	10.03	20.90	"	1.9	57	84	1	"	
"	"	"	1.85	1.79	22.69	"	1.6	58	15	0	"	beams dumped
"	"	"	2.84	7.16	29.85	"	2.1	59	60	2	"	
"	"	"	2.29	7.52	37.37	"	1.9	59	63	0	"	
"	"	"	1.77	4.30	41.67	"	1.7	59	36	0	"	

Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E_n>66eV	T2 Bit 17 ΣT, E, 2tr.

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1/6/83

16⁰⁰ Chrin & Kobayashi

Message "Break – Wiederbeginn frühestens 18⁰⁰" still on TV.

18⁰⁰ They shifted time limit to 20⁰⁰.

Run 13524 to conv

~~Nord Note~~ ~~Yet another test version of Nord-50 with different Muon filter track finder. Its currently loaded but if you reload JOAS or restart it you should answer (DIT) N50DAR instead of default.~~ HEM

21:45 "Wiederbeginn ~" now at 23:00.

24.00 Dietrich & Clarke ON/~~OFF~~ shift.

2.6.83

PKR say that there will be no beam until tomorrow morning (at least 08.00).

2h30. Previous statement rescinded! PKR now say they will attempt to start up.

2/6/83

06.30 Still no success.

08.00 Warming & Skard

9.50 Beate phones and announces that it may take days before we get beam again

10.10 PETRA-TV died

10.35 PKR announces access until 1400 today

10.40 Cello phones to point out that it was PKR! who requested the access time

From now on (Run 13524) the Nord-50 performs simple track-finding in the Muon Filter and places results in N50 Summary bank. For T1 accept bit 14 (J.O. trigger) only, this information is used to decide if the event is a COSMIC or not. Any N50 version after 8306 (& including), has this feature. Actual rejection does not yet take place.
HEM

16.00 Cords & Finch on shift

23⁰⁵ Petra produces luminosity

23²⁰ background at reasonable level.

IBM gives frequent timeouts: 1) EXP Jobs on IBM restarted
2) talked to Mr Knabbe (R1)
3) Mr Delp will come in to see what the problem is

23⁴⁴ we start writing to Nord-Tape: deadtime 45% (with N50 pattern recognition off)
=> N50 analysis flags: Current analysis off } => deadtime drops to 30%
Histograms: 20% } background

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

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7⁴⁰ Minava will check whether one can increase thresholds further.

3.6.83

0⁰⁰ K. Stephens & P. Steffen on shift

0¹⁵ have made change threshold of LG-barrel to 2 GeV (old value 1.75 GeV)
[Total E(4)]

0⁵¹ Beam dumped – Ralf the current was lost.

1⁰⁷ Luminosity.

The threshold for "total E(4)" was returned to the old value (1.75 GeV) for the new fill (RUN 13526). In this time, the beam condition was improved (dead time ≈ 15%, ≈ 5 trig/sec).

Histograms looked all OK except 1D wire map shows that wire 130¹²⁹³ is "missing". We decide to leave on that Rieseberg is on at 8⁰⁰.

2⁰⁸ Run 13527

Ysfy detected error trigger 3 input missing (Hist look OK).

3⁵³ Beam dumped

4⁴ Luminosity and energy 20.375

8⁰⁰ T. Nozaki and H. Rieseberg on shift

8²⁰ We have good background and luminosity conditions:
Trigger 2 bit 17 (2 TOF * E(4) * 2 trad all) is 20% lower than "normal";
At I⁺ = 3.05 and I⁻ = 3.00 we have still a gated luminosity of 2.0 * 10³⁰

8⁴⁰ Two holes in the TOF MEAN TDC I histogram: Channels 33+1, 74+1 (not same counter)
First action: Clean filter of TDC. Beate Naroska thinks that it is a program error. Error comes and goes since a few days! She puts counters 34 L+R and 33 (75) L+R on YHMON.

9⁰³ Stop for refill (leak of light)
└ I don't think its software! HEM
Note: G. Weber thinks that we will find top today. 5Z's and 35 W's at CERN (55-140 GeV) (81±2 GeV)

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	at Run Start D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 F1>66eV	T2 B:1 17

ON/OFF N50	MIP	TOF	∫L dt ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

3.6.83

10⁰⁵ After having tried twice to accelerate beams of 5.5 mA each, the sign SHORT BREAK shows up

10¹⁵ Injection starts again

10⁵⁸ New filling 5.04 + 5.12 mA , BP = 2.6 V

11⁰³ Run 13534 started. Currents in R1 and R2 of ID between 1.7 and 2.5 μA → unhealthy condition
Deadtime 13%
L ≈ 4.4 × 10³⁰

11²⁵ TOF MEAN TDC I Channel 34 has cured by itself
Channel 75 still low. YHMON Histogr. TDC 33 + (Right)
Input pulse of TDC is ok, also input to discriminator (may be a little noisy)



A. Ball checks muon system.

12⁰⁵ ∫Ldt (Run) = 14.85 nb⁻¹ !

13¹³ HT down for energy increase. Next point 20.390

13⁴⁰ On request of Beate Naroska I exchange the black and the white cable channel 75 TOF MEAN TDC for the next run
No ramping of energy yet. SHORT BREAK appears. Beams still good.

13.56 New beam energy is ready.
Run 13536 is ended automatically by the JDAS ERROR 6V TOF BARL light.

13⁵⁹ RUN 13537 starts ~~smoothly~~ without error.

14³⁵ Call from CELLO, Mr. Kriesling : PKR wants the dance to make the next fill with 6 mA / beam. We agree to this test, though it is nearly guaranteed that we can not switch on the ID. Test should not take long.

14⁴⁴ Stops for beam dumps

TOF TDC 33 (Right side: channel 75): May be that the TDC is faulty, ~~but more likely there is a light leak in the counter~~. Cables I (red) and II (white) changed back. → missing bit in TDC (R)

15²⁵ Start acceleration of two beams of 5.6 mA each

15⁴⁰ New filling 5.2 5.4 mA

15⁴⁵ BP rate 2.8 V, nevertheless ID on
L = 4.7 · 10³ !
B.N. phones from PKR. Our Background rate is at minimum. Still 2.8 Volts

ID. 220 Synchrotron light hits per event. Ring 1 and Ring 2 : 1.9 to 2.9 μA / cell

3.6.83

16.00 Kawamoto, Weber on shift

Nord-50 histogram percentage set to 20% - Didn't have much effect HER
16.40 difficulty printing event summary : read + off by hand : 'Loader is communicating'
" cured by switching off and on power of printer.
18.12 Beams lost because PKR tried to minimize background for CELLO
Naroska comes to change TDC in TOF system ; assisted by Krehbiel she finds defect Delay box, which is damaged as well.
19.12 runs 13543 I.D. trip due to beam probe hitting of PKR ; TV-monitor still says "background optimization" at 19.18 : "limit run".
19.56 runs 13543 stopped because of DL8 trouble ; called Matsinos to get instruction on how to replace it. new run started, after this operation at 20.22. Wire # 48-55
21.34 beams dumped because of high background of CELLO.
23.46 New fill : CELLO has now better running conditions

4.6.83 0⁰⁰ Warning + Heuer

1:20 histograms closed OK
1:25 No trigger → Stop Run, start new one : OK
1:57 Energy ramped without announcing via TV-screen ⇒ I complain
2:30 I notice quite some illegal hit #'s and try to find the faulty DL8 with the help of the event display. But when the first event with a fault appear, the screen gets filled with the fault message and there is no key to stop the p/o end of the message. So I turn the display to local. On the other display I trace the fault via list event to run # 1439.
In 10 min. we will have the beams dumped, so I wait with the repair.
2:50 We restart the Nord since we are not able to stop the error message p/o on the display in any other way.
4:00 Still illegal hit dr f. Rule DL8 ~~conn~~ CAMAC connection → now it looks ok.
6:45 Cello announces new fill for 7.00
8.00 ~~New~~ Clarke and Krehbiel on Shift.
8.08 New fill ready. Run started. Background not stable, sometimes jumping upwards.
8.25 Background high & fluctuating BP ~ 6.0. ID Trip because of that. Script "Background Optimierung" appears
We keep the run paused and the ID off until improvements. Call to PETRA revealed : a fundamental problem, common to all Experiments, which they don't understand, but investigate.
8.52. Suddenly "short break" then beams lost. Cause : A correction coil P.S. ~~was~~ bad tripped. Switching it on again caused the beams to blow up. We run down HV for new injection.
No ID Alarm.

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E_e>66eV	T2 B:17 ϑ_{Ti} E_e>2tr.	ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks

8.53 New fill ready. HV-up: LG-HV tkam. About 5 power supplies had tripped for overcurrent. Switching off-on helped. Maybe the lost beam completely gumped into our readyglass.
11.50 New energy during the filling at request of CELLO (Coord.) → ~~20.41~~ 20.420
11.58 Beam Lost, ID trip. "Short break" 3 Transmitter tripped + one "Netzgerät". K-People busy.

16⁰⁰ R.G. Glasser and H. Rieseberg on shift

PKR just accelerated two beams of $I^+ = 4.5$ and $I^- = 5.4$ mA.
16⁴⁰ Beams lost at full energy (20.420 GeV)
17³⁵ New beams accelerated

e⁻-Pickup [Kado's right hand bar] has now a 6 dB-attn in front to avoid yellow lamp at start of fill. (former: 3 dB)

18⁰⁰ New filling ready with $I^+ = 3.69$, $I^- = 4.82$, BP = 2.3V → I^+ is low.
Run 13560 started. Dead time ≈ 30%

After some time dead time is down to 13% and histograms about normal
ID: 150 counts synchrotron light / event, Ring 1 and 2: 1.6 to 2.2 μA/cell.
gated luminosity 3.1×10^{30}

~~Remark: R.G. scans the events of BEK, FASTSEL, DS 282 with data from Runs # 13540, 13543~~

20⁰⁰ Standard histograms o2 in Run 13561
20³⁴ Stop Run 13562 for beam dumps
21¹⁰ New fill ready. Run 13563 started
23³⁵ No triggers. Reset at Knobbel box
23⁴⁵ new fill at 2700 (Cello coordinator)

5/6/83
0:00 Murphy + Bowdery on shift
02.59 New energy - 20.435 GeV
04.00 New fill soon as L is rather low now. ($1.58 \times 10^{30}\,cm^{-2}s^{-1}$)
8:00 Takeshita, Meier
9:40 NEW FILL – BACKGROUND HIGH (BP~2.5V)
10:50 IBM-Transfer-Error 000054 Suberror 100000 Err. Cnt. 00002
Restart of IBM-Link impossible. We asked the IBM operator about the status of the Online Job. He dropped down the receiver.

→ Run 13575 written to tape. TASSO's IBM-Link is working
11.16 IBM-error message disappears from TV-screen.
11.30 IBM-error is still there. The error message is coming and going. We are still writing to tape
11:36 Beam Energy changed to be 20.450 GeV.
11:41 Background conditions almost unchanged compared to the ~~three~~ start of this Filling (currents: 5.1 mA → 3.8 mA, BP: 2.4V → 2.3V)
12.20 We phoned Mr. Delfs from F58. He will come to repair the IBM link.
13.43 PKR + Bartel did beam optimization at the end of the present Filling. The position of the beam in the machine should be much better for the next go.
13:50 Mr. Delfs came and changed "Driver Unit", and we tested Run 13579.
14:00 SHORT BREAK STARTED Phone 04101/45840.
15:55 IBM ERROR 53 (TIME OUT USER CHANNEL)
16⁰⁰-24⁰⁰ Mean + Petra on shift
16⁰⁰ Petra vacuum leak
21⁰⁰ Mr. Delfs from F58 repaired the IBM link again
22²⁰ Synch. has problems we run down the magnets
23²⁰ Injection

6.6.83
0:00 Spitzer, Kawamoto (RUN 13581)
1:28 I.D tripped without alarm. / Run Pause ⊕ HV on again ⊕ RUN CONTINUE
2:10 " " (anode current) / " " "
5:38 During background optimization at the beginning of the new fill the energy has changed from 20.450 to 20.469. We requested Cello to call PKR. We called them back after a while when the energy reading was again 20.450, they told us, the energy has been corrected by changing the frequency, without touching the magnets so we left the run (# 13584).
08.00 Zacharov & Clarke
08.54 IBM Error 54 Suberror 140000 Err Cnt 2
Phoned IBM operator – system down for 5 minutes.
Run terminated by non-shift member pushing wrong button

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_1 > 66$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2t_r$
13566	5/6/83	0:54	1:40	4.14	4.50	17.3	2753	8002	716	124	2316	8542	809	3178
13567	"	1:41	2:48	3.75	4.08	9.4	4027	7667	1047	99	3444	8933	1253	2450
13568	"	2:59	4:13	3.17	3.46	8.2	4410	8002	1147	94	4169	8253	1218	1929
13569	"	4:14	4:15	2.74	2.99	15.9	73	127	189	3	60	125	16	33
13570	"	5:38	6:43	4.50	4.64	10.9	3759	8002	978	107	3303	9322	1150	2702
13571	"	6:45	7:54	3.88	4.00	9.6	4126	8002	1074	103	3487	9184	1182	2587
13572	"	7:54	9:00	3.34	3.44	8.2	3915	6711	1019	84	3211	7653	1106	1966
13573	"	9:46	10:36	5.05	5.22	16.5	2945	8002	766	126	2763	10209	946	4064
13574	"	10:36	11:05	4.44	4.58	14.7	1417	3496	368	54	1358	4216	447	1463
13575	"	11:13	11:38	4.05	4.19	11.5	1534	3449	399	46	1425	4096	461	1245
13576	"	11:41	12:08	3.79	3.91	12.1	1577	3608	410	50	1431	4391	467	1286
13577	"	12.12	13.17	3.53	3.66	10.1	3901	8002	1014	102	3472	9398	1103	2516
13578	"	13.21	13.32	3.04	3.14	9.2	624	1210	162	15	556	1363	197	366
13579				Dump to test IBM link										
13580														
13581	6/6/83	0:59	2:04	4.23	4.88	10.9	3765	8002	978	106	3054	9633	765	2356
13582	"	2:04	3:30	3.64	4.19	7.6	4899	8002	1275	96	3713	8882	1152	1897
13583	"	3:30	4:51	3.02	3.48	6.5	4843	7175	1259	82	3688	7576	1101	1418
13584	"	5:45	6:44	4.72	4.54	11.9	3434	8002	893	106	3271	9127	993	2356
13585	"	6:45	8:01	4.08	4.39	7.9	4549	8002	1184	93	4020	8272	1174	1800
13586	"	8.08	8.39	3.38	3.22	6.8	1802	2727	469	32	1466	2745	459	2119
13587	"	8.44	8.56	3.14	3.00	7.4	693	1155	180	13	562	1231	162	224
13588	"	9.08	10.04	2.99	2.85	6.4	3309	4928	862	54	2572	4939	782	950
13589	"	16:19	16.24	5.04	5.32	25.6	312	908	81	21	244	1033	57	402
13590				No D			316							
13591	"	16.43	16:56	4.76	5.90	12.2		1609	186	23	569	1977	105	654
13592	"	16.56	17.56	4.59	4.86	12.5	3459	8002	900	112	2865	9189	804	3131
13593	"	17.56	18:53	3.88	4.22 3.71	13.2	3390	8002	882	116	2687	9317	821	3426
13594	"	18:54	19:55	3.40	3.73	11.3	3666	8002	954	108	2959	9264	887	3811
13595	"	19:56	20:07	3.00	3.30	10.5	635	1385	165	17	521	1502	136	525
13596	"	23.30	0:26	4.85	4.97	22.7	3100	8002	806	183	2316	10640	613	4593
13597	7/6/83	00.27	1.01	4.20	4.33	15.8	1964	4896	511	81	1661	6520	482	2778
13599	"	3:30	3:34	3.42	3.93	9.3	221	425	57	5.6	165	511	38	132
13600		4.30	5.31	5.02	4.93	10.9	3301	6529	857	92	2695	7852	712	2438

N50	MIP	TOF	ON/OFF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Bhabha Run	$\int L dt$ Bhabha Exp	IBM/Tape	BP [V]	T_2 Rej. Ev. Fract. [%]	Bhabha Σ	MH	E_{beam}	Remarks
ON	ON	ON		2.63	5.73	47.40	IBM	1.85	59	48	2	20.420	
"	"	"		2.40	9.07	56.47	"	1.8	59	76	2	"	Stop run to increase energy
"	"	"		1.71	6.93	6.93	"	?	59	58	1	20.435	New energy
"	"	"		1.06	0.00	6.93	"	1.5	62	0	0	"	
"	"	"		3.55	11.95	18.88	"	1.9	57	100	3	"	
"	"	"		2.56	8.73	27.61	"	1.8	57	73	1	"	
"	"	"		1.94	7.41	35.02	"	1.7	59	62	0	"	beams dumped
"	"	"		3.65	9.56	44.58	"	2.4	58	80	1	"	
"	"	"		3.18	3.83	48.41	ZBM	2.4	57	32	3-1cosm	"	
"	"	"		2.91	4.06	52.47	Fill 207 Tape	2.2	58	34	0	"	
"	"	"		2.39	2.51	2.51	Fill 207 Tape	2.2	59	21	0	20.450	
"	"	"		2.18	6.58	9.09	Fill 211 Tape	1.7	59	55	2	"	
"	"	"		1.81	0.72	9.81	Fill 211 Tape	1.5	61	6	0	"	
								2.5					
"	"	"		3.47	12.69	22.50	IBM	2.5	60	106	5	"	
"	"	"		2.52	11.25	33.75	"	1.85	58	94	5	"	
"	"	"		1.80	6.23	39.98	"	1.6	60	52	3	"	beam - dumped
"	"	"		3.21	8.74	48.72	"	2.4	60	77	4	"	
"	"	"		2.65	11.49	60.21	"	1.9	58	94	4	"	
"	"	"		1.93	3.35	63.56	"	1.6	60	28	1	"	
"	"	"		1.83	1.68	1.68	"	1.5	59	14	1	20.465	New energy
"	"	"		1.6	5.75	7.43	"	1.5	59	48	1	"	Beams dumped
"	"	"		4.21	0.84	8.27	"	2.6	60	7	0	"	
							F						
"	"	"		4.40	3.36	11.63	F11/112	2.5	60	28	0	"	stopped to try IBM link.
"	"	"		3.78	12.83	24.46	IBM	2.4	58	107	1	"	
"	"	"		2.61	7.91	32.37	"	2.3	59	66	1	"	
"	"	"		1.97	5.51	37.88	"	2.0	59	46	2	"	
"	"	"		1.71	1.09	38.97	"	1.8	58	9	0	"	Beams lost, ID trip.
"	"	"		3.78	10.19	49.16	"	2.4	60	95	6	"	
"	"	"		3.31	6.59	55.75	"	2.3	60	55	0	"	Beams lost
"	"	"		3.54	.48	0.48	"	2.1	57	4	1	20.480	Beams lost (sender ausfall)
"	"	"		3.47	12.95	13.33	"	2.7	57	107	1	"	Beams lost

Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (secs)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 Fn >66eV	T2 B:t 17 Ti Fn :2tr	ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

16⁰⁰ Stephen & Weber on shift.

16¹⁸ IBM Error 53 Tel 3219... try to restart Cmk – Run Paused
" 54 3818 IBM Waiting for Clk

16³⁰ Run Stopped.
Cannot restart Error 54
Run 13591 to tape F11/112
16⁵⁶ 13592 to IBM
17¹⁰ Look at beam gas events : 700–900 ID-hits/event
Bartel is in PKR trying to get background reduced.
I.D. tripp due to high B.P. – current at 17.18; paused and reset I.D. → no alarm.

18¹⁵ Histograms visually checked.

19⁰⁵ YSPY Trig 3 input missing. S7 28 GP2

20.15 Shortly after I.D. trip due to beam loss we notice magnet trip. Reset: 7499A (after take run (Run 13596)
Beam loss due to PETRA magnet trips and Klystron problems.
Magnet unstable. Try to reset, if does not go above 7250A. Try to reset again. Find
21.45 light "servo limit" on controll panel on. Push reset button. Magnet trips. Try to
Call K-people, nobody answers the phone. PKR tells them to call us.
21.52 PKR tells us that K-people on their crag to us. They arrive.
22.31 MAGNET current 7500A. ("Servo limit was at slightly higher than 7500A. Should be o.k. now")
23.06 ~~Run fill B.P. – counter too high ≥35 → lower heliport to get more separation for PKR:~~
~~9.50 → 8.10~~, Turned the wrong heliport, put back to 9.50, set right hand heliport to 2.0
then gives PKR enough sensitivity. P.P still ≥ 35, too ~~long~~ high!
23.35 I.D. trip. pause + reset. ("jet ch. high current")
During run 13596 quite often " " " , but B.P. "only" 2.3
23.50 I.D. trip. as before; reset! PKR says ~~this is due to~~ shows B.P. fluctuations, are
not correlated with any obvious operation of ~~these~~ controlls, they occur when
PETRA runs all by itself.
Right hand heliport (for PKR) set at 2.5 ✓

0:00 7/6/93 H. Mills plus missing man onshift ← replaced by 50% C. Weber & W. Bartel

~0:20 changed histogram % to 20%. dead time fell abit.
0.50 I.D. trip, pause + reset. ("jet ch. high current")
1.00 Beams lost
1.45 New fill at new Energy: 20.480 GeV; BP = 10V, heliport (PKR) = 0.00, Det ind. at PKR still saturated. Decide take out 75% of the plugs at panel.

2.15 Beams ready since ¼ hr but trouble turning ID on (seems solved) but get no triggers at all after the pedestal run. Removing ID stop cable has no effect. seems to be a total veto somewhere.
Problem seems to be with bunch missing signal although all bunches are there.
TASSO & Mark-J see no problem Herr Krehbiel is comming in.
CELLO say its moved 30nsec for them

Herr Krehbiel arrives and confirms the movement (its early by 20–30ns)

3²⁷ The bunch marker is retimed and a run #13599 starts
3⁴⁵ I send Cos Weber home – Wolf Bartel is on his way here.

↳ Effect was: The Bunch marker (our prepulse) had moved ca 25 nsec towards late.
(This has been observed for CELLO and TASSO, but not the others.) – Effects here were:
No output from Kado Box, & since the output is gated with an internal gate generator
triggered by the bunch marker.)*. We could readjust it with the control "Delay" but then the
beams were dumped. ~~It~~ With the new fill things ~~should be~~ were as they were all the days.
Disquieting! Mark-J don't use the PETRA signals to trigger!

4⁰⁰ W. Bartel replacing R. Reinke who did not turn up
4¹⁵ IBM terminal is broken somebody should inform R1
4²⁵ start new run 22% dead time

4³² Only 11%.

The Dimmers need repairing – inform Herr Krehbiel.
(but let him sleep first)

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.it 2 E1>66eV	T2 B.it 17 2T·E4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
178																											179
13601	7/6/83	6:46	8:17	3.71	4.27	7.4	5253	8002	1767	101	3516	9181	879	2088	ON	ON	ON	2.69	13.81	27.14	IBM	?	58	115	5	20.480	
13602	"	8:18	9:05	2.90	3.42	6.7	2801	3876	779	49	1876	4467	496	850	"	"	"	1.97	5.28	12.42	"	1.8	60	44	—	"	
13603	"	10:23	11:33	4.63	4.89	10.0	4226	8002	1120	110	3122	9573	805	2699	"	"	"	3.90	14.77	47.19	"	2.7	58	123	7	"	
13604	"	11:34	12:32	3.93	4.15	8.8	3502	6262	911	80	2783	7172	775	1808	"	"	"	3.13	10.69	57.88	"	2.25	~~128~~ 57	~~48~~ 89	2	"	Run stopped to change energy
13605	"	12:37	14:01	3.42	3.61	7.6	5038	8002	1711	120	3713	8986	989	2087	"	"	"	2.18	8.90	8.90	"	2.25	58	74	6	20.495	
13606	"	14:01	14:20	2.88	3.04	7.2	1100	1706	286	21	807	1881	196	428	"	"	"	1.85	1.44	10.34	"	1.25	58	12	0	"	Beams dumped
13607	"	14:56	15:20	5.03	5.18	13.6	1400	3381	364	49	1168	4153	329	1603	"	"	"	4.37	6.73	17.07	"	2.7	57	56	1	"	Beams lost + ID alarm
13608	"	23.11	23.57	3.95	4.50	27.3	2416	6969	628	171	1552	8238	390	3615	"	"	"	2.39	5.78	22.85	IBM	2.4	61	30	0	"	
13609	8.6.83	2.12	3.12	5.45	5.77	12.4	3573	8002	929	116	2931	9865	781	3497	"	"	"	4.79	14.55	37.4	"	3.0	58	121	4	"	
13610	"	3.12	4.24	4.65	4.94	8.2	4273	7172	1111	91	3744	8348	857	2034	"	"	"	3.00	12.51	49.91	"	2.3	58	104	3	"	Beams dumped
13611	"	4.50	5.02	5.46	5.40	11.6	722	1699	188	22	649	1888	175	629	"	"	"	5.87	4.09	54.00	"	2.6	54	34	0	"	
13613	"	5.07	5.17	5.22	5.15	12.0	606	1325	158	19	497	1635	155	536	"	"	"	4.21	2.89	56.89	Tape F11 173	2.6	58	24	0	"	
13614	"	5.18	6.23	5.07	5.00	10.6	3904	8002	1016	108	3237	9529	878	2816	"	"	"	3.70	12.87	69.78	IBM	2.6	58	107	3	"	
13615	"	6.24	6.42	4.31	4.24	9.6	1078	2078	287	27	875	2382	235	669	"	"	"	3.25	2.65	72.43	IBM	2.2	58	22	1	"	
13616	"	6.43	7.58	4.12	4.05	8.8	4469	8002	1164	102	3468	9250	907	2319	"	"	"	2.72	9.63	9.63	IBM	2.1	58	80	2	20.510	
13617	"	7.58	8.30	3.48	3.41	8.1	1883	3130	490	39	1380	3620	362	829	"	"	"	2.04	3.49	13.12	"	2.0	58	29	0	"	Beams lost
13618	"	10.56	11.05	5.04	5.47	12.3	463	1109	120	14	380	~~1210~~	86	408	"	"	"	4.73	1.45	14.57	"	2.9	55	12	2	"	Beams lost
13619	"	11.39	12:53	5.09	5.28	9.5	4368	8002	1139	108	3265	9372	874	2625	"	"	"	3.74	14.69	29.26	"	2.4	57	122	3	"	
13620	"				Only 5		pedestal	events																			Beams lost
13621	"	17:22	17:44	4.83	5.28	10.1	1339	2689	349	35	1045	3049	284	892	"	"	"	4.86	6.02	35.28	"	2.5	57	50	1	"	
13622	"	17:58	18:20	2.86	3.43	35.9	224	637	37	20	133	1183	42	651	"	"	"	0.6	0.24	35.52	"	1.6	63	2	1	"	stopped because of transmitter noise
13626 (23 - 25 June)	"	21:20	21:29	4.61	4.71	9.5	488	1534	127	12	379	1062	118	288	"	OFF	OFF	4.47	2.17	37.69	"	2.6	0	18	0	"	switched Mirrors off !
13628 (27 June)	"	21 33	22 48	4.46	4.56	8.0	4489	8002	1768	93	3532	8006	1069	2259	"	ON	"	3.64	13.85	51.54	"	2.4	58	115	4	"	MF-71 on again, ASP shut off!
13629	"	22 49	23 23	3.72	3.81	7.4	2011	3353	522	38	1568	3788	439	787	"	"	"	2.69	4.58	56.12	"	1.8	59	38	0	"	
13630	"	23 26	0 22	3.43	3.52	6.9	3378	5448	878	61	2663	5830	775	1277	"	"	"	2.21	8.08	8.08	"	1.7	58	67	2	20.525	beams lost
13631	9.6.83	1 23	2:32	4.53	4.52	8.6	3916	7517	1019	88	3213	8331	1008	2218	"	"	"	3.74	12.06	20.14	"	2.4	57	100	4	"	beams lost ID. trip
13632	"	3.29	3.42	4.82	5.01	8.8	742	1373	193	17	453	1671	175	493	"	"	"	—	2.89	23.03	"	2.4	57	24	0	"	Tagging system (-z) side down. EHT
13633	"	3.42	3.58	4.67	4.51	9.3	802	1481	209	19	537	1791	205	511	"	"	"	0.54	3.86	26.89	"	2.2	56 ~~32~~	32	0	"	problem. Otherwise good data
13634	"	3.58	4.39	4.67	~~4.49~~ 4.47	8.8	2374 4484	4569	618	55	2019	4969	655	1361	"	"	"	3.26	9.41	36.30	"	2.1	58	78	0	"	Tagging channel & MFR 61 down until next run missing
13635	"	4.39	5.57	4.26	4.08	7.5	~~17750~~	8083	1219	91	3798	8711	1173	2123	"	"	"	2.56	9.89	46.19	"	1.9	~~32~~ 58	82	2	"	Beams Dumped
13636	"	7.14	~~4.90~~	4.87	4.90	9.4	4645	9514	1209	114	4319	10533	1263	3174	ON	ON	OFF	3.51	13.87	60.06	"	2.4	58	115	2	"	
13637	"	8:43	9.53	4.01	4.06	8.2	4352	8002	1133	93	3822	8656	1037	2219	ON	ON	OFF	2.58	11.47	11.47	"	2.0	~~48~~ ~~47~~ 58	95	2	20.540	
13638	"	9.55	10 25	3.40	3.44	7.3	1650	2801	429	31	1390	2988	401	3442	ON	ON	OFF	2.23	3.14	14.61	"	1.7	58	26	1		
13639-40	Calibration																										Calibration
13641	"	Only 3	events																								

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Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 E_T>66eV	T2 B:t 17 2T: E_T·2tr	ON/OFF N50	MIP	TOF	⟨L⟩ ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

8⁰⁰ Bowdery + Hesse (all present and correct!)
We fix the IBM terminal by the time-honoured method of switching it off and back on again!

* How many eagle-eyed people have noticed that CERN has changed its name?
* The European Organisation for Nuclear Research has become the European Laboratory for Particle Physics!
* See, for example, the CERN telex announcing the Z⁰ or this month's CERN Courier.

10:54 Good luminosity with this fill: $4.87 \times 10^{30}\ cm^{-2}s^{-1}$ at the start (10:22)
$4.52 \times 10^{30}\ cm^{-2}s^{-1}$ now (8–10% dead time)

12:15 MARK-J: $62\ nb^{-1}$ TASSO: $67\ nb^{-1}$ CELLO: $40\ nb^{-1}$ JADE: $55.5\ nb^{-1}$
12:35 New energy 20.495 GeV – almost W = 41!

14:56 New fill ready $\mathcal{L}_{corr} = 5.33 \times 10^{30}\ cm^{-2}s^{-1}$ a new 1983 record
15:20 Beams lost + ID alarm
15:50 PKR have told CELLO that PETRA has a broken power supply ⇒ "Short" Break
We lower the magnet to 5000A.
16:00 Pearce & Kobayashi
7/6/83 Magnet lowered further to 2000 A.

Recommended Nord-50 Analysis settings for next few days

All analysis on (YES) except for Pattern Recognition.
Histograms set to 50% or even 25% at start of noisy fill
HEI

N.B. Change settings via ANALYSIS-FLAGS under N50-DIALOGUE **CHECK AFTER NORD RELOAD**

19.00 PETRA injects e^- only and do orbit corrections. Vacuum problems in e^+-Linac.
22.15. PETRA is ready once more but we cannot raise the SPS magnet current.
We managed to raise it slowly from 2000 to 2100 amps in about 10 mins after which we could not raise or lower the current at all.
We called in K group.
22.30 K group rep. ~~decides~~ decides to call in an expert on our power supply.
23.06 Magnet fixed.
Start run 13608

Dead time for run 13608 is high due to poor beam conditions. The background was greatly reduced by PKR after some optimisation. The dead time went from 60% to 10% during this optimisation! Since our dead time and B.P. current were good at the beginning of the run and then slowly got worse, it could be that the problem was caused by an optimisation for another expt.

23.50 B.P. current shoots up to 7V. I.D. trips due to high current.
PKR know about this and are working on it. Meanwhile, we cannot run.
CELLO call. No-one can run. PKR trying to track the fault. – could be 1 hour.

8.6.83 0⁰⁰ Kado + Hesse
Correction coil was broken, that was obviously the reason for the bad conditions.
1⁰⁰ Injection starts again

2.04 new fill ready – background optimization –
Currents at Run-start: 5.4 and 5.7 mA which lead to ~2.5 pA current in the inner detector(!) and to ~225 Signals radiation hits(!). I think we are pretty close to what we can accept.
2.30 PKR optimizes beam conditions for our interaction region to their best knowledge: BP shows 2.5 V
I would say, they know a lot, since currents are still high (5.5, 5.2 mA)
5.00 IBM link down
5.10 link up again
6.40 Submitted a Reformjob. Obviously the generation #'s have changed, so I start type #'s with 001.
I hope it's correct.

8.00 Murphy & Takeda on shift

8³⁰ Beams lost. ID tripped.
10⁵⁰ New fill ready after 2 hours struggle of injection.
B.P. ~3V. D.T. ~14%
11⁰² Beams lost.
11⁴⁰ Beams are ready B.P. ~2.4V
12⁵⁰ Beams lost.
13⁰⁰ Short Break up to 14⁰⁰. (Cello said (Transmitter problem)
↳ updated to 14³⁰ and ?? → 15⁰⁰ → 16⁰⁰
~~14⁸⁰~~ ~~PETRA TV~~
15¹⁰ Still "Unterbrechung". ~~Magnet~~ Run down the Magnet to 2500A.

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:t2 E₁>660V	T2 B:t 17 2T: E₂ ·2tr.

16^{00} Beckmann, Felt display shows "restart 16^{024}"
16^{20} PKR asked for low magnet → 7500A
16^{30} beam in the machine
17^{20} Run started
17^{32} Magnet fluctuation error; current 7445A magnet can't be changed anymore
17^{50} transmitter failure Beams down to 2·5 mA, lifetime 1h, stopped run, called Shragnet expert
21^{10} new filling ready, but problems with CAMAC Error 44 and 47 ← (branch 2 crate 3)
switched off both MIPROC and continue data taking, and try to get an expert
21^{25} found that Kabel both MIPROC short Kabel off fixed
MP-16 now on again, ASP still off
22^{10} YSPY says muon digitizer missing 5 — can't find any obvious failure in the histograms

9683 Pearce + Schneekloth
0^{22} beams lost
1.23 Start Run 13631. New Fill.
1.38. ID 'Soft' Trip. Everything looks normal so we switch it on again
1.50 reform job submitted YEN.EXPATH.G.4 → REFORM...4
2.32 beams lost, ID. trip
3:29 start run 13632, new fill.
Tagging −Z voltages down. EHT supply was down. Following the 'Emergency Procedure' we managed to raise the voltages again (see SOAS manual on tagging EHT's).
3.58. Start run 13634
Tagging channel ϕ on −Z is down. This one clearly did not reset along with the remainder of −Z. All attempts on our part to raise the volts on this channel failed. It remains at 59V. We telephone Karl-Heinz Meier who suggests we leave it off. He will check this channel out tomorrow if the problem still exists. Channel ϕ corresponds to a small inner block so the effect on acceptance is not great.
— Persistence Pays! —
Eventually we managed to wind the volts on channel ϕ MFR 61 up manually. The MIPROC & the supply still fails to do this. We set the Voltage ~~set~~ to 1252 V as demanded by the ~~failed~~ printer message. This channel still requires attention as the problem will recur after the EHT's are switched off again.
Start Run 13635.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

5.57 Beams Dumped.
7.14 start run 13636. Tagging EHT's all switch on correctly!
7.15 ID soft trip
YSPY detects small discrepancies in BP/LG EHT's. If this needs worrying about, we will let the next shift worry about it.
7.25 analyse job submitted ↖ Thats clever! YSPY doesn't look at voltages!

8⁰⁰ Meinke + Komamiya
8³⁰ HV read error for LG/BP
Test program via NORD (WAR)TSTHV) doesn't work.
'shut' indications for HV distributor #0, 2, 21 are always on: cannot be reset (both by ON/OFF LINE)
8.38 One 'Quad'-Unit in Tagging Power Supply replaced. Tagging HT-Problems should be cured now U.M.

Run 13635 / 13636 cannot be stopped at 8002 events.
9²⁰ 'Forward TOF has no hit' was detected by YSPY.
9³⁵ start of new run 13638

11⁰⁰ Tried to restart TOF MIPROC, but it says "noresponse", when run starts.
11²³ Run 13641 stopped after first 3 events reading.
13642 " 468 "

(Run 13639 / 13640 for calibration) Kobayashi was working on HV for LG.
11³⁰ Soft ID trip by B.P. current (H.V. was wrong?)
12⁰⁰ Beam lost

13⁴⁰ beams again, but problems with computer. We have restarted Nord-10 (about monitor did not show anything)
again problems because we had forgotten to switch off TOF Micro
13⁴⁹ now it seems to work (run 13640 in progress)
14⁰⁰ we permanently get <error 37> message & run stopped
It we are going to change the camac-Nord-interface

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B:12 E1>6GeV	T2 B:1 17 2T·E1·2TR
184														
Run	DATE	START	STOP	AT START OF RUN I+	I−	D.T (%)	TIME (SEC)	RECORDS OUT	ALL ×10⁶	TO REJ. ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>6GeV	T2 BIT 17 2T·E1·2TR
13642	9.6.83	11:23	11:26	4.69	4.84	9.3	140	465	36	3	118	304	30	103
13643	"	11:28	11:33	4.63	4.78	8.7	266	575	69	6	233	552	78	172
13644	"	11:50	12:00	4.39	4.53	10.4	54	157	14	1	65	139	18	55
13646	"	13:49	14:04	4.40	4.58	8.9	811	1589	211	18	778	1688	231	531
13647	"	14:14	14:18	4.17	4.33	8.4	210	407	55	5	209	419	62	117
		no data for run 13648/49												
13650	"	14:47	14:50	7.86	4.01	9.1	171	371	44	4	178	366	51	108
		no data for run 13651												
13652	"	15:02	15:48	3.73	3.88	8.7	2679	5414	697	60	2843	5457	879	1586
13653	"	15:53	16:11	3.28	3.43	8.7	1082	2085	281	25	1111	2084	334	571
13654	"	16:19	17:04	3.15	3.28	7.0	2669	4415	694	48	2430	4562	719	1061
13655	"	17:41	17:43	4.61	5.00	9.3	444	853	115	10	323	1052	100	307
13656	"	17:50	18:35	4.46	4.85	9.2	2676	5504	696	64	2501 652	5932	823	1527
13657	"	18:41	18:48	3.89	4.25	10.8	378	721	98	10	316	748	82	197
13658	"	18:48	20:10	3.82	4.17	7.7	4481	8002	1166	90	3830	8608	1187	1893
13659	"	20:12	21:20	3.13	3.44	6.5	4078	6289	1061	68	3126	6747	964	1259
13660	"	21:43	21:54	3.16	4.98	8.8	377	753	98	8	300	799	97	222
13661	10.6.83	0:35	1:50	4.87	4.90	8.9	4110	8002	1070	95	599 3547	8928	1120	2401
13662	"	1:44	3:06	4.09	4.12	7.7	4533	8002	1179	91	3710	8780	1111	2046
13663	"	3:03	3:40	3.43	3.45	7.0	1986	3332	517	36	1607	3557	481	781
13664	"	4:57	5:23 5:04	3.06	4.05	9.3	1088	2192	283	26	885	2445	292	676
13665	"	5:26	6:34	4.72	4.56	8.6	4101	8002	1067	92	3568	8570	1169	2010
13666	"	6:35	7:19	4.00	3.85	6.8	2611	4255	679	46	2054	4407	654	874
13667	"	8:18	9:26	5.35	5.15	9.4	3803	8002	990	93	3425	8609	1112	2196
13668	"	9:27	9:43	4.49	4.32	8.7	906	1842	235	20	823	1925	238	472
13669	"	13:00	13:55	4.63	5.10	9.7	2391	4811	622	60	2023	5311	667	1421
13670	"	14:22	15:15	4.79	5.19	9.2	2831	5883	736	67	2418	6403	782	1792
		No data for run 13671												
13672	"	15:32	16:49	4.06	4.44	12.5	828	1513	215	26	635	1681	186	452
13673	"	15:54	17:09	3.84	4.20	7.9	4490	8002	1168	91	3647	8778	1134	2229
13674	—"—	17:10	17:50	3.24	3.53	7.0	2372	3993	617	43	1997	4129	666	824
13675	—"—	18:29	18:48	4.93	4.92	11.4	1133	2699	295	34	1011	2981	348	1009
13676	"	19:31	19:46	5.11	4.92	10.2	866	1927	225	23	751	2035	260	595
13678	"	20:20	21:22	5.08	4.89	9.5	3583	7594	931	88	3119	7984	1089	2252

Run	ON/OFF NSO	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/TAPE	BP [V]	T2 Reg. EV Fr. (%)	BHABHA Σ	MH	EBeam	Remarks
185													
13642	on	off	off	5.26	.74	15.35	IBM	2.6	0%	3	0	20.540	
13643	ON	ON	OFF	4.69	1.25	16.60	"	"	50	8	1	"	
13644	ON	ON	OFF	4.12	0.22	16.82	"	"	52	2	0	"	
13646	"	"	off	4.42	3.58	20.40	"	2.2	60	25	1	20.540	
13647	ON	ON	OFF	3.76	1.09	21.49	"	"	62	9	0	"	
13648	on	on	"	3.59	.48	21.97	"	2.2	51	4	0	"	
13650													Head bank has B=0 for these runs Connected with readout problems most probably, but this should have been noted by shift crew! Lots of paint on teletype. Error is now corrected for by KALIBR J.O. 13.6.83
13652	ON	ON	OFF	2.83	7.61	29.58	"	2.0	58	63	2	"	
13653	ON	ON	OFF	2.24	2.42	32.00	"	2.0	60	27	0	"	
13654	ON	ON	OFF	1.80	4.80	36.80	"	2.0	61	33	0	"	
13655	"	"	off	1.80	4.80	41.60	IBM	2.6	61	3345	0	"	
13656	"	"	off	2.72	1.21	42.81	IBM	2.5	58	316	0	"	new fill IBM down, writing to tape ↓
13657	"	"	"	4.17	11.84	54.65	TAPE	2.5	56	98 228	2	"	bad tape tape F11194
13658	"	"	"	3.77	1.33	1.33	TAPE 1541	2.3	54	11	0	20.555	bad tape F11070 new energy
13659	"	"	"	2.86	13.06	14.39	IBM	1.9	58	108	3	20.555	
13660	"	"	"	2.12	9.19	23.58	IBM	1.7	59	76	1	20.555	
13661	"	"	"	3.99	1.94	25.52	"	2.7	56	16	0	"	short lifetime → new fill
13662	"	"	"	4.38	17.28 13.5	43.30	"	2.7	58	147	4	20555	
13663	"	"	"	2.99	12.94	56.24	"	2.2	57	107	4	"	
	"	"	"	2.44	3.99	60.23	"	2.0	57	33	0	"	
13664	"	"	"	4.37	4.23	64.46	"	2.7	57	35	0	20.555	
13665	"	"	"	3.94	16.96	16.96	"	2.6	56	140	3	20.570	new energy
13666	"	"	"	2.61	6.18	23.14	"	2.2	57	51	1	"	
13667	ON	ON	OFF	4.79	16.72	39.86	"	2.85	56	138	2	"	
13668	"	"	"	4.19	3.15	43.01	"	2.40	56	26	2	"	Beams lost
13669	"	"	"	4.12	8.12	51.13	"	30	57	67	3	"	Beams lost
13670	"	"	"	4.68	10.17	61.30	"	2.75	55	84	3	"	Nord 50 busy
13672	"	"	"	3.59	2.18	63.48	"	2.35	56	18	0	"	
13673	"	"	"	2.87	11.16	74.64 1116	"	2.1	57	92	2	20.585	
13674	ON	ON	OFF	2.41	6.19	80.83 1135	IBM	2.1	58	51	2	—"—	Beams lost
13675	ON	ON	OFF	4.60	14.12	21.47	"	2.7	56	34	1	"	Beams lost
13676	"	"	"	4.51	3.03	24.50	"	2.85	55	25	2	"	Beams lost. No run 13677
13678	"	"	"	3.58	10.55	35.05	"	2.85	55	87	6	"	Beams lost

Run	Date	Start	Stop	at Run Start: I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B.+2 E_T>66eV	T2 B.+17 T_i E_T>2te

16^{50} Kubler and Nozaki on shift

Tokyo people are trying to cure the lead glass HV READ error.
We continue to take data.

17.06 Changed discriminator for TOF 46 (low channel in Mean TDC II).
Rebuilt YCLRTV, because screen looked peculiar (letters in wrong places and missing).

1735 New fill is ready. Run 13655 start. No HV error occurs.

17^{40} High voltages for LG/BP could not be read or set ~~from~~ from 8:00 this morning till now.
We have found out at last that SHD was wrong. ← serial Highway Driver

17.46 IBM down. Stop run 13655. START 13666 with TAPE.

18.30 Energy changed: 20.555 GeV

20.15 ZDAS read error 56 - TOF bank wrong length =360 (dec)

20.55 Telephoned to to ask how fill at 9:15 is OK or not. We agreed:

21.50 New filling because of short lifetime;

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McCann + Minowa on shift ← What did they do ?

8^{00} Helst & Takeda on shift.

8^{17} New fill ready E_b = 20.570 GeV. B.P. ~ 2.9 V

9^{20} "trigger 3 input missing" says VSPY we can't find anything wrong

9^{39} Beams lost.

10^{45} shift break magnet → 2000 A

11^{23} Injection is started. maguet → 7500 A

12^{50} New filling is ready. B.P. ~ 3.3 V

13^{00}

Note: During a beam orbit optimization, the beam energy changes. ex. 20.570 → 20.579 GeV.
→ We ~~stopp~~ paused the run.

After the optimization B.P. ~ 2.6 V

13^{55} Beams lost.

14^{23} New fill ready. B.P. ~ 2.7 V

ON/OFF N50	MIP	TOF	LL> ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Ev.(%)	Bhabha Σ	MH	Ebeam	Remarks

15:15

NORD 50 BUSY → RUN 13670 was stopped.

MEMORY OUT OF RANGE - 156346 -
156346/204223540013 LDR 54, ØØ13, 10, ØØ, I
ARITHMETIC OVERFLOW
M. OUT OF RANGE
LAST START ADDR 156346
LAST MEM REF ADDR 2736673
↳ DATA TO/FROM MEMORY 422560044
BREAK POINT REG. 1 (BP) 077140
" 2 (BQ) 100000
BREAK COND. SET
/STORE REF/

When we started run 13671, the above error messages appeared on the system terminal. According to the instraction of the on-line people, all the messages were written down. I want to propose that these lengthy messages should be printed on graphics or dot-printer. When we were writing these messages, we could not do anything to fix the problem.

Reload Nord → O.K. (RUN 13671 lost)

15:45 IBM busy → soon recovered.
No triggers → PAUSE/CONTINE then OK.

15:50 Energy changed. 20.585 GeV

16:00 Murphy/Schiewann

16:28 No hits in Forward-[illegible] 9 → Acknowledge Error : 4
(VSPY-message)

17.50 New Fill

18.29 RUN 13675 started

20:00 Bowdery takes over from Murphy.
The display was jammed so we restarted ZDAS and the problem was solved.
We then restarted the MIPROC but left the TOF meter off.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (secs)	Records out	All $\times 10^6$	T_0 reg. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T. $E_4 > 2$T.
188														
13679	10.6.83	21:56	23:01	4.99	4.81	9.1	3938	8002	1024	93	3381	8487	1122	2286
13680	10/6/83	23:02	0:18	4.26	4.10	13.3	4510	8002	1173	156	3758	8188	1276	1875
13681	11.6.83	0:18	0:38	3.61	3.46	7.5	1181	2149	307	23	1047	2108	370	508
13682	11.6.83	0:46	1:16	3.41	3.26	6.9	1765	2871	459	32	1464	2911	487	623
13683	11.6.83	1:17	1:20	3.10	3.07	2.1	155	278	40	3	121	282	27	64
13684	-"-	2:22	3:28	4.74	4.94	9.0	3920	8002	102	92	3452	8477	1162	2291
13685	-"-	3:28	4:19	4.05	4.23	8.3	2994	5799	778	65	2673	5955	898	5894
13686	"	4:59	6:11	4.28	5.01	8.8	4031	8002	1049	92	3607	8531	1221	2188
13687	"	6:12	7:15	3.58	4.25	7.6	3793	6851	888	75	3263	7102	1056	1615
13688	"	8:20	9:32	3.24	4.68	8.1	4354	8002	1133	92	3619	8895	1206	1895
13689	"	9:33	9:35	2.75	4.05	9.0	119	248	30	3	111	254	34	50
13690	"	9:42	10:35	2.69	3.98	7.9	3202	5887	833	66	2709	6385	971	1183
13691	"	12:32	13:40	4.37	4.74	8.9	4094	8002	1065	95	3323	8868	1088	2402
13692	"	13:42	13:53	3.73	4.06	8.7	671	1402	174	15	606	1411	214	416
13693	"	14:56	15:59	4.28	5.09	9.9	3695	8002	866	95	3168	8853	1035	2689
13694	"	15:59	17:08	3.68	4.36	8.5	4114	8002	1070	91	3530	8554	1138	2250
13695	"	17:09	17:17	3.13	3.63	7.9	523	996	136	11	446	1018	134	278
13696	"	18:49	19:57	4.50	4.66	7.7	4061	7219	1056	82	3223	7375	1030	1890
13697	"	21:18	21:23	4.77	4.73	8.7	232	466	60	5	158	498	46	135
13698	"	23:05	23:52	4.59	4.61	7.8	2753	4954	716	56	2076	5221	609	1276
13699	12.6.83	04:19	04:53	4.87	4.88	8.9	2016	3940	524	47	1533	4352	444	1081
13700	12.6.83	18:38	18:38											
13701	12.6.83	19:04	19:13	3.25	3.74	6.3	420	684	109	7	326	655	112	127
13702	12.6.83	20:01	21:32	3.52	4.24	6.2	5425	8002	1410	88	3780	8371	1415	1446
13703	"	21:32	22:35	2.83	3.54	5.8	3751	5303	977	57	2647	5324	959	861
13704	"	23:57	0:45	3.83	3.90	6.6	2831	4498	736	48	2175	4450	822	903
13705	13.6.83	2:46	3:10	3.81	3.90	7.0	1119	1895	291	20	882	1867	324	404
13706	"	4:10	4:18	3.79	3.74	6.8	428	755	111	8	328	710	101	143

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Bhabha Run	$\int L dt$ Exp	IBM/ TAPE	BP [V]	T_2 Reg. Ev Fr. %	Bhabha Σ	MH	E_b	Remarks
189													
	ON	ON	OFF	3.75	13.46	48.51	IBM	2.8	56	111	3	20.585	
	ON	ON	-"-	2.73	10.67	59.18	-"-	2.3	57	88	4	20.585	
	-"-	-"-	-"-	2.33	2.55	61.73	-"-	2.2	56	21	0	20.585	run terminated / energy changing
	-"-	-"-	-"-	2.33	3.04	3.04	-"-	2.1	59	25	0	20.600	new energy, run stopped the timout br. 4 cr. 3
	-"-	-"-	-"-	2.06	0.12	3.16	-"-	1.85	56	1	0	-"-	beams dumped
	-"-	-"-	-"-	4.00	15.43	18.59	-"-	2.75	56	127	0	-"-	
	"	"	"	3.15	7.77	26.36	"	2.3	56	64	2	"	Beams lost
	"	"	"	3.73	12.63	38.99	"	2.6	57	104	5	"	
	-"-	-"-	-"-	2.88	8.75	47.74	-"-	2.15	57	72	3	-"-	Beams lost, (I+ .34mA, I− .75mA)
	"	"	OFF	2.84	12.03	59.77	"	2.6	59	99	1	"	
	"	"	OFF	2.47	0.12	59.89	"	2.0	60	1	0	"	
	"	"	OFF	2.06	5.85	5.85	"	2.1	58	44	0	20.615	New energy. Beams dumped at 10:36
	ON	ON	OFF	3.77	13.50	18.85	"	2.6	57	111	2	-"-	
	"	"	"	2.81	2.43	21.28	"	2.3	54	20	1	-"-	Beams lost
	"	"	"	3.73	12.04	33.32	"	2.7	56	99	4	-"-	
	"	"	"	2.77	9.37	42.69	"	2.3	57	77	3	-"-	
	"	"	"	2.21	0.12	42.81	"	2.0	57	1	0	"	New fill
	"	"	"	~~3.17~~ 4.22	10.22	53.03	"	2.5	56	84	5	"	Beams lost
	"	"	"	4.17	0.73	53.76	"	2.85	57	6	0	"	Beams lost.
	"	"	"	4.11	10.22	~~53.98~~ 53.98	"	2.8	55	84	2	"	Beams lost ~~339nb⁻¹~~ /day 1289 11/6/83
	"	"	"	4.22	8.53	8.53	"	2.6	56	70	1	20.639	New energy beam lost.
								2.1				20.630	FUNK
	"	"	"	2.24	0.49	9.02	"	2.1	56	4	0	"	Beams lost
	"	"	"	2.45	10.11	19.13	"	2.25	58	83	3	"	
	"	"	"	1.78	6.21	25.34	"	1.85	58	51	1	"	New fill
	"	"	OFF	2.83	7.43	32.77	"	2.4	57	61	0	"	beams lost.
	"	"	"	3.08	3.90	36.67	"	2.5	55	32	0	"	" " also during the run. (partly)
	"	"	"	3.06	1.34	38.01	"	2.4	54	11	0	"	" "

continues to the new log book XI with the same E_{beam}.

L fill
R 13698
2506,6 nb^{-1}

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To reg. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·t2 E₁>66eV	T2 B·t 17 2T·E₄·2tr	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Reg. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

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0⁰⁰ Ambrus, Zschiesche

1¹⁰ Timeout br. 4 or 3 run 13682 stopped, error disappeared after start of new run

1³⁰ PETRA announced „short break"

1⁴⁰ Injection; this break was really short

8²⁰ Injection, however was long. Run 13684 started

4⁴⁰ We didn't manage to submit „REFORM" jobs. They failed because of JCL errors. Some CPU minutes wasted in this way. We have found that the previously submitted ~~job~~ REFORM job failed in the same way. Hoping that the errors (~~all~~ data sets were not found) are due to the break in the submitting stream I tried to resubmit this previous one. However that didn't work either. I gave up because I didn't want to waste more CPU time and also because TSO terminal hang on several times. M.T. (ANALYSE job run without problems)

6³⁰ YSPY error : FORWARD TOF no hits : 9
We checked histograms. Channel nr. 9 was missing, but after some minutes everything ~~was~~ was o.k.
(but not completely lost!)

7¹⁵ ~~Beam~~ Beam currents suddenly went down. PKR reports unrecognized problems with the synchrotron.

08 00 Baile, Strand

08:19 New fill ready. Start run 13688. Not a great fill $I^+ = 3.24$, $I^- = 4.68$.
09:42 New energy: 20.615 GeV. Start run 13690
10:35 Run 13690 stopped. Beams dumped.
12:00 Jurg Becker informed of failure of recent REFORM jobs. He will investigate today.
12:15 New fill ready, but background high BP > 3. Ask for optimisation. TASSO also have trouble.
12:30 Heavy artillery (Prof. Weber!) deployed at PKR. Background suddenly better!! Start run 13691
13:53 Beams lost. I.D. 'slow-ions'
14:55 New fill ready. Start run 13693
16:00 Heinzelmann & Takeshita
19:55 Beamslost
21:- They lost beams a few times during the injection.
21:22 After 5 min (RUN 13697), Beams lost.
22:00 Machine people said they have TRANSMITTERS PROBLEM. EXSPERTS COME ON 11 O'CLOCK.
23:57 Short-break – presumably to repair transmitter!
23:58 Fast Fotes on shift + Gerhard Knies
24 00 Short-break due to shuttle dropping in!

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0.25 Short break is over – no its not!
00 56 injection?
00 57 short break!
02 50 Injection at last.
03 25 Short break again.
03 33 Try again.
04.05 Successful injection – background optimisation will new energy 20.630.
04 19 Start run 13699 background ~2.6V. OK.
04 49 Beams trip off
06-28 another short break.
07-34 This has been a real drag all night!

0800 Yamada, Pearce on shift. Inherit a 'short break'.
Magnet → 5000 A.
8⁵⁵ Magnet → 2000 A.
9¹⁵ IBM terminal is broken since early morning. Comp. center operators are informed about it. It will be fixed tomorrow.
11⁰⁰ Magnet → 5000 A. → (at ~11⁵⁸) 7500 A
11⁵⁵ PKR obtain a stable fill @ 7 GeV and are now attempting to accelerate. Beams lost @ 15.9 GeV.
~12⁰⁰ B. Naroska at PKR informed us "Problems with the transmitter. Experts for RF are being called."

Prof. Weber calls from PKR. Mark J have a water leak in their detector and want access to investigate. PKR are now accelerating stable beams and insist on completing this first – it will tell them whether they have solved the PETRA problems. Mark J now want the beams to be dumped immediately PKR have finished (if there are any beams to dump of course) in order to get access as soon as possible!! We await a call from TASSO (coordinating) on this question.
Mark J call. They are very worried because ~~they~~ better their water leak is in the region of some electronics and could be showering / dripping on it. Unless action is taken quickly this could cause much damage. The other experiments have agreed to having the beams dumped – we agree too. (We couldn't run anyway due to bad background conditions). Mark J estimated ½ hr. for access.
11⁵⁵ Beams dumped. Mark J get access. Magnet → 5000 A → 2000 A.
15⁵⁵ Still having a 'short break'.
This was my very last shift – I came ready to discover TOP and did not even get luminosity!!
What a farewell!
16:00 Ambrus / Zsiege on shift; still having 'short break'.
~17:30 Magnet → 7500. A; Injection

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	at Run Start D.T. (%)	Time (sec)	Records out	All ×10⁶	To rec. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 B·t2 E₁>66eV	T2 B·t 17 2T·E₄·2tc	ON/OFF N50	MIP	TOF	∫L dt ×10³⁰	∫L dt Bhabha Run	∫L dt Exp	IBM/ TAPE	BP [V]	T2 Rej. Ev Fv.(%)	Bhabha Σ	MH	Ebeam	Remarks

19 192

18:38 RUN# 13700 started BP ~ 2.1 V
ERROR during LG-PED-Ring YPARA 5 ; Run terminated ; 'hanging' Nord
18:45 restart Nord
19:04 Run # 13701 started BP ~ 2.1 V ; terminated 19:13 because of lost beams ; Injection
20:00 new fill ready ; start run 13702
22:30 Mark 7 required to have access for ~ 10 to 15 min
23:20 short break for ~ 10 to 15 min. PKR has to check a transmitter.
23:55 new fill ready ; start run 13704

0:00 Yamada, Becker
0:41 Beams lost.
5:11 Call from PKR : no lumi → 7⁴
7:00 magnet current 2000 A.
"access" will continue ~~ex~~ till ~ 12⁰⁰. (PKR guesses)
Magnet did not run down below 1580 A. Group K is examining the trouble.
Before the cause ~~was~~ is found water was cut and magnet current went zero.
(↑ not for the main coil but another one)
8:00 13/6/93 H. Mills on shift
9:07 restart estimate 11.30 IBM links also down.
9³⁰ M-2 there is now some additional lead wrapped around the beam pipe. This is inside the lead box.
W. Bartel
Air Conditioning off - probably due to lack of H_2O
10²⁶ " " said to be OK
10⁵⁵ restart estimate now 13.00 - computers (zen) also down until 13.00
Lead glass NIM crate has fan fail. Temp still high

Nord-50 program A YCLRTV & YRUNSM altered to prepare way for online reduction.

Temperature falling (as hoped)