JADE LOG BOOK XI Runs 13407 – 15050

Ein Brunnen-Erzeugnis

JADE LOG BOOK

Nr. XI

- L 13707 - 15050 -

ON/OFF N50, MIP, TOF,	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE,	BP [V],	T_2 Rej Ev F_{ev} (%),	Bhabha Σ	MH	Ebeam	Remarks

LOG #11

13/6/1983

16:00 Ambrus + Minowa

16:35 PETRA TV says restart ca. 18:30.

18:05 Run down the MAGNET to 1000 A.

18:15 Reload Nord in first crate of balcony terminal. Did not help. Port check next (tomorrow)

Found that someone had recently turned TOF MIPROCs OFF. No comment at all in log book

50 Since D. Cords said earlier today all worked, I turned back on. HEM

19:20 FREQUENCY-CONTROLER OF BETATRON DOES NOT WORK. THEY TRY TO CALL AN EXPERT. TV SAYS: RESTART CA $21^{\underline{00}}$

21:00 " " " $23^{\underline{20}}$

23:20 The magnet current rises from 1000 amps to 1670 amps. cannot be resetted. We called the K-group.

00.00 14/6/1983 Foster + Becker on shift. K-group is successful magnet works O.K.

00 05 Magnet problem reappears! K group fix it again – but do not understand problem.

00 45 We decide to run magnet to 7500 A and leave it alone. Have luminosity but BP > 3V

00 50 Magnet current not stable. Fixes to 7550 A. Decide to go manual + set knob to 7500 A. keep watching it.

00 50 Phone PKR to ask for background optimization.

01 10 BP down to 2.5V ... start run. and Telephones also! (why can't people log off when they finish playing)

01 21 Run 13707 terminated Error 44 Branch 4 Crate 7 also VSPV LUN OCCUPIED (Someone playing games) logged into N50).

01 29 Beams lost during run 13708 error 46 did not reappear but keep watches for it.

01 41 Magnet fluctuates badly – call K group again. – They could that the increase can be due to computer. We switched off computer control for magnet current. Unlikely since computer only READS the values except when asked to change setting

Magnet wanders again.

03 21 Start run 13709 Error 44 again. branch 4 crate 7 I.O reg 2.

04 02 End run 13709 Error 44 problem – we can't cure it yet.

04 06 Start run 13710. Error 44 again (Branch 4 crate 7)

Darvill takes over from Foster (the story of my life! HH)

04 25 more Error 44 – crate 7 branch 4 – we try removing cable and terminator associated with this crate – perhaps there is some contact problem. It makes no difference! Although Wagner is on call so we call him to ask advice. He suggests switching off the crate for a few minutes and praying and says we should call him out if this does not work. we lost beam during this intervention, and so until we get beam again we can't tell if we were successful. we await beam.

04 35 more magnet fluctuations. We run the magnet down to 7000 and then back up again.

05:50 Beams ready we start run 13710 with crate 7 branch 4 crate controller off-line! start run 13712 – beams lost immediately – Kurze Unterbrechung. PKR say it should start filling again soon.

Run	Date	Start	Stop	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·E4·2th.
13707	14/6/83	01.16	01:21	3.92	3.70	10.3	136	408	35.2	3.6	123	265	33	60
13708	14/6/83	01.27	01 33	3.74	3.53	8.3	403	981	104.9	8.7	373	637	112	132
13709	14/6/83	3:41	3:53	3.58	3.70	14.6	626	1491	163	24	610	881	174	183
13710		Very short run		with	many	problems	- beams lost							
13711		05:46	05:47											
13712		05:48	05:49											
13713	14/6/83	07:49	08:04	4.44	4.42	11.6	735	2161	191	22	711	1442	220	404
13714	14/6/83	9.37	10.10	2.96	2.86	7.0	1925	3074	501	35	1589	3003	364	568
13715	14/6/83	13.42	14.43	4.59	4.63	10.6	3644	8002	948	100	3573	8270	931	2108
13716	"	14.43	15.47	3.97	3.99	9.9	3828	8002	996	98	3758	8015	935	1927
13717	"	15.50	16.06	3.42	3.42	9.0	892	1687	232	21	781	1718	181	402
13718	"	18.56	19.08	4.32	4.82	8.4	653	1303	170	14	641	1081	242	279
13719	"	20.07	20.20	4.41	4.59	9.8	707	1535	183	17.9	674	1467	229	353
13720	"	20.34	20.42	4.15	4.33	8.7	492	963	127	11.1	441	938	130	217
13721	"	20.55	20.07	3.91	4.08	8.9	705	1365	184	16.4	624	1398	170	328
13722	"	21.10	21.21	3.77	3.94	8.5	637	1150	166	14.1	521	1209	174	274
13723	"	23.25	0.15	4.94	5.02	15.8	2858	8002	744	118	2985	9304	800	2392
13724	15/6/83	0.15	0.18	4.03	4.11	13.1	155	444	40	5	168	476	44	154
13725	"	1:49	2:36	4.78	4.61	11.9	2173	6608	566	68	2088	4762	606	1079
13726	"	4:17	5:08	4.99	5.01	13.9	3006	8002	781	109	3188	8709	460	2193
13727	"	5:08	5:53	4.42	4.41	12.9	2703	8002	703	91	2838	7275	786	1786
13728	"	5:54	6:16	3.98	3.95	11.8	1233	3619	321	38	1293	3047	394	722
13729	"	6:22	6:26	3.72	3.67	11.2	269	777	70	8	282	654	72	146
13730	"	6:56	7:37	5.02	5.00	15.5	2471	8002	623	100	2482	7089	850	1888
13731	"	7:38	8:26	4.49	4.46	13.7	2488	8002	647	88	2658	6951	811	1733
13732	"	8:26	9:09	3.96	3.89	12.5	2577	8002	670	83	2784	6725	806	1660
13733	"	9:10	9:27	3.60	3.52	12.4	1052	3163	274	34	1062	2709	297	651
13734	"	9:30	10:03	3.46	3.38	88.6 (11.5 eff.)	—	4519	—	—	2018	—	556	1050
13735	TOF-Test-Run (written to the ISM) on special request of D. Naroska (machine coordinator)													
13736	"	14.45	15.51	4.64	4.96	9.0	3597	6797	936	84	3608	7093	881	1578
13737	"	15:53	16:59	3.36	3.33	7.8	3894	6925	1013	79	3646	6533	1048	1243
13738	"	17:37	18:53	4.88	4.92	9.1	3809	7497	991	90	3385	7516	1079	1700
13739	"	18:58	19:19	3.56	2.66	10.8	1244	2810	323	35	1213	2462	370	676
13740	"	20:31	20:43	4.58	4.92	14.0	675	1789	175	24	705	2067	199	584

N50	MIP	TOF	<L> ×10³⁰	Slat Bhabha Run	Slat Exp	IBM/ TAPE	BP [V]	T2 Rej. Ev Fr.(%)	Bhabha Σ	MH	Ebeam	Remarks
ON	ON	ON	3.51	0.24	38.25	IBM	2.6	12	2	0	20.630*	Error 44. * 20.725 GeV was the real EBEAM in those runs!
"	"	"	2.67	1.22	39.47	"	2.5	18	10	0	20.630*	Beam lost.
"	"	"	2.75	1.95	41.42	"	2.4	12	16	1	"	ID Error 44 ~~Beam lost~~
							7.8					
												Beams lost
ON	ON	ON	3.03	1.71	43.13	"	2.8	14	14	0	20630*	
ON	ON	ON	1.59	2.68	3.07	IBM	2.1	56	22	1	~~20.625~~*	NEW ENERGY* Bal E_B = 20.740
ON	ON	ON	3.76	12.57	12.57	"	2.8	56	102	5	20.750	New ENERGY!
"	"	"	2.94	10.23	22.80	"	2.5	56	89	4	"	
"	"	"	2.36	1.48	24.28	"	2.3	56	12	0	"	
ON	ON	ON	4.15	2.83	27.11	"	2.8	55	23	0	20.750	ID error 2 then beam lost
ON	ON	ON	4.05	2.83	29.94	"	2.7	52	28	2	20.750	
"	"	"	3.31	1.85	31.79	"	2.4	54	15	0	"	
"	"	"	3.59	2.59	34.38	"	2.3	56	21	0	"	
"	"	"	2.96	2.34	36.72	"	2.3	58	19	0	"	beams lost
"	"	"	3.81	8.38	45.10	"	2.9	59	68	3	"	
"	"	"	3.66	0.62	45.72	"	2.6	56	5	1	"	beams lost
"	"	"	3.20	6.90	52.62	"	2.9	58	56	0	"	beams dumped
"	"	"	4.03	11.09	3801 (From previous runs 49.10 58.76)	"	3.0	57	91	5	20.630	back to old energy!
"	"	"	3.31	9.26		"	2.7	41	76	2	"	
"	"	"	2.63	3.17	61.43	"	2.55	36	26	0	"	
"	"	"	2.20	1.22	1.22	"	2.40	37	10	0	20.645	new energy, beams lost
"	"	"	3.52	8.17	9.39	"	3.0	37	67	0	"	
"	"	"	3.25	~~6.22~~	~~15.61~~	"	2.75	36	51	0	"	
"	"	"	2.46	5.25	20.86	"	2.6	36	43	0	"	
"	"	"	2.35	2.68	25.54	"	2.5	35	22	0	"	
"	"	"	—	4.27	27.81	"	2.5	—	35	1	"	Beams lost
						"						
"	"	"	3.53	11.47	39.28	FI1192	3.0	57	94	5	"	
"	"	"	2.03	8.42	47.70	FI1101	2.1	58	69	1	"	Beams dumped.
"	"	"	2.85	11.10	~~48~~ 48.80	FI1105	3.1	56	91	1	"	Hit end of tape ⇒ end of run!!
"	"	"	1.80	2.81	61.61	IBM	2.6	~~57~~	23	0	"	
"	"	"	3.64	2.81	64.42	FI1206	3.0	60	23	1	"	Going to new energy.

14 · 6 · 83

07 36 we have a filling with ~ 4.5 mA in each beam, but high BP current.

07:50 now we have an acceptable beam pipe current so we start run 13713

08 Low There is still an instability in the magnet control system and also an occasional DL8 crate timeout error.

8.00 ~~H. Hoell~~ G. Knies + H. McCann

9.20 Herr Delfs says IBM links should be OK now

9.32 The following jet-chambes problems were fixed:
V34 - 19.4 fuse exchanged
3 DL8 problems cured (wire 520 - 27, 872 - 879, [redacted] + timeout branch 4, crate 7)
with a rubber and a prayer (H. Mclaim) AW
This is all a consequence of the failure of our beloved air condition. system yesterday -

10.06 New injection

11.30 **if there is a break > 40 min phone Mr. Hase - K - Tel. 3556 to check the magnet.**

12.30 Trouble with STOR$S is temporarily fixed but will probably require more work for permanent fix. Refer any calls in this respect to Dieter Cords. Now ~~have problem on XDRO tape drive too~~ !! FALSE ALARM.

12.50 New fill ready. TV shows E_b = 20.650, 20.740 GeV etc., but PKR claim it really is 20.645 GeV !!!
Background much too high to run, BP ≈ 3.5 V; complained to PKR and they are working on it.

13.15 Still high BG, ~ 5.0 V.

DISASTER WITH ENERGY CALIBRATION: The present energy really is 20.740 GeV!! — the energy calibration was wrong all through the morning and also (possibly) last night. E_b is now to be lowered to 20.735 GeV, since 20.740 GeV is not a "step point". But we haven't been able to take any data at 20.740 anyway !!

13.25 Next energy will be 20.750 in order to get back to the old energy grid. 2453 / 3169

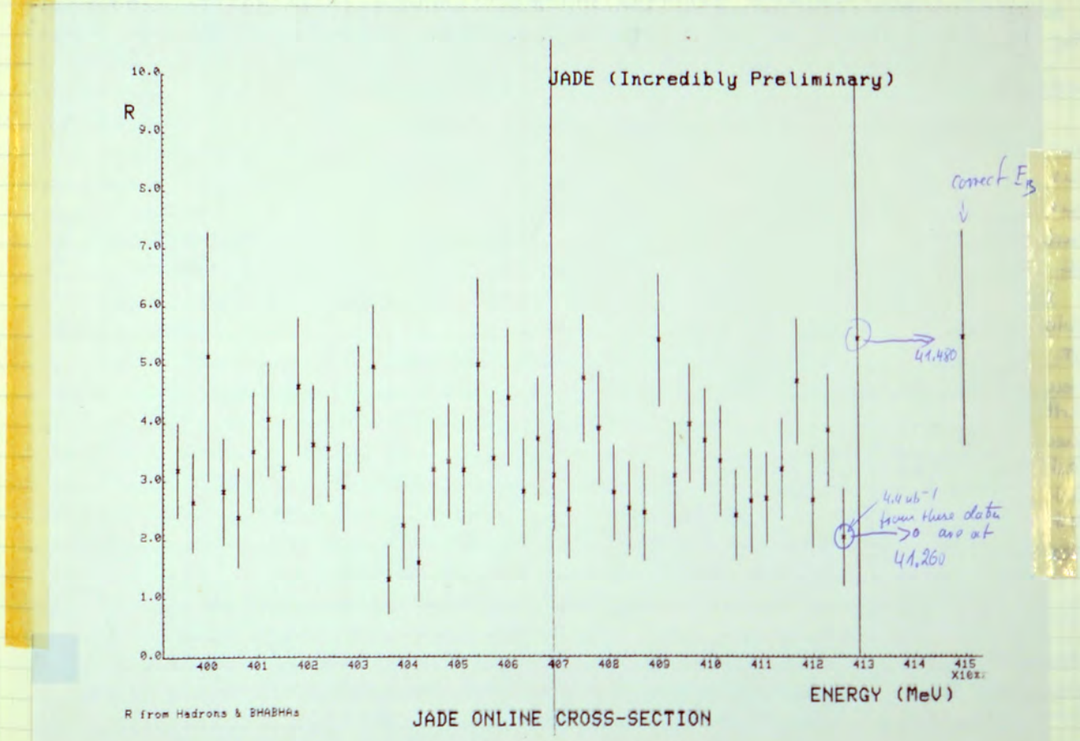
13.40 PETRA now on E_B = 20.750, instead on 20.645; i.e. 8 energy steps are missing

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

14.6.83

14.10 MESSAGE FROM PKR: PETRA ENERGY VALUE WAS WRONG
SINCE 14.6.83, 0400 (midnight) nominal reading: 20.630 GeV
REAL VALUE 20.725 GeV
since we accumulated ~~5.1~~ 4.4 nb⁻¹ with this wrong energy value (1 multihadron event!) we may just ignore the whole affair (runs 13707 - 713)

16.00 Whittaker + Wagner



14.6.83

Summary of Energy confusion:

true energy	integr. Luminosity
20.630 GeV	38.01 nb^{-1}
20.725	5.12
20.740	3.07
20.750	24.28 until now

talk to TASSO (Wolfstadt): plan for the future = finish $50 nb^{-1}$ at 20.750, then go back to 20.630 GeV and complete $50 nb^{-1}$. Then continue upwards from there in the usual way. - It is however unclear how this problem has occured.

17^{15} D. Cords reports that IBM-disk problem has been fixed.

18^{56} Beams back
19^{08} Beams lost
20^{07} Beams back
20^{24} Branch 4, crate 7 time out again. Finally traced the problem: Ventilator had fallen down and right hand part of crate was no more properly coded.
20^{42} we seem to produce only short runs.
Problem now: NORD50 Busy
EXIT from ZDAS produces the following error summary

```
Memory out of range      at    515021
arithmetic overflow
mem. out of range
last start address       156361      — LEVEL in TASK-LIB
last mem ref. add.       000005 15023
last data to/from mem:   247404 00001
breakpoint reg 1         077140
   —  "  —     2         100000
```

20^{55} running again
21^{21} beams lost
22^{59} beams back, but beampipe current > 3.5V. PKR has orbit optimising program running. We wait a little before switching on.
23^{25} start run

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

15/6/1983

0:00 Ambrus, Heier

0:18 Beams lost in PETRA, we got a HV-Spark Alarm in the ID which is not possible to reset with the normal procedure. We phoned the expert (Wagner). Following the instructions of the expert we resetted the alarm for ~~sector~~ cells 2, 3, 22 in ring 1.

1:49 After starting Run 13726 lineprinter prints:
'ERROR 20 AT 67516; DISK/DRUM TRANSFER ERROR' and
'ERROR 21 .....'

2:30 TASSO proposes to go back to 20.630 GeV because $\Sigma_{PETRA} \approx 200\ nb^{-1}$
This has to be done with a new Filling since deceleration is impossible.

6:21 including the previous runs on 20.630 GeV we have now
$\sim 60\ nb^{-1}$ → change energy to 20.645

6:56 Tagging EHT's (+z) failed → reset o.k.

8:00 Kobayashi + Heer
The last few runs have ~50% of the words with illegal bit set in the JCT-disc. I rm the corresponding JCT → ok (was # 504-512)

10:05 Beams lost.
"Short Break" on TV. PKR says there may be a vacuum leak, but they think it will not be long before we get beam again. Problems with the e^+-kicker
Magnet → 5000 A

11:30 Dimer repaired

11:40 Magnet → 2000 A

12:30 " → 7500 A

12:40 Error messages produced when cross-section display cured. Error 412 in FORTRAN is illegal character on input - due to run 13734 ending in a funny state and the luminosity being ***** - also to be seen on run summary. I fixed the XSECT file by hand. HEIM

13:15 Magnet fell down to ~7300 A by itself. One can not control it anymore. We asked K-Group to fix it. → A man came and measured the current in the magnet room. Although he did nothing actually, it was fixed.

14:14 beams! but ISM down

15.6.83 16⁰⁰ H. McLaren & P. Steffen on shift

16⁰⁰ Writing to tape since the IBM status is uncertain.

17²⁵ New fill ready – but BP = 3.1 ✓

18⁰⁰ Status of $\int L dt$ at 20.645 GeV : TASSO 53 nb⁻¹
TASSO 43
CELLO ~35
MARK J ~38
169 nb⁻¹

18²⁰ This fill seems to be quite unstable and the lifetimes fluctuate enormously. However our beam pipe counter rate decrease from 3.1 at the beginning to 2.2. ~~Some~~ Tasso has big problems and cannot switch on ~~their~~ chambers. We continue with data taking.

18⁵⁵ Now writing to IBM

19¹⁹ beams dumped.

20²⁰ New fill : beam pipe counter : 3.5 V. We decided not to switch on PETRA to save the voltage.
PKR is ~~working & observing the situation~~ observing the present situation.
They will act when the present situation has settled down a little bit.

21:30 H. KADO ‖ This evening, there has been some variation in the (time) position of the ELECTRON BUNCH PICK UP (see histograms ELECTRON (NIM UN)[3] for runs 13736 – 13740). It even developed a distinct 2-peak structure. It is now back at the old position.

16.06.83

0⁰⁰ Mills, Zacharee on shift.

We inherit 'INJECTION'. After 1 hour not much change. TASSO say PETRA does not get electrons

1⁵⁰ Beams ready. It seems there are about 200 ID hits of background.

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

16.6.83

2:04 Soft ID trip. BP current went very high for ~30 secs then back to normal. PKR don't know why

2:49 No triggers – "level 5" hangup pressed buttons as prescribed & all worked.

4:10 " " " " " " " " " " " "

Standard histograms made from run 13748. The beam proto signal "ELECTRON (NIM UNIT)" as a second peak – not present in previous run. This had also been seen by previous shift. ✓

8:00 T. Hagerstedt, Spitzer on shift

10.00 A Wagner for J. Spitzer
new filling with very bad background conditions : 75% DT with 4.7 on 4.6 mA
several soft trips of CD_ (–ID ?)

10.20 end run, switch off HV, R. Felst calls from PKR: positrons had a prebunch. This was probably the reason for the high background.

11.03 new beams
trigger rate still high → 60% DT
soft C.D trip
PKR (Pégéle) optimises beam : BP current 3.5 → 2.9V, DT 60% → 20%
R. Felst adjusts attenuator of beam pipe signal to PKR, since the signal there was in the overflow.

11.30 partial beam loss.

11.46 beams lost

12.00 Diedrmann for Wagner

13.56 Magnet set manually from 7250 A back to 7500 A. New Run started.

14.47 Beams dumped LG HV Errors are due to broken DVM. Will be replaced.

15.30 Call from Tasso (coordinator) that Mark J wants access for another hours. They have a waterleak, dropping on the photomultipliers.

15.40 Magnet → 2000 Amps

16⁰⁰ Lo-Bue-Jee / Kuiles 16/6/83

16.30 Magnet set to 7500 A (worked o.k. via computer).

16.50 MARK J wants another ½ hr → 1 hr access (to repair another suspect water hose).

17.40 Following group meeting the "50" triggers (TIA bit 14, no other bits in TIA or TIP) with a Muon track are classed as Cosmic & Rejected. 5% these events kept. Effect should be ~50-70% of 50 triggers rejected = ~2% whole Run 13762 should be first run

HEM

RUN	DATE	START	STOP	RUN START I+	RUN START I-	D.T. (%)	TIME (sec)	RECORDS OUT	ALL x10^6	TΦ REJ. x10^6	T1 ACC. SUM	T2 ACC. SUM	T1 BIT 2 E1 > 6 GeV	T2 BIT 17 2T. E4. 2tracks
13741	15.6.83	20:51	21:19	4.36	4.66	19.5	1635	4993	425	83	1922	5798	505	1576
13742	"	21:19	22:09	4.01	4.17	13.7	2975	8002	774	106	3428	8952	892	2239
13743	"	22:07	23:00	3.60	3.70	13.3	3014	8002	784	104	3635	8519	887	2045
744	"	22:58	0:00	3.25	3.33	10.6	3527	8002	918	98	3920	8236	976	1851
13745	16/6/83	0:01	0:06	2.92	2.96	9.1	843	528	63	6	862	476	72	99
13746	"	1.53	2:52	4.37	4.58	12.9	3165	8002	823	106	3333	8877	681	2053
13747	"	2:52	3:45	3.87	4.03	14.6	3168	8002	825	121	3524	8662	796	~~1924~~ 1881
13748	"	3:46	4:45	3.44	3.54	11.9	3551	8002	924	110	3890	8303	906	1762
13749	"	4:46	5:06	3.05	3.10	10.0	1183	2574	308	31	1354	3454	304	502
13750	"	5:41	6:23	4.96	5.20	18.9	2535	8002	658	124	2955	9692	688	2436
13751	"	6:24	7:08	4.48	4.67	15.8	2661	8002	692	109	3423	9156	844	2250
13752	"	7:09	7:20	3.89	4.13	15.3	560	1704	145	22	767	1762	184	415
13753	"	7.24	8.05	3.85	3.97	14.1	2403	6876	625	88	3075	7275	701	7148
13754	"	8:05	8.57	3.49	3.57	12.2	3115	8002	810	99	3918	8172	937	7603
13755	"	8.58	9.03	3.13	3.15	10.3	104	284	27	4	136	288	40	61
13756	"	10.01	10.20	4.81	4.94	60.5	686	2387	178	118	664	3616	78	655
13757	"	11.09	~~11.42~~	~~4.93~~	5.24	24.8	1525	4852	397	98	1758	6040	351	1433
13758	"	12.31	12.38	5.09	5.07	21.1	403	1427	104	72	497	1816	69	386
13759	"	12.42	13:23	4.86	4.84	20.9	2437	8002	634	132	3143	8957	584	2101
13760	"	13.23	14.03	4.29	4.22	14.1	1976	5301	477	67	2562 ~~2447~~	5143	482	1209
13761	"	14:03	14.47	3.88	3.81	14.0	2590	7877	674	94	4171	7110	688	1496
13762	"	21:07	22:08	5.13	5.27	14.1	3368	7962	876	123	3423	8659	702	2205
13763	"	22.10	22.15			12.5		1072						
13764	"	22.21	22.50	4.21	4.21	11.4	1762	3996	459	52	1815	4366	385	1028
13765	16/6/83	22.53	0.04	3.91	3.86	24.8	4234	7863	1102	273	3729	8424	772	1823
13766	17/6/83	00.05	00.45	3.39	3.31	10.1	2403	5205	625	63	2685	5314	520	1077
13767	"	1.22	2:14	4.98	4.73	13.2	3070	~~8000~~ 7368	798	105	3183	8677	705	2281
13768	"	2:14	3:07	4.44	4.20	12.3	3139	~~8000~~ 7963	816	100	3569	8434	823	2078
13769	"	3:07	3:50	3.96	3.92	10.7	2361	5327	614	65	2573	5594	597	1218
13770	"	4.20	5.18	4.94	4.43	11.6	3464	7954	901	104	3341	8887	784	2272
13771	"	5.19	6:19	4.11	3.74	11.1	3445	7841	896	99	3648	8398	872	1917
13772	"	6:19	7:11	3.66	3.30	10.5	3157	6881	822	86	3199	7384	744	1755
13773	"	8:20	9:15	4.92	5.02	13.5	3323	7720	865	117	2867	9415	703	2583
13774	"	9:20	10:18	4.29	4.37	11.7	3503	7961	912	107	3144	9299	850	2573

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> x10^30 cm^-2 sec^-1	∫Ldt Bhabha nb^-1 Run	∫Ldt (nb^-1) Exp.	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam (GeV)	Remarks
13741	ON	ON	ON	3.12	5.50	5.50	F11206	3.0	60	45	2	20.660	End of tape. NEW ENERGY
13742	"	"	"	2.76	8.20	13.70	IBM	2.8	58	61	4	"	
13743	"	"	"	2.27	683	20.53	"	2.5	~~59~~ 59	56	—	"	
744	"	"	"	1.89	5.01	25.54	"	2.4	59	41	0	"	
13745	"	"	"	1.77	0.24	25.78	"	2.1	56	2	0	"	beams dumped
13746	"	"	"	3.07	8.68	34.46	"	2.85	59	71	3	"	
13747	"	"	"	2.35	7.58	42.04	"	2.5	59	62	3	"	
13748	"	"	"	1.91	5.74	47.78	"	2.3	60	47	1	"	
13749	"	"	"	1.74	1.71	49.49	"	2.1	60	14	0	"	beams dumped
13750	"	"	"	3.55	8.31	57.80	"	3.0	60	68	4	"	
13751	"	"	"	3.13	6.72	64.52	"	2.7	60	55	1	"	
13752	"	"	"	3.08	2.08	66.60	"	2.55	58	17	0	"	run terminated — energy ~~changed~~ changed
13753	"	"	"	2.49	5.51	5.51	"	2.5	59	45	0	20.675	New energy
13754	"	"	"	1.85	6.24	11.75	"	2.3	60	51	1	"	
13755	"	"	"	1.40	0.72	11.87	"	2.3	63	1	0	"	
13756	"	"	"	1.17	1.22	13.09	"	3.0	66	10	0	"	
13757	"	"	"	2.92	7.67	16.76	"	3.2	63	30	1	"	beams lost
13758	"	"	"	3.41	1.59	18.35	"	2.7	67	13	0	"	
13759	"	"	"	3.12	5.87	24.22	"	2.4	60	48	2	"	
13760	"	"	"	2.79	7.18	27.40	"	2.0	60	26	1	"	magnet current tripped
13761	"	"	"	2.30	4.41	31.81	"	1.9	60	36	3	"	beam dumped
13762	"	"	"	4.01	11.14	42.95	"	2.5	59	91	2	"	
13763	"	"	"	3.1	0.86	43.81	"	2.3					NORD HANG-UP
13764	"	"	"	2.84	4.28	48.09	"	2.0	59	35	3	"	
13765	ON	ON	ON	2.10	7.23	7.23	IBM	1.9	60	59	2	20.690	New energy
13766	"	"	"	1.98	3.31	10.54	"	1.8	60	27	1	"	
13767	"	"	"	3.62	9.07	19.61	"	2.5	58	74	3	"	
13768	"	"	"	2.96	9.07	28.68	"	2.1	~~74~~ 68	74	0	"	
13769	"	"	"	2.02	3.65	32.23	"	2.0	59	29	1	"	Beams dumped
13770	"	"	"	3.11	9.80	42.03	"	2.4	58	80	2	"	
13771	"	"	"	2.42	7.72	49.75	"	2.0	59	63	1	"	
13772	"	"	"	1.95	4.90	54.65	"	1.9	59	40	0	"	Beams lost
13773	"	"	"	3.78	10.54	65.19	"	2.4	58	86	1	"	
13774	"	"	"	2.74	9.45	9.45	"	2.1	58	77	2	20.705	New Energy

16/06/83

18^{45} After MARK J fixed a water hose, PETRA starts optimizing the orbit
19^{20} Work on orbit finished, injection beginning
20^{15} beams lost, after energy ramping
21^{02} Lumi filling !

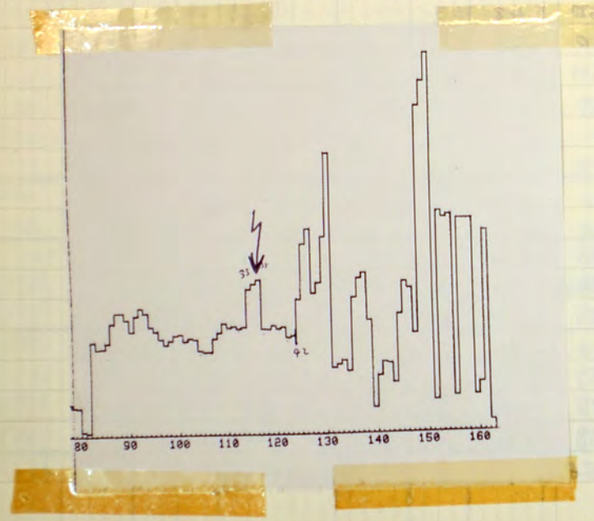
21.10 Stable beams. Stat run 13762. Get white series of error messages from YVOLTS claiming all LG/BP H.T.'s wrong. Power supplies & histograms look O.K.
We tell Minowa who says he will come and check.

21.40. All YVOLT error messages come again.
Minowa found that the probe into the DVM was broke. He repaired it. Now all O.K.

22.10 Nord Hang for no apparent reason. NORD restarted O.K.
Will have energy increase at 22.45.

23.45 Mu-chamber 11 is sending some garbage. This will distort some of the standard mue-histogs. Do not worry about it! — Now fixed !!

17/06/83
0^{00} Whittaker & Takeda on shift



The bump in Lead Glass Barrel Groups map of "Trigger 1 I/P" histogram is caused by one noisy counter.
The pulse height of it is quite low.
Please ignore it for the moment.
H. Takeda

ON/OFF N50, MIP, TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

17.6.83

00.45 New fill.
1.22 Fill complete. Run 13767 started.
3:10 "HV read error" appears frequently on dot-printer.
It says YVOLTS : ERROR IN HV-SYSTEM, SUPPLY/MAINFRAM =18
LG/BP SYSTEM HV CONTR : NO RESPONSE
The distributor #17 (counted from Φ) was checked by the program (NAR) TSTHV and the primary HV & the individual HV could be read. The applied HVs are OK.
The control system of HV monitor should be checked when we have enough time. (maybe in the shut down ?)

3:15 ID tripped. Anode current alarm. Some beams were lost.
3:60 Beams dumped.
4:14 New fill ready.
5.34 JETC HIGH CURRENT + FAULTY PART 94 flashed on screen.
8:00 Takeshita, Zacharov on shift
8:30 LG-HV check by RI-HB channel selection error at 17-42 ER-FLAG=3
DST#17 cannot be read by @TESTHV but can be read by (NAR)TSTHV and in general.
It depends on the ordering of BUS CABLENET. seems to be
Ordering was changed and Dist #17 has came 3rd position. Now problem is fixed (Takeshita)
12:21 After examining the tagging system signals I conclude that ADC channel 11 is faulty. change ADC. It looks better now. DeDaniil.
~13:00 all LG HV are tested by TESTHV. There remain 3 counters not to be controlled but dev. are not big.
~13:00 Prof. Saergal came to our control room and at that time a "MH" event came to shown him.
15:20 IBM TRANSFER ERROR 00053 or 00054 soon restarted.

16.00 17/6/83 Peter Warming & Fred Lobkowicz.

16.13 IBM error 53/54 run self-terminated
IBM clears & new run started
New fill expected 16.45, New energy ~ 17.15
16.45 PKR asks us to continue the run until ~ 17.15
18.00 Kh Meier comes in to check tagging ADC's, input signals, cables and so on
He found one dead cable and one bad ADC (channel 11, but left it for tomorrow
18.50 IBM busy
19.00 We write to tape. Run 13785 on F11 145

14 Run	Date	Start	Stop	Run start I^+	Run start I^-	DT (%)	Time (sec)	Records out	All $\times 10^6$	$T_{0\,rej}$ $\times 10^6$	T_1 Acc sum	T_2 Acc sum	T_1 Bit 2 $E_1 > 6$GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2_{tr}$
13775	17.0683	10:19	10:51	3.71	3.66	10.6	1890	4032	492	52	1638	4665	448	1114
13776	"	11:17	12:16	5.23	4.89	14.6	3256	7974	848	124	2699	9881	762	3348
13777	"	12:23	13:26	4.50	4.16	12.5	3759	7961	978	122	2999	9689	988	3216
13778	"	13:27	13:39	3.97	3.66	10.8	735	1635	191	21	615	1782	220	559
13779	"	14:18	15:07	5.06	5.11	16.6	2913	7990	759	126	2805	9708	734	3083
13780	"	15.10	16.08	4.38	4.40	15.7	3492	7950	909	143	3042	8869	883	2500
13781	"	16.08	16.12	3.82	3.77	11.1	165	437	43	48	159	432	53	120
13782	"	16.15	17.13	3.77	3.71	10.2	3345	6707	871	89	2830	7613	819	1719
13783	"	17.46	18.23	4.84	4.80	14.0	2243	5671	584	82	1969	6598	585	1800
13784	"	18.30	18.53	4.36	4.29	12.7	1348	3371	351	45	1251	3850	331	1137
13785	"	19:07	19.33	3.93	4.01	11.4	1556	3176	405	46	1398	3533	368	992
13786	"	20:16	20:50	4.98	4.92	11.4	2026	4400	527	60	1861	5168	423	1555
13787	"	20:51	22:01	4.51	4.86	9.7	4209	7564	1096	106	3330	8639	1022	2174
13788	"	23.00	23.55	4.51	4.60	12.3	3148	7934	819	101	3772	7450	865	2115
13789	17/18.06	23:55	00:58	3.97	4.01	11.1	3717	7942	967	108	3289	9130	987	2748
13790	18.6.83	00:59	1:05	3.41	3.42	49.7	376	1063	98	48	219	1965	65	1155
13791	"	1:34	2:37	4.77	4.92	17.8	3763	7910	979	174	3073	9662	873	3608
13792	"	2:37	3:06	3.69	3.65	8.6	1683	3040	438	37	1387	3298	441	922
13793	"	3:10	3:33	3.40	3.33	8.1	1370	2343	356	29	1099	2568	323	662
13794	"	4:14	5:06	5.16	5.21	14.0	3128	7975	814	114	2782	9196	828	3029
13795	"	5:07	6:12	4.54	4.57	12.5	3388	7979	881	110	3080	9049	909	2780
13796	"	6:12	7:12	3.94	3.95	11.0	3586	7964	934	103	3170	8848	955	2415
13797	"	7:13	7:39	3.49	3.49	10.2	1592	3309	414	42	1367	3661	404	905
13798	"	08:04	08:13	5.20	5.23	14.1	532	1299	139	20	393	1663	115	618
13799	"	09:50	10:58	4.80	4.90	10.3	4023	7967	1047	107	3093	9414	894	2863
13800	"	10:59	11:55	4.06	4.10	8.9	3336	6056	868	77	2611	6743	754	1877
13801	"	13:28	13:41	4.42	4.62	9.4	736	1345	192	18	484	1592	124	483
13802		13:45	14:52	4.21	4.36	8.9	3982	7169	1036	92	3095	8106	957	2247
13803	"	16:38	17:46	4.26	3.94	8.3	3994	6694	1039	86	2712	7950	919	2079
13804	"	18:13	19:20	4.43	4.28	9.8	3969	7952	1032	102	3326	8741	1196	2566
13805	"	19:20	19:55	3.99	3.60	8.2	2000	3566	520	42	1767	3676	672	970
13806	"	23:30	0:29	6.29	5.22	11.3	3479	7761	906	103	2812	8740	932	2727
13807	19/6/83	0:33	1:36	4.60	4.53	10.4	3789	7959	985	102	3322	8819	1162	2681
13808	19/6/83	1:37	2:06	4.03	3.46	9.6	1695	3324	441	42	1460	3685	497	1027
33809														

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int Ldt$ Bhabha Run	$\int Ldt$ Exp	IBM/TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	15 Remarks
ON	ON	ON	2.31	4.17	13.62	IBM	2.0	58	34	1	20.705	Beams dumped
"	"	"	3.13	9.82	23.44	"	2.5	57	80	3	"	
"	"	"	1.87	8.22	31.66	"	2.0	57	67	1	"	
"	"	"	1.87	1.35	33.01	"	2.15	54	11	0	"	Beams lost
"	"	"	3.01	7.36	40.37	"	2.4	57	60	2	"	
"	"	"	2.43	7.00	47.37	"	2.15	55	57	4	"	
"	"	"	2.36	0.61	47.98	"	2.0	49	5	0	"	
"	"	"	1.46	4.17	52.15	"	2.0	58	34	2	"	beams dumped
"	"	"	3.60	7.36	59.51	"	2.25	58	60	1	"	
ON	ON	ON	3.16	3.20	3.20	IBM	1.9	57	26	0	20.720	
"	"	"	2.73	2.95	6.15	TAPE F11 A5	1.8	58	24	1	"	beams lost
"	"	"	3.99	6.39	12.54	F11 B4	2.2	57	52	0	"	
"	"	"	2.10	6.76	19.30	IBM	2.05	59	55	1	"	
"	"	"	3.11	9.34	28.64	"	2.0	58	76	3	"	
"	"	"	2.26	7.50	36.14	"	1.9	59	61	2	"	
"	"	"	0.84	0.37	36.51	"	2.1	64	3	0	"	beams dan dumped
"	"	"	2.88	8.73	45.24	"	2.3	59	71	4	"	
"	"	"	2.30	2.83	48.07	"	1.8	57	23	2	"	
"	"	"	1.91	2.71	2.71	"	1.75	58	22	2	20.735	New energy! beams dumped
"	"	"	3.90	11.57	14.28	"	2.4	56	94	1	"	
"	"	"	2.89	8.00	22.28	"	2.3	57	65	0	"	
"	"	"	2.27	9.97	32.25	"	2.1	57	81	1	"	
"	"	"	1.86	2.58	34.83	"	2.2	58	21	0	"	beams dumped
"	"	"	4.56	1.72 2.83	36.55	IBM	2.5	57	14	0	"	Beams lost. Transmitter failure.
"	"	"	3.34	13.78	50.33	IBM	2.3	56	112	3	"	
"	"	"	2.38	7.38	57.71	"	2.0	56	60	4	"	beams lost
"	"	"	3.27	2.96	2.96	"	2.1	55	24	0	20.765	Since 20.750 has already been covered on 14.6.83
"	"	"	2.72	10.0	12.96	"	2.0	56	81	0	"	the new energy is to be 20.765
"	"	"	1.81	481	17.77	"	2.2	56	39	2	"	Beams dumped.
"	"	"	2.77	9.13	26.90	"	2.3	56	74	3	"	
"	"	"	1.89	3.58	30.48	"	1.9	58	29	1	"	Beams lost
"	"	"	3.99	13.58	44.06	"	2.5	54	110	1	"	Run ended due to the trigger.
"	"	"	2.94	8.52	52.58	"	2.2	55	69	3	"	
"	"	"	2.62	2.96	55.54	"	2.0	56	24	1	"	energy raised. JUNK

22.00 Magnet fluctuation down to ~7200 A (during cycling of PETRA magnets after beam dump). Try to go up to 7500 Amps again, current is increasing very slowly only and gets stuck at 7420 A, we phone MKK
meanwhile it went down to 7300 A again. When the K-people arrived it shot up spontaneously to 8000 Amps !! Afterwards we were able to bring it down to 7500 A manually (without interference of K)

22.25 at run start, one LG power supply cannot be switched on due to over current
Kobayashi comes in to sort out the problem → short circuit in a photo tube

22.55 start running again

~23.20 hell driver attacked NW-hall, near miss.

18/06/87

0[00] Hagerdt & Zachara on shift

1[10] Too high dead time and trigger rate for run 13790! (Beam-gas events!). However it was only 5 min. run, just before the end of fill. We hope everything will go well with new beams.

1[40] Run 13791. Dead time still very high (~50%). We called PKR, they were not aware of any problem but promised to help.

1[45] They've done it pretty well. Dead time went down to 10%! (However total dead time will remain high for this run)

2[30] { JDAS READOUT ERROR 43 + NO TRIGGERS! Run paused and restarted, errors are gone.
MP-16 out of sequence

3[00] News energy in 10 minutes.

5[20] Magnet fluctuation down to ~7400 A. Set back to the 7100 A with K-computer and then rapidly fluctuated up to 7850 A. Adjusted to nominal value (this time manually) and seems to be stable now.

07:58 new filling ready - run 13798 started

08:00 Darrell & Dietrich on shift.

08:13 most of the beam lost - we get the "switch off the high voltage" message followed by "short break". Called Tasso (coordinating experiment) who say that there is a transmitter problem and PKR expect to restart soon.

09:50 News filling ready - we start run 13799.

12:00 Beams lost during ramping to new energy. The news energy is to be 20.765 since 20.750 was already covered on 14.6.85.

13:28 After more troubles, this time due to beampipe shutters closing - i.e. possible vacuum failure, we have a new filling and start run 13801

13:41 We stop the run to replace a tagging system ADC. It takes 4 minutes and so we start run 13802 at 13:45

14:52 Run stopped for a new filling. Beames dumped.

ON/OFF N50 MIP TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev F_R (%)	Bhabha Σ	MH	Ebeam	Remarks

16[00] Knies & Takeda on shift

16[35] New fill is ready. Start run 13803

17[30] TASSO proposed a new fill. Beam lifetime is short.
New fill at ~17[45]. Fill ready at 18[05]

~~18[02]~~ 19[53] Beams lost. ID tripped. "Short Break"
20[40] (or somewhat earlier!) Magnet current at ~ 7340 amps
computer or manual controll has not much effect on current — we called MKK1

21[00] Another trouble was found.
DVM for LG HV read-out was found to be broken.
Its indication was crazy. It was replaced with a new one.
It should be noted that no trial to adjust HVs should be done until the broken one is repaired, because the new one is not calibrated to ~1% level.

21[10] The magnet trouble was fixed.

22[37] A long "short break" ended. Injection started.

23[30] Beams ready.

LG high voltages were checked with new DVM ⇒ No problem.
A new DVM seems to be well calibrated as the old one.

19/6/85 0000 Bowen & Glossner on shift (last 8!)
No triggers from computer. Triggers at CAMAC, started new run which cured problem
H. Mette trigger bypass seems to cause the "lost" triggers to still be counted against the run end condition, all this is the reason the energy is about 0.4% of all triggers! Nord50 still counts 800Z

0145: New energy at 2:00 AM

0418: No triggers again - Red lamp on. (level 5 ?)

04:33 beams lost
SHORT BREAK Short in magnet - PKR is looking at it

07:27 started new during optimizations

07:53 magnet fluctuated down to 7460, but went back up immediately.

18 RUN	DATE	START	STOP	AT RUN START I⁺	AT RUN START I⁻	DEAD TIME %	TIME sec	RECORDS OUT	ALL ×10⁶	T_0 rej ×10⁶	T_1 acc sum	T_2 acc sum	T_1 BIT2 E_1>66eV	T_2 Bit 17 2T·E4·2b
13810	19/6/83	02:09	3:05	3.77	3.71	8.3	3291	5953	856	71	2899	6202	1075	1414
13811	19/6/83	4:10	4:30	5.03	5.35	2270	830	1728	345	47	607	1853	198	547
13812	19/6/83	7:27	8:12	4.79	4.67	10.0	2619	5194	682	68	1870	6147	498	1627
13813	19/6/83	9:19		5.12	5.07									
13814	19/6/83	9:50	10:46	4.56	4.51	12.7	3321	7975	864	109	3064	8809	993	2509
13815	19/6/83	10:46	11:39	4.03	3.97	13.4	3122	7985	812	109	2752	8384	929	2541
13816	〃	11:39	12:31	3.59	3.49	12.2	3053	7304	794	97	2594	7672	822	2222
13817	〃	14:06	14:53	4.58	4.57	9.5	2809	5494	731	70	2246	6001	776	1615
13818	〃	15:03	15:36	3.73	3.57	8.4	1635	2966	425	36	1412	3068	495	744
13819	〃	17:48	17:51	4.61	4.61	18	150	492	39	7	321	271	22	76
13820	〃	18:24	18:46	4.48	4.47	9.1	1356	2526	353	32	1182	2481	277	668
13821	〃	21:24	21:30	3.83	3.81	5.2	348	521	907	4.6	300	289	109	86
13822	〃	21:34	22:27	3.75	3.73	8.5	3093	5746	805	68	2752	5745	1044	1349
13823	〃	22:31	22:45	3.34	3.37	7.9	872	1506	227	17	705	1582	255	367
13826	〃	23:21	23:40	4.76	4.58	12.3	1161	2879	302	37	1065	2990	388	1043
13827	〃	23:43	0:06	4.47	4.35	12.9	1320	3310	343	44	1224	3550	453	1182
13828	20.6.83	0:06	1:06	4.24	4.12	12.3	3588	7943	933	115	3147	8801	1095	2898
13829	〃	1:07	1:53	3.73	3.62	10.5	2711	5751	704	73	2404	6140	836	1896
13830	〃	2:25	3:23	5.29	5.52	12.5	3336	7981	868	109	3148	8706	1119	2831
13831	〃	3:24	4:22	4.18	4.16	11.7	3409	7918	887	103	4061	7576	1051	2156
13832	〃	4:22	4:24	3.43	3.19	8.9	114	209	30	2.6	91	223	39	62
13833	〃	4:27	4:56	3.39	3.15	8.2	1696	2987	442	36	1477	3149	546	757
13834	〃	5:29	6:21	5.22	5.40	16.6	3063	7990	797	133	2785	9297	923	3428
13835	〃	6:21	7:16	4.54	4.68	13.2	3257	7979	847	111	3101	9196	1044	3254
13836	〃	7:17	8:18	3.99	4.10	10.9	3651	7963	951	104	3309	8889	1101	2638
13837	〃	8:19	8:26	3.46	3.55	9.4	411	799	107	10	348	847	114	221
13838	〃	9:31	9:38	4.55	4.50	12.1	409	809	107	13	274	1113	69	~~137~~ 400
13839	〃	15:58	16:11	4.15	4.68	12.3	723	1523	188	23	528	1842	178	624
13840	〃													
13841	〃	17:06	17:09	4.53	4.61	12.5	132	371	34	4	134	356	452	470
13843	〃	20:04	20:50	4.10	4.41	10.8	2763	5753	706	76	2227	6621	881	1678
13844	〃	22:04	22:58	4.68	4.82	13.0	3222	7979	838	103	2903	8071	1122	11236
13845	〃	22:58	23:56	4.14	4.27	11.8	3472	7866	903	106	3147	9360	1400	10190
13846	〃	28:57	0:10	3.64	3.76	10.7	771	1568	201	22	641	1780	219	1915

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	$\int Ldt$ Bhabha Run	$\int Ldt$ Exp	IBM/TAPE	B.P. (V)	T_2 Rej Ev Fr. (%)	BHABHA Σ	MH	E_{BEAM}	REMARKS
ON	ON	ON	2.34	7.70	7.70	IBM	2.0	57	49	4	20.780	NEW ENERGY ; new fill
〃	〃	〃	4.23	3.51	11.21	〃	2.5	52%	26	0	〃	Beam lost magnet problems
〃	〃	〃	3.51	8.03	19.24	〃	2.3	55	65	3	〃	Beam lost → RUN END
				?			2.5				〃	NORD-10 HANGS NO RUN SUMMARY
〃	〃	〃	3.30	10.38	29.62+?	〃	2.3	55	84	2	〃	
〃	〃	〃	2.58	7.79	37.41+?	〃	2.4	53	63	1	〃	
〃	〃	〃	2.13	5.44	42.85+?	〃	2.4	53	44	0	〃	BEAMS DUMPED
〃	〃	〃	3.28	8.90	51.75+?	〃	2.3	54	72	0	〃	
ON	ON	ON	2.30	2.72	2.72	IBM	2.5	57	22	0	20.795	BEAMS LOST
〃	〃	〃	2.61	0.37	3.09	〃	2.2	56	3	0	〃	Beam lost (sudden fall)
〃	〃	〃	2.78	3.96	7.05	〃	1.9	56	32	2	〃	Beam lost
〃	〃	〃	2.77	0.62	7.67	〃	1.9	58	5	0	〃	Magnet trip
〃	〃	〃	2.36	6.44	14.11	〃	1.8	57	52	4	〃	
〃	〃	〃	1.99	1.49	15.60	TAPE F11133	1.7	58	12	0	〃	Beam dumped
〃	〃	〃	?	?	?	F22B49	2.3	56	33	1	〃	Tape Info: Energy was input in GEV and currents were input in mA → no beam calculated
〃	〃	〃	3.04	3.34	18.94+ε	F22B60	2.2	57	27	0	〃	ε ≈ 3nb⁻¹
〃	〃	〃	2.48	8.79	27.73+ε	IBM	2.1	57	71	2	〃	
〃	〃	〃	2.15	4.33	32.06+ε	〃	1.9	57	35	1	〃	Beam lost
〃	〃	〃	3.63	10.27	42.33+ε	〃	2.6	56	83	3	〃	First 200 events: B is about 1% too low. Unstable Magnet current
〃	〃	〃	2.46	6.81	49.14+ε	〃	2.0	57	55	1	〃	Unstable Magnet current. Noisy L6 (probably)
〃	〃	〃	1.74	0.50	49.64+ε ≈ 52.6	〃	1.7	60	4	1	〃	〃
〃	〃	〃	1.58	2.36	2.36	〃	1.7	58	19	1	20.810	Beams dumped
〃	〃	〃	4.07	8.55	10.91	〃	2.5	56	69	1	〃	Magnet stable
〃	〃	〃	2.92	7.31	18.22	〃	2.3	57	59	0	〃	
〃	〃	〃	2.28	7.44	25.66	〃	2.0	56	60	1	〃	
〃	〃	〃	2.13	0.50	26.16	〃	1.9	58	4	0	〃	Beams lost
〃	〃	〃	3.54	1.74	27.90	〃	2.4	56	14	0	〃	〃 〃
〃	〃	〃	3.48	2.48	30.38	〃	2.4	56	20	2	〃	Beam lost
				3.22	33.60	〃	2.3					Nord hung on level 14 when drawing event
〃	〃	〃	3.84	0.74	34.34	〃	2.3	48	6	0	〃	IBM disconnection.
〃	〃	〃	2.89	7.31	41.65	〃	2.4	57	59	4	〃	Beams lost
〃	〃	〃	3.22	10.79	52.44	〃	2.2	56	87	0	〃	
〃	〃	〃	2.88	8.06	60.50	〃	2.1	58	65	0	〃	
〃	〃	〃	2.61	2.23	62.73	〃	1.9	57	18	0	〃	

19

19.6.83

8:00 S.Wagner, Kawamoto

8:10 Beam lost, ID tripped, (RUN 13812 stop)

9:40 NORD-10 HANGS → DAS TERMINAL HANGS, TRIGGERS STOP BEING ACCEPTED, CONSOLE LIGHTS STOP FLICKERING → CONVINCED THIS IS A NORD-10 PROBLEM, SO REBOOT → SEEMS TO WORK

12:25 BEAMS DUMPED FOR NEW FILL.

15:05 NEW ENERGY (20.795/BEAM) AT FIRST HIGH BACKGROUNDS, BUT AFTER BACKGROUND OPTIMIZATION, BP CURRENT ~1.8 → GOOD

Narozza & Diedrumm on shift

16.00 Injection

16:30 Short Break

16:50 Magnet Trip : Alarm: Brummenwanne Vordond < was Reset.
Run up to nominal field again.
17.50 beam for 5 min. Then again Sensoralarm all. It's too hot.
When we started run, magnet had lowered itself to 7400 A.

20.00 Magnet trip: Alarm Vorlaufdrossel Primär < Expert called

21.00 Experts can't get magnet started, call other expert by phone (Wedel)
Now they have managed to put 4500 Amps in.

21.20 Magnet at full field
Start run ~1.30 hours lost

22.30 Trouble with FSB DATA Link, writing to Tape Experts were called
ca 2355 IBM Link up again.

20/6/83

0:00 Rieseberg & Kobayashi

0:20 Forward Counters # 3 and 4 : low in MEAN TDC and MEAN ADC ——→ Cures later by itself

1:50 Beams lost. PKR warned a few seconds before the Big loss !

2:20 New fill ready $I^+ = 5.3$, $I^- = 5.5$, BP = 2.6
Start Run 13830. At Run-start the magnet current is 7430A instead of 7500 A (4.802kG instead 4.845)
We try by computer and by hand to increase the current. Very slowly the current comes back to the correct value. We continue the run.

2:40 Another fluctuation of the magnet down to 4.828kG (not yet indicated as "fluctuation"). Current is rather unstable.
More fluctuations

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

4:10 During run # 13831 (started 3.23) we have many magnet fluctuations up (observed 4.866kG) and down (observed 4.812kG). We always react with the MAGNET program : GO 7500.

Moreover we observe in this run a somehow noisy Lead Glass : Periodic spikes in LG hit maps Barrel I and trigger bit 13 (Z. Olsson) very high, and Trigger 1 Input spiky in LG-region.
—ok in next run—.

4:25 Change of energy : New E_{beam} = 20.810, Run 13833 started

4:55 Stop for new filling

5:00 High voltages of all the LG counters were checked, and six of them were found to be wrong because the corresponding HV distributor channels were dead. They were connected to the other channels.

5:25 New filling ready $I^+ = 5.2$, $I^- = 5.4$ mA, BP = 2.5 V, L gated ≈ 4.9×10^{30}
but ID : few cells have I = 2.7 μA

Start R 13834 — magnet current is stable now

8:00 Baines, Becker

8:26 Beam lost

8:38 " " again → short break

8:39 Magnet fluctuations

10:53 INJECTION

11:40 TROUBLE WITH 1 GHz TRANSMITTER

12:30 INJECTION

13:00 SHORT BREAK ~~Fluctu~~
TROUBLE WITH TRANSMITTER

13.10 DELFS (FSB) calling. They will switch off the IBM Link after 1/4 hr for 1/2 hr to do a final repair.

13.30 Magnet current down due to Interlog

14.00 " " → 7500 → 3000 taps.

15.55 Start run 13839

16:00 Mills / Schmidt 20/6/83

16.06 beams LOST.

17.02 Nord hung on Level 14 when drawing event

17:09 no connection with IBM. Beam Lost Run 13842 to tape but so short we junk it
L seemed to be planned. I complain to coordinators (TASSO/Netz)

17[15] problem with the magnet current.

19[51] Beams stored - optimising Start Run 13843

20[50] Beams lost Problems w. th RF

21:59 Start run 13844 Large background fluctuations

22:45 Histogram : Forward counter mean ADC seemes to be slightly different compared to the last output.

21-06-83

0:00 A. Ball, G. Kuhles
0:14 Energy raised to 20.825 GeV
01:21 Beams dumped. Stop run 13847.
02:45 New fill ready. Start run 13848.
- Had to pause run + run-down I.D. during B.G. optimisation - wild fluctuations in B.P. readings.
04:30 ID start-ups.
05:00 Trigger box hang-up 'level 6'. Cured by 'reset event', as normal.
05:51 Stop run 13850. Dump beams
06:29 New fill. Start run 13851. ID start-ups after 3 mins.
07:23 Start run 13851, p-beats 3 missing for 1st 200 events
07:57 Beams lost, ID start-ups. stop run 13852.

8[00] A. Wagner & P. Warming on shift
8[50] Trouble with vacuum
9[33] Trouble with transmitter Nord
10[15] New Klystron for Transmitter (N) → restart not before 15:00
15[45] still no beam

16[00] Marshall, Zachara on shift

17[00] Trouble with synchrotron. Restart about 6.00 p.m." (On PETRA monitor)
18[15] Restart still expected to be at 6.00 p.m.!!
18[50] Injector/accelerator
19[37] Beam lost
20[31] retiyel start again

ON/OFF N50	MIP	TOF	<L> ×10[30]	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

21[st] charge energy

22.6.83

0:00 Baines & Takeshita on shift
0:34 RUN 13859 STARTED BUT ~~WHEN~~ DURING LG PED (TRIG 1-13) RUN PAUSE BOTTON WAS PUSHED AND THIS RUN TERMINATED — SO RUN 13859 IS JUNK RUN.
0:35 13860 STARTED.
0:44 NO EVENT — JDAS READ OUT ERROR 45 MP-16 ···· YY=1 : RUN PAUSED AND COTINUED.
3:00 HIGH VOLTAGES OF ALL LG's WERE TESTED AND FOUND OK.
5:39 NEW ENERGY : 20.855 GeV

8[00] D.C. Darvill and H. Riesberg
8[40] New fill ready, start Run 13867 $I^+ = 5.12$, $I^- = 5.01$, BP = 2.15 V, $L = 4.9 \times 10^{30}$!

Test of A. Wagner's SYNRAD program Hits in R1 81, R2 83, R3 80 | Total # of hits 244 / event at $I^+ = 4.94$, $I^- = 4.83$

Mean hits from event display and SYNRAD histogram : 212. Average is spoiled by a few LUMI events with "wool" and about 500 hits
A. Wagener improves his program which calculates the mean number of synchrotron hits in the rings of the ID and histograms the hit number/ev, the timing and the amplitude.

11:10 Run passed for ID checks

11:38 Stop (Run 13869) for beam measurements and dumps
Stable beams at $E_b = 21.326$ $I^+ = 3.3$, $I^- = 3.3$ for some time, beam lifetime ~ 2.6 h
12[30] SHORT BREAK shows up : Transmitter problems
14:00 Chris Youngman from Tesla calls to say that DESY gave a status report. They are having difficulties injecting e^- into the synchrotron. Also they want to do some more checks on their HVs. They say we are unlikely to get beam before 15:00.
15:00 Kohaupt uses the 16Hz system as after burner !

E beam	I^+	I^-	
21.388	2.6	3.3	
21.503	2.44	3.11	
21.527	2.42	3.08	then beams lost. Lifetimes seemed to be good, but they were not indicated on the TV because of the BREAK sign

RUN	DATE	START	STOP	RUN I+	START I-	DEAD TIME (%)	TIME (sec)	RECORDS OUT	ALL ×10⁶	Tφ REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1 >6 GeV	T2 BIT 17 2T. E4. 2T1
13847	21/6/83	00:15	01:21	3.51	3.63	9.4	3982	7755	1036	97	3455	8458	1280	2349
13848	"	02:46	03:47	4.72	4.64	11.6	3549	7980	923	107	2988	9070	1128	2884
13849	"	03:48	04:51	4.11	4.04	10.8	3674	7955	956	103	3326	8771	1246	2619
13850	"	4:52	5:51	3.59	3.51	10.7	3527	6842	918	98	2919	7528	1078	2037
13851	"	06:29	07:23	4.75	6.37	14.3	3084	7992	802	115	2873	9163	1036	3313
13852	"	07:23	07:56	4.11	4.68	13.6	1959	4945	510	69	1871	5688	667	1990
13853	21/6/83	19:12	19:39	5.19	5.36	17.7	1622	3746	396	70	1225	4426	436	1502
13854	"	20:34	21.33	4.97	4.86	14.6	3359	7991	874	128	2861	9131	1069	2938
13855	"	21.33	21.36	4.29	4.19	11.9	129	376	33	4	138	328	57	118
13856	"	21.42	21.49	4.19	4.10	11.4	398	910	104	12	335	1004	131	308
13857	"	22:10	23:14	4.77	4.84	16.9	3163	7985	822	139	2799	9185	1040	3090
13858	"	23:16	23:23	4.17	4.23	12.7	380	934	101	13	349	1079	137	381
13860	22/6/83	00:37	01:39	4.79	4.86	13.6	3684	7974	959	130	3169	8990	1179	2408
13861	"	01:39	2:43	4.10	4.17	10.2	3770	7963	981	100	3457	8304	1270	2107
13862	"	2:44	3:48	3.56	3.62	8.9	3801	7146	989	88	3378	7507	1275	1792
13863	"	04:12	5:06	5.16	5.25	15.6	3159	7988	822	128	3040	8729	1117	2774
13864	"	05:12	5:36	4.47	4.57	13.5	1761	4188	458	62	1734	4419	635	1377
13865	"	5.39	6:40	4.10	4.09	10.9	3613	7958	940	103	3478	8410	1302	2338
13866	"	6:40	7:22	3.56	3.65	9.5	2471	4808	643	61	2207	5162	807	1336
13867	"	08:41	09:41	5.13	5.02	11.9	3621	7985	943	112	3134	9078	1116	2870
13868	"	9:42	10:49	4.45	4.35	9.8	3930	7966	1023	101	3535	8432	1261	2425
13869	"	10:49	11:39	3.84	3.74	8.9	2588	4805	673	60	2268	5045	808	1431
13870	23/6/83	21[16]	22:11	4.92	5.01	20.3	3195	7991	831	169	2438	11253	723	3867
13871	"	22[10]	22:58	4.29	4.37	12.3	2753	5846	716	88	2089	7106	706	2259
13872	"	23:46	23:56	3.77	3.54	10.4	585	1029	152	16	321	1329	74	387
13873	24/6/83	0:01	0:52	3.36	3.43	17.3	3018	7997	785	136	2333 464	10192	769	3643
13874	"	0:52	1:07	3.01	3.08	10.9	883	1836	230	25	689	2312	210	614
13875	"	9[50]	10[03]	11[08]	4.09	4.64	3859	6978	1004	94	2708	8371	814	2429
13876		very short run ignore												
13877	"	11[12]	12[37]	3.4	3.9	10.5	5070	7942	1303	136	3382	9348	1115	2411
13878	"	42[38]	12[52]	2.86	2.31	7.2	818	1207	213	15	537	1451	147	334
13879	"	14[05]	15[01]	4.82	4.95	29	2710	6906	705	203	2040	8522	733	3363
13880	"	15[45]	15[49]	4.08	4.87	14.5	165	472	43	6	139	492	48	171
13881	"	16[22]	16[50]	5.00	5.00	17.0	1667	4357	434	74	1398	5351	493	1991

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Bhabha Run	∫Ldt Exp.	IBM/ TAPE	B.P. [V]	T2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam GeV	REMARKS
13847	ON	ON	ON	2.13	807	807	IBM	1.8	57	65	4	20.825	NEW ENERGY
13848	"	"	"	3.49	13.90	21.97	"	2.2	55	112	4	20.825	
13849	"	"	"	2.64	8.81	30.78	"	2.1	56	71	1	"	
13850	"	"	"	1.98	6.70	37.48	"	2.0	55	52	1	"	Beams dumped.
13851	"	"	"	3.88	8.69	46.17	"	2.5	55	70	4	"	
13852	"	"	"	3.02	4.59	50.76	"	2.3	55	37	2	"	Beams lost.
13853	"	"	"	4.73	5.19 7.20	57.96	"	2.6	53	66	1	"	Beams lost.
13854	"	"	"	4.07	11.38 13.67	70.25	"	2.5	53	91	1	"	
13855	"	"	"	3.81	0.50	70.75	"	2.4	47	4	0	"	
13856	"	"	"	3.64	1.12	1.12	"	2.4	52	9	0	20.840	NEW ENERGY Beams lost
13857	"	"	"	3.74	11.06	12.18	"	2.2	54	89	1	"	
13858	"	"	"	3.73	0.99	13.17	"	2.1	57	8	0	"	Beams lost
13860	"	"	"	3.80	10.57	23.74	"	2.3	54	85	3	"	
13861	"	"	"	2.84	10.44	34.18	"	1.8	54	84	0	"	
13862	"	"	"	2.21	7.58	41.76	"	1.65	57	61	1	"	Beams dumped
13863	"	"	"	3.97	10.32	52.08	"	2.2	54	83	2	"	
13864	"	"	"	3.32	4.48	56.56	"	2.0	55	36	0	"	
13865	"	"	"	2.72	9.96	9.96	"	1.8	56	80	4	20.855	NEW ENERGY
13866	"	"	"	2.26	5.73	15.69	"	1.6	57	46	0	"	
13867	"	"	"	4.00	11.08	26.77	"	2.2	55	87	1	"	
13868	"	"	"	2.92	9.84	36.61	"	1.9	54	79	3	"	
13869	"	"	"	2.27	7.10	43.71	"	1.7	55	57	1	"	Beams dumped
13870	"	"	"	3.84	11.45	55.16	"	2.8	59	92	4	"	
13871	"	"	"	3.31	8.47	63.63	"	2.1	55	68	3	"	magnet trip, vacuum dropped
13872	"	"	"	2.26	0.87	64.50	"	2.	56	7	0	"	change of energy
13873	"	"	"	1.79	5.24	5.24	"	1.9	58	42	1	20.870	NEW ENERGY
13874	"	"	"	1.87	1.00	6.24	"	1.7	58	8	0	"	Beams lost
13875	"	"	"	3.40	11.84	18.08	"	2.0	56	95	3	"	IBM Trouble
13876								1.6					
13877	"	"	"	2.30	8.48	26.56	"	1.6	56	69	2	"	
13878	"	"	"	2.07	0.62	27.18	"		58	5	0	"	Beams dumped.
13879	"	"	"	3.20	7.71	34.91	"	2.5	56	62	3	"	beams lost
13880	"	"	"	4.59	0.50	35.41	"		49	4	0	"	Beams lost.
13881	"	"	"	4.42	4.99	40.40	"	2.8	55	40	1	"	"

22.6.83 cont'd

If 21.527 GeV is the maximum energy, which can be reached with the present PETRA, we have 45 more steps to go.

15²⁰ Trouble with septum (Synchrotron) Restart ca 16:30 . W's leave our magnet on since it is critical.

18⁰⁰ TROUBLE WITH A MAIN POWER SUPPLY. NO ONE KNOWS HOW LONG DOES IT TAKE TO BE OK. WE DECREASED THE MAGNET CURRENT TO → 500 AMPS.

16⁰⁰ Kawamoto + Kamamiya

20⁵⁰ TROUBLE WITH 10KV CELL ; NO BEAM BEFORE 5 AM TOMORROW (23.6).

21³⁰ Restarting time is now updated to 7⁰⁰ a.m. (on PETRA MONITOR TV)

0⁰⁰ JUNGE & S. WAGNER
NO BEAM BEFORE 7 A.M., SO WE WILL SPLIT SHIFT.

07:00 PKR want to start injection but is waiting on TASSO ; they have to set their broken inter
07:15 PKR is still waiting on synchrotron ; we increased magnet current up to 7500 amps. ✓
8⁰⁰ Ambros & Warming on shift
10:15 PKR has trouble with ~~[illegible]~~ transport-magnet (Endstück 3)
set magnet to 1000 amps
10:30 set magnet to 7500 amps for cosmic-run
11:30 set magnet to 1000 amps
14:30 PKR told: restart ca 18⁰⁰ Request access to install μ-chamber lead shielding at +z end. Break interlock.
15:00 we leave graveyard to attend Jade meeting
15:30 Access complete, interlock reset.

16:00 Becker, Stephan

18³⁰ TV → restart ca 20⁰⁰

20⁰⁰ Beams have current and PKR ask for magnet to be put on. Find it can't be brought on. Call MKK. system had been switched at Power supply. after reset everything comes on

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

H.V. Error power supply 5 HV ~~Stat~~ = 1.870 Should be 1.970
↳ Yamada says its all OK!!
Try to look at Histograms - Too quick - Display busy - wait 20 secs
Cannot get out it. Try to find it will be demonstrate.
↳ cured - someone logged on still!

22⁵⁸ Magnet trip. but no warning on TV
runs stopped, HV down, K group informed - cooling problems.

23³⁵ Mark J says they'll change energy at 23⁵⁰

24.6.83
0⁰⁰ NOZAKI & TAKESHITA on shift
1⁰⁷ Beam lost.
Short break due to RF transmitter problem.
3:50 TV: RESTART 9:00
MAGNET current down to 500 A.

8⁰⁰ ~ 16⁰⁰ Felst + Yamada on shift
9⁰⁰ magnet current up to 7490A. PETRA starts injection
10⁰⁰ new filling OK
14⁰⁰ new filling ready, but trigger rate very high, PKR tries to improve the orbit w/ power supply for correct coil Regnitt, PKR is going to exchange it, meanwhile we run with 50% deadtime
14⁴⁰ power supply replaced, configured OK
14⁴⁵ S. Narita and H. Kichimi come to "Broken" after the TOF counters

16:00 D. Darvill and A. Wagner on shift
16:12 beams ready, start run 13661.
16:50 beams lost
18:33 beams lost.
19:01 new filling ready - Run 13662 started.
21:15 energy changed to 20.865
21:26 beams lost
22:02 new filling ready - Run 13663 started

25.6.83 0^{00} – 8^{00} Matsumoto + Peters

0^{00} problem with synchrotron
1 14 near filling ready
1 50 Nord hang up nothing unusual visible restart of Nord
2 05 beams lost
2 48 new filling ready
5 53 no trigger. We paused data taking and reset on the trigger base
It helped error message READOUT ERROR 44 Time out branch 2 crate 5 Leadglass ADC
8 27 we have started run 13854
8 38 channel 40 of TOF counters changed because of inefficiency; now we are
good triggering on one side
channel 36 changed for same reason (was triggering on -z side only)

9 01 run stopped because IBM link down
9 04 new run started IBM up again

The RUN-summary print-out is the most unreadable thing I ever saw! R. Hicks

Trying mainly a few more shifts

9 41 energy changed to 20.900 GeV
10 54

1:06 JDAS readout error 44 – timeout branch 2 crate 5 : Leadglass ADC's
appeared on JDAS console, but did not reocur.
(negative entry rate and average Lumi ?!)

16: Ball, KAWAMOTO

17;05 New fill, beams ready; R 13903 START
17;12 RUN STOPPED. ← HISTOGRAM CANNOT BE DISPLAIED. : [message TOO QUICK, wait 20 SECONDS]
ABORT EVENT DISPLAY explicitly → doesn't change.
we restarted JDAS.
17;13 RUN 13904 start. New HISTOGRAM COMES.
17:37 Beams lost. Stop run 13904.
18:13 New fill ready. Start run 13905.
19:11 Run 13905 ended. Start run 13906. Online disk 92.3% full. Call IBM operators. JDUMP
Job is active.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

19:21 disk was dumped OK.
19:44. Beam lost, ID tripped → RUN 13906 END
20;30 New fill with new energy (20.915 GeV). RUN 13907 start. 20.55. Run stopped to replace card in L.G. trigger.
22:09 Beams lost, ID slow ans. Stop run 13909.
22:29 New fill ready. Start run 13910
22;39 ON THE TV, "SWITCH OFF HV" message appeared. RUN STOPPED (RUN 13910)
and then, "short Break". [a trouble with transmitter (?)]
The trouble was recovered without dumping the beams.
Then, after very short "short break", started new RUN.
22;55 ~~Beam lost~~. ID tripped, Beam lost (22:45)
23;21 New fill ready. START RUN 13912

0^{00} Kado, Olsson, beams lost, R13912 stopped.
Then is an inefficiency in counter 39 in TOF MEAN TOC II
1:20 beams lost, Run 13913 stopped
2.19 YSPY: Muon digitisers missing 38....51
2:56 Trigger box hangs up due to readout-error in muon crate (JDAS error 44)
Stop run 13914 and start # 13915 solves the problem
4:02 Trigger box hangs up; "pause/cont.", "reset event", etc. does not help → stop run 13916 | "Beam lost" was the reason.
start run 13917 – beams lost nearly at same time, no run summary was printed

8:00 Krehbiel & Kobayashi
8.05 Run stopped, Beams dumped.
9.06. New fill ready. + on
9.05 Nord hangup, no printouts. Level 03, Protect Ring 3+2, Interrupts, Paging on. Data 2627, Regist L on
Continue-Button on. Standard procedure followed.
9.52 Beam lost
10.25 Start again, but rather high background. Improvement after complaint. Frequent MUON CRATE 11 missing.
11:00 Beam lost 11.31 JDAS Error Time out 63 Cr 2 Muon Ch.
Run 13924 High current, >5 mA/beam. Background & Rate problems. All "shot" events, with many counters on, also L6, but not identifiable tracks in ID, but ca 700 hits.
Dead-time > 30%.
Run 13925 JDAS Error 44 Timeout branch 2, crate 5, Leadglass ADC
15:30 "SHORT BREAK". Problem with synchrotron. It will take ca 1 hour.
15:58 New fill ready

RUN	DATE	START	STOP	at Run Start I+	at Run Start I-	D.T. %	Time (sec)	Records out	All x 10^6	T_0 rej x 10^6	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T·E4·2tr
13882	24.6.83	17:54	18:33	5.01	5.16	15.3	2274	6026	592	90	2035	6929	757	2460
13883	"	19:01	19:17	4.93	4.90	17.2	882	2448	230	40	746	2880	298	1118
13884	"	19:48	20:32	5.06	5.02	24.6	2581	7994	672	165	2080	7935	784	2870
13885	"	20:32	21:17	4.49	4.46	16.2	2685	7985	699	113	2302	8026	828	2774
13886	"	21:22	21:27	3.99	3.98	12.8	303	778	79	10	258	833	94	291
13887	"	22:02	22:54	4.48	4.96	14.6	3080	7977	802	117	2892	9273	1138	3180
13888	"	22:54	23:06	3.93	4.37	12.4	670	1703	174	22	621	1862	231	614
13889	25.6.83	1:18	1:50	4.71	4.74	13.4		5589						
13890	"	2:05	2:12	4.14	4.19	12.3	324	788	84	10	318	854	117	239
13891	25.6.83	2:55	3:44	5.08	4.66	14.4	2902	7449	755	108	2687	8840	1049	2931
13892	"	5:39	6:48	4.29	4.48	12.2	4075	7969	1060	129	3169	9446	1199	2877
13893	"	6:49	7:48	3.34	3.81	9.6	3558	6009	976	80	2760	6957	995	1887
13894	25.6.83	8:30	9:04	4.91	4:54	14.3	1940	4895	505	72	1755	5933	573	2221
13895	"	9:08	9:45	4:36	4:07	12.9	2089	5019	543	69	1873	6040	632	2122
13896	"	9:54	10:57	3.92	3:31	11.2	3781	7968	983	109	3206	9647	1050	3157
13897	"	10:58	11:23	3:41	3:40	10.2	1412	2877	367	37	1210	3313	397	1071
13898	"	12:16	12:30	4:04	5:20	16.0	165	473	44	7	142	521	46	233
13899	"	13:05	13:19	5:20	5:25	16.0	436	955	113	18	242	1892	84	565
13900	"	13:17	14:06	5:11	5:16	16.4	2897	8002	757	123	2750	9104	987	3275
13901	"	14:06	14:56	4:52	4:57	15.2	2896	7820	753	114	2870	9335	1010	3422
13902	"	15:39	16:04	5:10	5:02	15,3	1310	3451	341	52	1171	4207	430	1642
13903	"	17:05	17:12	4,92	4.93	15,2	454	1106	118	18	354	1305	116	1950
13904	"	17:14	17:42	4.81	4.82	14.0	1647	4074	429	60.2	1481	4829	541	1835
13905	"	18:18	19:13	4.80	5:08	17.9	3290	7942	841	117	2897	9529	1083	3471
13906	"	19:13	19:44	4.21	4.46	14.2	1876	4446	478	67.9	1762	5199	678	1799
13907	"	20:30	20.57	5.04	4.98	14.8	1578	4049	410	60	1372	4750	469	1729
13908	"	21:06	22:00	4.61	4.55	13.2	3254	7970	847	112	3100	9293	1104	3085
13909	"	22:01	22:09	4.03	3.98	11.8	457	1116	119	14.1	441	1218	169	387
13910	"	22:35	22:39	5.15	5.20	16.3	213	581	56	9	149	693	34	257
13911	"	22:45	22:55	3.88	4.12	10.6	536	1036	139	15	391	1326	125	428
13912	"	23:21	00:05	4.07	4.08	11.2	2727	6247	710	83	2362	7168	837	2478
13913	26.6.83	0:34	1:21	4.54	4.59	11.7	2829	6378	737	86	2465	7394	894	2494
13914	"	2:09	2:59	4.84	4.77	13.2	3011	7150	783	104	2598	8619	849	3154
13915	"	3:02	3:34	4.05	4.05	11.6	1898	4267	444	57	1779	5077	583	1667

N50	MIP	TOF	<L> x 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
ON/OFF	ON/OFF	ON/OFF										
ON	ON	ON	4.24	7.98	48.38 (46.40)	IBM	2.5	54	64	3	20.870	Beams lost
"	"	"	4.55	3.74	53.12	"	2.4	54	80	1	"	Beams lost during background optimization
ON	ON	ON	3.63	7.73	59.85	"	2.5	38	62	1	"	
"	"	"	3.18	2.36	62.21	"	2.25	40	57	2	"	
"	"	"	2.63	1.00	1.00	"	2.0	54	8	1	20.885	Beams lost
"	"	"	3.70	10.86	11.86	"	2.3	55	87	2	"	
"	"	"	2.88	2.37	14.23	"	2.0	52	19	1	"	Beams lost
"	"	"	3.39	8.36	22.59	IBM	2.3	39.8		>1	"	New energy set. Need long op.
"	"	"	3.04	1.00	23.59	"	2.1	53	8	0	"	Beam lost
"	"	"	3.65	9.36	32.95	"	2.3	54	72	2	"	Beam lost
"	"	"	2.93	11.11	44.06	"	2.1	57	89	0	"	
"	"	"	2.85	5.49	49.55	"	1.6	58	33	2	"	Beams stored
"	"	"	3.67	6.12	55.67	IBM	2.2	57	61	1	"	Stopped because of IBM problems
"	"	"	3.05	1.93	57.60	"	2.0	57	42	1	"	energy will be increased
"	"	"	2.28	6.63	6.63	"	1.8	58	53	2	20.900	
"	"	"	2.12	2.38	9.01	"	1.7	57	19	0	"	Beams lost
"	"	"	4.82	1.13	10.14	"	2.1	52	9	0	"	"
"	"	"	0	0	10.14	"	2.2	58	0	0	"	TV said switch off H.V.
"	"	"	4.28	12.25	22.39	"	2.3	56	98	0	"	
"	"	"	3.33	2.63	30.02	"	2.1	57	61	2	"	Beams lost
"	"	"	4.36	5.25	35.27	"	2.3	56	42	1	"	Beam lost, TV said switch off HV
"	"	"	3.83	1.38	36.65	"	2.2	56	11	0	"	STOPPED due to HISTOGRAM problem
"	"	"	3.58	4.75	41.40 (40.40)	"	2.1	56	38	1	"	beams lost
"	"	"	3.85	10.88	52.28	"	2.2	56	87	7	"	
"	"	"	3.03	6.38	56.66	"	2.0	56	35	1	"	Beam lost, ID tripped
"	"	"	4.42	6.14	4.42	"	2.2	54	49	2	20.915	New energy
"	"	"	3.29	8.52	12.94	"	2.05	52	68	1	"	
"	"	"	3.09	1.75	14.69	"	2.0	53	14	0	"	Beam lost. ID slow-ans
"	"	"	4.01	0.63	15.32	"	2.2	52	5	0	"	short break to recover PETRA trouble (beam not dumped)
"	"	"	2.87	0.75	16.07	"	1.8	60	6	1	"	Beam lost.
"	"	"	3.32	9.05	25.12	"	2.0	55	55	1	"	" "
ON	ON	ON	3.09	5.76	30.88	IBM	2.1	56	46	1	"	" "
ON	ON	ON	3.29	9.77	40.65	"	2.15	56	78	0	"	Trigger hangs up
ON	ON	ON	2.48	4.26	44.91	"	1.95	57	34	1	"	beams lost

Run	Date	Start	Stop	at Run Start I^+	at Run Start I^-	D.T. [%]	Time [sec]	Records out	All $*10^6$	T_0 rej $*10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit 2 $E_1>6$ GeV	T_2 Bit 17 $2T\cdot E_1\cdot 2t_r$
13916	26.6.83	3:58	4:07	3.91	3.71	9.9	496	994	129	13	335	1160	102	380
13918	"	4:38	5:37	4.89	4.84	12.2	3489	7976	908	111	2993	9533	1051	3332
13919	"	6:14	7.05	4.96	5.08	13.2	3067	7223	798	105	2619	8824	847	3213
13920	"	7.09	8.05	3.45	3.79	9.3%	3333	6228	867	80,6	2764	7212	954	7958
13921	"	9.03		4.30	5.12			ca 500						
13922	"	9:14	9:52	4.18	4.99	13.4	2235	5492	581	78	1989	6455	710	2289
13923	"	10:26	11:00	4.84	5.00	18.3	2009	5272	522	95	1739	6804	551	2837
13924	"	11:29	12:31	5.22	5.23	24.0	2889	8001	751	180	2653	10050	952	4334
13925	"	12.32	13.23	4.47	4.48	16,5	3048	~~8001~~ 7991	793	131	2859	9639	943	3637
13926	"	13.23	14.18	3.96	3.93	13,1	3281	7974	853	111	2995	9365	1027	3176
13927	"	14:19	15:05	3,51	3,57	11.4	2747	6004	715	81	2548	7063	859	2358
13928	"	16^{05}	16^{13}	5.07	4.72	29	777	1934	202	59	572	2414	190	3371
13929		16^{24}	16^{25}	not	events	, forgot it								
13930	"	16^{56}	16^{59}	5.16	4.95	23	158	567	41	9	121	511	41	228
13931	"	17^{29}	18^{13}	4.74	4.83	18	2649	7994	689	126	2274	8263	760	3317
13932	"	18^{18}	18^{45}	4.40	4.30	16	1610	4696	418	66	1504	4689	532	6206
13933	"	18^{50}	$19:13$	4.09	3.99	12.7	1372	4703	513	65	1839	5543	657	1900
13934	"	19^{57}	20^{55}	4.73	4.66	14	3779	7994	811	115	2747	9430	998	3595
13935	"	20^{55}	21^{53}	4.11	4.05	12.8	3452	7968	898	115	3185	9764	1094	3227
13936	"	21^{54}	22^{36}	3.60	3.54	10.8	2517	5303	654	107	2194	6758	737	1882
13937	"	23 45	0 33	4.80	5.04	17.9	2875	7998	748	134	2661	9332	895	3871
13938	27.6.83	0 33	1 27	4.18	4.46	19.0	3208	7994	834	159	2832	8734	941	3406
13939	"	1. 27						14						
13940	"	1:35	2:21	~~3.57~~ ~~4.86~~	3.85	13.7	2772	7462	721	98.6	2472	6824	843	2334
13941	"	2 32	2 51	3.13	3.41	10.5	1108	2357	288	30	1020	2669	318	958
13942	"	3:24	4:14	4.36	4.86	15.5	3004	7994	780	121	2962	9325	971	3734
13943	"	4 15	5 10	3.76	4.26	12.9	3319	7981	863	111	3237	9355	1031	3595
13944	"	5.11	5. 59	3.26	3.73	11.2	2550	5665	662	74	2434	6443	827	2153
13945	"	6.43	6.45	4.89	4.90	65.5	116	149	30	19.8	35	172	7	82
~~13946~~	"	7.35	8.11	5.38	4.61	43.4	1814	5559	472	204	1331	~~5218~~ 5229	415	2460
13947	"	16^{12}	16:43	4.80	4.98	21.6	1817	6033	473	102	1285	4941	347	1823
13948	"	17:25	17:56	3.44	4.12	11.9	1796	4136	467	55.6	1507	4760	470	1546
13949				JUNK		RUN	— WRONG		PROGRAMME			LOADED		
13950	"	18 45	18 49	4.90	5.11	14.1	179	488	46.5	6.5	159	529	51	199
13951	"	RUN	LOST	DUE	TO	BEAM	LOSS	DURING	DEBUGGING		EVENTS.			

N50	MIP	TOF	<L> $*10^{30}$	$\int$Ldt Bhabha Run	$\int$Ldt Exp	IBM/ Tape	BP [V]	T_2 Rej. Ev. [%]	Bhabha Σ	MH	Ebeam [GeV]	Remarks
ON	ON	ON	2,55	1,17	46.08	IBM	1.85	53	6	0	20.945	~~Stopped by hangup in trigger box~~ beams lost
"	"	"	2.97	9.52	55.60	"	2.2	56	76	3	"	beams lost
"	"	"	3,15	~~8.89~~	64.49	"	2.25	56	71	1	"	
"	"	"	1.71	4.26	4.26	"	1,8	57	34	3	20.930	New energy
"	"	"				"	2.3				"	Nr summary. Word wel.
"	"	"	3,27	7,27	11.53	"	2.25	54	58	1	"	Beams lost
"	"	"	3,33	4,26	15.79	"	2.5	56	34	2	"	Beams lost
"	"	"	3,24	9.41	25.20	"	2.5	~~56~~	75	2	"	Bad Run ! High background
"	"	"	3.14	9.58	34,78	"	2.2	56	48	0	"	
"	"	"	2.48	7.52	42.30	"	/	55	60	2	"	
"	"	"	2.03	3.89	46.19	"	1.9	57	31	0	"	Beam dumped.
"	"	"	2.82	2.79	48.38	"	2.55	54	18	0	"	
												Beam lost
"	"	"	3.98	0.63	49.01	"	2.35	30	6	0	"	Beams lost
"	"	"	3.31	10.66	59.67	"	2.30	41	85	3	"	
"	"	"	2.77	4.27	4.27	"	2.0	41	34	1	20.945	of ~~regular~~ run & new energy, stopped because
"	"	"	2.47	4.87	9.14	"		56	50	2	"	Beam lost (partially)
"	"	"	3.29	10.27	19.41	"	2.1	56	75	1	"	
"	"	"	2.58	~~7.03~~	~~26.44~~	"	1.8	57	56	1	"	
"	"	"	1.84	4.52	30.96	"	1.7	57	36	2	"	Beam dumped
"	"	"	3.04	7.03	37.99	"	2.2	53	56	1	"	
"	"	"	2.15	6.91	44.90	"	2.1	49	55	2	"	
					— (Ø)		1.9					Nord died after ~~14 events~~ 14 events
"	"	"	1.75	5.65	50.55	"	1.8	34	45	1	"	
"	"	"	1.53	1.38	51.93	"	1.	56	11	1	"	Beams lost
"	"	"	2.94	7.80	~~7.80 69.73~~	"	2.2	56	62	3	20.960	
"	"	"	2.24	6.16	13.96	"	1.9	~~57~~	49	2	"	
"	"	"	1.65	4.15	18.11	"	1.5	50	33	0	"	Beam dumped.
"	"	"	1.70	0.00	18.11	"	2.4	56	0	0	0	Stopped due to DL8 error
"	"	"	2.38	4.40	22.51	"	—	29	35	2	"	
"	"	"	3.50	6.79	29.30	"	2.3	14	54	3	—"—	Stopped to repair DL8
"	"	"	2.99	2.83	32.19	"		52	23	2	"	Beams lost
							2.3					
"	"	"	3.76	0.5	32.69	"	2.3	51	0	0	—"—	BEAMS LOST ?!
												DO NOT COUNT RUN.

16^{00} Bethke, Fest on shift

16^{10} time out DL8 ~~exchanged~~ cleaned

16^{20} Beams lost

16^{50} new fill ready 16^{55} Tenderenschell

17^{00} frequently fet illegal wire #, also reset event fraction low, suspect ~~exchanged~~ cleaned DL8 clean it again

19^{20} beams partially lost; ID Anode current - alarm;

20^{00} new filling ready

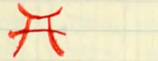
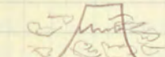
20^{30} permanently "set chamber high current", even if HV down, faulty electronics, disappeared after pressing "stop" in the Parameter "Anode current ctrl"

22^{55} Magnet tripped during refilling, pump on primary side failed

23^{30} magnet O.K. again, new fill ready

27.06.83

0.00 Komaniya + Minowa

( + ),

How did it "die"?

~~0:27~~ → Nord died after 14 events (parametre setting) (run 13939)

1:27 Nord restarted ok,

2:15 found a gap in JETC - Wiremap in Run 13940.
This gap has been there since Run 13937.
The gap corresponds to 5x DL8 starting wire address is 504

2:30 DL8 #63 (wire number 504 ~) was rubbed. → the histogram seems to be o.k. (wire map) from run 13941

4:45 Magnet fluctuation; DVM value (7.4,95) looks o.k.

5:30 Mark J inform us that the new filling will be at 5 45.

6:45 DL8 - time out error: branch 6 Crate 4.
Magic rubber does not help.

6:55 Beams lost.

7:00

7:30

DL8 was exchanged ~~seg. ring DL8 20.1 #169~~ #170

8 00 Naroska, Nozaki

Noticed that dead time is > 40%. Same picture as yesterday. All events full of junk. No tracks. Highest trigger: 2 TOF, 1 track and Coll. TBG.

ON/OFF N50, MIP, TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

9.00 Screen says: ca 1 Std Unterbrechung: Cavity Fehler.

10.15 Magnet wurde kommissioniert by K-group.

12:00 Test version of N50 program loaded. This has an additional histogram (70) of the z-vertex quality flag. Programs (DIT)N50DAR. HEP

16:00 W. Bartel, R. Hedgcock on shift.

16:01 Stable beams for the first time after 8:00

Very high dead time (~ 35%) with low BP-rate (2.2V)
After an orbit correction mainly in x ($\sigma_x = 1.7 \Rightarrow \sigma_x = 0.7$ mm)
the dead time went down to 15% ($I_1 = 4.6$, $I_2 = 4.5$ mA)

Conclusion: There is an aperture limitation in the vicinity of our experiment. The showers which extend into our detector typically set all TOF's and deposite most of the energy in our end caps. No tracks are recognized in the central detector because particles fly parallel to the wires, most of them at a radius covered by ring 1.

Action: Ask PKR for an orbit correction. Not particular bumps in NW. It is important to have the beam centered everywhere. I guess the cavity region should be most sensitive.

PKR: PKR shift crew will look for instabilities in the correction coil power supplies. They could cause spurious beam deflections.

16:43 Chamber experts took ~~over~~ to cure DL8 disease.

17:25 Postpone repair of DL8 to the next fill, continue to run without DL8 170, 171 (ring 3 segment 20)

17:56 Both beams lost due to RF phase instability

Cards 3169

18 30 Two DL8's are exchanged
{ DL8 171 (290 is replaced by 320)
" 170 (~~17~~ 17 " ~~17~~ 20)
Bethke / Olsson / Kern.

20 45 PETRA still having trouble with RF cavities.

0 00 28/6/83 H. Mills & C. Bowdery on shift

0 30 New beams ready - at new energy. Not aware of that! Dead time ~ 16% ~ 230 spurious hits in inner detector. Several long events.
0 40 Beams lost
2 05 New Beams. Dead time quite high. Several events are quite long (>6000 wrds)
5 15 Nord-10 hung on level 14. Reloaded Nord & reconfigured with ZDAS1. All seemed to work again
Tagging system power supply tripped during run 13958 (Frame 63)
Back on after ~~event~~ 2000
5:39 Beams lost again. It has not been a good night.

7:20 DL8 65 stopped giving hits during run 13960 (found by the YSPY)
There is a dip in the wire map - looks wider than 8 wires.
They then loose the beam.

Run also had 3etch illegal wire numbers - this it may not be DL8 #65 but one before it? Although I see nothing to cause it, 3etch errors may cause the Nord-50 not to recognise Hadronic events.

8.00 Cords & Fiber on shift.
9 00 new filling ready
Note on ID : At I⁺ = 4.5, I⁻ = 4.9 mA we have an average current of 2.7 μA/cell (Max. 3.3 ~~hodgen off-set~~ corrected), mean number of synchrotron rad. hits 266. BP - 2.4 V R
DL8 # 65 rabbled → ok
12 15 beams dumped
12 45 new filling

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

16 00 Skard & Fabian on shift

16 40 YSPY error. muon digitizer 45 missing. - all seems OK.
17.25 Mark J want new fill at 1745 we agree.
19:30 YSPY Error 4, muon digitizer 20 missing

This has been a hard shift because we had to change the paper in the Gould printer.

0 00 29/6/83 MINOWA, SCHIEMANN

0 32 MUON Digitizer missing 138 (YSPY)
0 29 " 46
2:06 found an error on run summary
MIPROC-16 and TOFMIPROCS are OFF on RUN SUMMARY
although Colour TV and MAIN terminal F15 + F09 say they are ON.
This has been so since run 13961.
ZDAS was reloaded before starting run 13980 to see if this is due to the program.
[N50 program = (DIT)N50DAR]
2:35 run summary 13980 says MIPROC-16 and TOFMIPROCS are OFF again!
Computer expert should look into this problem.
5:13 Beams dumped. cavity problem.
6.31 New fill

08:00 Bell & Yamada

08.04 New fill ready. start run 13986
08:15 ID slow ons - partial beam loss.
09:15 partial beam loss. - ID did not trip.
11:25 The run summary problem (with MIPROC status) cured. The flag word had been moved without the summary program being updated. Cured by updating YRUNSM.MAC
11:35 Stop run 13989 to raise energy to 21.035 GeV. New run started
12:33 Stop run 13990 for PETRA crew to do some measurements then dump beam.
13 10 New fill ready

16 00 K.H. Hellenbrand and H. Rieseberg
16 05 New fill ready
Run # 13994 started

RUN	DATE	START	STOP	RUN I^+	RUN I^-	DEAD TIME (%)	TIME (SECS)	RECORDS IN	RECORDS OUT	ALL ($\times 10^6$)	TΦ REJ ($\times 10^6$)	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GeV	T_2 BIT 17 2T, E4. 2T.
13952	27/6/83	21^{24}	22^{22}	4.82	4.92	12.8	3413	8002	7993	887	113	2765	9741	848	3340
13953	—"—	22^{22}	22^{52}	4.08	4.20	11.8	1774	3936	3929	461	546	1515	4702	518	1456
13954	28/6/83	0^{32}	0^{46}	4.99	5.15	15.7	799	2078	2077	207	32.6	629	2510	163	925
13955	"	2^{07}	2^{51}	5.15	5.07	14.9	2602	6778	6776	676	100	2328	8193	670	2965
13956	"	3^{49}	4^{15}	4.95	4.97	15.9	1574	4346	4346	409	65.2	1372	4946	384	1752
13957	"	5^{15}	5:20?						~ 150						
13958	"	5:21	5:39	4.88	4.98	14.6	1035	2588	2588	269	393	803	3175	275	1217
13959	"	6:06	6:56	5.06	5.09	17.5	3004	8002	7999	781	1365	2782	9490	884	3528
13960	"	6:56	7:33	4.41	4.43	18.3	2152	6277	6644	559	457	2126	6552	620	2269
13961	"	9:08	9:54	4.99	5.33	18.2	2749	8002	8000	715	130	2596	9509	738	3125
13962	"	9:55	10:42	4.44	4.75	17.2	2772	7039	7032	721	124	2443	8592	~~768~~ 764	3080
13963	"	10:42	10:54	3.97	4.26	13.7	713	1853	1848	185	25	694	2136	227	699
13964	"	11:01	11:57	3.80	4.08	12.7	3312	8002	7977	862	109	3141	9254	~~803~~ 968	3014
13965	"	11:57	12:19	3.71	3.62	11.7	1347	3077	3070	350	41	1224	1774	392	1074
13966	"	12:52	13:39	4.90	5.08	17.5	2769	8002	7997	720	126	2832	9365	865	3771
13967															
13968	"	13:49	14:40	4.25	4.40	14.4	2990	8002	7994	778	111	3136	9266	951	3435
13969	"	14:40	14:53	3.76	3.89	12.5	811	2029	2027	210	26	846	2209	251	2767
13970	"	16:15	17:19	4.10	3.87	10.6	3926	8002	7977	1021	109	3119	9600	1029	3204
13971	"	17:20	17:51	3.52	3.28	10.4	1872	3769	3725	487	505	1612	4274	569	1318
13972	"	18:26	19:14	4.86	5.21	16.0	2919	8002	7997	759	121	2730	9766	836	3978
13973	"	19:16	19:32	4.30	4.62	14.4	935	2507	2505	243	35	944	2896	294	1096
13974	"	19:35	20:30	4.11	4.41	12.8	3263	8002	7985	849	109	3179	9187	1064	3206
13975	"	20:30	21:21	3.62	3.90	12.6	3037	6791	6763	790	998	2736	7629	956	2451
13976	"	21:51	22:38	5.04	5.13	16.1	2825	8002	7999	735	119	2797	9191	908	3591
13977	"	22:38	23:29	4.44	4.52	12.9	2990	~~7285~~ 7303	7285	778	100	2943	8167	963	2795
13978	29/6/83	0:17	1:09	4.94	~~4.502~~	14.4	3060	8002	8000	796	115	2979	9385	841	3652
13979	"	1:09	2:03	4.35	4.42	13.1	3206	8002	7984	834	~~77~~ 109	3273	~~9862~~ 9862	1003	3263
13980	"	2:07	2:55	3.82	3.87	11.6	1697	3830	3817	442	51	1607	4409	496	1490
13981	"	~~2:07~~ ~~356~~	~~2:55~~ ~~356~~	3.56	3.61	12.3	1873	4042	4032	488	60	1690	4530	538	1433
13982	—"—	3:59	4:26	5.07	5.21	16.6	2835	8002	7998	737	122	2975	9306	890	3812
13983	"	4:27	5:13	4.46	4:58	14.8	2619	7004	6997	682	101	2882	8020	929	3083
13984	"	5:43	6:21	5.08	5.24	12.7	2813	6094	6080	731	92	2499	7010	~~768~~	2449
13985	"	6:56	7:22	4.87	5.06	15.9	1563	4278	4278	406	644	1566	5008	444	2078

N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Ldt Bhabha Run	$\int$Ldt Exp.	IBM TAPE	BP (V)	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	E_{beam}	REMARKS
ON/OFF	ON/OFF	ON/OFF	~~3.72~~									
ON	ON	ON	2.90	4.28	47.53	IBM	2.27	56	84	3	20.960	
"	"	"	4.10	3.27	3.27	—"—	2.0	56	34	2	—"—	BEAMS LOST.
"	"	"	4.25	10.20	13.47	"	2.4	54	26	0 [17]	20.975	Beams Lost
"	"	"	4.05	6.42	19.89	"	2.3	55	81	3	"	Beams Lost
						"	2.4	52	51	0	"	Beams Lost
ON	ON	ON	0.95	4.41	24.30	"	2.4			?	"	Nord-10 hang on level 14
"	"	"	3.75	10.58	34.88	"	2.3	55	35	1	"	Beams lost again
"	"	"	3.15	5.92	40.90	"	2.4	56	84	3	"	
"	"	"	4.13	10.16	51.76	"	2.3	46	47	0		DLS problem at end - then Beams lost
"	"	"	3.20	7.93	59.19	"	2.5	55	87	4	"	[Triped because of Trigg problems]
"	"	"	3.22	2.39	61.58	"	2.1	56	59	3	"	
"	"	"	2.57	6.68	6.68	"	2.05	55	19	0 [14]	"	
"	"	"	2.16	3.53	10.21	"	2.3	56	53	2	20.990	New energy
"	"	"	3.69	8.07	18.28	"	1.9	56	3	0	"	beams dumped
						"	2.5	55	64	1	"	
"	"	"	3.07	7.32	25.60	"	2.2					HV went down right at restart, skipped over
"	"	"	2.54	2.14	27.74	"	2.2	55	58	1	"	
"	"	"	2.48	9.21	36.95	"	2.0	55	17	0	"	beams lost
"	"	"	1.92	3.41	40.36	"	2.0	56	73	0	"	
"	"	"	3.75	9.59	49.95	"	1.7	57	27	2	"	beams dumped.
"	"	"	2.99	2.77	52.72	"	2.4	56	76	2	"	
"	"	"	2.76	6.82	6.82	"	2.1	55	22	0 [8]	"	
"	"	"	2.13	5.68	12.50	"	2.05	56	54	2	21.005	New energy
"	"	"	3.37	12.00	24.50	"	1.95	55	45	3	"	beam lost.
"	"	"	2.57	5.94	30.44	"	2.4	55	95	2	"	
"	"	"				"	2.2		47	0		current loss beam dumped.
"	"	"	3.78	9.47	39.91	"	2.4	55	75	2	"	
"	"	"	2.79	7.96	47.87	"	2.2	55	63	1	"	
"	"	"	2.45	4.04	51.91	"	1.9	57	32	2 [12]	"	
"	"	"	2.06	3.04	3.04	"	1.8	55	24	4	21.020	new energy beams dumped
—"—	—"—	—"—	3.80	9.74	12.78	IBM	2.1	55	77	1	—"—	
"	"	"	3.10	7.59	20.37	"	—	56	60	1	"	beams dumped
—"—	—"—	—"—	2.47	7.08	27.45	—"—	2.4	56	56	0	—"—	beams dumped
"	"	"	3.63	5.57	33.02	"	2.35	55	44	1	"	beams lost

Run	DATE	START	STOP	Runstart I^+	Runstart I^-	Dead TIME in %	Time (sec)	RECORDS in	Records out	All $\times 10^6$	TØ. Rej. $\times 10^6$	T_1 Acc sum	T_2 Acc sum	T_1, BIT2 $E_T > 6$GeV	T_2 · BIT17 2T·E4.2T
13986	29.6.83	8⁰⁵	9¹⁹	4.98	4.90	9.9%	4170	8002	7967	1085	108	3483	9191	1079	2875
13987	"	9²⁰	9²⁸	1.33	1.09	5.0	358	465	459	93	4.6	260	408	105	58
13988	"	10⁰⁴	10⁵⁶	4.87	5.01	14.7	3091	8002	7995	804	118	2907	9658	942	3718
13989	"	10:59	11:36	4.25	4.37	14.0	2223	5415	5408	579	81	2254	6186	750	2278
13990	"	11:38	12:34	3.88	4.00	12.9	3340	7795	7776	869	112	3318	8676	1165	2971
13991	"	13⁰⁹	13⁵⁹	4.88	4.97	18.6	3032	8002	7999	789	147	2934	9443	922	3835
13992	"	14:00	14:52	4.27	4.35	13.4	3120	8002	7983	812	109	3197	8841	1102	3206
13993	"	14:53	15⁴⁸	3.78	3.84	10.0	3306	6934	6899	860	86	3093	7279	1066	2211
13994	"	16:30	~17⁰⁰	~4.95	~5.10	20.5		4809	4809						
13995	"	17:01	17:52	4.54	4.71	23.0	3017	8002	7989	785	181	3016	9480	996	4077
13996	"	17:52	18:45	4.00	4.15	15.2	3182	8002	7820	827	126	3216	9287	1997	3647
13997	"	18:46	19:29	3.54	3.69	11.5	2560	5788	5767	666	76	2525	6377	916	2238
13998	"	19:57	20:39	5.05	5.05	30.8	2444	6293	6292	636	196	2141	7804	761	3453
13999	"	20:43	21:35	4.45	4.45	17.1	3102	8002	7984	807	138	3160	9212	1104	3478
14000	"	21:36	21:53	3.89	3.89	15.8	1045	2571	2561	272	43	1094	2882	376	981
14001	"	22:27	23:18	4.55	5.05	19.2	3005	8002	7996	782	150	2938	9190	1052	3615
14002	"	23:25	0:19	3.89	4.36	13.5	3186	8002	7981	829	112	3326	9011	1221	3060
14003	30.6	0:19	0:30	3.21	3.60	11.3	656	1511	1495	170	19	641	1658	225	516
14004	"	1:02	1:56	4.86	5.24	15.2	3215	8002	7989	836	127	3219	8980	1183	3263
14005	"	1:57	2:57	3.60	3.86	11.1	3591	8002	7970	934	103	3574	8765	1285	2740
14006	"	2:58	3:20	3.15	3.39	10.3	1289	2781	2765	335	34	1239	3027	462	875
14007	"	4:19	5:14	5.01	5.03	15.1	3312	8002	7988	862	130	3102	9337	1169	3444
14008	"	5:14	5:50	3.17	3.22	9.5	2101	4249	4225	546	52	1960	4531	747	1293
14009	"	6:17	7:14	5.12	5.16	31.2	3349	8002	7988	872	272	2942	9338	1170	3828
14010	"	7:14	7:16	3.28	3.23	12.0	44	121	110	11	1	49	109	19	0
14011	"	7:26	7:39	3.20	3.16	9.6	766	1484	1471	195	19	677	1707	238	483
14012	"	10:22	11:23	4.83	4.80	21.4	3213	8002	7996	836.5	178.8	2727	10080	1012	3885
14013	"	11:24	12:22	3.96	3.95	11.9	3501	8002	7976	913.0	108.9	3356	9154	1257	2928
14014	"	12:23	13:11	3.45	3.44	10.9	2863	6225	6191	745.0	81.0	2693	6935	983	2050
14015	30.6⁸³	14:06	14:57	4.79	4.93	16.5	3017	8002	7998	785.4	189.8	2902	9732	1080	3703
14016	"	14:57 15:51	15:51	4.13	4.31	13.4	3177	8002	7978	826.7	110.9	3280	9216	1189	3370
14017	"	~~16:00~~	16:51	3.63	3.79	11.5	3603	8002	7966	937.5	108.0	3463	9099	1282	2996
14018	"	16:52	17:22	3.19	3.33	9.6	1780	3562	3538	463.3	44.3	1677	3792	635	1092
14019	"	18:46	19:32	4.79	5.04	19.6	2757	8002	8000	717.5	140.5	2622	9937	984	4235
14020	"	19:33	20:20	4.31	4.54	17.6	~~11002~~ 2831	~~11991~~ ~~11954~~ 8002	~~11002~~ 7989	736.6	129.4	2844	9934	1014	4194

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$ $cm^{-2}sec^{-1}$	$\int Ldt$ Bhabha Run	$\int Ldt$ Energy bin	IBM/TAPE	BP (V)	T_2 Rej Ev Fr (%)	Bhabha Σ	MH Σ	Ebeam	Remarks
ON	ON	ON	2.05	7.21	40.23	IBM	2.3	57	57	2	21.020	New fill ready 8⁰⁸
"	"	"	0.3	0	40.23	"	0.7	57	0	0	"	Beams lost
"	"	"	3.42	10.75	50.98	"	2.3	56	85	2	"	
"	"	"	2.97	6.70	57.68	"	2.0	56	53	1 |12	"	
"	"	"	2.25	6.71	~~6.71~~	"	2.0	57	53	4	21.035	new energy
"	"	"	3.29	7.98	14.69	"	2.3	56	63	1	"	
"	"	"	2.76	7.73	22.42	"	2.1	55	61	3	"	
"	"	"	1.78	5.32	27.74	"	1.9	55	42	2	"	
"	"	"	~3.6	5.70	33.44	"	2.5				"	Run Sum lost → No entry in cross section
"	"	"	2.62	6.59	40.03	"	2.3	56	52	2	"	
"	"	"	2.17	6.90	46.93	"	2.0	56	45	1	"	
"	"	"	1.95	4.81	51.74	"	1.75	56	38	1	"	beams dumped
"	"	"	2.83	5.95	57.69	"	2.5	57	47	0 |16	"	
"	"	"	2.74	6.09	6.09	"	2.2	56	48	1	21.050	New energy
"	"	"	2.33	2.66	8.75	"	1.9	57	21	0	"	
"	"	"	3.19	8.50	17.25	"	2.2	56	67	1	"	
"	"	"	2.48	7.61 x)	24.86	"	2.0	56	~~60~~	2	"	x) midnight: 5.71
"	"	"	2.19	0.89	25.75	"	1.7	56	~~47~~	0	"	beams dumped
"	"	"	2.97	9.77	35.52	"	2.35	56	77	2	"	
"	"	"	2.06	7.36	42.88	"	1.85	56	58	0	"	
"	"	"	1.72	1.52	44.40	"	1.65	56	12	0	"	beams dumped
"	"	"	2.71	6.72	51.12	"	2.3	56	53	1	"	
"	"	"	1.76	3.55	54.67	"	1.65	56	28	2	"	beams dumped
"	"	"	2.93	11.42	66.09	"	2.35	55	90	2	"	~~beams dumped~~
"	"	"	2.85	0	66.09	"	1.70	49	0	0 |11	21.050	beam energy increased
"	"	"	1.50	1.27	1.27	"	1.60	58	10	0	21.065	Last 30 minutes of this run energy 20.865 !!!
ON	ON	ON	2.62	7.62	8.89	"	2.3	57	60	one 1	21.065	
"	"	"	2.30	6.86	15.75	"	1.95	58	54	1	"	
"	"	"	1.85	4.83	20.58	"	1.5	57	38	1	"	beams dumped
"	"	"	2.93	8.64	29.22	"	2.3	56	68	1	"	
"	"	"	2.28	~~14.25~~ 8.26	37.48	"	2.1	56	65	4	"	
"	"	"	1.96	7.24	44.72	"		57	57	0	"	
"	"	"	1.21	1.78	46.50	"		56	14	1	"	beams dumped
"	"	"	3.01	6.22	52.72	"	2.5	56	49	1	"	
"	"	"	2.53	7.11	59.83	"	2.2	57	56	0	"	

16^{50} Muon digitizer missing : 40, 45, 46, 94, 119

17^{00} Nord crash ends run (D.C. and J. Huttunen (Zurich) are fiddling)

17^{05} Time out in Branch 2 crate 5 LG-ADC

Deadtime increases : 20% → 25% , TCOR rate is ~6/sec . Situation is similar to the one described by W. Bartel on page 35 . BP rate at 2.3V . Events are full of rubbish (no tracks), many TOFs fire . Lumi events have in average 230 hits . I^+/I^- = 4.5/4.7 mA . Many hits in p. chambers . PKR says, that orbit correction is already done .

17^{40} Histogram # 28 (256 bit dead) is a box ☐☐ , other histograms look normal .

19^{00} W. Bartel advises PKR how they can eventually improve our background by introducing Beuler . (in the next pic) The orbit is actually very good σ = 0.6 mm.

19^{30} Beams dumped

19^{55} New fill ready

Deadtime around 30% . PKR is still optimizing , but, I think, for this purpose they do not have the proper signal from us. PKR: May be that a region of bad vacuum in the south worsens the background.

20^{30} Deadtime is now down to 16% ; $I^+ - I^-$ = 4.61 mA , still Background Optimization

20^{40} Stop to change energy to 21.050

21^{50} Beams become unstable : Stop for beam dump . color TV : DISPLAY DRAWING N50 HISTOGRAM is flashing all the time on right side of the box that it used to be . No action

22^{25} New fill ready, but we have to exchange power pack of DL 8s # 83-89

22^{27} Run # 14001 started . Optimization of beam is now completed . With I^+ = 4.5 and I^- = 5.0 we have now only 20% dead time and a better Luminosity 3.3 × 10^{30}

~~Note : At beginning of runs it happened a few times that Records out > Records in~~

23^{18} EXIT to cure Color TV problem

30/6/83

24^{00} Meijke & Chris on shift .

00:27 YSpy Error : Trigger 3 input missing : ST 36 cp 3

00:32 beams dumped

1.02 New fill ,

3:20 beams dumped.

3.55 Beams lost during injection .

4.18 Run 14007 started.

5:21 ~~'zic' III of jet chambers seem to be dead now~~ (see histograms)
~~jet anode currents were too high~~ ; looking at the beam history → ~~I think~~ this was caused by big losses at certain times — we think it should have switched off

5^{40} jet current okay now

ON/OFF N50, MIP, TOF	<L> ×10^{30}	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T$_2$ Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

6:20 Muon Crate No 11 briefly switched off to replace a digitizer which had just failed.

6:32 very bad background conditions, they have tried orbit corrections after we complained but ~~the~~ no improvement : inst. dead time sometimes >40%

08^{00} Bethke & Duerdoth. 'short break' restart 10^{00}.

qso If there is a break of > 1 hr please phone Pillet (magnet expert)

10^{20} New Fill.

10^{32} Beams: 2 × 4.6 mA; I_{BP} : 2.4 - 2.5 ; dead-time: ~ 50%; Sometimes very high Jet-chamber current and instable BP-current. Asked PKR to optimize . Run down inner detector

10^{35} Background better; but we observe unusual background in LG-endcaps +z and Ring of ID always full of hits ("confident. error") informed PKR . They also are not satisfied with conditions, they are working on it.

11:02 background now looks more 'normal' (LG-endcaps +z now almost empty).

MARK J want to dump at 13^{00}.

13^{10} Beams dumped.

14^{05} New fill. Conditions are cleaner than last fill.

16^{00} BOWDERY & STEVE WAGNER

16.35 MARK-J want to dump the beams in 15 minutes. PKR will try out the 1 GHz system for the rest of the fill No beam energy change should occur (we hope!) We continue data taking.

We submitted 2 reform jobs. No analysis jobs could be submitted as the reform tapes have not yet been created.

17:15 LINAC 2 vacuum problem. We keep this fill but the beams are decaying rapidly.

17:22 PKR says to switch off the HV. Hopefully all is now well

19:20 PASSED 50 nb^{-1} AT THIS ENERGY ($\sqrt{s}$ = 42.13), SO WE CALLED MARK-J & ASK FOR ENERGY INCREASE DURING THIS FILL.

23:00 New fill ready

Histogramming 15% of all events.

1/7/83 WELCOME JULY?

24^{00} YAMADA & HEDGECOCK TAKE THE HELM!

08^{00} Duerdoth & Takeda Mark J want to dump at 8^{30} hrs.

8^{30} beams dumped. 8^{55} New Fill — We were not taking data for only 26 minutes. —

9^{35} No triggers — In Kr-Box — level 5 — cleared by pushing Red, White, Green.

11^{40} MARK J want to dump at 12^{00}.

RUN	DATE	START	STOP	RUN I^+	START I^-	DT %	TIME secs	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TØ REJ. $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GeV	T_2 BIT 17 2T. E4. 2T.
14021	30/6/83	20.21	20.51	3.88	4.09	14.3	1775	4734	4715	462.0	66.1	1818	5688	674	2117
14022	"	20:53	21:47	3.62	3.82	12.8	3202	7725	7700	833.4	106.3	3113	9000	1137	3139
14023	"	2301	23:53	4.36	4.89	14.5	3128	8002	7997	813.8	117.7	2947	9753	1109	3911
14024	—"—	23 53	00 48	3.67	4.16	12.9	3239	8002	7983	842.8	108.8	3268	9140	1126	3375
14025	1/7/83	00 48	01 47	3.25	3.70	11.4	3523	8002	7967	916.4	104.1	3590	8880	1266	2994
14026	—"—	01 47	02 17	2.88	3.28	10.3	1717	3602	3580	446.8	45.8	1665	3979	613	1283
14027	—"—	03 17	04 05	5.01	5.10	20.5	2819	8002	8000	733.8	150.2	2800	9809	1002	4231
14028	—"—	04 05	04 26	4.35	4.43	15.1	1195	3213	3210	311	47	1168	3894	390	1516
14029	—"—	05 11	05 59	4.94	5.00	17.3	2816	8002	8001	733	127	2846	9651	954	3950
14030	"	06 00	06 51	4.29	4.36	14.2	3058	8002	7989	796	113	3156	9469	1055	3698
14031	"	06 51	07 46	3.77	3.83	12.1	3276	7736	7716	851.3	103.2	3224	8891	1075	2974
14032	"	07 49	08 33	3.30	3.28	10.7	2563	5590	5570	667	717	2511	6269	887	1951
14033	"	8 59	09 51	4.95	5.49	25	3039	8002	7997	791	198	3023	9442	1028	3900
14034	"	9 51	10 45	4.15	4.34	18.3	3192	8002	7982	851	152	3305	9186	1110	3483
14035	"	10 45	11 43	3.60	3.77	12.2	3420	8002	7979	890	109	3363	9197	1143	3145
14036	"	11 44	12 01	3.15	3.30	11.2	1026	2246	2232	267	299	971	2484	339	835
14037	"	13 06	13 55	4.55	4.86	19.3	2821	8002	8000	733	141	2874	10081	978	4396
14038	"	13 55	14 45	4.06	4.34	19.0	2850	8002	7994	741	141	2838	10407	937	4533
14039	"	14 46	15 11	3.65	3.91	15.7	1473	3950	3940	383	60	1478	4629	492	1895
14040	"	16 20	16 26	4.87	5.05	15.0	271	1796	746	70	10	262	813	98	341
14041	"	17 19	18 07	5.02	5.04	15.9	2904	8002	8001	755	119	2584	9346	861	3659
14042	"	18 08	18 48	4.43	4.46	14.4	2339	6708	6701	608	87	2325	7107	722	2630
14043	"	20 39	20 52	4.71	4.91	16.0	1298	8405	3404	387	53	1129	3893	351	1480
14044	"	20 55	21 45	4.38	4.47	15.9	2936	8002	7998	763	121	2628	10041	874	4097
14045	"	21 45	22 45	3.81	3.88	13.7	3185	8002	7986	828	113	2925	9467	981	3428
14046	"	22 46	23 03	3.29	3.34	12.3	970	2224	2219	252	30	839	2671	308	925
14047	2/7/83	03 42	04 49	4.48	4.97	21.4	2748	8002	7998	715.6	153	2661	9691	718	3650
14048	"	04 29	05 17	4.00	4.44	16.8	2838	8002	7989	758	123.7	2925	9893	877	3784
14049	"	05 17	06 06	3.58	3.98	16.8	2900	8002	7990	7534	126.8	2968	10185	850	3863
14050	"	06 00	06 25	3.21	3.58	16.5	1068	2943	2939	277.7	45.8	1026	3849	309	1427
14051	"	06 57	07 42	4.70	4.78	27.9	2603	7894	7892	677.7	198.7	2733	9930	807	4283
14052	"	08 16	09 00	4.72	4.71	29.6!	2589	8002	8000	674	199	2572	10414	751	4689
14053	"	09 00	09 47	4.24	4.21	28.7!	2621	8002	7993	682	196	2734	10418	821	4674
14054	"	09 47	09 52	3.79	3.76	30.5	275	933	932	71.2	21.8	284	1178	73	584

N50	ON/OFF MIP	TOF	<L> $\times 10^{30}$	$\int Ldt$ Bhabha RUN	$\int Ldt$ Exp (Energy Lost)	IBM/ TAPE	BP [V]	T_2 Rej. Ev Fr. %	Bhabha Σ	MH	E_b	Remarks
ON	ON	ON	2.18	3.56	63.79	IBM	20?	57%	28	1	21.065	
"	"	"	1.73	5.34	5.34	"	1.9	56	42	2	21.080	
"	"	"	2.80	6.49	11.83	"	2.25	57	51	1	"	
"	"	"	2.14	4.71	16.54	"	1.9	55	37	1	—"—	
"	"	"	1.78	5.22	21.76	"	1.8	57	41	1	—"—	
"	"	"	1.52	2.29	24.05	"	1.6	57	18	1	—"—	BEAMS DUMPED FOR NEW FILL
"	"	"	3.23	7.38	31.43	"	2.5	57	58	3	—"—	
"	"	"	3.07	4.58	36.01	"	2.15	56	86	0	—"—	SUPPOSED BEAM LOSS THEN DUMPED.
"	"	"	3.30	9.92	45.93	"	2.35	55	78	0	—"—	
"	"	"	2.73	7.63	53.56	"	2.1	57	60	1	—"—	
"	"	"	2.09	6.11	59.67	"	1.9	56	48	1 (II)	"	
"	"	"	1.78	4.33	4.33	"	1.75	57	34	0	21.095	NEW ENERGIE. BEAMS DUMPED
"	"	"	3.09	7.52	11.85	"	2.4	57	59	2	"	
"	"	"	2.41	7.52	19.37	"	2.1	56	59	2	"	
"	"	"	1.93	4.97	24.34	"	1.9	56	39	0	"	
"	"	"	1.76	0.89	25.23	"	1.7	56	7	2	"	BEAMS DUMPED
"	"	"	2.43	6.37	31.60	"	2.35	57	50	4	"	
"	"	"	1.50	3.31	34.91	"	2.30	58	26	2	"	
"	"	"	1.62	1.78	36.69	"	2.05	56	14	1	"	Beams lost
"	"	"	3.13	0.76	37.45	"	2.4	52	6	0	"	Beams lost
"	"	"	2.57	0.73	43.98	"	2.5	56	45	0	"	
"	"	"	2.39	5.35	48.53	"	2.4	57	42	0	"	Beams lost
"	"	"	2.89	4.33	52.86	"	2.4	56	34	2	"	Beams dumped
"	"	"	2.37	5.23	58.09	"	2.0	58	41	1	21.110	New Energy
"	"	"	1.99	5.10	63.19	"	1.9	55	40	1	"	
"	"	"	1.73	1.79	64.98	"	1.8	57	14	1	"	Beams Dumped
ON	ON	ON	3.15	6.76	18.88	"	2.7	57	53	4	"	
"	"	"	2.93	7.65	26.53	"	2.2	57	60	2	"	
"	"	"	2.41	5.61	32.14	"	2.15	58	44	1	"	
"	"	"	2.13	2.17	33.31	"	2.05	58	17	1	"	Beams dumped.
"	"	"	3.39	6.76	40.07	"	2.5	57	53	0	"	Beams lost.
"	"	"	2.93	4.21	44.28	"	2.5	58	33	0	"	Deadtime v high
"	"	"	2.17	4.59	48.87	"	2.4	59	36	1	"	
"	"	"	1.80	0.64	49.51	"	2.4	56	5	0	"	

14^{30} ID slow trip.
BP. voltage does not decrease. Almost constant from the beginning.
15^{11} Beams lost.
16.00 Nozaki and Nyae on shift
18.27 YSPY detected error. Muon digitizer missing 13.
But Muon hit histogram looks like OK.
21:30 Mark J wants new energy in 10 minutes.
22.40 Magnet current fluctuates by ~ 20 A - but in a few minutes it becomes stable again.
23:15 Short breaks due to some problem in power supply.

2/7/83
00.00 AMBRUS & HEDGECOCK.
BREAK INDICATED ON TV SCREEN. WIEDERBEGINN CA. 01.00 HRS.
01.00 HRS. PWR estimate 2-4 Hours for repair.
$0^{8}2.45$ Magnet current fluctuations (~ 20 A). Gets stable after a few minutes.
3.33 new fill
03^{42} Start a run. N° 14047.
05.00 During run 14048 two cases of YSPY. ① MUON DIGITISER MISSING 156 ② 41 & 159.
05.20 " " 14049 Muon crate missing (13) Reset out in the Hall.

08.00 Ball & Chrin on shift
08.16 New fill ready. B.G. high (BP > 3V). After optimisation, BP ~ 2.6, but dead time ~ 30% on average. Instantaneous dead time oscillates between 20% & 40% ! TBG(rate 2) is highest trigger, but this has been ~~is~~ true for ~~for~~ some time.
09:00 Run 14053 started. D.T. ~ 20% now — still awful.
09:31 Trigger box hang : level 5.
10:00 There are problems with our Reduce jobs the queue did not move at all over night. I have chatted with the operators. Nothing is wrong with the jobs. One was in the set up stage, the others were just waiting. These jobs have to run one after the other, no 2 jobs must be active at the same time. That of course slows Muon down, but not that much. I suspect some disease of the IBM digesting that many jobs. All Queues are full !;
W. Bartel

Energy increased → 21.125 GeV. Start run 14055

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks

11.42 New fill ready. Start run 14056. BP ~ 2.7.
Deadtime 40% !! Request further optimisation.
12:00 PWR taging everything — to little avail.
12:05 NORD 50 BUSY permanent message.
Stop run 14056. ABORT N-50 as on P29 of operator's manual. no dump appears!
Start run 14057 OK. Background live better. BP ~ 2.4. Deadtime much better ~ 20%.
13:43 Beams dumped. End run 14059
15.45 New fill ready. Start run 14060.
16.00 Takeda, Schmicelt on shift
18:22 Beams dumped.
19:08 The fast reduction queue now moves ! 4 reform jobs got through during the day, one is active
W. Bartel
19:07. New fill ready. Start run 14063
21:25 new energy 21.140 GeV Start run 14066
21:50 Run 14066 stopped due to error readout 46
22:00 Beams dumped
22:26 New fill ready Start run 14067

3/7/83
00:00 Baines, Sherd on shift
01:28 Beams dumped. 1:29 start new run
03:54 Beams lost. "Short breaks" is announced
04:00 Magnet fluctuation ~ 20A, quickly returns to proper setting
07:00 NEW FILL
Y-SPY Forward TOF NO. hits 30,31. seems to be just low statistics.
07:57 Energy will be increased about 08:30.

08.00 MIDONA & HEDGECOCK.
09.10 COMPUTER HANGS AS I ATTEMPT TO LOOK AT EVENTS. RESTART THE WORD AS PER A1 IN JADAS OPERATORS MANUAL.
09.45 New filling at 10.00.
16.00 Ambrus, Olsson 16^{35} pr crate 13 could be reset only at the crate itself

ASSOCIATED WITH PETRA CYCLING
DURING INITIALISATION AT THE START OF A NEW FILL ETC. CH.

MUON DIGITISER MISSING Y-SPY ERROR MESSAGES ARE DUE TO ONLY 20% OF EVENTS BEING USED FOR HISTOGRAMS, GIVING INSUFFICIENT TIME FOR SINGLES RATE READOUT IN A RUN.

RUN	DATE	START	STOP	RUN I^+	RUN I^-	START DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TØ RES. $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 E.766eV	T_2 BIT 17 2T. E4.2
14055	2/7/83	9:58	10:46	3.70	3.66	14.5	2860	7403	7389	749	107	2869	8687	944	3255
14056	"	11.46	12:06	5.10	5.08	33.7	1166	3570	3568	303	102	1000	4223	293	1937
14057	"	12:10	12:56	4.80	4.78	18.5	2670	8002	8000	694	128	2640	9112	827	3580
14058	"	12:56	13:43	4.34	4.31	16.9	2780	8002	7992	723	122	2851	9187	948	3520
14059	"	13:43	14:12	3.91	3.87	17.1	1732	4694	4679	450	77	1702	5255	573	1934
14060	"	15:46	16:40	4.84	4.81	14.8	3233	8002	8000	841	125	2772	9163	945	3258
14061	"	16:40	17:34	4.06	3.90	12.8	3192	8002	7983	830	107	3011	8642	1046	2865
14062	"	17:35	18:22	3.55	3.40	12.8	2810	6735	6715	731	93	2613	7434	800	2387
14063	"	19.08	20:01	4.80	4.87	13.8	3148	8002	7998	819	113	2764	9828	888	3273
14064	"	20.01	20:58	4.08	4.15	12.1	3382	8002	7884	880	106	3203	8843	1227	2806
14065	"	20:58	21:22	3.55	3.61	11.4	1408	3206	3196	366	42	1260	3586	427	1182
14066	"	21.23	21:47	3.34	3.40	10.4	1286	2858	2846	300	35	1251	2937	451	934
14067	"	22.26	23:13	5.02	4.83	17.1	2766	8002	8000	720	123	2764	9412	932	3293
14068	"	23:13	0.01	4.25	4.17	15.5	2838	8002	7888	738	115	3012	9566	1003	3655
14069	3/7/83	0:01	0:53	3.70	3.64	16.6	3073	8002	7977	800	117	3104	9261	993	3236
14070	3/7/83	0:53	1:15	3.25	3.19	12.8	1313	3266	3249	342	44	1367	3597	453	1206
14071	"	1:29	2:23	4.63	5.08	18.5	2677	8002	7998	696	129	2655	8958	878	3571
14072	"	2:23	3:11	4.01	4.62	15.8	2788	8002	7984	725	115	3101	8747	1010	3253
14073	"	3:10	3:54	3.54	3.90	13.6	2540	6791	6771	661	90	2765	7515	908	2563
14074	"	7:00	7 49	4.71	5.00	18.1	2896	8002	7993	754	137	2503	9150	724	3396
14075	"	07 51	08 42	4.20	4.46	16.5	3069	8002	7984	798	131.8	2987	9076	1003	3230
14076	"	08 42	09 31	3.73	3.96	14.8	1106	2995	2988	287.5	426	1158	3316	375	1152
14077	"	09 04	09 10	3.55	3.78				≈ 700			Summary lost.			
14078	"	09 16	10 12	3.47	3.69	12.4	3293	8002	7975	856.4	106.6	3312	9181	1077	2870
14079	"	11 01	11 47	5.09	5.15	19.4	2658	8002	7999	692	134	2691	9275	821	3740
14080	"	11 47	1, 32	4.51	4.49	18.1	2640	8002	7992	687	1244	2831	9302	851	3589
14081	"	12 52	13 16	4.04	4.06	17.6	2639	8002	7981	687	121	2885	9518	895	3697
14082	"	13 19	13 52	3.61	3.62	19.5	770	2363	2356	204	39	836	2962	252	1126
14083	"	14 13	14 57	4.70	5.42	20.4	2604	8002	7995	677.5	138.2	2693	9205	846	3791
14084	"	14 57	15 41	4.12	4.76	20.3	2553	8002	7996	664	135	2797	9630	917	3976
14085	"	15 41	16 24	3.67	4.24	18.8	2534	8002	7982	659	150	2770	10450	861	4572
14086	"	16 24	17 02	2.99	3.49	24.5	2262	7233	7213	588	144	2437	9574	799	4332
14087	"	19 48	20 25	2.95	2.94	9.2	2173	3868	3852	565	518	1532	4656	578	1403
14088	"	21.45	22.43	3.84	3.88	13.1	3445	8002	7994	897	117	2853	9096	940	3199
14089	"	22.44	23.45	3.28	3.30	10.7	3702	8002	7973	964	103	3366	8575	1078	2632
14090	"	23.45	0:31	3.28	3.30	9.8	2724	5589	5553	709	69	2493	5930	796	1696

ON/OFF NSO	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 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks
ON	ON	ON	1.92	~~4.47~~ ~~5.48~~	~~5.48~~	IBM	2.3	56	35	0	21.125	NEW ENERGY
"	"	"	2.39	~~1.82~~ ~~2.79~~	~~6.38~~ ~~9.27~~	"	2.7	56	15	0	21.125	Nord-50 crashed !
"	"	"	2.45	~~5.28~~ ~~6.53~~	~~12.27~~ ~~14.80~~	"	2.5	56	46	1	21.125	
"	"	"	2.03	~~4.85~~ ~~5.64~~	~~17.12~~ ~~20.44~~	"	2.35	56	38	3	21.125	
"	"	"	1.75	~~2.04~~ ~~3.03~~	~~19.16~~ ~~23.47~~	"	2.3	56	16	0	21.125	Beams dumped.
"	"	"	2.80	8,43	27.59	"	2.6	55	66	1	"	
"	"	"	2.15	5,48	33.08	"	2.1	55	43	1	"	
"	"	"	1.49	4.85	37.93	"	2.0	56	38	1	"	Beams dumped.
"	"	"	2.73	8.05	45.98	"	2.6	54	63	1	"	
"	"	"	2.05	7.79	53.77	"	2.1	55	61	1	"	
"	"	"	1.71	2.04	55.81	"	1.86	~~55~~ 56	16	0	"	~~Beams lost~~
"	"	"	1,67	1.54	1.54	"	1.85	54	12	0	21.140	new energy beams dumped
"	"	"	3,14	7.29	8.83	"	2.5	55	57	1	"	
"	"	"	2.12	5.88	14.71	"	2,3	56	46	1	"	
"	"	"	1.75	5.12	19.83	"	2.0	57	40	0	"	
"	"	"	1.40	2.43	22.26	"	1.8	56	19	0	"	Beams dumped.
"	"	"	2.36	6.52	28.78	"	2.5	55	51	0	"	
"	"	"	2.26	5.63	34.41	"	2.2	55	44	1	"	
"	"	"	1.86	4.35	38.76	"	2.0	56	34	0	"	Beams lost
"	"	"	3.25	7.93	46.69	"	2.5	57	62	3	"	
"	"	"	2.52	6.91	53.60	"	2.1	55	54	3	"	
"	"	"	2.20	2.87	56.41	"	1.95	55	22	1	"	
"	"	"		40.47		"	1.83				21.155	NEW ENERGY. NORD HANGS?
"	"	"	1.8	4.87	5.34	"	1.82	58	38	2	"	BEAMS DUMPED.
"	"	"	3.51	6.02	11.36	"	2.45	56	47	3	"	
"	"	"	2.74	6.92	18.28	"	2.25	56	54	2	"	
"	"	"	2.26	5.64	23.92	"	2.15	56	44	1	"	
"	"	"	2.06	1.41	25.33	"	2.00	57	11	0	"	BEAMS DUMPED.
"	"	"	3.14	7.69	33.02	"	2.50	55	60	2	"	
"	"	"	2.57	5.89	38.91	"	2.2	57	44	1	"	
"	"	"	1,93	4.48	43,39	"	2.1	59	35	2	"	
"	"	"	1,58	4,36	47,75	"	2,0	58	34	0	"	
"	"	"	3	2,44	2,44	"	1,75	57	19	0	21,170	This Run with No tagging voltage
"	"	"	2,65	9,88	12,32	"	2,3	55	77	1	"	
"	"	"	1,98	7,31	19,63	"	1,9	56	57	3	"	
"	"	"	1,62	3,08	22.71	"	1,7	56	24	0	"	Beams damped.

3/7 Now fill ready at 17⁰⁰ but HV LG cannot be switched on. After systematic search, Kawamoto and Nimoy find this is due to a bad channel in the system. Mark J is waiting for us to be ready, to complete our 50 nb⁻¹. We have now <48 nb⁻¹. We are ready to go just as beam energy is changed. We start now at 21,170 GeV. R14087

Lead glass HV over current. Disconnect 19-T0-5 then ok. HV reloaded.
(blockm 531) from Run 14087 now dead

Run 14087 was without tagging, For 14088, we had to set Tagg HV by hand. Watch it!

4/7/1983 0⁰⁰ Dieckmann & Takeda on shift

1³⁰ New fill ready. Tagging HV was switched on automatically.

4²⁰ New fill ready. Tagg-HV was set automatically again.

7²⁰ Energy increase to 21.184 GeV (1 MeV less than expected)
↳ corrected 21.185 soon.

8.00 Navoska + Kado on shift

9.48 YSPY : Muon digitisers missing 36
10.05 IBM down → stop run 14100 ; run 14101 goes to tape F11136
10.47 YSPY : Muon digitisers missing 125
15.16 " " " " 45
15.30 " " " " 15
16.00 Austin Ball, Karlheinz Meier on shift
16:22 An oriental gentleman from Mark J rings, with the message :- 'We like dump four part half' We agree.
16:30 Beams dumped
17:10 New fill ready. Tests by D.C. + Helsinki & H.K. still in progress
17:17 start run 14107
18:01 Run 14107 ended, start run 14108.
19:50 new Energy 21.200 GeV
19.15 YSPY detected no Hits in FWD-Counter 9. This seems to to be explainable by limited statistics, because after some short time hits appeared in the corresponding Histogram.
19.30 Reprom + Analysis Jobs submitted

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

21:29 New fill. Start run 14112.

00⁰⁰ 5/7/1983 Kuhlen & McCann on shift.

02³⁰ "NORD 50 busy" — end run. Start new run — now it hangs during the pedestal run. NORD re-loaded.
03⁰⁰ "NO TRIGGERS" — level 5 trigger hang-up ; reset as per supplied instructions.

04³⁰ We agree to dump beams at 4⁴⁵ for new fill.
05⁰⁰ PETRA has "feed-back problems". Restart ~45 mins
05⁴⁵ "Restart 8 Uhr".

MAGNET AT 500 AMPS.

8⁰⁰ Ambrus + Schneekloth on shift
8¹⁰ Barbi + Uelkind break switch to enter - 2 area for a visual inspection of the vacuum system.
Magnet was set to 0 and switched off.
It is not possible to restart the magnet. Pillat will exchange 2 relays.
9¹⁵ Magnet repaired, 500A
9⁵⁰ Magnet at 1700A, does not respond to computer or manual control, called HKK
10¹⁵ Magnet reset, turn down, raised current to 7500A
12⁰² start RUN 14120
12¹⁹ beams lost
15²⁵ new fill ready, start RUN 14121
11⁰⁰ - 24⁰⁰ Bainer + Peterson
16²⁰ nearly the whole beam lost, refill
16³⁰ SHORT BREAK
17⁴⁵ ; Vakuum-Fehler in a Transmitter somewhere in the East of Petra. Technicians at work but no prognosis given. (Result of a telephone call). Magnet down to 7000 A
22:15 MAGNET → 7500 INJECTION
22:20 SHORT BREAK

6/7/1983 0⁰⁰ Cords + Bethke on shift
1²⁰ Petra has transmitter problems which can only be fixed during the day
Mark J suggests that we continue the scan where we left off last Christmas, i.e. 19.33 GeV
we don't object.

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RUN	DATE	START	STOP	RUN I+	START I−	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL x10^6	TØ REJ x10^6	T1 Acc Sum	T2 Acc sum	T1 Bit 2 E>6GeV	T2 Bit 17 2T.El.2Tr.
14091	4/7/83	1:38	2:26	4.69	4.18	16.3	2837	8002	7997	738	120	2790	9078	855	3499
14092	"	2:26	3:16	4.19	4.27	14.7	2945	8002	7988	766	113	3020	9086	981	3312
14093	"	3:16	4:09	3.75	3.82	13.1	3132	8002	7973	814	107	3159	8985	1025	2951
14094	"	4:09	4:40	3.35	3.41	12.4	1827	4431	4409	475	59	1826	4912	603	1579
14095	"	5:20	6:09	4.49	4.97	16.3	2884	8002	7996	749	122	2753	9300	879	3646
14096	"	6:09	6:59	4.01	4.45	14.6	2946	8002	7994	768	112	3034	9111	1031	3414
14097	"	6:59	7:17	3.58	3.98	13.6	1014	2640	2637	263	35	1059	2972	355	1074
14098	"	7:27	8:12	3.42	3.80	12.0	3042	7134	7113	792	95	3030	7548	1042	2527
14099	"	9:09	10:01	4.73	4.47	14.5	3085	8002	7999	804	116	2802	8981	1007	3291
14100	"	10:02	10:05	4.19	3.95	13.5	140	435	433	37	5	166	389	56	158
14101	"	10:08	10:53	4.74	3.90	12.6	2673	6778	6766	696	88	2649	7284	913	2556
14102	"	10:53	11:53	3.74	3.51	10.9	3594	7979	7946	936	102	3341	8738	1196	2818
14103	"	13:59	14:07	4.77	4.96	17.0	483	1288	1291	126	21	397	1493	111	535
14104	"	14:08	14:59	4.65	4.84	15.2	3002	8002	7998	782	119	2829	9040	912	3362
14105	"	15:03	15:55	4.07	4.23	13.6	3106	8002	7987	809	110	3125	8961	1004	3166
14106	"	15:56	16:35	3.59	3.73	21.9	1939	5339	5323	505	110	1941	7076	599	2848
14107	"	17:18	18:01	4.80	5.14	20.9	2564	8002	8001	668	140	2593	9026	823	3898
14108	"	18:01	18:46	4.29	4.60	18.7	2654	8002	7993	691	129	2835	9146	958	3801
14109	"	18:46	18:47	3.84	4.12	23.5	33	93	93	9	2	32	94	12	36
14110	"	18:50	19:39	3.80	4.08	15.4	2887	8002	7989	752	116	3011	9510	1027	3722
14111	"	19:39	20:32	3.38	3.64	12.9	3123	7719	7681	813	105	7256	9030	1088	3362
14112	"	21:30	22:19	4.42	4.95	17.1	2915	8002	7996	759	130	2717	9228	891	3703
14113	"	22:14	23:11	3.90	4.38	16.2	3077	8002	7994	801	130	2988	9262	1023	3682
14114	4/7/83	23:11	0:08	3.43	3.87	12.8	3343	8002	7983	869	110	3298	8912	1080	3244
14115	5/7/83	0:10	0:31	3.00	3.38	11.9	1265	2973	2966	329	39	1315	3188	447	1115
14116	"	02:15	02:33	4.78	4.93	17.7	1083	2647	2644	282	50	838	3166	224	1179
14117	"	NO DATA DUE TO NORD HANG UP													
14118	"	02:49	3:50	4.24	4.38	21.1	3597	8002	7997	935	197	3297	9000	1064	3036
14119	"	03:51	04:45	3.59	3.71	11.8	3232	7633	7612	841	100	3231	8382	1070	2644
14120	"	12:02	12.19	4.42	4.68	23.3	2621	2465	2465	242	56	772	1611	208	1193
14121	"	15.32		4.36	4.11	19.0	2682	6670	6660	699	133	2016	8587	613	3465
14122	"	23:54		4.98	4.88	12	4889	8002	7991	1271	148	3296	8984	1308	2292
14123	6.7.83	2:01	2:51	4.80	4.71	15.3	2946	8002	7950	766	117	3369	10457	974	3568
14124	"	2:51	3:41	4.34	4.31	14.7	2989	8002	7943	777	114	3460	10618	1067	3531

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N50	MIP	TOF	<L> x10^30	∫Ldt Bhabha Run	∫Ldt Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
ON/OFF												
ON	ON	ON	3.00	8.85	31.56	IBM	2.3	55	69	2	21.170	New fill
"	"	"	2.43	5.64	37.20	"	2.1	56	44	1	"	
"	"	"	1.98	5.90	43.10	"	1.95	55	46	1	"	
"	"	"	1.54	2.95	46.05	"	1.75	56	23	1	"	Beam dumped
"	"	"	2.77	5.77	51.82	"	2.3	56	45	2	"	
"	"	"	2.25	6.41	58.23	"	2.10	56	50	0	"	
"	"	"	2.17	1.41	59.64	"	2.0	57	11	0	"	
"	"	"	1.67	5.78	5.78	"	3	57	45	1	21.185	New Energy
"	"	"	2.71	8.99	14.77	"	2.3	55	70	0	"	
"	"	"	2.50	0.26	15.03	"	2.05	47	2	0	"	IBM brak down
"	"	"	2.12	5.27	20.30	Tape F11136	2.0	54	41	0	"	
"	"	"	1.80	4.88	25.18	IBM	1.85	55	38	3	"	dump.
"	"	"	3.77	1.03	26.21	IBM	2.4	54	8	1	"	IBM problems
"	"	"	3.27	7.32	33.53	"	2.35	54	57	2	"	
"	"	"	2.42	7.97	41.50	"	2.15	55	62	2	"	
"	"	"	1.56	1.54	43.04	"	1.90	59	12	0	"	beams dumped
"	"	"	3.30	6.55	49.59	"	2.5	55	51	0	"	
"	"	"	2.75	6.30	55.89	"	2.3	56	49	1	"	
"	"	"	1.59	0.13	56.02	"	2.2	59	1	0	"	
"	"	"	2.22	5.66	5.66	"	2.2	56	44	2	21.200	new energy
"	"	"	1.78	4.89	10.55	"	1.9	56	38	1	"	beams dumped
"	"	"	3.33	7.20	17.75	"	2.4	55	56	2	"	
"	"	"	2.50	7.98	25.73	"	2.1	56	62	1	"	
"	"	"	2.10	6.30	32.03	"	1.9	56	49	0	"	
"	"	"	1.81	1.67	33.70	"	1.7	57	13	0	"	beams dumped
"	"	"	3.62	3.92	37.62	"	2.5 2.2	54	19	1	"	NORD hang up ended run
"	"	"	2.36	8.75	46.37	"	2.2	55	68	1	"	
"	"	"	1.45	5.02	51.39	"	1.9	55	39	0		beams dumped
"	"	"	1.16	3.04	54.43	"	2.4	55	32	0	"	beams lost
"	"	"	2.72	7.42	7.42	"	2.3	56	36	2	21.215	beam nearly lost 10 high current
"	"	"	1.51	5.62	13.09	"	2.6	57	37	2	"	
"	"	"	3.76	5.84	9.84	"	1.35	61	92	0	19.330	transmitter problems → lower energy
"	"	"	3.17	9.20	19.04	IBM	1.20	60	86	0	19.330	

RUN	DATE	START	STOP	Run Start I+	Run Start I−	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	All $\times 10^6$	T0 Rej $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{T1}>6$ GeV	T_2 BIT 17
14125	6.7.83	3[42]	4[35]	3.95	3.92	13.0	3183	8002	7851	828	108	3638	10358	1101	3163
14126	"	4[35]	4:36	3.59	3.56	12.1	1202	7882	2856	313	38	1284	3627	352	1034
14127	"	5[46]	6[35]	4.82	4.87	14.9	2550	8002	7955	767	114	3368	10545	1009	3509
14128	"	6[35]	7[04]	4.36	4.40	15.1	1696	3887	3860	447	67	1741	4987	509	1403
14129	"	7[04]	7[13]	4.11	4.15	11.7	495	1173	1161	129	15	553	1435	160	382
14130	"	7:32	8:28	3.90	3.94	12.6	3306	~~8002~~ 7962	7942	860	109	3543	10446	~~1139~~ ~~353~~	~~3311~~ ~~10372~~
14131	"	8:28	8:54	3.49	3.51	12.0	1530	3579	3541	398	48	1638	4708	463	1291
14132	"	9:44	10:37	4.57	4.43	19.5	3164	8002	7997	824	160	2791	9302	948	3448
14133	"	10:38	11:28	3.98	3.82	21.6	2973	8002	7992	774	167	2811	9984	912	3815
14134	"	11:29	11:51	3.44	3.22	36.5	1324	3726	3717	345	126	1216	5317	362	2322
14135	"	12:47	13:46	4.50	4.67	21.2	3081	8002	7995	801	170	2901	9130	1024	3604
14136	"	13:47	14:11	3.79	3.54	16.4	1431	3652	3646	373	61	1413	4162	515	1583
14137	"	19:49	20:20	4.83	5.10	41.4	1831	4527	4527	476	196	1300 ~~2486~~ ~~2486~~	5766	513	2702
14138	"	21:21	22:15	5.04	4.62	28.9	3197	8002	8001	831	241	~~2486~~	9543	979	4044
14139	"	22:19	22:31	4.37	4.01	23.7	938	2407	2405	244	58	~~885~~ 753	2885	275	1198
14140	"	22:34	23:50	4.18	3.84	32.4	927	2120	2115	241	78	663	2583	215	1086
14141	"	22:59	23:29	3.92	3.60	17.0	1821	4527	4520	474	81	1562	5673	532	2295
14142	"	23:30	0:22	3.65	3.75	14.3	3093	7548	7534	805	115	2703	9071	855	3489
14143	7.7.83	2:22	3:16	4.37	3.99	14.5	3284	8002	7993	854	123	2966	9130	1237	3352
14144	"	3:16	4:07	3.83	3.49	15.5	3033	7602	7590	790	122	2855	9118	1006	3500
14145	"	4:41	5:28	4.93	4.48	17.5	2768	8002	7998	720	126	2904	8673	1110	3553
14146	"	5:28	6:17	4.33	4.30	15.3	2965	8002	7987	771	118	3119	8744	1148	3340
14147	"	6:18	7:04	3.80	3.77	11.0	2799	6152	6118	728	80	2809	6471	1006	2059
14148	7.7.83	7:49	8:43	4.15	4.69	14.9	3787	8002	7996	829	124	3757	8598	1252	3157
14149	"	8:54	9:04	3.48	3.93	14.0	580	1375	1371	150	26	~~197~~ 578	1422	212	~~1559~~ 533
14150	"	12:50	13:13	4.98	4.93	29.7	1332	3496	3496	346	102	1170	3754	453	1612
14152	"	18:57	19:18	3.25	4.27	25.5	1230	3717	3706	320	81	893	2583	337	858
14153	"	22:58	23:09	4.75	4.95	58.4	668	1567	1567	173	101	338	1201	139	496
14154	8.7.83	0:26	1:21	4.16	5.02	18.3	3261	~~8002~~ ~~7975~~	7998	848	155	2647	9412	923	3671
14155	"	1:21	2:01	3.42	4.26	13.0	2404	5522	12!	625	81	2082	6292	647	2291
14156						junk									
14157	"	2:38	2:51	5.16	5.25	40.9	746	1808	1807	194	79	567	2214	172	1000
14158	"	2:51	3:05	4.94	5.04	36.2	703	1839	1839	183	66	599	2089	172	1006
14159						junk									
14160	"	3:19	3:29	4.52	4.63	29.0	469	1215	1214	121	35	388	1401	105	639

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int$Ldt Bhabha Run	$\int$Ldt Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Frak. %	Bhabha Σ	MH	E_{beam}	Remarks
14125	ON	ON	ON	2.62	845	27.49	IBM	1.7	61	20	1	19.350	
14126	ON	ON	ON	2.36	2.25	29.74	"	1.0	60	21	1	"	beam dumped
14127	"	"	"	3.74	11.34	41.08	"	1.4	60	106	0	"	
14128	"	"	"	3.16	4.28	45.36	"	1.2	60	40	1	"	
14129	"	"	"	3.24	1.82	47.18	"	1.1	61	17	2	"	
14130	"	"	"	2.60	7.92	55.10	"	1.1	61	74	2	"	
14131	"	"	"	2.16	1.71	56.81	"	1.0	62	16	0	"	
14132	"	"	"	2.84	6.70	19.79	"	2.5	56	52	4	21.215	← again
14133	"	"	"	2.14	4.38	24.17	"	2.1	57	34	1	"	
14134	"	"	"	1.29	0.90	25.07	"	2.1	60	7	0	"	Beams dumped
14135	"	"	"	2.87	7.73	32.80	"	2.4	56	60	3	"	
14136	"	"	"	2.28	2.32	35.12	"	2.0	56	18	1	"	Beams lost
14137	"	"	"	2.26	3.74	38.86	"	2.7	57	29	1	"	BEAMS LOST
14138	"	"	"	2.82	8.63	47.49	"	2.65	55	67	1	"	
14139	"	"	"	2.26	2.06	49.55	"	2.3	54	16	0	"	
14140	"	"	"	1.63	1.55	1.55	"		54	12	0	21.230	New energy:
14141	"	"	"	1.82	3.23	4.78	TAPE	2.2	56	25	0	"	DATA ON NORD TAPE / HDMAA (: DISK FULL)
14142							IBM	2.0				"	
14143	"	"	"	2.84	9.33	18.88	"	2.2	55%	48	1	"	
14144	"	"	"	2.13	5.81	24.69	"	2.1	56	45	1	"	beams dumped
14145	"	"	"	3.59	9.93	34.62	"	2.5	55	56	2	"	
14146	"	"	"	2.73	8.11	42.73	"	2.3	55	49	0	"	
14147	"	"	"	1.76	4.92	47.65	"	2.1	56	28	1	"	beams dumped
14148	ON	ON	ON	2.90	9.25	56.90	IBM	2.3	55	56	1	21.230	
14149	"	"	"	2.48	0.78	~~0.78~~	IBM	1.8	56	6	2	21.245	NEW ENERGY / ↓ Sender Ausfall
14150	"	"	"	3.53	~~4470~~ 3+44	4.27 ~~548~~	"	2.5	56	27	0	"	beams dumped & (Ant)
14152	"	"	"	2.02	1.55	5.82	"	2.2	10	12	0	"	beams lost
14153	"	"	"	1.87	0.65	6.47	"	2.5	15	5	0	"	beams lost
14154	"	"	"	2.48	6.72	13.19	"	2.5	55	52	3	"	
14155	"	"	"	1.96	4.78	17.97	"	2.1	55	37	1	"	beams lost
14156							"	2.65					very short run
14157	"	"	"	3.31	2.20	20.17	"	2.65	58	17	0	"	
14158	"	"	"	3.08	1.55	21.72	"	2.45	55	12	1	"	
14159													
14160	"	"	"	2.62	0.78	22.50	"	2.3	54	6	0	"	beams lost

6.7.83

6:00 The last four [reform-jobs] did not run ("requested space not available").
Probably no further jobs should be submitted until this ~~point~~ problem is solved.

7:12 short break for repairing transmitter
7:30 Started run at old energy 19.330 to finish this point (nearly done)
8:00 Finch & Takeshita on shift
8:40 PKR needs a few hours to repair TRANSMITTER.
8:50 MARKJ asked us next energy, we preferred +15 MeV ie 19.345 GeV = E beam.
8:55 Beam dumped, RUN 14131 ended.
9.25 PKR has finished so we can go up high-energy (21.215 GeV). They are injecting now.
9.55 'No triggers' - solved by PAUSE/CONTINUE
11.28 " " "
11:53 IBM ERROR 53 ; IBM BUSY : IBM has problem and is solved at 12:05.
11:55 MARKJ SAID ~~NO~~ Beams dump and New fill at 12:00.
12:03 RUN 14134 ended. We could not get RUN SUMMARY because of defect of copy sw (or others?).
12:10 IT WORKED !!
13:35 IBM ERROR 53 ; IBM BUSY ; IT restarted again on 13:40
14:13 Beams lost. Run 14136 Ended.
14:23 "SHORT BREAK" ON TV.
ALL LG-counters HV's are checked and were OK.

16:00 AMBRUS, KAWAMOTO 三井 + 三十 (Young guys!)
19:40 New fill ready after 5 hours of short break ⊕ unsuccessful injection . RUN 14137 start.
19:50 MS43 on LP [VOLTS: TOF MFR=53, CH 30 2.7 should be 2.1
53 31 2.75 " "]
20:20 BEAMS LOST
21:20 BEAMS READY, V_{BP} ≈ 2.7 V START RUN 14138
DEAD TIME IS HIGH: ≈ 40% → gradually improved to ≈ 20 ≈ 30%
21:23 "TOF HV WRONG" MESSAGE came again.
22:30 ENERGY INCREASED TO 21.230. L (Petra) ≈ 200.8 [according to MARK]
(FINAL NUM: CELLO 55.4, TASSO 56.1, JADE 49.6, at 20.215)
22:44 IBM BUSY, JADE DISK 92.0%. DATA are not dumped even the number reaches 94%.

ON/OFF N50	MIP	TOF	<L> ×10^30	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

RUN 14140 STOP. (WRITE) THE DATA ON MAG TAPE for NEXT RUN (14141)

7.7.83 0:00 - 8:00 Ball + Peterse
00:22 Stop run 14142 - dump beams
02:20 New fill ready - start run 14143.
wrong HV MFR 53 channel 1 HV = 2.523 should be 2.750
2 HV = 2.523 " " 2.760
rather to our surprise, we manage to reset these using the 'TOF' program under our NAR.
04:07 beams dumped, stop run 14144
04:41 new fill ready start run 14145.
07:04 dump beams end run 14147
JADE IS NOW COORDINATING!
07:49 New fill start run 14148.

8:00 Zorn + Hellenbrand
8:45 Luminosities Cello: 250; Mark J ≈ 40; TASSO ≈ 57; JADE ≈ 56
8:50 Change in Energy → 21245
9:04 Sender failure: beam dumped.
12:50 New fill at 21.245 GeV.

R.H. TEXTRONIX IS STILL GIVEING MULTIPLE CHARACTERS WHEN A KEY IS PRESSED AND IS ALMOST UNUSABLE !!

~13:13 Sparks in Inner Detector - ~~IR~~ Ring 1, cell 6+7
Immediately thereafter beams were lost.
14:40 Temperature in the hardware room ≈ 27°
2 compressors in the airconditioning room (out of 3) did not work
they were repaired by 11463
15:00 Temperature down to 19°

16:00 Bartel + Chrin on shift
18:10 beams ready
19:00 D. Cords reprimanded systems, we start taking data

19:00 very high dead time ~35% ask for orbit correction ⇒ went down to 15%
19:10 DL8 63, 65, 109 did not give any response
shaking helped, except for 109 experts cleaning the contacts
19:18 Beams lost, a correspondingly setting off I.D. anode current alarms.
19:45 Screen says 'short break' run magnet down
Interlock problems
22:55 Petra is back on again
very high dead time 43% Q values are optimum, orbit has been corrected, is ok, Try another orbit correction
23:10 Again beams lost a I.D. anode current alarm set off.
23:25 Short Break. Run Magnet Down To 2000 Amps.
Magnet power supplies in the e^+ transport system failed

8/7/83 0⁰⁰ Finch & Kobayashi
0¹⁰ Injection started. Magnet back to 7500 A. EVENT
2⁰¹ Beams lost. When we stopped the run by "DOWN" command, "REGULAR DISPLAY, DISPLAY SELECTING EVENT" did not disappear from TV screen after the run stopped, and we could not erase it by any command. # of Records out was only 12 while # of Records in was 5522 (Run 14155).
(TRIG=8804, N10=5512, N50=5509, N40=5491, IBM=5490)
→ Only TV was hanging. → Restart ZDAS. OK now.
2⁴⁵ Dead time rate is very high (40~45%). We asked PKR to reduce background. BP current reduced from 2.65 V to 2.45 V. Trigger bit #31 (TBG coll(z)) is about twice high than other bits, which could be due to bad pedestal setting for LG. We restarted new run (#14158). Trigger bit # 31 is now reduced by ~30%, and dead time rate to 35%.
3¹⁰ IBM down. IBM operator says it will recover soon.
4³⁰ We found that since Run 14161 6 DL8's (wire 505 - 551) were not working. We called Riesberg. → (deadtime ~50%, MP-16 rejection ~20%)
5·32 Nierberg working on DL8 - Run 14163 stopped
5⁴⁰ Riesebarg fixed DL8. Now dead time ~20%, MP-16 rejection ~40%.
6⁰⁰ Luminosities so far at present energy: Mark-J 50 nb⁻¹, TASSO 41, CELLO 46, JADE 35.

8/7/83 8⁰⁰ Mukawa + Mizuko
10³⁵ 21.245 finished / $\int Ldt$: MJ = 69.2 nb⁻¹ / Taso = 53 nb⁻¹ / Cello = 65 nb⁻¹ / Jade = 51.2 nb⁻¹ Σ = 245.4 nb⁻¹
— We have 16 multi hadrons at this energy —

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

11⁵³ new fill at 21.260 / current of HT counter too high to switch on ~10 V
they will try orbit corrections
11⁰¹ conditions have improved V_{HT} ~ 2.4 V
13³² IBM problem / no time estimate of how long it will last / we switch to tape

16⁰⁰ McCann & Weber on shift
There is trouble with RF-hall Nord, because of high air temperature. They are able to accelerate at 16.45; trouble seems to be cured. Beams lost at acceleration 17.07 o'clock, after having reached 13.86 eV.

18⁴⁵ WORD Hung — lost the run summary for run 14173, which had ~ 2,800 records out.
18⁵⁵ Started run 14174

19.19 beams lost. Stop run 14174. I.D. alarm reset.
T.V. monitor says "short break"
20.14 New fill. Start run 14175. Still "background optimisation"
20.18 Dead time 56% : barrel Bhabhas show ~ 500 hits in I.D.
20.27 " " 40%

22²⁰ Now low currents, but these are Linac problems, so we can't get a new fill for "several hours" — so plod on with this fill.

		11.56 o'clock
$\int Ldt$ = 47 nb⁻¹	JADE	54
45	CELLO	53
43	TASSO	53
35	MARK-J	41
170		201

23²⁰ PKR says it will take ~ 0.5 – 1 hrs. before they know when they will be ready to inject.

0⁰⁰ 9.7.83
SCHNEEKLOTH # 5 WAGNER
BEAM LOST ~~[illegible]~~ → I.D. ALARM
1:37 start run 14178 ← DATA IN THIS RUN PROBABLY NOT USABLE → LOST U34 CRATE (DL8 49-53) → HAD TO REPLACE POWER PACK. LOOKS O.K. NOW, BUT BEAM WAS LOST DURING PROCEDURE.

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RUN	DATE	START	STOP	Run I+	Run I−	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T⊕ RES ×10⁶	T1 Acc SUM	T2 Acc SUM	T1 BIT2 E1766eV	T2 BIT17 2T. E4,2Tr.
14161	8.7.83	4:00	4:19	5.15	5.12	54.3	1106	2674	2674	287	156	771	2659	227	1215
14162	"	4:19	4:38	4.11	4.80	47.7	1087	2852	2851	283	135	823	2768	223	1237
14163	"	4:40	5:29	4.52	4.52	43.7	2952	7965	7961	769	336	2224	7398	648	3326
14164	"	5.43	~~5:54~~	3.74	3.75	21.6	537	1418	1416	139	30	513	1703	164	716
14165	"	6:33	7:03	4.86	4.67	33.8	1761	4563	4562	458	155	1566	5377	510	2405
14166	"	9:05	9:53	4.40	4.78	17.4	3191	8002	7999	831	145	2950	9205	1004	3539
14167	"	9:59	10:27	3.81	4.14	14.4	1454	3538	3531	378	55	1355	4039	446	1517
14168	"	10:26	10:42	3.55	3.87	12.4	927	2203	2202	241	30	866	2366	315	866
14169	"	12:03	12:56	4.76	4.55	17.1	3159	8002	7997	822	140	3052	8821	1120	3378
14170	"	12:57	13:30	3.86	3.61	12.7	1952	4445	4430	508	65	1800	4921	619	1785
14171	"	13:33	13:57	3.47	3.24	10.9	1392	3035	3024	362	39	1276	3330	449	1092
14172	"	13:57	14:26	3.26	3.04	9.7	1746	3472	3459	454	44	1515	3790	534	1194
14173									~2,800						
14174	"	18:55	19:19	4.23	4.04	11.5	1402	3283	3281	365	42	1309	3351	493	1058
14175	"	20:14	21:16	4.21	4.13	16.9	3683	8002	7989	957	80	3231	8139	1239	2392
14176	"	21:16	22:29	3.54	3.48	8.4	4349	8002	7964	1131	95	3877	7652	1530	1719
14177	"	22:29	23:56	2.92	2.86	7.0	4939	8002	7908	1285	89	4232	7478	1616	1458
14178	9.7.83	1:37	2:12	4.38	4.66	~~4.5~~ 2.73	882	2472	2472	229.6	55.7	932	2709	376	1128
14179	9.7.83	3.23	4:14	4.61	4.86	~~4.7~~ 20.5	3010	8002	7995	783.9	161.1	3202	8357	1250	3313
14180	"	4:14	~~5:12~~	3.68	3.95	~~3.7~~ 11.8	3431	8002	7985	893.1	105.2	3479	8366	1259	2909
14181	"	5:12	5:38	2.99	3.25	~~3.2~~ 10.1	1518	3063	3046	394.7	39.9	1422	3295	497	1012
14182	"	6:14	~6:30	4.73	4.99	~~6.9~~	~~3.569~~	~~8000~~	~2000						
14183	"	6:41	7:41	4.38	4.63	65.9	3569	8002	8000	930	613	2485 1945	12680	684	7825
14184	"	7:41	8:21	3.72	3.94	51.0	2384	5723	5767	612	316	~~1945~~	6945	566	5138
14185	"	9:57	10:51	4.99	5.36	41.5	3178	8002	8002	827	341	2726	9646	886	4658
14186	"	11:20	11:68	3.84	4.13	19.3	1653	4862	4857	430	829	1939	5594	592	2454
14187 → 14190			JUNK												
14191	"	15:09	16:04	4.03	3.98	13.8	3230	8002	7998	842	116	3083	9240	1126	3592
14192	"	16:04	16:05												
14193	"	19:10	20:02	4.66	4.71	15.9	2916	8002	7994	758	120	2871	9116	1120	3798
14194	"	20:03	20:58	4.09	4.09	15.6	3305	8002	7989	859	134	3026	9114	1210	3485
14195	"	20:59	22:00	3.48	3.52	11.3	3649	8002	7968	949	107	3368	9084	1347	3171
14196	"	22:00	22:09	2.97	3.01	10.3	498	1065	1061	129	13	468	1165	192	375

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RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Lat Bhabha Run	∫Lat EXP	IBM/ TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
14161	ON	ON	ON	2.17	3.10	25.60	IBM	2.6	42	24	0	21.245	6 DLB's not working
14162	"	"	"	2.22	2.20	27.80	"	2.4	38	17	1	"	"
14163	"	"	"	1.92	6.07	33.87	"	2.4	33	47	1	"	"
14164	"	"	"	2.25	1.03	34.90	"	2.1	56	8	0	"	beams lost
14165	"	"	"	2.43	3.75	38.65	"	2.4	55	29	2	"	beams lost
14166	"	"	"	3.28	9.04	47.69	"	2.4	56	70	3	"	
14167	"	"	"	2.99	3.49	51.18	"	2.1	55	27	2	"	energy started
14168	"	"	"	2.52	1.29	1.29	"	1.95	54	10	0	21.260	beams dumped
14169	"	"	"	3.16	10.35	11.64	"	2.35	56	80	4	"	
14170	"	"	"	2.26	3.11	14.75	"	1.95	56	24	0	"	HT problem
14171	"	"	"	2.01	1.55	16.30	FH1214	1.8	55	12	1	"	data on TAPE
14172	"	"	"	1.43	1.94	18.24	IBM	2.7	48	15	1	"	
14173					~4.26	22.50	"	2.1				"	NORD CRASHED. NO RUN SUMMARY.
14174	"	"	"	~~3.55~~ 3.47	5.18	27.68	"		~~46~~ 55	40	1	"	ID alarm by loss of beams
14175	"	"	"	2.53	10.22	37.90	"	2.4	55	79	2	"	New fill
14176	"	"	"	2.08	8.80	46.70	"	1.8	54	68	2	"	
14177	"	"	"	1.47	5.82	52.52	"	1.5	56	45	1	"	ENDED RUN, THEN BEAM LOST
14178	"	"	"	2.67	3.11	3.11	"	2.2	58	24	1	21.275	CLOST BEAM RUN ENTIRE BAD V34 CRATE
14179	"	"	"	2.96	6.87	9.98	"	2.4	57	53	2	"	
14180	"	"	"	2.16	5.83	15.81	"	1.9	56	45	2	"	
14181	"	"	"	1.62	2.33	18.14	"	1.6	58	18	4	"	BEAMS DUMPED
14182	"	"	"		?	?	"	2.5				"	NORD crashed, no run summary
14183	"	"	"	0.87	2.54	20,73	"	2.4	65	20	0	"	
14184	"	"	"	0,77	1.84	21.77	"	2.2	56	8	1	"	Beam dumped ?
14185	"	"	"	~~2.82~~ 2.59	9.59	31.36	"	2.7	58	74	1	"	
14186	"	"	"	2.47	3.76	35.12	"	2.4	57	29	0	"	Beams dumped
14187 → 14190								~~2.5~~					JUNK - NO EVENTS, NORD PROBLEM
14191	"	"	"	2.53	5.70	40.82	"	2.3	56	44	1	21.275	
14192													Beams lost just after physical events
14193	"	"	"	3.36	10.25	10.25	"	2.4	56	79	3	21.290	
14194	"	"	"	2.55	7.40	17,65	"	2.1	55	57	2	"	
14195	"	"	"	1.96	6.49	24.14	"	1.9	~~58~~ 57	50	1	"	
14196	"	"	"	1.66	0.52	24.66	"	1.6	57	4	0	"	Beams dumped

3:40 MUON CRATE MISSING (#11) SEEMS TO BE APPEARING QUITE FREQUENTLY → WILL CONTINUE MONITORING SITUATION & CALL EXPERT IF THIS CONTINUES.

~~6~~ 5:38 beams dumped

6:14 start run 14182

submitted reform jobs YEN 122 → REFORM 137, YEN 123 → REFORM 138

" analyse " BEK 135 → MIN 135, BEK 137 → MIN 137

≈ 6:30 NORD hung, lost Run Summary, reload NORD

6:41 start run 14183

7:16 VERY HIGH (66%) DEAD TIME → WILL TRY TO FIGURE OUT WHY → SEEMS TO BE A VERY HIGH BEAM GAS EVENT RATE

7:41 start run 14184

8:00 Barnes + Zorn

8:30 PKR contacted: They reported some trouble with vacuum (getter pumps in North). This could have been the problem ~~not~~ producing our high dead time ↑.

9:57 new fill. background still high, dead time ~ 45 %. PKR say they will try to optimize the background

10:15 background still the same 45~~44~~ % dead time. phone PKR, they say they will try again.

10:34 dead time 43 %. PKR say they have tried everything and can't get any improvement. They say the vacuum may take an hour to improve. ∴ (10:45, 41.9%) ~~(0:58, 41.2%), (11:10, 41.2%)~~

11:20 run 14186 started ~~dead time~~ Nord-50 histogramming was at 100 %, reduced to 20 %. Dead time → 17 %.

11:51 ~~Pkr~~ T.D. slow trip while beams still in machine, but PKR say switch off the high voltage - dump beams.

12:47 SHORT BREAK. Problem with R.F. cavities estimate start in 15 mins.

15.00 Funny computer hangup [illegible] at Nord still flickering, but unable to start a run. When trying the program went as far as to print on the console, but no reaction on colour TV. Command terminal did not react to esc. key. Then I followed the procedure on Page A7 of YDAS manual. But how does one configure ZOAS? F16-key means something else.

However without that data taking seemed to work o.k.

~~Zoas~~ 4 quite runs resulted. Kreindl

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

1505. Nord 50 - Histogramming set to 20% - (not much improvement in dead time 17% → 16%)

16⁰⁰ Kobayashi, Bethke on shift

16⁰⁵ Just after starting run 14192, beam lost (only pedestal events written). Next fill will be at higher, new energy (21.290), because ΣL over all experiments ≈ 278 We have only 40 because of former problems!

16¹⁰ "Störung Ost Redits, Senderstromversorgung". We will not get beam for at least ~1h. Magnet down to 500 A.

18¹⁵ New fill started.

19⁰² New fill ready. New energy from now (21.290 GeV).

beam's at 21.275: JADE ~40, TASSO ~60, MARK ~54, CELLO ~64 ⇒ Σ ~ 220

21⁵⁵ We asked PKR for a new fill in 15 min.

23⁴⁰ After starting run 14199: Hi procs were off, deadtime ~ 70%. Started Hi procs. Some time later: Time out TOF bx.3 ost. Stopped run and started new one: All looks ok. Deadtime ~ 20% (End of run 14197: ~60..70%; could not investigate it because of IBM-link-errors, TOF-errors and so on! Now all looks ok.

Sunday, 10 July 1983

0⁰⁰ J. Chrin and H. Riesberg

0 37 When the Run # 14200 is full (8000 records in) we get the error message "No triggers for.. sec" and no automatic end of the run. We stop it manually.

The next run hangs at the first (pedestal) event, and Kreindl Bon gymnastics fails. This run ends, as it should, after a few seconds.

At F1 (Start Run) the function sign comes and then the terminal is dead. On the teletype the error TRANSF#! several times

The Terminal hang-prodedure doesn't works, therefore EXIT can not be given. We have to reload the Nord. At the first go the Colour TV doesn't light up. We have to do the EXIT cycle to cure the problem. Start Run 14202 ok.

1⁰⁰ JADE 34 nb⁻¹ 1⁰⁷ ~~Nord fell~~ Beam dump for new filling

CELLO 34

TASSO ~ 30

MARK J 30

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RUN	DATE	START	STOP	RUN START I^+	RUN START I^-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TΦ REJ $\times 10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 BIT 2 $E_1 > 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot 2T_2$
14197	9.7.83	22:54	23:39	4.58	4.51	41.4	2697	8002	8002	701	290	2545	11515	868	6597
14198	no	events;		no IBM link											
14199	"	23:41	23:	3.86	3.83	66.8	702	742	742	52	35	106	539	35	331
14200	"	23:48	0:37	3.75	3.72	18.9	2869	8002	7985	746	141	3054	10302	1051	5005
14201	no	events													
14202	10.7.83	0:51	1:18	3.05	3.04	13.7	1565	3704	3684	407	56	1594	4507	570	1925
14203	"	2:55	3:43	4.98	5.05	17.5	2891	8002	7999	752	132	3017	8935	1094	3805
14204	"	3:47	4:47.	3.75	3.83	11.3	3558	8002	7979	925	105	3546	8492	1294	2933
14205	"	4:48	5:03	2.80	2.89	9.1	910	1782	1771	237	22	863	1824	312	513
14206	"	5:41	6:29	4.61	4.83	17.2	2886	8002	8000	750	129	3079	9424	1067	4021
14207	"	6:37	7:42	3.65	3.85	12.2	3410	8002	7982	887	108	3465 9122	8886	1236	3170
14208	"	7:46	8:01	2.92	3.10	10.9	879	2420	2412	228.9	25.0	[illegible]	2042	338	658
14209	"	8:48	9:23	4.94	5.07	22.6	2075	6018	6018	540.3	122.4	2134	7260	678	3204
14210	"	9:27	9:38	4.14	4.34	15.6	633	1759	1759	165	26	676	1985	249	836
14213	"	9:45	10:03			26.7	1047	3491	3992	272	73	931	2788	312	1096
14215	"	10:09	10:33	3.80	3.88	21.4	1476	5598	5599	384	82	1401	3876	475	1517
14216	"	10:45	10:46	3.44	3.51	15.8	18	JUNK RUN							
14217	"	10:48	10:51	3.42	3.49	12.1	161	374	374	42	5	163	413	57	154
14218	"	10:51	11:08	3.38	3.45	19.7	979	2312	2303	255	30	348	2496	348	3436
14219	"	12:05	12:12	4.92	4.71	18.2	401	1137	1137	104	19	423	1269	171	579
14220	"	12:13	12:26	4.80	4.59	19.2	777	2275	2275	202	39	848	2519	309	1127
14221	"	12:31	12:53	4.52	4.31	17.5	1315	3898	3897	342	60	1500	4399	554	1868
14222	"	15:44	16:20	4.38	4.38	21.5	1734	4908	4905	502	108	1793	5168	630	2089
14223	"	17:50	18.20	5.15	5.32	25.1	1732	3373	3373	295	73.8	1746	3795	423	1727
14224	2	its	run	stopped	for	IBM	error	"54"		Short run, few events, no summary					
14225	"	19:32	20:17	4.87	4.62	13.5	2665	6418	6416	693	93	2571	6808	1152	2382
14226	} type problems; short, no event, no summary														
14227															
14228	"	20:35	21:23	4.02	3.81	11.0	2657	6002	5988	691	75	2726	6102	1178	1871
14229	"	21.28	22.12	3.47	3.28	9.5	2674	5258	5229	680	64.4	2500	5394	1708	1554
14230	"	22:54	23:22	4.74	5.22	24.7	2254	6002	6000	583	144	2227	6287	931	2610
14231	"	23:26	0:09	4.11	4.54	18.3	2483	6502	6493	632	116	2620	6962	992	2678
14232	11/7/83	00:14	0:56	3.92	4.53	12.2	2467	6002	5988	641	78	2651	6347	1017	2238
14233	"	00:57	1:41	3.13	3.48	10.4	3083	6924	6901	802	86	3242	7033	1192	2237

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ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	∫Ldt Bhabha Run	∫Ldt Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	E_{beam}	Remarks
ON	ON	ON	2,08	4,93	29.59	IBM	2.4	61	38	1	21.290	
"	"	"	0,85	0 (cut mid-night)	29.59	"	2.25	-48%	0	0	"	stopped run, TOF-time-out
"	"	"	1.96	3.76	33.35	"	2,05	58	29	0	"	
"	"	"	1.55	2.34	35.69	"	1.7	58	18	0	"	Beams dumped
"	"	"	3.26	7.91	43,60	"	2.6	56	~~57~~61	4	"	
"	"	"	1.96	6.36	49.96	"	2.0	56	49	2	"	
"	"	"	1.36	1.82	51.78	"	1.6	55	14	0	"	Beams dumped
"	"	"	3.05	8.56	60.34		2.5	57	66	2	"	Change of energy
"	"	"	2.10	4.03	4.03	"	2.1	56	31	1	21.305	
"	"	"	1.61	0.91	4.94	"	—	34	7	1	"	BEAMS DUMPED
"	"	"	3.45	4.55	9.49	IBM	2.7	56	35	1	"	
"	"	"	2.21	3.23	12.72	F22B70	2.3	55	17	0	"	
"	OFF	OFF	2.42	2.08	14.80	"	2.3	—0%	16	0	"	
"	"	"	2.16	4.16	18.96	HD621	2.1	—0%	32	0	"	
						F22B71	2.0					
ON	ON	ON	2.06	0.26	19.22	"	2.0	58	2	0	"	
ON	ON	ON	1.93	1.56	20.78	IBM	2.0	53	12	1	"	Beams lost.
"	"	"	3.70	0.91	21.69	F22SC2	2.6	56	7	0	"	
"	"	"	3.50	2.21	23.90	IBM	2.4	54	17	0	"	
"	"	"	2.90	4.42	28.32	F22B64	2.2	55	34	3	"	Beams lost
"	"	"	2.12	3.64	31.96	1B4	2.3	55	28	1	"	Beams lost
"	"	"	3.60	3.51	35.47	"	2.6	55	27	1	"	"
						"	2.3					
"	"	"	3.15	6.11	41.58	HD 186	2.3	54	17	2	"	
							2.1					
							2.0					
"	"	"	2.31	5.2	46.78	FM205	2.05	55	40	1	"	
"	"	"	1.77	4.03	50.81	HD619	1.9	56%	31	2	"	Beams dumped
"	"	"	3.07	6.25	6.25	MD166	2.0	54	48	0	21.320	New energy
"	"	"	2.61	5.20	11.45	F11184	2.2	55	40	1	"	
"	"	"	2.08	4.03	15.48	F11145	2.0	56	31	2	"	
"	"	"	1.71	3.25	18.73	IBM	1,8	56	25	0	~~21.320~~	Data output to IBM

10.7.83 cont'd.

1³⁵ A DESY car and a fire brigade (with blue lights) shows up in front of the JADE hall. But no fire here

2⁵⁰ New fill ready, start Run # 14203

At run start we get – as in the previous runs – ERROR 14 in 34761 at 106736 outside segment bounds, page 0
This is in YVOLTS task.

Note: We are still runing with 20% histograming (accessible via NORD 50 DIALOG, ANALYSIS FLAGS)
Deadtime ~ 20%

Several time outs from DL8 # 65 (wires 520-527)

3⁴³ After the end of the run we rebuild YVOLTS

4⁴⁵ JADE 50 nb⁻¹ We ask for a new filling at 5⁰⁰ with the same energy
CELLO 51
TASSO ~40
Mark J 40
Σ ≈ 180

5³⁸ New fill ready

6³⁰ New energy 21.305 GeV, At 21.290 we get JADE 60 nb⁻¹
CELLO ~62 "
TASSO ~50 " not confirmed, computer problems
Mark J 49 "
~ 220 "

7⁴⁰ Forward counter hit maps. Ctr ~~26~~ is missing. Was low before

8⁰⁰ S. WAGNER & TAKESHITA ON SHIFT
DUMP BEAMS.
>1000 JET CHAMBER ILLEGAL HITS IN LAST RUN
→PROBLEMS WITH DL85, RIESEBURG IS LOOKING INTO IT. DL 129+130 (wires 1032-1047) illegal hits. Contacts cleaned → ok.

9:01 YSPY ERROR: "MUON DIGITIZER MISSING", 18,46, we called H. McCann.
9:20 H.M came and looked into MU-chamber.
9:24 IBM ERROR 53 → START WRITING TAPE ON NORD (RUN 14210) (F22870)
9:45 JUNK RUNS 14211 & 14212: IBM LINK ERROR – AGAIN WRITE ON TAPE (RUN 14213)
10:10 JUNK RUNS 14214, FAILED TO LINK IBM.
10:11 RUN 14215 STARTED WRITING DATA ON MT (HD621)
10:28 YSPY ERROR: FORWARD ~~MUON~~ TOF 9, 22, 24, 25 NO HITS.
10:40 NORD HANG UP – RELOAD NORD 10
10:46 START RUN 14216 but COLOR TV HAD NO RESPONCE – EXIT SPAS and ENTER RT AGIN.

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

10:49 START RUN 14217 WRITING ON MT. JUST AFTER START, IBM-LINK UP.
10:51 " 14218 WITH IBM.
11:51 IBM ERROR 53. without data taking. EXIT SPAS and ENTER SPAS – Nothing changed.
12:13 IBM LINK BACK BY RESTARTING PADAC-MICRO by TASSO PERSON.
12:31 IBM ERROR 53. – RUN 14220 STOPPED.
12:31 RUN 14221 STARTED WRITING ON MT.
13:15 ON TV "MAGNETKUELUNG AUSGEFALLEN, RESTART IM WINTER"
13:20 S. WAGNER WENT TO IBM & RESET IBM-LINK PADAC-MICRO, but before that he had trouble thatis without key
13:30 WE ASKED Mr. Hackwelle to repair this but his answer was the only thing we can do now is RESET (OR RESTART).
14:00 MAGNET DOWN TO 500 A.
14:40 ON TV "RESTART 15:00"
15:00 MAGNET GOES UP TO 7500 A
15:44 RUN 14222 STARTED

16:00 Krehbiel, Spitzer
16:22 Beams lost, "Kurze Unterbrechung"
16:50 Magnet current lowered to 2000 Amps
17:00 Injection, magnet current back to 7500 Amps
18.12 Beams lost. ID trip. (Simultaneously IBM transfer Error 53. Bloody PADAC Micro.
@18.00 called Hahwellen again. He promied to investigate the PADAC-Micro failures
Short break
19.27. Beams up again.
19.30 For a change IBM Error 54. Operator say "No, all o.k." but Freese is investigating Link Micropr. We write on tape.
20.00 Freese has disconnected IBM link. FWMU-Counter 26 has low rate. Something is bad. Analog pulses arrive, but too few. Under phone control of NAR the HV was raised from 2700 to 2900 Volts.
While Tape F11222 we had trouble. EPT light on, and "probably a bad tape" After several trials with this tape, the NORD hung up. So reload Nord
Result of FWMU operation: Efficiency of Counter 26 rose from 0 to 2%.
We hope to fix it without opening the arches.
27.00 In the F58 premises Freese and Hackwellen burning around, but they give no prognosis. until Fri

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RUN	DATE	START	STOP	Run start I^+	Run start I^-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\bar{\Phi}$ REF. $\times 10^6$	T_1 ACC. SUM	T_2 ACC. SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T. EV. 27r
14234	11.7.83	2													
14235	"	2:30	3:02	4.94	4.89	24.9	1898	5833	5833	494	123	2133	6346	752	2982
14236	"	3:06	3:42	4.38	4.34	14.7	2158	6002	6001	561	82	2531	6356	874	2467
14237	"	3:46	4:30	3.86	3.82	12.5	2605	6502	6492	678	84	2900	6786	1034	2373
14238	"	4:36	5:02	3.35	3.32	10.7	1551	3443	3425	404	43	1658	3570	608	1122
14239	"	5:34	6:05	4.84	4.99	29.6	1800	5478	5478	468	139	1898	6564	624	3220
14240	"	6:08	6:43	4.30	4.44	18.0	2033	6002	6000	529	95	2354	6616	816	2853
14241	"	6:45	6:54	3.82	3.95	14.7	457	1306	1306	119	17	548	1359	220	555
14242	"	7:29	8:15	4.83	4.85	22.0	2732	8002	8001	712	157	3001	9005	1051	4000
14243	"	8:16	8:26	4.09	4.09	15.7	637	1903	1903	166	26	732	1980	278	776
14244	"	junk run													
14246	"	14:20	14:25	4.29	4.43	19.0	268	792	791	70	13	285	913	105	805
14247	"	20:01	20:07	5.24	4.87	30.9	344	1098	1097	90	27	377	666	171	1868
14248	"	23:26	23:51	3.92	4.54	19.5	1500	3424	3318	390					
14249	12.7.83	~~23:57~~	~~0:14~~	~~3.55~~	~~4.13~~	~~12.7~~	~~986~~	~~2452~~	~~2149~~	~~256~~	~~35~~	~~836~~	~~2465~~	~~344~~	~~911~~
14250	12.7.83	23:57	0:14	3.55	4.13	12.7	986	2452	2149	256	35	836	2465	344	911
14251	"	0:35	0:38	2.92	3.47	9.8	122	289	288	31	3	115	265	41	99
14252	"	1:52	2:40	4.78	4.83	17.1	2878	8001	7999	749	128	2926	9483	1174	4006
14253	"	2:41	3:33	4.14	4.19	14.0	3102	7872	7863	807	113	2960	9323	1051	3577
14254	"	3:42	4:31	3.50	3.54	12.1	2898	6644	6624	753	91	2770	7704	1018	2679
14255	"	4:35	4:37	3.06	3.09	12.3	77	228	208	20	24	91	205	20	91
14256	"	5:18	6:08	5:18	5:18	26.6	2665	8001	7998	693	185	2742	9915	964	4515
14257	"	6:03	6:37	4.48	4.48	19.4	1988	5711	5535	517	100	2157	6586	799	2794
14258	"														
14261	"	17:24	18:11	4.83	5.01	18.3	2764	8002	7945	719	132	3587	3629	1131	3629
14262	"	18:13	18:57	4.24	4.40	15.2	2246	5465	5486	584	89	2521	6655	715	~~5689~~ 1949
14263		18:59	20:02	3.75	3.85	12.1	3727	8001	7881	969	117	3819	9593	1273	~~7737~~ 2382
14264				Lost.											
14265	"	~~20:13~~	20:13	3.17	3.24	9.7	28	100	105						
14266	"	20:50	21:35	5.44	5.24	17.9	2656	8001	7963	690	124	3672	9844	1229	3452
14267	"	21:35	22:23	4.73	4.54	14.3	2869	5002	7946	745	107	3831	9393	1216	2830
14268	"	22:25	23:16	4.14	3.96	12.5	3126	8001	7911	813	102	3996	9088	1307	2599
14269	"	23:19	0:17	3.63	3.47	11.4	3402	8001	7909	885	101	4180	9061	1324	2491
14270	13.7.83	0:18	0:33	3.05	3.02	10.1	899	2032	2013	233	24	1076	2166	361	558

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RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
	ON	ON	ON	?			IBM	2.6					
	"	"	"	3.20	5.46	24.19	F11197	2.6	57	42	0	21.320	NO DATA. IBM link down.
	"	"	"	2.95	4.42	28.61	F11133	2.3	55	34	0	"	
	"	"	"	2.1	3.60	34.21	F11207		55	43	1	"	
	"	"	"	1.89	2.99	37.20	F11146	1.9	~~55~~ 57	23	0	"	BEAM DUMPED
	"	"	"	2.8	3.25	40.45	F11215	2.6	58	25	0	"	
	"	"	"	2.68	6.38	46.83	HD203		~~55~~	49	1	"	
	"	"	"	2.58	1.30	48.13	IBM	2.1	53	10	0	"	DATA → IBM // ID trip ⊕ Beam lost ⇒ RUN END.
	"	"	"	3.16	7.94	56.07	"	2.6	55	61	1	"	
	"	"	"	2.65	1.95	5.792	"	2.3	55	15	0	"	beam dumped ⇒ FIRST-access
	"	"	"	2.59	0.91	0.91 ~~8~~	"	2-3	54	7	0	21.335	Beams Lost
	"	"	"	3.24	1.12	2.03	"	2.5	57	11	0	"	Beam dumped
								2.15				"	inner detector not fully working
	~~?~~	~~?~~	~~?~~	~~2.37~~	~~2.48~~	~~4.54~~	"	~~2.0~~	~~64~~	~~19~~	~~2~~	"	Junk run
	?	?	-	2.32	2.48	4.51	?	2.0	64	19	2	"	DL8 problem Run stopped.
	"	"	"	2.08	0.26	4.77	"	2.0	67	2	0	"	Beam lost
	"	"	"	3.67	9.38	14.15	"	2.4	56	72	1	"	
	"	"	"	2.79	7.43	21.58	"	2.1	54	57	1	"	Run stopped IBM down.
	"	"	"	2.02	~~4.56~~	~~26.14~~	F11370	1.9	67	35	2	"	Tape end
	"	"	"	1.67	0.13	26.27	IBM	1.8	66	1	0	"	Beam stopped
	"	"	"	3.70	9.77	36.04	"	2.6	57	75	1	"	
	"	"	"	2.95	4.56	40.60	"	2.4	69	35	0	"	Beam lost
								2.6					
	"	"	"	~~3.74~~ ~~3.07~~	11.02	67.83 sep 5f	IBM	1.1	60	103	2	19.330	NEW BEAM ENERGY. SEE P. 72
	"	"	"	3.17	7.19	75.00	"	1.0	59	68	3	"	
	"	"	"	2.53	8.59	8.59	"	~~2.0~~ 0.8	60	80	4	19.345	
					~~0.21~~			1.5				"	
					0.21	8.78	"	0.8				"	beams dumped
	"	"	"	4.04	10.50	19.28	"	1.3	60	98	4	"	
	"	"	"	3.31	7.39	26.67	"	1.1	59	69	2	"	
	"	"	"	2.74	8.03	34.70	"	1.0	59	75	4	"	
	"	"	"	2.13	6.11	40.81	"	0.9	61	57	1	"	
	"	"	"	1.71	1.39	42.20	"	0.7	59	13	0	"	beams dumped

Monday ~~Sunday~~ 11th July 1983 — Forgot the day of my night shift (confusion!).

00°° Kawamoto & McCann

00¹⁰ 20% histograms, because we have ~19% D.T.

00⁴⁵ Forward TOF (i.e. FWMH) counter no. 25 has zero hits – Ysly detected it. We looked at last standard histograms (from almost 24 hours ago!!) and it was very low there too. So we let sleeping Beate lie.
+ see page 67.

00⁵⁷ IBM LINK RESTORED. START RUN 14233 with THE DATA OUTPUT TO IBM.

02°° IBM link down again – but only for JADE. We phoned the IBM operators, but they don't know much about it. Beams are dumped now.

02³² New fill ready. We tried to write to IBM, without success. We complained again to the operator, who said they'd think about it – but meanwhile write to tape.

5³⁰ NEW FILL READY.

6⁴⁵ IBM ONLINE COMPUTER UP. IBM LINKED SUCCESSFULLY.
WRITE DATA TO IBM (RUN 14241)

6⁵⁴ Beams lost.

8:00 Finch, Meier
JADE: 53.2 nb⁻¹, CELLO: 48.8 nb⁻¹, Mark J: 55.0 nb⁻¹, TASSO: 20.0 nb⁻¹, Σ: 177.0 nb⁻¹

8:30 Petra down for ~ 2 h to measure temperature of the RF windows. We go into the interlock to install some more lead at -z.

9:52 Temperature at DL8's now ~19.5°. We informed the people responsible for the air condition. They promised to do something.

10⁵⁵ Temperature decreasing; one compressor (of 3) ~~was~~ has been inactive. Hopefully it works now.

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

Please check reversal times (~ 1..2 times per hour): Temperature in hardware room between DL8's, on the wall

It has to be < 19° .
In case of T > 20°: inform I.D. expert, call MKK3-people immediately
In case of T > 22° and no expert reachable: stop run, switch off all DL8-crates

S.13.

Starting with run 14244 the 2-Trigger FADC readout is included
D.C.

13:02 Magnet switched on manually since NORD is not available (REG-DIR...)
13:36 Lumis:
CELLO: 53 nb⁻¹, Mark J: 60 nb⁻¹, TASSO: 26 nb⁻¹, JADE: 58 nb⁻¹, Σ: 197 nb⁻¹
→ increase E_B
13:56 Run 14244 to IBM contains no data
14:05 Timeout branch 6, crates 5+6 → 14245 junk as well
Komamiya solved problem by playing around with some cables
14:06 2 disk/drum transfer errors appeared

16:00 Junge + Murphy on shift.
Petra is off.
17:30 Trouble with Linac II, PKR: it seems to be a vacuum problem
18:30 Start injection
20:00 Start run 14247
20:06 Large loss of current from PETRA: ID trips off.
23 10 Power lines for V34 ~~were~~ ~~off~~ broken (4 crates), which makes SPARK ALARM.
Run 14248 } 4 crates of V34 were off! S. Komamiya.
Run 14249 }

Tues 12 July
Stephens / Dietrich on shift
continuous message JOAS-error 44 Branch 4 crate 7 I Ring 2.
Phone Komamiya who instruct us. We find connector on DL8 No 7 in Branch 4 crate 7 loose, tighten and seems OK now will keep fingers crossed.

0:38 We lost beams break for ~1 hr.

01:38 beams but background too high BI = 5-10 V. PKR optimize

01:49 we can start

3:33 IBM down. go to Tape.

4:32 IBM up.

5:45 DL8 temperature 16.8°C

6:15 Tasso 57 nb^{-1} Cello 28 nb^{-1} MarkJ 50 nb^{-1} Jade 36 nb^{-1}

6:36 50% loss of current beam dumped. sum = 171 nb^{-1} + 4×4 E_b = 21.335

7:45 DL8 temperature 17°C

8:00 Dieckmann, Meier

8:30 TV: Trouble with Transmitter NR

9:30 Magnet to 500 A

11:45 TV: Restart ca 15:00 ??

14:00 PKR informed us that one Klystron is broken. It has to be replaced which may take ~1 d. It is however possible to run with E_B = 19.33 GeV. A decision will be coordinated by the coordinator.

15:20 Magnet back to 7500 A. We intend to run at 19.33 GeV.

15:50 The Klystron cannot be changed today → PETRA will run at 1933 GeV over the night.

16:00 M. Conn & Zorn on shift.

17:10 Beams ready. E_b = 19.330. Run number 14259, 14260 were junk due to NORD start-up and MilRoc re-loading problems. Background very low e.g., BI = 1.1 V

17:25 We have IBM error 00 — but, according to JDAS operator's manual, there is no such error!! Everything is running reasonably well and we are writing to the IBM. This came after some "IBM busy" messages and during a PAUSE in which we were pressing "IBM attention" etc. — so,

ON/OFF N50, MIP, TOF	<L> ×10^{30}	∫Ldt Bhabha Run	∫Ldt Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks

maybe it's not surprising that we've resolved the error detection!!

17:45 YSPY Lun temporarily out of action, because the terminal was accidentally given keyboard input — we don't know now how to get YSPY to write to the terminal or how to make the terminal free. There is no mention of this in JDAS manual.

18:28 ∫Ldt at 19.330 JADE 70 nb^{-1} MARK-J 66 CELLO 80 TASSO 68

18:55 Change of energy - run terminated to 19.345 (HV for ID turned off)

21:15 Deadtime seems reasonable (inst. 15-16 %) — so we try 100 % histograms

21:30

24:00 Bothke, Schmitt on sh. ft. 13.7.83

0:30 Just after command "down": lineprinter tells us something about "Disc-drumm transfer error, dev-# 1540, unit# 0, disc address 3556, status 44030. Hope, it means nothing serious. Beams dumped for new filling. — Very Serious

1:50 New fill ready: Start Run 14271

3:30 ∫Ldt: Jade 59 Mark J: 56.6 Tasso: 59 Cello: 58 asked for new energy: 19.360

4:18 beams dumped.

5:00 new fill Start run 14275

7:15 beams lost, ID anode current alarm. PKR starts now with klystron-exchange. Besides that they have trouble with positron-injection. Restart-time unknown. So we run down magnet to 500A.

8:00 Murphy & Kobayashi

8:15 New fill started. Magnet back to 7500A.

8:35 New fill ready but E_b = 19.360 GeV still. Klystron was not exchanged. it will be exchanged at ~12:00.

9:55 PKR has informed us that they want to switch on the new klystron in an hour.

12:35 Petra on at 21.335 GeV.

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Run	DATE	START	STOP	RUN I^+	RUN I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	$\mathcal{L}dt$ $\times 10^6$	T_1 REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 E, >6GeV	T_2 BIT 17 2T, EV. 2TI
14271	13.7.83	1:52	2:37	5.03	4.76	17.0	2700	8002	7848	702	119	4018	9318	1200	3187
14272	"	2.38	3:30	4.45	4.13	15.3	3092	8001	7938	805	123	4015	3064	1244	2636
14273	"	3:30	3:42	3.88	3.64	14.0	689	1823	1807	178	25	883	2123	266	674
14274	"	3:48	4:18	3.77	3.54	18.1	2065	6288	6238	537	101	2861	8323	111	2884
14275	"	4:53	5:44	5.36	5:54	21.7	2648	8002	7963	689	150	3737	9777	1057	3561
14276	"	5:44	6:31	4.66	4.81	15.1	2783	8002	7945	725	110	8914	9360	1098	3038
14277	"	6:32	7:14	4.01	4.21	13.6	2482	6685	6623	645	88	3245	7875	905	2339
14280	"	8:41	8:54	5.08	5.55	47.2	767	3165	3158	199	94	914	2116	262	828
14281	"	8:55	9:39	4.86	5.32	17.8	2629	8002	7967	684	121	3995	9070	1123	2971
14282	"	9:39	10:23	4.27	4.68	17.2	2608	8001	7941	678	116	3964	9254	1038	3043
14283	"	10:23	10:54	3.78	4.16	19.9	1847	5460	5411	480	76	2706	6397	755	2020
14284	"	12:39	12:40	4.31	4.47	51.7	23	103	103	6	3	34	53	13	53
14285	"	12:42	13:34	4.28	4.44	22.2	2927	6319	6309	762	169	2705	6895	997	2346
14286	"	15:06	15:53	4.67	5.00	20.9	2806	8002	8002	731	153	3079	9191	1136	3399
14287	"	15:54	16:13	3.78	4.05	16.1	1111	3123	3120	289	46	1240	3501	367	1272
14288	"	16:47	17:34	4.68	4.71	24.2	2643	8001	8001	688	166	3074	9498	1098	3730
14289	"	17:33	18:17	4.09	4.11	21	2636	8002	7997	686	144	2978	9563	982	3711
14290	"	18:22	18:58	3.56	3.58	15.6	2168	5936	5929	564	88	2333	7082	797	2589
14291	"	19:28	20:12	4.83	5.27	30	2609	8001	8000	679	203	2870	9800	1040	4053
14292	"	20:12	20:17	4.05	4.44	23.7	240	831	811	62	14	307	932	121	394
14293	"	22:41	23:16	4.84	4.84	14.4	2071	5300	5298	529	76	2103	5922	774	1963
14294	14.7.83	01:17	02:11	4.15	4.81	13.2	3254	8002	7999	847	112	3389	8845	1179	2777
14295	"	02:12	2:44	3.18	3.77	12.9	2160	5775	5762	562	72	2309	5643	750	1773
14296	"	3:05	3:25	2.72	3.25	11.9	1158	2679	2670	301	36	1167	2986	377	876
14297	"	4:28	4:43	5.06	5.05	34.1	511	1286	1286	133	45	425	1608	139	576
14298	"	4:44	5.37	4.77	4.78	18.4	2787	8002	8001	726	134	2972	9275	982	3370
14299	"	5:37	6.21	4.10	4.12	15.9	2957	8001	7994	769	123	3177	7286	860	3258
14300	"	6.21	7.03	3.54	3.57	16.5	2457	6988	6981	640	105	2682	8288	693	2950
14301	"	8:03	8:37	4.80	4.87	23.7	1960	5902	5902	510	121	2219	7198	693	2649
14302	"	9:14	9:59	5.15	5.13	30.4	2625	8001	8001	683	208	2829	9911	818	3228
14303	"	10:03	10:28	4.28	4.32	25.9	1672	5125	5123	435	112	1805	6221	514	2305
14304	"	10:31	10:50	3.88	3.91	21.5	1112	3398	3398	290	62	1180	4107	347	1451

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N50	MIP	TOF	$\mathcal{L}$ $\times 10^{30}$	$\int \mathcal{L}dt$ Bhabha Run	$\int \mathcal{L}dt$ Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	E beam	Remarks
"	"	"	3.51	3.21	51.41	IBM	1.15	61	86	2	19.345	
"	"	"	2.66	8.14	59,55	"	1.05	60	76	0	"	
"	"	"	1.07	0.86	60,51	"	1.05	61	9	1	"	
"	"	"	1.08	1.93	1.93	"	1.0	62	18	0	19.360	beams dumped.
"	"	"	3.28	8.80	10,73	"	1.3	60	82	1	"	
ON	ON	ON	3.54	8.15	18,88	"	1.2	60	76	4	"	
"	"	"	2.81	6.01	24.89	"	1.05	59	56	2	"	Beams lost
ON	OFF	OFF	2.99	2.04	26.93	"	1.3	0	19	0	"	Run 14278, 14279 = junk
ON	ON	ON	3.81	9.23	36.16	"	1.2	59	86	1	"	
"	"	"	3.07	8.37	44.53	"	1.1	59	78	3	"	
"	"	"	2.51	4.51	49.04	"	1.1	60	42	1	"	Beams dumped.
"	"	"	3.28	0.00	~~40.60~~	"	2.1	13	0	0	21.535	IBM link failed.
"	"	"	2.36	5.47	46.07	"	2.0	~~55~~	42	0	"	Beams lost
"	"	"	3.41	8.74	8.74	"	2.6	55	67	3	21,350	
"	"	"	2.70	2.09	10.83	"	"	53	16	1	"	beam Lost
"	"	"	3.29	8.48	19.31	"	2.6	56	65	1	"	
"	"	"	2.56	6.79	26.10	"	2.4	55	52	0	"	
"	"	"	1.92	4.05	30.15	"	2.2	56	31	0	"	beam Lost
"	"	"	3.23	6.92	37.07	"	2.5	56	53	0	"	
"	"	"	2.78	.26	37.33	"	2.4	53	2	1	"	beam Lost
"	"	"	3.22	5.74	43.07	"	2.4	54	44	1	"	beam dumped
"	"	"	2.86	8.09	51.16	"	2.3	55	62	2	"	
"	"	"	2.21	4.37	55.47	"	1.9	?	33	1	"	new energy
"	"	"	1.52	1.44	1.44	"	1,9	55	11	1	21.365	beams dumped same fill
"	"	"	2.34	1.96	3.40	"	2.6	56	15	0	"	
"	"	"	2.05	4.70	8.10	"	2.5	55	36	2	"	
"	"	"	1.37	3.53	11.63	"	2.3	56	27	1	"	
"	"	"	1.04	1.96	13.59	"	2.1	57	15	0	"	beams dumped
"	"	"	3.29	6.45	20.04	"	2.6	57	32	2	"	beam lost
"	"	"	3.49	7.94	28.98	"	2.7	57	44	0	"	
"	"	"	3.33	3.89	32.87	"	2.4	56	21	2	"	
"	"	"	2.28	2.53	35.40	"	23	55	22	0	"	beam lost

13⁰⁰ Luminosities at E_b = 19,360 Mark J 51.3, TASSO 36, CELLO 56.5, JADE 49. Σ = 193 nb⁻¹
21.335 57 60 32.3 43, Σ = 192
We asked for a new energy (+15 MeV) in 30 min.

13²⁰ MUZAK restarted.

13⁴⁰ Mark-J 61, Tasso 68, Cello 32.3, Jade 46, Σ = 207 nb⁻¹
collected at E_b = 21.335 GeV

15²⁰ New fill ready at new energy (21.350 GeV)

16⁰⁰ Minowa, Spitzer

21¹⁵ transmitter problem

14.7.83

0:00 McCann and Kado on shift

1:44 YSPY: Forward TOF no hits 0, 14, 25 — but only 20% lists
DT is low ~13%. So, we try 100% lists. DT still ~ 12-13%.

02⁴⁰ $\int L dt$ $\sqrt{s}$ = 2x 21.350 : JADE 57 nb⁻¹ CELLO 37 MARK-J 50 TASSO 57 Σ = 195
— energy increase imminent.

04³⁰ D.T. high ~ 40% → 40 to 20% lists. BP meter fluctuating. Soft trip.

04⁴⁰ Level 2 Trigger hang-up. No obvious problem with HV's. Had to stop run and restart to get trigger going again.

8:00 MATSUMURA, PETERSEN on shift

10³⁰ JADE disc used 95%, the dump gab has been active in the IBM since 30 m.
JADE disc used 100%, 1 min later dump gab finished and we could start the new run

10⁵⁰ most of the beams lost

11⁰⁰ try to refill

11²⁰ vacuum trouble at Petra

15⁰⁰ new injection

15³⁰ trouble with synchrotron radiation

16.00 Zorn and Stephens on shift.

17.00 Still no beams.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

15⁴⁵ Start run 14305 after ~10 min discover we have no logging HV's reset as per instruction and it works.

18⁵⁶ Cello 50 nb⁻¹ Tasso 45 nb⁻¹ Mark J 52 nb⁻¹ Jade 50 nb⁻¹
19¹⁵ " 49 nb⁻¹

19⁴⁷ Ask for energy increase to 21.380 GeV

20⁵⁰ ID trips no alarm. all look OK in the racks.

21:00 Currents now 3.19 and 3.17 ma. ask about new fill.

All group agree to new fill at ~21.30.

15.7.83

0⁰⁰ Finch + Komamiya on shift.

1⁵⁰ After several trials of injection, TV monitor says finally: 'Short break'.

2⁴⁰ New filling is ready. Beam current is low ~3.2 mA. They lost the beam current during the injection.

3¹⁵ Standard histograms were checked all OK. except for TOF (Counter 25 is missing)
Krehbiel's yellow disco lamp for beam monitoring is now on.

4³⁰ $\mathcal{L}$ is now 1×10^{30} We called MK-J, TASSO, CELLO and ask for new filling.
PKP says that they lost a transmitter. → They can only get 2mA/bunch.

7⁴⁰ 'Short break' for 3 hours no schedule for restarting.

7⁴⁵ TV says 'restart ca 9 a.m.'.

8⁰⁰ Dietrich & Takeshita

8²² PKR starts to inject beams.

9¹⁰ After long Injection, we start Run 14313 (at first dead time ~40%)

9²² Muon Digitiser missing 125, 138.

10⁴⁰ TV "SHORT BREAK"

11— Machine people start to inject but they fail several times (they lost beams)

11⁵⁰ 17°C near DL8.

12¹⁰ Luminosity Run started

12²⁰ RUN 14314 STARTED WITH IBM ERROR 53. — JUNKRON.

78 RUN	DATE	START	STOP	RUN I+	RUN I-	DEAD TIME %	TIME (SECS)	RECORDS IN	RECORDS OUT	ALL x10^6	T$ REJ x10^6	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>66eV	T2 BIT 11 2T.E4.2T1
14305	14-7-83	17:48	18:38	4.95	4.94	16.3	2974	8002	7983	773	126	2636	9958	888	3521
14306	"	18:39	19:23	4.35	4.33	20.3	2613	6914	6899	679	138	2577	8503	755	2603
14307	"	19:29	20:22	3.88	3.86	14.3	3133	8002	7970	815	117	3069	9781	1033	2947
14308	"	20:22	21:22	3.46	3.44	12.7	3387	8002	7963	880	111	3389	9461	1120	2816
14309	"	22:39	23:25	5.27	5.23	21.0	2696	8002	7998	701	147	2961	9582	1016	3147
14310	"	23:25	23:55	3.89	4.28	15.6	1799	5134	5126	468	73	2214	5687	754	1732
14311	15.7.83	2:49	3:51	3.24	3.31	10.9	3922	8001	7966	1020	111	3333	9354	1255	3073
14312	"	3:52	4:35	2.36	2.25	7.8	2502	4434	4098	651	51	1978	4539	650	1080
14313	"	9:11	9:34	4.73	4.51	29.0	1383	4130	4129	360	104	1410	5305	446	2292
14315	"	14:24		5.08	5.22		— NORD HANGUP — RUN SUMMARY LOST —								
14316	"						"		"			"			
14317		15:48	16:56	3.17	3.34	9.7	4081	7634	7579	1062	163	3191	8405	994	2167
14318	16.7.83						JUNK (NO I.D.)								
14319	"	6:33	6:51	4.93	4.94	33.1	980	2470	2470	254	94	780	3134	258	1083
14320	"	9:14	9:57	4.69	4.26	24.9	2480	5454	5452	568	141	1824	6758	279	2237
14321	"	10:12	10:44	4.06	3.65	18.6	1889	4597	4592	492	92	1468	5721	329	1851
14322	"	10:48	11:41	3.69	3.29	12.1	3141	6742	6726	818	99	2372	8149	567	2549
14323	"	12:23	13:16	5.34	5.04	45.1	3165	7570	7567	824	372	2388	10271	623	7893
14324	"	13:49	14:39	3.96	3.69	46.8	3006	8002	7996	787	367	2598	9723	600	2586
14325	16.7.83	15:36	16:30	5.28	5.20	41.3	3199	8002	8002	834	344	3052	9448	828	4537
14326	"	16:42	17:15	4.44	4.35	32.0	1980	5324	5321	516	165	1708	4951	591	2277
14328	"	17:25	17:50	3.95	3.87	26.9	1453	4036	4036	378	102	1238	3335	457	1514
14329	"	17:55	18:21	3.56	3.47	30.5	1573	3879	3873	409	125	1166	3165	413	1361
14332	"	19:56	20:06	5:02	5.04	58.5	564	1727	1727	147	86	318	1079	129	469
14334	"	20:37	20:59	4.50	4.51	34.6	1360	5197	5197	354	122	1131	3644	380	1511
14335	"	21:12	21:48	3.99	4.01	13.7	2173	5589	5583	565	77	2211	6254	752	2379
14336	"	22:00	22:38	3.45	3.48	11.1	2211	4996	4987	576	64	2093	5242	783	1844
14337	"	23:22	0:4	5.15	5.18	22.9%	2930	8002	8000 762	762	174	3184	9597	388	3860
14338	17.7.83	0:16	1:10	4.45	4.48	16.6	3239	8001	7997	843.1	139.7	3677	9337	1189	4028
14339	"	1:11	2:17	3.72	3.75	11.3	3735	8002	7984	971.2	110.1	3768	8777	1205	3159
14340	"	2:17	2:28	3.17	3.20	10.1	623	1288	1285	161.9	16.3	610	1389	195	465
14341	"	3:04	3:52	5.40	5.57	23.9%	2862	8002	8002	744	177	3637	10279	944	5506
14342	"	3:54	4:43	4.52	4.69	17.4	2943	8001	7994	765.5	132.9	3611	9618	995	4471
14343	"	4:43	5:39	3.88	4.04	13.6	3324	8002	7994	864.6	118.0	3707	8969	1151	3400
14344	"	5:40	6:07	3.34	3.50	11.4	1607	3529	3519	417.9	47.6	1656	3912	499	1362

79	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> x10^30	Slat Bhabha RUN	Slat EXP 3590	IBM/ TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	REMARKS
	ON	ON	ON	1.82	10.45	45.85	IBM	2.55	55	80	2	21.365	cami counters off during first part of run
	"	"	"	3.30	7.71	53.56	"	2.3	56	59	2	"	
	"	"	"	2.71	8.11	8.11	"	2.4	56	62	2	21.380	
	"	"	"	2.04	6.28	14.39	"	2.0	6.57	48	1	"	beams dumped.
	"	"	"	3.52	5.76	20.15	"	2.8	56	44	1	"	
	"	"	"	2.89	4.71	24.86	"	2.4	56	36	1	"	Beams lost
	"	"	"	1.24	4.58	29.44	"	2.0	58	35	0	"	
	"	"	"	0.91	3.14	32.58	"	1.4	58	24	1	"	Beams dumped
	"	"	"	2.80	3.66	35.24	"	2.7	89	28	1	"	Beams lost
					} 45		MT FM1137	2.7					
	"	"	"	1.60	5.89	46.13	IBM	1.8	55	45	0		Beams lost
								2.7				21.380	
	"	"	"	3.53	7.06	50.19	IBM	2.7	56	31	0	"	Beams lost at optim. energy
	on	on	on	3.17	6.70	57.09	IBM	2.5	55	54	3	21.380	450 problems
	on	on	on	2.61	4.94	62.03	IBM	2.5	53%	32	3	21.380	Energy change
	on	on	on	1.98	4.72 4.23	234.72	IBM	2.1	53%	36	0	21.397	New energy
	on	on	on	2.77	5.90	10.62	IBM	2.8	54%	45	1	21.395	
	on	on	on	1.40	4.19	14.71	IBM	2.5	51%	32	2	21.395	Beams dumped.] BAD LG HV
	On	On	On	2.94	8.65	23.36	IBM	2.8	59	66	1	21.395	
	"	"	"	2.36	5.63	28.99	"	2.5	41	43	0	"	
	"	"	"	1.89	2.75	31.74	"	2.4	36	21	1	"	
	"	"	"	1.56	2.36	34.10	"	2.3	34	18	1	"	Beams dumped
	On	OFF	OFF	2.83	1.70	35.80	"	2.8	-3%!!	13	0	"	JDAS reloaded
	On	OFF	OFF	3.33	2.36	38.16	TAPE HD650	2.6	0	18	1	"	
	ON	ON	ON	3.29	4.98	43.14	TAPE HD585		55	38	2	"	
	"	"	"	1.83	4.07	4.07	IBM	2.2	53	31	2	21.410	NEW ENERGY / beam dumped
	"	"	"	3.72	7.87	11.94	IBM	2.8	60%	60	1	"	
	"	"	"	2.61	8.92	20.86	"	2.35	58	68	2	"	
	"	"	"	1.95	6.43	27.29	"	2.1	55	49	1	"	
	"	"	"	1.80	0.92	28.21	"	1.9	56	7	0	"	BEAMS DUMPED
	"	"	"	3.74	8.79	37.00	IBM	2.8	62%	67	1	"	
	"	"	"	2.69	7.22	44.22	"	2.5	58	55	3	"	
	"	"	"	2.15	6.56	50.78	"	2.4	56	50	1	"	
	"	"	"	1.95	3.02	53.80	"		56	23	0	"	BEAMS DUMPED

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14:25 RUN 14315 STARTED WITH WRITING ON MT. (FM137)
14:48 F-TOF NO HITS: 25 DATA
14:59 NORD - HANG UP (STOP LAMP ON) — RESTART NORD
(AT THE END OF MT) RUN SUMMARY WAS LOST.
15:00 some of Beams (e+) lost — ID SLOWLY DOWN
~~15:02~~ 15:46 NORD - HANG UP AGAIN — RESTART NORD
15:48 CELLO ASKED CS TO DUMP BEAMS AS THEY HAVE BIG BACKGROUND.

16:00 Heinzelmann & Chin
vacuum trouble with Synchrotron. We have to keep the present filling.
16:47 beams lost. Still vacuum troubles.
20 30 Restart not before 11:00 p.m.
Magnet current = 500 Amps.

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00 00 Ahrens & Olsson Petra Down still
0600 Injection being attempted. Magnet on.
06:32 Run 14319 BP 2.8 V Complaining doesn't help, optimization ⇒ beam loss, ID alarm.
08:00 Greenhan & Hellenbrand.
09:13 Yspy err. 4 Found TOF no hits: 25
9:50 NO TRIGGERS because of "N50 BUSY"
stopped Run 14320, tried to start next Run, not possible "N50 cannot be started"
tried to cure the problem by EXIT ... did not help
"Internal device for N50 batch occupied" on line printer
Restarted N10, then it worked
Godel plotter out of order, it was not possible to print anything
refilled water
changed toner ← this helped (old toner was still half filled, well above MIN-line)
13:30 problems with LG power supplies
no power on HV power supplies 7 and 10 } all on the same power line (L1)
—"— —"— HV power distributor 17
plugged into a different power line ⇒ power ok.
overload in HV power supply 10, switched off - on - ok.
16:00 Y spy error 4 Found TOF no hits: 25

Integrated Luminosities at 21.380 GeV
Celle 50 / JADE 62
Tasso 70 / Mark J 63

Important!!
HV distributers easily forget the HV data. Do not forget to reset them after Power ON/OFF.

The HV Reset Procedure can be found in the 1st sheet of the FILE "JADAS FOR THE INQUISITIVE".

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

16:00 SKARD, KAWAMOTO

16:10 HV for LG counters were checked. It was found that the HV values for Barrel Ring 20, 21, 22/WAND (126 LG counters) were completely random. These counters correspond to the LG HV distributer #17 which was in trouble with the power supply. (see p 81, item on 13:30). Due to this problem, the data for RUN 14324 and 14325 have incorrect (should) LG data.
The HV data were reloaded to the memory of the HV distributers.
HV values checked. Now it seems OK.
(for some of the counters)

2TB6 coll TRIGG taken out

16:40 START RUN 14326.
17:15 Run 14326 stopped due to transmitter problem at PETRA.
Run 14327 - glanb
17:25 Run 14328 started.
18: YSPY detected error "DL8 giving no response: 65" ; happend twice

19:30 BEAMS READY. DATA TAKING DOESN'T START. RESTART JDAS.
RUN 14332 START. (RUN# 14330, 331 LOST)

20:15 DL8-65 changed (old Nr. 22, new Nr. 73)
~20:30 IBM trouble - data run 14334 to tape
20:45 YSPY error 4: Mem Dighyn 20 missing
20:55 —"— 4 —"— Forward TOF no hits: 4, 24, 25
21:55 YSPY error 4: DL8 no response, # 20 this time. No errors in JETC wire numbers this time.
22:30 A ~~Hole~~ Hole in JC hit map (RUN 14336). width: 24 ~~chan~~ channels. (144 ~ 168)
23:00 K.H. Hellenbrand came, and hit and shaked the DL8. → The ~~hole~~ Hole disappeared.
After Run 14336 end,

"Communication link to PETRA" down, I^+, I^- and E_0 typed in by hand.

4 innermost TWIU counters fall out of TWIU trigger Run 14337

00 17.7.83 HILL & J. WAGNER
15 I.D. ALARM RIGHT AFTER END OF RUN. NO OBVIOUS CAUSE. RESET & CONTINUE TAKING DATA.

2^{25} ASK FOR NEW FILL.

5^{00} JADE: 46 NB^{-1} MARK-J: 45 } Σ = 171
CELLO: 37 TASSO: 43

6^{05} JADE: 53 MARK-J: 51 } Σ = 197
CELLO: 43 TASSO: 50

7^{10} ASK FOR NEW FILL AT SAME ENERGY.
FINAL Σ = 216 NB^{-1}; ASK PKR TO INCREASE ENERGY.

8^{00} Chrin & Takeda on shift

8^{10} Suddenly "short break" appeared on TV.
Data ~~da~~ taking is still running.
PKR says "Transmitter problem". → beam energy is changed to 21.468 GeV.

We stopped the run 14347.

Note. There are two different energy data in RUN 14347 (21.425 & 21.468).
Total ~~run~~ number of events is small (843).

We suggested to PKR that sound alarm should be sent with TV screen message. They agreed to think it over.

8^{28} Beams lost. Short break starts.
9^{30} Magnet → 2000 A. → 500 A
9^{40} Back to 7500 A
12^{19} New fill ready.
12^{43} Beams dumped.
13^{05} Nord 50 busy - permantly displayed ie. Nord crashed.

Run stopped - and Short-N50 command entered • the details as requested :-

Memory out of range at 156230
" " " 204 2354 0013 LDR 54, 0013, 10, 001.
Arithmetic Overflow,
Mem. out of range

ON/OFF N50	MIP	TOF	<L> ×10^{30}	Lat Bhabha Run	Lat Exp	IBM/ TAPE	BP [V]	T$_2$ Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

Last start address : 156230
Last Memory Reference address : 00002736 555
Last Data To/From " : 00422560044
Breakpoint Register 1 (BR) : 077140
" " 2 (BR) : 100000

I strongly suggest that these lengthy messages should be printed out on dot printer or on Gould, if they are important to on-line people.

15^{29} Beam lost. ID tripped.
16^{00} Becker + Diedrichsen on shift

16^{55} Jade 54
Mark-J 53
Cello 39
Tasso 60
206
} We ask PKR to increase Energy

17^{00} Beams lost during Energy raise; "Short Break"
17^{50} New Fill ready
18^{00} We have trouble with the Nord: The colour TV flashes regularly (1/sec) between the green "JADE" sign and parts of the normal running information / Restart of Nord → No effect
18^{18} Rebuilding YCLRTV ⇒ seems OK again (JDAS Op. Manual 15)
18^{22} Beams lost ID Trip; Reset alarm in the meantime
19^{43} YSPY: Forward TOF no hits: 25
21^{07} Ask for new Fill
22^{20} JDAS Readout Error 44 - TIMEOUT branch 2 crate 5: Readplan ADC's
22^{36} YSPY: Forward TOF no hits: 25
23^{56} beams lost

0^{00} Kobayashi + Hemke on shift
0^{58} new fill // dead time ~ 50% // improved after orbit correction ~ 30%
1^{25} JDAS Read-out error 44 // after that no triggers; cured by resetting trigger box
1^{36} beams lost
2^{57} ID alarm ~ over current
4^{00} we asked for energy increase, but since there is a problem with the synchrotron (no new particles) we decide to keep the present beam conditions as long as possible.
Tektronix 4014 is blocked it still shows histogramme of previous run; we will try to fix it at the end of the run.
4^{54} beams lost

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TΦ REF $\times 10^6$	T1 acc Sum	T2 acc Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T.E4.2T>
14345	17 8 83	6:38	7:15	5.38	5.31	25.3	2179	6039	6038	567	143	2577	8525	695	4585
14346	"	7:18	8:08	4.54	4.53	19.0	3007	8001	8000	782	149	3452	10127	952	4578
14347	"	8:08	8:13	3.76	3.78	24.3	282	843	843	73	18	308	1121	72	412
14348	"	8:16	8:28	3.67	3.70	12.6	678	1652	1651	176	22	751	1805	217	720
14349	"	9.45	10:36	5.44	5.40	24.7	3046	8002	8002	792	195	3404	11317	893	6072
14350	"	10:36	11.32	4.20	3.99	14.1	3342	8001	7997	869	122	3462	9819	1052	4320
14351	"	11:33	12:17	3.91	3.52	12.5	2570	5873	5862	669	83	2559	6973	741	2921
14352	"	12:43	13:04	5.35	5.32	38.6	1229	3362	3361	320	123	1402	5017	383	3270
14353	"	13:10	13:57	4.94	4.90	25.0	2820	8002	8001	733	183	3352	10632	938	6075
14354	"	13:58	14:48	4.34	4.30	16.3	2981	8001	7995	775	126	3432	9836	1005	9836
14355	"	14:49	15:29	3.80	3.76	14.0	2382	5962	5954	619	86	2562	7111	761	3334
14356	"	16:14	17:01	4.43	5.24	20.1	2736	6717	6716	712	143	2927	7915	913	4111
14358	"	18:16	18:22	3.96	3.94	34.0	207	518	517	54	18	196	658	58	353
14359	"	19:16	20:10	5.23	5.20	26.9	3244	8002	7999	844	227	3296	10143	1099	5183
14360	"	20:11	21:06	4.06	4.03	15.3	3327	8002	7984	865	132	3441	9591	1069	4072
14361	"	22:10	23:05	5.12	5.22	27.9	3268	8001	7999	851	237	3321	10138	1126	5200
14362	"	23:05	23:58	4.14	4.25	18.8	3066	7869	7855	798	150	3328	8874	928	4019
14363	18.8.83	0:58	1:36	5.03	5.24	32.2	2137	5110	5110	555	175	2294	6287	769	3489
14364	"	2:12	3:05	5.13	5.33	31.9	3258	8001	8000	848	270	3727	9628	1184	5135
14365	"	3:09	4:06	4.05	4.24	18.1	3189	8002	7989	830	150	3606	9273	1055	4175
14366	"	4:06	4:55	3.45	3.65	12.9	2874	6749	6729	748	96	3262	7458	983	2991
14367	"	5:34	6:27	5.1	5.27	26.2	3011	8002	8002	784	205	3567	9900	1005	5391
14368	"	6:27	7:11	4.25	4.43	16.9	2521	6873	6865	656	111	3071	8088	872	3865
14369	"	10:15	11:01	4.96	4.72	29.1	2725	8002	8000	708	206	3330	11018	938	4791
14370	"	11:01	11:56	4.22	4.21	13.6	3280	8002	7992	853	116	3510	9376	1067	4100
14371	"	11:57	12:34	3.82	3.85	12.4	2148	5836	5824	636	79	2656	6469	857	2520
14372	"	14:30	14:46	4.31	3.92	12.0	916	2068	2068	283	28	973	2165	406	856
14373	"	20.46	21:28	4.36	5.03	13.4	2445	6414	6355	551	85	3299	7674	925	2645
14374	"	22:05	22.37	5.48	5.43	14.5	1691	4638	4601	440	64	2287	5677	622	2052
14375	"	2237	2333	5.00	4.97	12.9	3227	8001	7922	840	109	4035	9921	1039	3299
14376	"	23.33	0.29	4.45	4.40	11.6	3284	8002	7912	854	99	4153	9049	989	2626
14377	19.783	0.29	1.27	3.97	3.93	10.9	3436	8002	7902	873	97	4332	8670	1084	2396
14378	"	1.27	1.48	3.57	3.52	9.9	1238	2779	2686	322	32	1507	2880	387	772

N50	MIP	TOF	<L> $\times 10^{30}$	∫Ldt Bhabha Run	∫Ldt Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhabha Σ	M.H.	Ebeam	Remarks
ON/OFF												
ON	ON	ON	3.24	5.51	59.31	IBM	2.8	64	42	Ø	21.410	
"	"	"	2.60	7.23	9.23	"	2.5	59	55	2	21.425	NEW ENERGY
"	"	"	1.68	0.13	←	"	"	58	1	0	21.425+21.468	← Transmitter problem
"	"	"	2.11	0.26	9.49	"	2.3	54	2	0	21.425	Beams lost
"	"	"	3.47	8.80	16.29	"	2.8	64	67	3	"	
"	"	"	2.37	6.83	23.22	"	2.3	57	52	1	"	
"	"	"	2.00	4.34	27.56	"	2.1	56	33	1	"	Beams dumped
"	"	"	2.84	1.97	29.53	"	2.8	66	15	0	"	←stopped by NORD SO BOSY
"	"	"	2.93	6.04	35.57	"	2.5	61	46	1	"	
"	"	"	2.51	8.15	43.72	"	2.4	58	62	1	"	
"	"	"	2.01	4.20	47.92	"	2.1	56	32	2	"	Beams lost
"	"	"	2.65	6.83	54.75	"	2.5	57	52	2	"	Beam lost at Energy raise
"	"	"	1.86	0.26	0.26	"	2.3	58	2	0	21.440	Beam lost
"	"	"	2.73	8.29	8.55	"	2.6	59	63	0	"	
"	"	"	2.33	6.58	15.13	"	2.1	56	50	4	"	Now filling
"	"	"	2.90	9.34	24.47	"	2.6	59	71	1	"	
"	"	"	2.50	8.03	32.50	"	2.3	53	61	1	"	Beam lost
"	"	"	3.03	6.84	39.34	"	2.65	60	52	1	"	Beams lost
"	"	"	3.03	7.50	47.24	"	2.6	61	60	1	"	
"	"	"	2.16	6.90	54.14	"	2.25	57	54	2	"	
"	"	"	1.80	3.68	57.82	"	2.0	57	28	2	"	Beams lost
"	"	"	3.11	2.64	2.64	"	2.85	60	58	2	21.455	
"	"	"	2.69	6.33	11.97	"	2.35	57	48	2	21.455	Beam lost
"	"	"	3.01	7.77	21.74	"	2.5	61	53	1	"	
"	"	"	2.65	7.25	28.99	"	2.25	56	55	2	"	
"	"	"	2.11	5.14	34.13	"	2.1	54	49	1	"	Beams dumped
"	"	"	2.70	1.32	35.45	"		55	10	0	"	Beam Lost
"	"	"	3.63	8.38	8.38	"	1.3	62	78	1	19.375	Beams Lost
"	"	"	4.82	6.02	14,40	"	1.25	61	56	4	"	
"	"	"	3.43	10.53	24,93	"	1.1	62	98	3	"	
"	"	"	3.23	8.6	33,53	"	1.0	60	80	1	"	
"	"	"	2.62	8.27	41.80	"	0.95	60	77	4	"	
"	"	"	2.27	1.83	43.63	"	0.9	60	17	3	"	beams dumped

5:25 $\int L dt$ for 21440 / Cello = 44 nb^{-1}, Mark J 60.3 nb^{-1}, 67.6 nb^{-1} = Tasso, Jade = 57.8 nb^{-1} Σ = 229.7 nb

8:00 18/7/83 H. Mills & J. Spitzer on shift

The online cross-section file had more than 100 data points and hit the limit. I have removed all points under 20.105 GeV per beam. – HEM

12:40 As run 14371 ended two Disc/drum errors appeared. YCLRTV had some funny status. Rebuilt YCURTV, YHDISP as a precaution. HEM.

11:00 "Short break" because of transciber failure

16:00 Finch + Schneekloth on shift

16:30 message: "break, restart 6pm.", magnet down to 2500 A

18:00 magnet → 7500 A

20:00 PETRA has transmitter problems, beams have always been lost at ≈ 21 GeV. PKR wants to run at lower energy, continue "low energy scan" at 19.375 GeV

21:34 Beams lost ID trip shut weak. (Power supply for magnet)

22.05 new fill, start run 14374

22.32 Run 14374 stopped to cure 'No triggers'
Start run 14375 no problem

23:37 start run 14376

0:00 19.7.83 Clarke and Kado on shift

3:37 $\int L dt$ JADE: 59 CELLO: 62 MARK J: 55 TASSO: 56

Σ = 232 nb^{-1} ⇨ new energy (19.39 GeV)

3:53 JDAS Error 44 – Timeout branch 2 crate 5 : Readglass ADC's

8:00 Bethke & Krehbiel on shift.

8:05 During a smooth run deadtime going up, above 20%.

8:20 Bad background conditions (50% deadtime) due to the fact that PKR is trying to activate the transmitter again, which was lost last night.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

PKR will continue with this operation with beams stored. All experiments agreed to this procedure. Data taking will continue under conditions get worse.

9.06 Inverse nb. management. Mark J 52.6 Tasso 48.0 CELLO 53.6 We 49
PETRA says Synchrotron trouble. They cannot inject, but want to keep the transmitter on.
Agreement: Not to take nubs but stay at that energy.

11.20 Novd crash, Level 7. HEM had a programming session. – Irrelevant.

11.30 PETRA says: No fill before 1 hr. So we (all Experiments) agreed to an energy ramping to 21.454 GeV

12.30 partially beam lost (e^+); $\mathcal{J}^+$ = 1.13 $\mathcal{J}^-$ 2.58 cannot measure, not enough trigger.
run down magnet to 2000.

12.50 Cello requests Beam down to get access to their area. Others agree.
Refill possible in about 1 hour (PKR).

14:20 PKR wants magnets switched on again. Run → 7500 A

15.55 Beam up again at 21.455. BP DC reading 2.4 Volts after Resetting BP HV by Naroska's Program. The Voltages seem to creep upward steadily.

16:55 New beams ready, E_b = 21.455 GeV start run 14394

16:00 Duerdoth Schmidt

16:15 Deadtime is only ~16%.

17:40 IBM BUSY very oft deadtime rises by a factor of 2.

18:00 $\int L dt$ JADE: 56 ; MARK J: 55 ; TASSO: 52 : CELLO: 42 Σ 205 nb^{-1}
CELLO asked for ~~a new run~~ to continue at this energy.

18:55 new energy E_b = 21.470 GeV

19:04 Beams dumped

19:30 PKR says trouble with feedback for beam position. Beware till 22:00.

0.00 20.7.1983 Helterbrand, Schiemann

0.10 Restart ? → Magnet down to 2500 A

Run	date	start	stop	at run start I^+	at run start I^-	dead time [%]	time [sec]	records in	records out	all $\times 10^6$	T0 rej $\times 10^6$	T1 acc sum	T2 acc sum	T1 Bit 2 E > 6 GeV	T2 Bit 17 2T. E≥. 2T.
14379	19.7.83	2:38	3:22	5.53	5.76	16.0	2613	8002	7961	680	109	4222	9163	1017	3515
14380	"	3:22	3:41	4.91	5.13	15.4	1103	3410	3381	287	44	1807	3776	448	1392
14381	"	3:46	4:32	4.65	4.86	14.9	2772	8001	7939	721	107	4125	9426	1061	3294
14382	"	4:32	5:22	4.22	4.40	13.5	2943	8002	7925	766	104	4207	9313	1154	3076
14383	"	5:22	6:15	3.87	3.98	12.1	3152	8001	7930	820	99	4299	9009	1239	2808
14384	"	6:16	6:18	3.44	3.60	10.6	111	297	294	29	3	158	287	48	105
14385	"	6:49	7:29	5.50	5.36	18.3	2479	8002	7962	629	115	4122	9678	995	3986
14386	"	7:29	8:11	4.95	4.81	16.6	2481	8001	7941	645	107	4160	9314	1122	3457
14387	"	8:11	8:48	4.49	4.35	38.0	2148	8001	7966	559	272	4278	9892	754	4613
14388	"	8:49	9:24	4.10	3.97	44.6	2045	8001	7970	531	237	4467	9943	674	5009
14389	"	9:24	10:03	3.81	3.69	18.3	2230	8002	7947	580	106	4385	9104	1010	3645
14390	"	10:02	10:42	3.56	3.44	18.3	2294	8002	7947	597	109	4361	9180	949	3559
14391	"	10:42		3.33	3.22	17.5	2284	7484	7435	594	116	4069	8811	900	2
14392	"	11:25	11:41	3.12	3.01	16.9	890	2990	2968	231	38	1538	3436	347	1318
14393	"	11:51	12:37	3.00	2.89	9.6	~~604~~ 2322	4558	4539	604	58	2453	4438	867	1625
14394	"	15:58	16:55	5.07	4.42	14.1	3331	8002	8002	867	122	3538	9386	1154	~~4600~~ 13
14395	"	16:56	17:58	4.33	3.76	13.8	3725	8002	7887	982	136	3587	9316	1165	3867
14396	"	18:00	18:52	3.50	3.03	11.6	3075	6168	6148	800	92	2895	6859	938	2656
14397	"	18:55	14:04	3.14	2.70	10.3	482	1010	1007	125	13	472	1086	161	454
14398	20.7.83	2:44	3:43	4.64	4.62	14.2	3520	8001	8000	915	129	3560	10093	938	4888
14399	"	3:46	4:50	3.68	3.71	11.4	3843	8001	7998	1000	114	3520	9509	958	3627
14400	"	4:57	5:02	2.99	3.05	28.7	575	2130	2068	157	45	937	2680	146	822
14401	20.7.83	6:22	7:10	5.35	5.16	26.1	2840	8001	8001	738	192	3620	11667	754	5359
14402	"	7:11	7:51	4.27	4.14	27.9	2377	8002	8000	618	172	3636	10898	681	3696
14403	"	7:51	8:28	3.48	3.43	28.8	2205	8002	7998	573	165	3733	10206	600	3143
14404	"	8:29	8:43	3.01	3.01	30.5	833	3171	3171	216	66	1549	3891	214	1176
14405	"	10:04	10:37	5.21	5.27	47.4	1961	5080	5080	510	242	2112	7795	455	5303
14406	"	11:46	12:35	5.36	5.41	28.8	2953	8002	8002	768	221	3454	11581	870	6504
14407	"	12:36	12:38	4.43	4.46	18.1	83	290	290	21.7	3.9	123	308	30	162
14408	"	13:51	14:34	5.18	5.26	24.4	2532	7189	7189	659	161	2925	9064	725	4941
14409	"	14:42	14:54	4.49	4.55	19.5	668	1834	1834	174	34	748	2412	178	1230
14410	"	15:45	16:34	5.01	5.31	22.1	2912	8002	8001	758	188	3360	11123	892	6162
14411	"	16:34	17:23	4.33	4.61	17.9	2900	8001	7998	754	135	3396	10399	971	4892
14412	"	17:24	18:15	3.84	4.08	15.5	3044	8002	7995	792	122	3328	10081	1005	4239

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	∫Ldt Bhabha run	∫Ldt exp	IBM/ TAPE	BP [V]	T2 rej. ev. [%]	Bhabha Σ	MH	Ebeam [GeV]	Remarks
ON	ON	ON	4.71	11.28	54.91 (43.63)	IBM	1.4	61	105	0	17.375	
"	"	"	4.44	4.47	59.32	"	1.3	60	41	1	"	
"	"	"	2.82	6.57	6.57	"	1.2	61	61	0	17.390	
"	"	"	2.94	8.39	14.96	"	1.1	62	78	0	"	
"	"	"	2.55	7.86	22.82	"	0.95	61	73	2	"	
"	"	"	1.85	0.22	23.04	"	0.85	58	2	0	"	beams dumped
"	"	"	4.47	8.72	37.76	"	1.4	62	87	0	"	
"	"	"	~~4.58~~ 3.86	9.58	41.34	"	1.2	61	89	4	"	
"	"	"	2.26	5.81	47.15	"	1.25	65	54	1	"	Transmitter gyrotrons by PETRA. Very much working conditions. see prose! pg 82
"	"	"	1.63	3.12	50.27	"	1.35	67	29	1	"	
"	"	"	2.36	6.03	56.30	"	[illegible]	62	56	0	"	
"	"	"	1.85	2.58	58.88	"	0.9	63	24	2	"	
"	"	"	?	3.23	62.11	"	0.9	?			"	Level 3 trigger. Novel crash, data from Tektronix display
"	"	"	1.43	1.40	63.51	"	0.8	60	13	0	"	End of this Energy, Ramping to Maximum
"	"	"	1.45	3.03	~~63.51~~ 38.48	"	1.75	56	23	1	21.455	beams lost
"	"	"	3.58	10.41	48.83	"	2.50	57	73	1	"	
"	"	"	2.43	2.38	56.27	"	2.2	56	58	1	"	
"	"	"	1.73	6.19	64.46	"	1.7	55	47	1	"	
"	"	"	1.47	0.13	0.13	"	1.7	55	1	0	21.470	beams dumped.
ON	ON	ON	2.90	10.56	10.69	"	2.2	60	80	4	"	
"	"	"	2.04	7.82	18.51	"	2.0	56	60	0	"	
"	"	"	1.22	0.73	19.24	"	2.0	59	6	1	"	beams dumped
OFF	OFF	OFF	3.36	9.10	28.34	IBM	2.7	66	69	1	21.470	
"	"	"	2.09	4.49	32.83	"	2.5	62	34	0	"	
"	"	"	1.51	3.32	36.15	"	2.2	61	22	1	"	
"	"	"	1.17	0.98	37.13	"	2.1	62	4	0	"	Beams dumped
"	"	"	1.80	3.56	40.69	"	2.7	68	27	1	"	Beams Lost
"	"	"	3.05	9.01	49.70	"	2.85	65	71	3	"	
"	"	"	1.73	0.14	49.84	"	2.7	54	1	0	"	Beams lost
"	"	"	3.21	8.71	58.55	"	2.7	58	66	0	"	
"	"	"	2.55	1.06	1.06	"	2.4	60	8	0	21.485	NEW ENERGY!!! Beam lost
"	"	"	3.12	8.59	9.65	"	2.4	65	65	0	"	
"	"	"	2.46	6.21	15.86	"	2.4	60	47	3	"	
"	"	"	2.13	5.95	21.81	"	2.1	57	45	2	"	

0.36 Magnet set to 7500 A
5:00 Luminosity low, background increasing, we asked for a new filling
RUN 14400 stopped
beams dumped

08.00 Kawamoto & Clarke
Backgrounds still high DT ~ 29%, was better at start of fill.
Trigger ~~bit~~ Tagg. TBG ~~was~~ unusually high, so possibly due to high rate in tagging lum Trigg counter?

08.40 Start new fill.
10: Beams Ready. Start RUN 14405. Trigger bits checked. TBG and LUMI trigger decreased. Now bit 16 dominates (2T * E(4) * ----).
Dead time still high: 40~50%! Ask PKR to optimise
10:40 Beams Lost
10:50 "Trouble with electron transfer"
11.46 Run 14406 started, background high & fluctuating.
12.13 D.T. down to ~ 20%
YSPY error DL8s giving no response 63 — 4 errors during Run 14406
12.30 JADE 49 Cello ~~35~~ 55 Tasso 45 MJ 54
— energy increase a 13.00 hrs.
12:40 Beam lost. Next fill will be the old energy.
13:50 ID 4 wires missing from # 548 to 551 within same DL8 (we will fix it later) S.K.
14.17 LUMINOSITY JADE 55, CELLO 43, MARKJ 60, TASSO 53 ~~Tot~~ 211.2
energy change ∝ 14:30.
14:35 ENERGY INCREASED TO 21.485 GeV
14 40 Rubbed the connector of DL8 No 68. missing wires are recovered.
14 55 ID tripped Beam lost.

16 00 Takeshita + Kanamiya on shift.

16 58 YSPY ERROR : FORWARD TOF NO HIS : 25
17 41 " "

↳ checked the histgram → There is a hole!

	ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks

18 20 JET ch. high current → soft trip
18 45 YSPY ERROR: FORWARD TOF NO HITS 25
19 25 ID High current - HV slowly down
MK-J asked us to have a new filling
19 30 Beams dumped → ID trip
just at the time that we switch off HV's.
20 00 New beams ready. An ideal filling!
dead time 24%
20 10 We asked PKR to make a hard copy of beam history. Herr Weber wants to have a picture for "typical filling" (= ideal filling).
21 10 No trigger Trigger box hung up.
"T0 accept resp. dead time" (Green LED) steadily ON
" Acc. Event " LED OFF
"Trigger signals" } flickering
"Trigger during dead time"
T1 POSTPONE ON
⇒ PUSH "RED BUTTON" → PUSH "RESET EVENT BUTTON" → PUSH "START BUTTON"
⇒ O.K.
21 15 TIMEOUT Branch 5 crate 2 : LG ADC's
YSPY ERROR : FORWARD TOF NO HITS : 25
22 10 " " " " " " "
22 15 ALL LG HVs ARE CHECKED (by @TESTHV) and OK.
22 50 TASSO ASKED US A NEW FILLING.
LUMI. CELLO: ~~48.4~~ 43, TASSO: 55, MARKJ: 44, JADE: 50 nb^{-1}; SUM 192
WE DECIDED NEW FILLING AT 11:30 AT SAME ENERGY (21,485 GeV)
~~23~~ 07 YSPY DETECTED ERROR : FW TOF NO HITS : 25

July 21. 00 00. Duerkop & Junge FWD TOF #25 has no hits *
01 09 YSPY FORWARD TOF NO HITS : 25
1 15 CELLO 49, TASSO 54, MJ 52, JADE 57. We will go to next energy at 01 30.
1 22 End Run — NEW ENERGY 2 × 21.500 = 43.000 !
02 40 IBM disc 95% FULL flashes on screen!
IBM operators say that JADE has 4 dump jobs waiting & there are no tape drives available! We write to tape. Fill 145 Run 14422
3 00 IBM operators report that 2 of the dump jobs have been OK.

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RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I-	DEAD TIME [%]	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁴	T1 ACC. SUM	T2 ACC SUM.	T1 BIT2 E1>6GeV	T2 BIT17 2T. E4. 2Tr.
14413	20.7.83	18:16	19 13	3.40	3.63	14.1	3264	8002	7982	849	120	3479	9836	1082	3679
14414	"	19 13	19 33	3.00	3.21	11.9	949	2120	2112	247	29	944	2523	276	873
14415	"	20 00	20 50	5.08	5.32	24.7	2947	8001	8001	767	189	3209	11457	950	6305
14416	"	20 50	21 44	4.33	4.53	25.0	3160	8001	7998	822	205	3287	10599	993	5089
14417	"	21 45	22 39	3.69	3.87	14.4	3254	8001	7992	846	122	3411	10028	979	4235
14418	"	22 40	23 33	3.21	3.38	12.4	3154	7257	7234	820	102	3268	8641	991	3149
14419	21-7-83	00 45	01 24	5.05	4.96	29.9	2329	6570	6670	608	181	2775	9264	620	5549
14420	"	01 27	02 14	4.54	4.45	23.0	2790	8002	8001	726	167	3555	10,359	811	5665
14421	"	02 14	02 42	4.05	3.96	19.2	1602	4602	4599	417	80	2016	5649	160	2807
14422	"	2 42	3 31	3.81	3.72	16.2	2000	5501	5492	520	84	2967	6444	~~6~~ 160	3048
14423	"	04:53	05:49	3.70	3.74	15.0	3301	8001	7997	859	129	3329	10619	758	5623
14424	"	05:50	06:02	3.30	3.33	13.1	693	1652	1650	180	24	726	2014	205	964
14425	"	13:54	14:44	5.18	5.25	33.5	2970	8002	8002	773	259	3084	12671	611	7634
14426	"	14:44	15:33	4.35	4.40	26.4	2830	8002	7999	737	195	3301	11253	626	6386
14427	"	15 33	16:10	3.88	3.91	20.9	2067	5799	5796	5385	1125	2351	8205	531	4491
14428	"	17.41	18.21	5.10	5.26	52.2%	2271	6448	6382	591.3	308.9	2147	13865	391	3591
14429	"	19.08	19.12	5.02	5.14	43.9%	209	691	683	54.6	23.9	201	1376	35	681
14430	"	20.40	20.50	4.64	4.72	31.1%	531	1658	1642	138.2	42.9	470	3188	91	746
14431	"	21.42	22.27	5.35	5.34	40.2%	2670	8001	7910	694.5	279.0	2585	17190	353	2627
14432	"	22.28	23.18	4.58	4.56	15.3%	2993	8001	7820	778.5	119.3	3816	8715	314	1974
14433	21.7.83	23:20	0:18	3.91	3.89	11.7	3444	8002	7748	896	105	3984	8290	1048	2500
14434	22.7.83	00:18	00:51	3.47	3.39	10.4	2037	4578	4477	530	55.2	2383	4416	582	1175
14435	"	1:18	1:35	4.73	5.25	17.2	917	2433	2392	197	41.1	962	3182	254	1099
14436	"	16.07	16.09	5.24	5.43	22.1	138	395	382	36	7.9	132	570	20	152
14437	"	16.12	17.01	5.14	5.33	18%	2949	8001	7804	767	139	3205	10744	366	3200
14438	"	17.02	17.52	4.38	4.50	14.6	2975	8002	7698	774	113	3721	8833	838	2611
14439	"	17.53	18.47	3.80	3.89	12.2	3252	8002	7636	846	102	4018	8100	~~880~~	2258
14440	"	18.47	19.30	3.31	3.39	10.5	2531	5759	5449	658	69	3121	5525	711	1532
14441	"	20.08	20.18	5.38	5.69	28.9	578	1736	1706	150	43	651	2538	186	864
14442	"	20.25	20.58	3.09	3.41	9.2	1925	3914	3729	500	46	2059	3731	510	980
14443	"	21.53	22.39	5.21	4.74	19.0	2718	8001	7793	707	134	3476	10098	848	6126
14444	"	22.40	23.27	4.58	4.14	15.7	2786	8002	7707	724	114	3845	8696	936	2387
14445	"	2327	0.21	3.66	3.27	16.0	3213	8002	7669	835	125	4059	8109	924	2192
14446	23.7.83	0.22	0.29	3.59	3.21	11.1	420	1062	1012	109	12	574	938	134	265

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N50	MIP	TOF	<L> ×10³⁰	∫Ldt Bhabha Run	∫Ldt Exp	IBM / TAPE	BP [V]	T2 REJ EV. FR. [%]	BHABHA Σ	MH	EBEAM	REMARKS
ON	ON	ON	1.64	5.42	27.23	IBM	1.9	58	41	1	21.485	
"	"	"	1.62	1.19	28.42	"	1.7	58	9	1	"	Beams dumped
"	"	"	2.90	7.40	35.82	"	2.6	63	56	1	"	
"	"	"	2.24	6.74	42,56	"	2.4	59	31	0	"	
"	"	"	1.74	5.29	47.85	"	2.2	58	40	1	"	
"	"	"	1.49	4.62	52.57	"	1.9	57	35	0	"	Beams dumped
"	"	"	2.64	7.66	60.23	"	2.6	64	58	2	"	NEW ENERGY
"	"	"	2.37	5.69	5.69	"	2.4	62	43	0	21.500	
"	"	"	2.10	3.04	8.73	~~IBM~~	2.2	59	23	0	"	
"	"	"	1.61	4.90	13.63	FIL145 TAPE	2.1	59	37	0	"	Beams dumped
"	"	"	1.61	3.97	17.60	IBM	2.1	60	30	1	"	
"	"	"	1.54	0.93	18.53	"	"	58	7	1	"	Beams dumped
"	"	"	2,18	8.60	27.10	"	2,9	66	65	2	"	
"	"	"	1.83	4.76	31.86	"	2,3	62	36	2	"	
"	"	"	1.59	3.44	35.30	"	2.1	62	26	0	"	Beams lost
ON	ON	ON	2.06	5.03	40.33	IBM	2.6	71%	38	1	"	Beams lost.
ON	ON	ON	2.42	0.26	40.59	"	2.5	68%	2	0	"	Beams lost.
"	"	"	2.21	0.93	41.52	"	2.5	66%	7	0	"	Vacuum trouble. Rapid beam loss. Fill terminated
"	"	"	2.56	5.95	47.47	"	2.7	71%	45	1	"	
"	"	"	2.56	6.48	53.95	"	2.45	57%	49	1	"	
"	"	"	1.99	6.63	6.63	"	2.1	58	50	0	21.515	
"	"	"	1.67	2.78	9.41	"	2.1	55	21	0	"	Beam dumped
"	"	"	2.93	3.31	12.72	"	2,6	60	25	0	"	Beams lost
"	"	"	3.47	0.48	13.20	"	2.7	61	1	0	"	
"	"	"	2.79	~~7.16~~	~~20.36~~	"	2.7	60	54	0	"	
"	"	"	2.18	6.49	~~26.85~~	"	2.3	57	52	5	"	
"	"	"	1.71	4.24	~~31.09~~	"	1.9	55	32	3	"	
"	"	"	1.45	3.67	34.76	"	1.7	56	28	2	"	Beams dumped
"	"	"	2.88	1.67	36.43	"	2.8	62	7	0	"	~~Beams lost~~
"	"	"	1.32	2.54	38.97	"	1.8	54	18	0	"	Beams dumped.
"	"	"	3.11	8.45	47.42	"	2.7	60	50	3	"	next fill
"	"	"	2.50	5.17	53.62	"	2.4	57	39	4	"	
"	"	"	1.91	5.04	58.66	"	2.2	56	38	1	"	
"	"	"	1.88	0.66	59.32	"	2.0	54	5	0	"	

3^{05} ID trip ~~Some beam lost.~~ High background. then
Some beams lost (transmitter fault).
3^{30} Beams dumped.
4^{50} New Fill (only 2×37 mA) & Run to IBM again.
PKR reports that they are baking out a cavity because of vacuum troubles & prefer to stay with this low current for ~1 hour rather than try again for high current; 06:02 beams dumped.
07:30 PKR reports that the injection failed since 06:00 because of fault in cavity-control.

8^{00} Schneekloth + Dieckmann
8^{20} PETRA has still trouble with cavity SL, break for ≈ 1h, magnet down to 2500A
10:00 Injection, magnet → 7500A
12:45 Again trouble with cavity; magnet down to 500 A
13:20 Magnet to 7500 A
13:54 start run 14425
14:10 Muon crate missing faulty part 6, reset doesn't help, called expert
15:52 ID Soft Trip
16:00 Hill and Bowdery on shift
16:10 Beams lost – not our fault, honest!
≈17:00 Action to raise the TOF Discriminator Thresholds as was decided in the recent Rack 3 JADE meeting

	Discr. 1	2	3	4	5	6	
Old	-0.753	0.754	0.755	0.754	0.757	0.755	} Crate 4
New	-1.497	1.501	1.497	~~1.503~~	1.507	1.494	The Lower ToF-Discr-Coinc. Crate

	1	2	3	4	5	6	
Old	-0.753	0.750	0.753	0.752	0.750	0.753	} Crate ~~0~~ 3
New	-1.495	1.501	1.505	1.496	1.495	1.501	The upper TOF-Discr + Coinc. Crate

T. It seems the rate has gone up. Dominating triggers Collinear because of absence of veto.

19.15. Beams lost. Vacuum Trouble. Screen says Short-Break.

2205 During the run 14431 LG E(4) threshold was raised from 1.75 GeV to 2.0 GeV

ON/OFF N50, MIP, TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

22:25 CELLO 43 nb^{-1} TASSO > 50 nb^{-1} MARK-J 50 nb^{-1} JADE ≈ 47 nb^{-1}

Trigger changes during Run 14432:
Trigger 29 T-code [3] set to < 4 TOF (before < 5)
" 30 " [1] set to < 5 TOF (before < 7) 31 was off before this Run.

Trigger 20 2TBG-NS * <7 T * 2 All Tracks in ID completely off. Since Run 14432

23:00 LG EC[2] threshold was raised from 1.0 to 1.2 GeV.

22.7.83
0:00 Greenshaw, Kawamoto
1:17 New fill ready. Start RUN 14435
1:19 μ-crate 13 reset,
1:35 Beams partly lost. Beam dumped.
2:06 Short break: trouble with PIA.
4:10 "Break" trouble with LINAC 2
6:30 Asked PKR the restart time. → Rough estimation was ≈ 9 AM
decrease the magnet current → 500 A

8^{00} Hagestedt & Kobayashi
8^{50} Magnet current found to be ~1400A. It can not be changed. MKK1 called. → They fixed it.

9^{31} Runs from 14436 have online rejection of cosmics for the "Zein" trigger in a similar manner to that used for the "J.O." trigger. With current beam conditions the effects will be rather small. (HEIT)
11^{30} "Short Break", Problem with Power Supply for "Q-mini".
12^{00} "SYNCHROTRON DOWN" Restart : 1^{00} P.M. Magnet down to 500 A.
14^{00} new trial : magnet on

16.00 Weber & Clarke
Strange happening. — got IBM busy (Run 14436)
Paused run (F2)
IBM busy disappeared
Continue run (F2)
Run terminated as if by magic ie no human intervention. = computer?

Run	Date	Start	Stop	Run I^+	Run I^-	Dead Time (%)	Time (Sec)	Records IN	Records Out	ALL $\times 10^6$	T_ϕ Rej $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit2 $E_1 > 6$ GeV	T_2 Bit F $2T \cdot E_4 \cdot 2T_r$
14447	23.7.83	0:40	1:18	3.51	3.14	11.2	2270	5421	5192	589	66	2870	5282	655	1465
14448	"	1.46	2:37	5.18	5.36	19.1	2866	8002	7819	745	142	3351	10236	953	3637
14449	"	2:37	3:25	4.40	4.55	16.7	2799	8001	7770	718	121	3580	9150	980	3051
14450	"	3:25	3:41	3.85	3.96	14.2	905	2475	2403	235	33	1161	2965	304	951
14451	"	5:36	6:26	4.70	4.81	19.7	2954	8002	7825	748	151	3115	10635	934	4169
14452	"	6:26	6:53	3.93	4.06	12.6	1589	3872	3752	417	52	1751	4289	488	1602
14453	"	8:13	9:02	4.69	4.82	16.9	2946	8001	7839	766	130	3341	10182	997	3348
14454	"	9:02	9:21	4.68	4.81	14.6	1044	2910	2829	271	39	1327	3086	343	930
14455	"	10:22	11:23	5.10	5.40	15.3	2969	8001	7822	772	118	3479	9397	978	3097
14456	"	11:23	12:04	4.31	4.52	14.4	2405	6460	6731	625	90	3304	7009	789	2051
14457	"	12:02	12:34	3.81	3.97	12.5	1549	4121	3970	402	50	2129	3895	485	1098
14458							JUMP	NK							
14459	"	15:15	16:12	3.98	3.88	11.3	3343	8002	7685	871	99	4035	7706	941	2163
14460	"	16:13	16:22	3.19	3.07	13.2	528	1586	1518	137	18	864	1392	164	820
14461	24/7/83	0:26	1:18	4.81	5.14	15.9	3118	8002	7803	811	129	3516	9896	928	2837
14462	"	1:19	2:11	4.23	4.53	13.7	3153	8002	7693	820	112	3856	8618	872	2444
14463	"	2:12	2:46	3.47	3.71	13.8	2055	5260	5022	535	74	2393	5450	596	1937
14464	"	3:45	4:41	4.51	4.79	12.2	3371	8002	7718	869	106	3888	8218	989	2776
14465	"	4:42	5:35	3.99	3.97	11.6	3216	8001	7676	837	97	4335	7220	975	1922
14466	"	5:36	6:32	3.55	3.53	10.5	3329	7887	7492	775	91	4516	6637	953	4121
14467	"	7:33	8:28	4.58	5.00	12.3	3301	8001	7752	858	105	3966	8064	1043	2363
14468	"	8:29	9:04	3.70	4.00	11.0	2054	4951	4736	534	58	2729	4377	642	1158
14469	"	9:09	9:23	3.41	3.69	11.1	783	1967	1873	203	22	1086	1687	276	423
14470	"	10:46	11:30	5.17	5.04	51.7	2655	8001	7876	690	357	3674	11031	604	2158
14471	"	11:31	12:16	4.52	4.45	22.7	2726	8001	7716	709	160	3922	8446	827	2075
14472		12:16	12:54	3.96	3.91	26.3	2172	6972	6703	565	149	3454	7241	604	1902
14473	25/7/83	1:06	1:55	4.91	4.91	40.4	2888	8002	7830	751	303	2667	12260	759	5176
14474	"	1:56	2:32	4.51	4.52	23.4	2141	6254	6084	570	133	2427	8473	656	5726
14475	"	3:12	3:28	5.14	5.35	33.6	918	2593	2548	239	80	949	4120	290	1435
14476	"	6:34	7:27	4.90	5.03	17.7	2902	8002	7774	755	134	3473	9986	970	2785
14477	"	7:27	8:15	4.31	4.42	14.7	2833	8001	7659	737	108	3902	8355	910	2295
14478	"	8:15	9:05	3.87	3.95	22.5	2669	8002	7706	695	191	3941	8549	738	1776
14479	"	9:06	9:35	2.89	2.95	17.7	1613	4619	4384	420	74	2649	4193	462	768
14480	"	15:49	16:51	4.62	4.51	15.6	2979	8002	7758	776	120	3825	8765	1065	2383

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int Ldt$ Bhabha Run	$\int Ldt$ Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	E_{beam}	Remarks
14447	ON	ON	ON	1.58	3.72	3.72	18A	2.1	56	28	1	21.530	beam dumped
14448	"	"	"	3.37	9.45	13.27	"	2.75	60	72	2	"	
14449	"	"	"	2.53	5.57	18.84	"	2.45	57	42	0	"	
14450	"	"	"	2.39	1.19	20.03	"	2.2	52	9	0	"	stopped for DCB timeouts (Non beams Cut)
14451	"	"	"	2.53	7.03	27.06	"	2.6	59	53	0	"	
14452	"	"	"	2.16	3.05	30.11	"	2.2	55	23	0	"	beam lost
14453	"	"	"	3.21	8.63	38.74	"	2.75	59	65	1	"	
14454	"	"	"	2.63	2.65	41.39	"	2.4	54	20	0	"	beams lost
14455	"	"	"	3.20	9.51	50.90	"	2.70	57	77	0	"	
14456	"	"	"	2.62	6.29	57.19	"	2.40	54	43	3	"	new energy
14457	"	"	"	2.00	3.09	3.09	4	2.40	53	28	1	21.545	last 4h beams
14458													JUMP (7h cut)
14459	"	"	"	1.78	4.25	7.34	"	2.2	54	32	Ø	21.564	
14460	"	"	"	1.36	0.53	7.87	"	-	54	4	Ø	21.544	beams lost
14461	"	"	"	3.05	7.44	15.31	"	2.7	60	46	3	21.577	
14462	"	"	"	2.45	6.38	21.69	"	2.5	56	48	3	"	
14463	"	"	"	1.89	3.72	25.41	"	2.3	58	28	2	"	beams lost
14464	"	"	"	2.65	7.71	33.12	"	2.5	55	58	1	"	
14465	"	"	"	2.15	7.04	40.16	"	2.3	54	53	7	"	
14466	"	"	"	1.78	3.99	44.15	"	2.1	54	30	Ø	"	beams dumped
14467	"	"	"	2.73	7.84	51.99	"	/	55	59	1	"	
14468	"	"	"	2.30	2.92	54.91	"	2.2	54	22	2	"	New Energy
14469	"	"	"	1.71	1.33	1.33	"	2.15	53	10	0	21.587	beams lost
14470	"	"	"	1.88	5.06	6.39	"	2.75	65	39	1	21.559	very high background between 10^{57} and 11^{15}
14471	"	"	"	2.38	5.32	11.71	"	2.6	57	40	2	"	
14472	"	"	"	1.75	3.86	15.57	"	2.6	57	27	2	"	
14473	"	"	"	1.38	3.56	19.03	4	3.0	63	26	3	"	
14474	"	"	"	1.61	2.79	21.82	4	2.55	60	21	1	"	beam lost
14475	"	"	"	2.69	1.73	23.55	"	2.9	66	13	0	"	beams lost
14476	"	"	"	2.79	9.45	33.00	"	3.0 2.65	61	71	3	"	
14477	"	"	"	2.37	5.46	38.46	"	2.4	57	41	1	"	
14478	"	"	"	1.65	3.86	42.32	"	2.25	57	29	1	"	
14479	"	"	"	1.02	1.33	43.65	"	2.2	57	10	0	"	beams dumped
14480	"	"	"	2.74	8.25	51.90	"	2.5	59	62	1	"	

run 14441 terminated by I.D. trip, caused by beam loss due to transmitter trouble
" 14442 " because of low luminosity, asked for refill

0.00 Spitzer + Zorn

Luminosity on Pe energy 21.545 GeV :

CELLO	37.9
MARK J	54.6
TASSO	62.3
JADE	59.3
	214.1

~4.00 Failure 44 Crate 7 Branch 4 - ID - Contacts of connector cleaned and now works.

08:00 Baines + Glazer

requested new energy at about 12:00 at 11:20 we had about 200

TASSO	49
CELLO	32.4
MARK J	50.00
JADE	50.9

12:02 have new energy stored → 21.545

14:00 New fill. Energy 21.563, PKR say they cannot lower energy, we ask for a new fill. PKR now say they will lower energy in a few minutes. Energy → 21.810.
Eventually PKR get Energy = 21.545, but v. bad beam conditions. TASSO can't switch on, mark-J ask for a new fill. Beam pipe current ~ 3.2 V. We ask PKR for a new fill.

14:10 beams dumped Run 14458 Tanks (76 events).

15:00 new fill. PKR say the power supplies are up full, and so energy adjustments are extremely difficult, beam energy ranging between 21.530 and 21.560.

15:20 Energy 21.546. PKR say it would be extremely difficult to raise the energy the last 0.001, we decide to take data at 21.546. Background is good R.P. 2.2 V dead time 11%.

16:00 Mikowski Steffen on shift.
16:22 beam lost
16:40 trouble with transmitter

24/7/83

0.00 Finch & Haidt on shift

0.24 Finally we got beam - the beam energy was at the beginning 21.546, then PKR set it back to 21.544 as for the previous runs
They cannot perform 1 MeV steps at this high energy

2.05 READOUT error 44 - Timing branch 3 crate 2 muon chambers

ON/OFF N50. MIP. TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

Doing shift on last flying day so far this year (sad)! Swimming

8.00 Mills & Kobayashi

9.00 Luminosity at E_b = 21.544 GeV :

CELLO	45 nb^{-1}
TASSO	59
Mark-J	53
JADE	55
	212 nb^{-1}

9.05 New Energy (E_b = 21.559 GeV).

10.05 New fill.

10.55 BP current jumps up from 2.7 A to 3.1 A. and dead time 80%.
(Dead time of TASSO 95%, Cello 60-70%, Mark-J 65%)

11.15 PKR insisted that they cannot improve this bad beam condition, but we found out at last that PKR had changed "Bump" for TASSO at ~10.55 and when they put it back, the background became normal again!

16.00 Matsumura + Bowdery on shift

Status Report

We have been informed by CELLO that they are having severe background problems as are TASSO. We are running okay but we await a new fill before deciding whether to go on with the high energy scan or to scan downwards at a lower energy (< 40 GeV)

16:52 PETRA has a problem. Beam lost during ramping.
17:52 PKR say that they have a cooling water problem in the West Hall. Maybe they can restart in 30 min
19:52 We're still waiting..... but maybe not for long now. We hear the "Achtung! PETRA wird eingeschaltet" message.
21.35 None of us are infallible..... we're still waiting! Injection is, however, underway.
23:59 We never got any beam !! ... Can we get our money back?

25/07/1983

0:00 Spitzer + Minows
still short break
0:40 Injection started
0:35 ID switched off, run paused, because of too often „JETC HIGH CURRENT". VBP = 3.0 volts
6:38 run continued, now VBP ≈ 2.65 volts., Dead Time ≈ 15%

8.00 Hill & Cords on shift

8.20 TOF counter 37 broken; DL8 #33 in ring 1 shows a dip in the rate map

8.00 Integrated luminosity: Cello 25 nb^{-1} Tasso 40 nb^{-1} Mark J 48 nb^{-1} Jade 42 nb^{-1}

100 25.7.83

9⁵⁵ beams dumped

16:00 Steffen & Mills on shift.

16:35 orbit correction on request from TASSO : Run 14480 stopped & continued.

16:52 Some trouble when run 14480 ended - The run summary did not print. After some panic turning the printer OFF and ON cured the problem. (HEM)

17:55 New MIPROC-16 reduction program installed with "SPRAT" set to 10 (was 25).

At 21.560		
	TASSO	51.5 +
	JADE	57
	MARK-J	64-7
	CELLO	37.5
		210.7

Energy raise.
New fill delayed by injection problems - running with old one. Not much REAL data!

20:20 A hadronic event actually appears!

26.7.83 0:0 Baines & Krehbiel.
Stop & Go Traffic on IBM; Therefore increased deadtime of Run 14487;

2.58 When we were just coordinating a new fill, following a suggestion of TASSO, the beams were lost.
2.58 Beams up again.
3:23 Slow ID trip. B.P. current 2.3 V.
4:00 Another Slow ID trip. Maybe a short spike in the BP. Current.
5:10 JADE 45 TASSO 50 CELLO 35 MARK/I 45 TOTAL 175
5:30 Saved from decision making again by beam loss.
5:59 New fill
6:20 JADE 52 TASSO 55 CELLO 40 MARK/I 50 TOTAL 197 ⇒ ASK FOR NEW ENERGY
6:37 NEW ENERGY 21.590 GeV
7:15 partial beam loss, run paused, I.D. run dam. current falls → 1.8 mA. Ask for new fill.
7:35 PKR say power supply failure in linac II and getter pump problem. Estimate 15 mins until new fill
7:36 screen says switch of high voltage.

ON/OFF N50.MIP.TOF	<L> $\times 10^{30}$	Slat Bhabha Run	Slat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

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7:39 SHORT BREAK

8⁰⁰ Dieckmann & Hadt
8²³ Magnet Read Error on TV, Magnet tripped down, Alarm "Durchfluß wassergekühlter Kabel <" set. Called K Group
8⁴⁸ Water leak in the magnet power house!
9⁰² Leak found but repair may take some time, presumably until 12⁰⁰ (not one but three leaks)
11²⁰ No luminosity rates
11³⁰ Pillat says the repair is done. Cannot switch on magnet since PETRA got just now a filling ready and would lose the beam. We have to wait for the next filling.
12²⁵ Beam lost, run magnet up
14⁵⁰ "Klimastörung NL, Restart 16⁰⁰" Magnet to 500 A

16.00 Whitaker & Komamiya
No beam - message on screen - "Trouble with Transmitter / Restart : 5.00 PM"
17⁰⁰ Message on TV screen "Trouble with 10kV supply restart : 7⁰⁰ pm"
17.25 New message Trouble with 10kV supply, Restart about 7⁰⁰ pm. (Double bubble, toil & trouble)
19⁴⁰ PKR informed us that they cannot reach the full energy (... even they do not know how far they can increase the energy) because of the trouble with transmitter.
20 10 Beams ready with $E_b = 20.056$ GeV, The beams are stable we decided to take data with this energy. Next filling E_b will be 19.955 GeV. to fill the gap
25 Background optimization PKR is playing with Beam energy.
30 Start run 14495 with $E_b = 20.056$
NORD 50 BUSY
Run was terminated automatically Messages on console after trying to start new run.

- Memory out of range - AT : 101250 -
101250/ 14163130012 LDR 13, 0012, 03, 14
Memory out of range
Last start address: 155336
Last memory ref. address: 377554345 14
Last data to/from memory: 24540400001
Breakpoint register 1 (BP): 077140
" 2 (BQ): 100000
Break condition set:
/ Store reference/
* Exit
Batch user logged off at 20.32.40 26 July 1983
N50 Program file <N50DAR>:

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RUN	Date	Start	Stop	Run Start I+	Run Start I-	Dead Time (%)	Time (sec)	Records IN	Records OUT	ALL x10^6	T0 Rej x10^6	T1 Acc SUM	T2 Acc SUM	T1 Bit2 E1>6 GeV	T2 Bit 17 2T.E4.2Tv
14481	25/7/83	17:02	17:52	3.76	3.70	10.9	3049	7136	6749	793	86	3963	6575	943	1761
14482	"	17:56	18:14	3.21	3.19	10.0	1012	2236	2094	263	26	1362	1984	354	504
14483	"	19:16	19:19	3.02	3.00	10.1	3663	8002	7452	953	96	5101	7066	1288	1798
14484	"	19:19	20:27	2.55	2.55	9.5	3735	8002	7439	972	92	5204	6935	1258	1725
14485	"	20:22	21:31	2.20	2.22	8.4	4100	8002	7374	1066	89	5310	6736	1406	1556
14486	"	21:31	22:39	1.91	1.94	7.5	3379	6175	5695	878	66	4194	4950	1132	1066
14487	"	23:37	0:32	4.75	4.92	15.6%	3234	8002	7738	841	137	4379	8736	7406	2694
14488	26/7/83	0:37	1:28	4.00	4.05	12.0	3315	8001	7639	862	104	4781	7871	1370	2228
14489	"	1:28	7.58	3.45	3.49	9.2	1797	4194	3982	467	51	~~35~~ 2573	3877	733	2569
14490	26/7/83	3:05	4:02	5,00	5.00	14.9	3742	8002	7802	817	122	4202	9339	7305	2835
14491	"	4:02	5:01	4:09	4:05	11.8	3381	8002	7653	880	104	4681	7870	1341	2267
14492	"	5:01	5:29	3:49	3:45	10.5	1601	3663	3451	417	44	2233	3232	608	858
14493	"	6:00	6:34	5.22	5.20	19.2	1964	5543	5439	511	98	2648	2569	819	2569
14494	"	6:37	7:26	4.46	4.43	21.5	2616	8002	7742	680	146	4703	8848	1029	2033
14497	"	20:44	21:28	4.64	4.59	15.1	2613	8001	~~78~~ 7637	680	102	4966	8058 ~~7756~~	1064	2053
14498	"	21 ~~29~~	22 ~~13~~	4.21	4.16	14.5	2608	8001	7619	678	98	4991	~~1936~~	1041	1936
14499	"	22:14	22:59	3.82	3.78	14.0	2696	8002	7576	702	98	5190	7614	1135	5084
14500	"	22:59	23:48	3.49	3.19	13.0	2882	8002	7555	750	98 ~~750~~	5126	7782	1219	1861
14501	"	23:50	23:51	3.17	3.13	13.1	22	104	96	6	0.8	48	69	6	28
14502	} - JUNK														
14503															
14504	27.7.83	2:11	2:22	5.36	5.50	13.6	614	1663	1610	160	22	979	1693	297	596
14505	"	2:25	3:18	5.20	5.33	11.7	3200	8002	7642	833	98	4937	7508	1367	2266
14506	"	3:19	4:15	4.57	4.70	10.8	3371	8001	7574	877	95	5012	7349	1273	2104
14507	"	4:16	5:15	4.03	4.14	9.9	3546	8002	7534	923	92	5143	7037	1384	1928
14508	"	5:16	6:00	3.57	3.67	8.8	2668	5641 ~~5264~~	5264	695	62	3683	4822	958	1270
14509	"	7:31	8:25	4.88	5.21	11.4	3280	for2 ~~7647~~	7648	853	97	4981	7593	1354	2485
14510	"	8:27	8:51	4.30	4.59	10.4	1402	3361	3175	364	38	2127	2985	603	890
14511	"	9:40	10:31	5.06	5.17	17.1	3846	8001	7744	740	126	4600	8877	1297	3014
14512	"	10:31	11:20	4.53	4.63	13.2	2905	8002	7639	756	99	4948	8102	1273	2422
14513	"	11:20	12:12	4.09	4.18	11.4	3120	8002	7556	812	93	5181	7335	1316	1951
14514	"	12:13	12:58	3.68	3.77	11.2	2700	6675	6338	703	79	4295	6320	1173	1759
14515 ~~3~~	JUNK														
14516															

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RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> x10^30	∫Ldt Bhabha RUN	∫Ldt Exp	IBM/ Tape	BP [V]	T2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks
14481	ON	ON	ON	1.87	5.06	56.96	IBM	1.8	56	39	2	21.560	stopped to enter new MIPROC Vn
14482	"	"	"	1.55	1.46	58.42	"	1.6	60	11	0	"	
14483	"	"	"	1.16	5.33	5.33	"	1.7	68	40	0	21.575	not much beam but LINAC II down
14484	"	"	"	0.89	3.86	9.19	"	1.5	64	29	0	"	
14485	"	"	"	0.73	2.00	11.19	"	1.3	63	15	1	"	
14486	"	"	"	0.54	1.07	12.26	"	1.1	64	8	0	"	Beams lost (at last)
14487	"	"	"	3.03	9.99	22.25	"	2.5	62	75	2	"	High deadtime because of slow IBM
14488	"	"	"	2.31	6.00	28.25	"	2.0	63	45	1	"	
14489	"	"	"	1.89	2.93	31.18	"	1.9	62	22	1	"	Beams lost
14490	"	"	"	3.72	7.33	38.51	"	2.2	64	55	1	"	
14491	"	"	"	2.24	6.66	45.17	"	2.1	62	50	1	"	
14492	"	"	"	1.77	2.27	47.44	"	1.9	61	17	0	"	Beams lost
14493	"	"	"	2.98	6.40	53.84	"	2.5	66	48	1	"	Go to new energy
14494	"	"	"	1.97	5.74	5.74	"	2.3	67	43	0	21.590	NEW ENERGY
14497	"	"	"	3.39	8.29	8.29	"	1.5	66	72	1	20.056	Runs 14495 - 6 are lost. NEW ENERGY
14498	"	"	"	2.81	6.56	14.95	"	1.4	65	57	1	"	
14499	"	"	"	2.36	7.48	22.43	"	1.3	66	65	1	"	
14500	"	"	"	2.01	5.07	25.50	"	1.2	~~64~~ 66	44	1	"	
14501	"	"	"	3.21	0.00	25.50	"	1.1	49	0	0	"	
14502													} JUNK
14503													
14504	"	"	"	3.39	2.17	2.17	"	1.7	64	19	1	19.955	NEW ENERGY
14505	"	"	"	4.31	14.36	16.53	"	1.5	63	126	4	"	
14506	"	"	"	3.53	11.90	28.43	"	1.4	63	107	6	"	
14507	"	"	"	2.78	10.60	39.03	"	1.2	63	93	2	"	
14508	"	"	"	2.29	6.10	45.10	"	1.1	63	53	1	"	
14509	"	"	"	4.08	12.31	57.41	"	1.4	63	108	3	"	
14510	"	"	"	3.36	4.71	62.12	"	1.3	62	44	1	"	Beam dumps
14511	"	"	"	3.61	10.27	10.27	"	1.4	~~45~~	94	4	19.940	
14512	"	"	"	3.17	9.20	19.47	"	1.2	65	82	2	"	
14513	"	"	"	2.60	7.40	26.87	"	1.1	65	65	2	"	
14514	"	"	"	2.25	6.72	33.59	"	1.0	65	59	4	"	
14515 ~~3~~								~~0.8~~					} JUNK.
14516													

26/7/83 cold. ~~Eb~~ 20.40 Several attempts to start run. – Called Koward mills and restarted the N50 program. Run 14495 – 14496 are lost.
(no event)

20 10 Mark-J phoned us asking why the next Eb will be 19.955.
We have explained them 3 or 4 times ... finally they agreed.

23 30 We asked PKR about new filling at 23 45. E_b = 19.955 GeV

27/7/83

0:00 Matsumura + Minowa ☹

2:03 start run 14501
run did not start
try again. 2 failed again although run # was increased by one. Message console said just „TRANSF!!"
Nord restarted.
start run 14504. ok. (run 14502, 14503 are junk)
got an error massage at the console:

> 02:10:32 ERROR 14 IN 84761 AT 73177; OUTSIDE SEGMENT BOUNDS
> PAGE NO.: 154

This means the TASK „YVOLTS" has been corrupted (Section 4.2.2 of JDAS manual)
RT program rebuilt according to the 8. prescription in section A5 of JDAS manual.
Stop run 14504 (this run is probably OK since corrupted TASK is „YVOLTS")
REBUILD worked successfully.

2:22 Start run 14505

5:10 MARJ wants 5 min access after this filling. (HV broken)
Other experiments agree.

5:50 Present beams will be dumped at 6:00. Then after that MARKJ will make a 5 min.-access.
DL8 Wire 256 ~ 263 exchanged Series Nr. 221 NG new Series Nr. ~~75~~ 60

8:00 Kawamoto + Nozoboin on shift

8:25 Luminosity CELLO 54.4, Mark J 52, Tasso 55, Jade 55 ⇒ total 216 ns^{-1}
We asked PKR to ~~also~~ dump the beam at 8:30 for change of beam energy.

8:50 Beam dumped.

10:14 JDAS readout error 44 – Time out branch 2 crate 5 : leadglass ADCs

10:17 IBM Transfer error 53. No trigger

10:21 Run disappeared.

It is impossible to decrease the beam energy in the ring. New fill is needed.

ON/OFF N50 MIP TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

10:43 JDAS Readout error 44. Timeout br 2 cr 5. leadglass ADC's.
12:50 Asked ~~PKR~~ new fill. However, there is some trouble with PIA, so injection is not possible. We keep this fill for a while. ..... • TASSO has trouble with the magnet. They have no data at this energy.
~~12:59~~
12:59 IBM ERROR. Problem with IBM LINK. ~~RUN 14514~~ stop RUN 14514.
13:05 RUN 1451~~7~~ : Data written on MAGTAPE.
14:00 IBM LINK NOW OK. RUN 14518 START. Data writing to IBM disk.
14:25 BEAM DUMPED
14:48 New fill ready. start RUN 14519
15:11 JDAS Readout error 55 False Interrupt from a LG micro
= 66 MP-16 out of sequence; YY=1
= 44 Timeout br 2 cr3; TOF1 counters

ZSEND failing with illegal monitor call. REBUILD did not help – maybe system damaged? Have stopped ZSEND via "RTOFF ZSEND". If machine is rebooted the RTOFF (under user RT) must be repeated otherwise error will come again – although this is not affecting data taking. (HER

15:45 TASSO: 12, CELLO: 32, Mark J: 33, JADE: 63 $S = 130\ ns^{-1}$

16:00 Kobayashi + Hellenbrand
16:16 beams lost, ID trip, RUN 14521
19:50 Luminosities MARK J 82 / JADE 77 / CELLO 69 / TASSO 69
20:40 New fill ready with new energy (19.925 GeV)

28/7/83 00.00 Whittaker + Warming
00.33 new filling
1.34 Beam on run 14531 started
2.36 during run 14532 LG Power Supply #3 failed with overcurrent, (hot) ugly smell in its vicinity, switch on worked, so we think its OK
3.35 Luminosity check Cello 44 Tasso 60 Mark J 56 Jade 60
Rat is sufficient for this energy point, but fill is still quite good, so we continue

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RUN	DATE	START	STOP	RUNSTART I+	RUNSTART I-	DEAD TIME	TIME (SEC)	RECORDS IN	RECORDS OUT	ACC x10⁶	T&P REJ x10⁴	T1 ACC SUM	T2 ACC SUM	T1 BIT2 E1>6Gev	T2 BIT 17 2T·E1·2T1
14517	27.7.83	13:07	14:01	3.34	3.41	10.6	3239	7992	7534	843	90	5108	7302	1303	1888
14518	"	14:03	14:25	3.01	3.07	10,3	1325	3233	3035	345	35	2141	2855	578	719
14519	"	14:48	15:20	4.96	5,13	16,7	1827	5681	5507	476	79	3207	6440	981	2302
14520	"	15:20	16:07	4.60	4.76	14.0	2744	8002	7679	714	99	4763	8183	1363	2733
14521	"	16:08	16:17	4.14	4.29	13.4	517	1470	1429	135	18	855	1540	232	532
14522	"	17:23	18:10	4.67	5.17	14.5	2823	8001	7743	733	106	4612	8837	1453	3277
14523	"	18:11	18857	4.18	4.65	14.3	2772	8001	7827	721	103	4659	8631	1303	2927
14524	"	18:58	19:53	3.77	4.21	10,5	3312	8001	7548	861	94	4983	7783	1413	2260
14525	"	19:56	20:00	3.32	3.72	9.0	253	528	485	65	5	324	516	92	130
14526	"	20:47	21:33	4.75	5,09	15.0	2765	8001	7770	719	107	4523	9079	1376	3334
14527	"	21:34	22:21	4.28	4.60	13,9	2849	8002	7708	741	102	4670	8723	1338	2905
14528	"	22:22	23:15	3.86	4.16	11.7	3203	8001	7616	833	97	4930	7998	1403	2550
14529	"	23:16	00:10	3.45	3.73	11.2	3234	8001	7632	841	94	5049	7856	1396	2359
14530	28/7/83	00:11	00:35	3.11	3.37	8.9	1387	2993 ~~2501~~	2801	361	32	2018	2552	558	700
14531	"	1:35	2:30	4.88	5.20	11.2	3296	8002	7681	857	96	5074	7604	1552	2359
14532	"	2:30	3:31	4.33	4.62	10.2	3453	8002	7576	898	92	5225	7237	1461	2006
14533	"	3:32	4:20	3.82	4.09	9.4	2868	6374	5980	746	70	4268	5472	1132	1456
14534	"	4:48	5.40	5.08	5.18	12.0	3107	8001	7706	809	97	4851	7801	1444	2547
14535	"	5:40	6:34	4.53	4.62	11.5	3201	8002	7630	833	96	5015	7695	1371	2358
14536	"	6:34	7:29	4.05	4.12	11.0	3296	8002	7612	858	95	5009	7698	1350	2375
14537	"	7:30	8:17	3.56	3.63	12.0	2798	7227	6886	729	87	4460	7572	1214	2280
14538	"	13:03	14.20	4.56	5.09	3.4	4435	7998	7588	1155	96	5087	7066	1467	1931
14539	"	20:00	21:04	4.86	5.16	10.0	3786	8002	7633	986	98.3	4738	8177	1321	2352
14540	"	21:04	21:13	4.17	4.45	11.1	494	1185	1126	129	14.3	693	1223	203	373
14541	"	21:56	23:09	3.75	4.02	9.5	4361	8002	7664	1135	108	4398	8581	1451	2340
14542	"	23:10	23:44	3.01	3.31	8.2	2005	3487	3311	522	62.9	2049	3349	622	887
14543	29/7/83	0:52	1:51	4.31	5.09	13.3	3520	8002	7758	915	121	4049	9688	1190	6514
14544	"	1:51	1:53	3.15	3.97	10.1	62	143	146	16	1.7	81	136	22	44
14548	"	4:56	5:36	4.46	5.15	16.2	2591	8002	7750	674	109	4755	9014	1056	2947
14549	"	5:41	6:20	4.07	4.71	17.7	2313	8001	7766	601	106	4832	8615	898	2509
14550	"	6.21	6:57	3.78	4.39	17.6	2303	8002	7713	599	105	5016	8465	940	2304
14551		7.00	7.40	3.51	4.10	17.4	2374	8001	7689	619	110	4952	8607	846	2240

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N50	MIP	TOF	<L> x10³⁰	∫Ldt Bhabha RUN	∫Ldt Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks
ON/OFF												
ON	ON	ON	1.25	4.07	37.94	FI1101 ~~FI1101~~ IBM	0.9 4.0	65	59	4	19.940	IBM problem, data on TAPE
ON	ON	ON	1.88	4.21	37.80	FI1101	0.9	65	59	4	19.940	IBM problem, data on TAPE
"	"	"	1.58	1.71	39.51	IBM	1.0	65	15	0	"	Beam dumped.
"	"	"	3.54	8.08	47.59	"	1.5	65	71	1	"	
"	"	"	3.26	7.40	54.99	"	1.3	64	65	1	"	
"	"	"	3.05	1.48	55.47	"	1.1	64	73	0	"	beams lost
"	"	"	3.55	6.94	62.41	"	1.25	65	61	1	"	
"	"	"	2.97	8.08	70.49	"	1.2	64	71	2	"	
"	"	"	2.51	7.06	77.55	"	1.1	64	62	3	"	
"	"	"	1.93	0.68	78.23	"	/	66	6	0	"	beams dumped.
"	"	"	3.70	9.43	9.43	"	1.4	65	83	1	19.925	
"	"	"	2.96	8.98	18.41	"	1.2	65	79	1	"	
"	"	"	2.56	8.64	27.05	"	1.0	~~65~~ 65	76	3	"	
"	"	"	2.06	5.80	32.85	"	1.0	65	51	2	"	
"	"	"	1.82	2.61	35.46	"	0.9	65	23	1	"	Beams dumped
"	"	"	3.87	13.18	48.64	"	1.5	65	116	0	"	
"	"	"	2.96	11.48	60.12	"	1.2	65	101	1	"	
"	"	"	2.42	7.05	67.17	"	1.0	65	62	0	"	Beam dumped
"	"	"	3.87	11.57	11.57	"	1.3	63	102	3	19.910	NEW ENERGY
"	"	"	3.22	10.44	22.01	"	1.2	64	92	0	"	
"	"	"	2.53	8.51	30.52	"	1.1	64	75	2	"	
"	"	"	2.06	5.79	36.31	"	1.1	66	81	0	"	Beam dumped
"	"	"	2.99	13.28	49.59	"	1.3	62	117	5	"	Beam Lost
"	"	"	3.96	13.39	62.98	"	1.25	63	118	6	"	
"	"	"	3.37	1.48	64.46	"	1.2	64	13	1	"	
"	"	"	1.88	8.48	8.48	"	2.1	63	64	3	21.515	New Energy
"	"	"	1.30	2.39	10.87	"	1.8	62	18	0	"	Beams dumped
"	"	"	2.32	6.76	17.63	"	2.5	64	51	2	"	
"	"	"	1.75	0.27	17.90		2.2	62	2	0	"	
"	"	"	3.35	10.65	10.65	"	1.4	67	94	3	19.895	New Energy (problems with TG42 bits)
"	"	"	2.74	6.57	17.22		1.4	66	58	2		
"	"	"	2.40	6.35	23.57		1.55	56		2		
"	"	"	1.97	4.99	28.56		1.3	67	44	4		

2:00 Igniter + (Olsson) A. Wagner
11:40 The Data Acquisition System has been rebuilt; D.C.

13:03 beams back
14:20 beams lost

PKR is now ready again to go back to high energies.
Present ∫Ldt : Cello = 35, Tasso = 48, MJ = 36, JADE = 49
Talk to B. Naroska who decided: finish present point (19.910)
then go to 21.515 GeV.

16:00 Zorn / Greenshaw
"Restart 17:30"

21:03 "Magnet current fluctuation", acknowledged ev, did not reappear
22:15 Yiapopoo... "Trigger 3 i/p missing" acknowledged. did not reappear.
∫L dt at 19.910 GeV Cello 55.3 Tasso 63.6 MJ 64.8 JADE 64.66

29.07.83

0:00 H. Mills & P. Steffen on shift.
0:40 beams are back, start running.
1:52 Just after run 14544 starts, our magnet trips
Cross-section display altered to allow maximum of 200 data points (previous 100).
2:50 Magnet still down, MKKA is still working on it: a series of rectifiers is burnt
TASSO will coordinate until our Magnet is working again
3:20 Magnet is on again, beams are dumped in the meantime.

4:30 beams are back again. but PETRA has trouble with 1000 MHz system
only ~~low energy~~ lower energy available.

We start down from 19.845 GeV

Problems with IBM link
4:50 When we finally decided to write on tape the IBM came back again

5:40 Part of the T3 output for one ~~for~~ End caps seem to be missing
Runs 14548 a 14549 Also sometimes digitisers 75 76 78 79 81 82 119 120 123 125 126 125 129 missing
Power supplies for crates 7/11 on overload.

ON/OFF N50, MIP, TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

5:55 phoned oncall man (Chris Bowdery) who said it sounded like bad beam conditions. Suggested lowering $ slightly & returning voltage. Twiddled knob & seemed to work T3 back again

08:00 Takeda + Bowdery on shift.

We will have a new fill at 08:30. PKR say the 1 GHz system will be working then so we will run at 21.515 GeV – at least, that's the plan!

12:20 $\mathcal{L} = 3.5 \times 10^{30}\ cm^{-2}s^{-1}$ 40 minutes into the fill. 12% – 15% Dead time
CELLO has fairly high dead time (50%)
MARK J conditions not too good but no problems
TASSO have bad conditions but ...

12:41 Beams lost!
PKR say that the beam loss was due to an interlock break in the North East Hall.
Someone opened the door ..... !
Injection starts again quickly.

13:40 New fill ready

We notice that the PETRA monitor display of the IBM status is hopelessly wrong! Apparently there has been a fault with it for about a day. Advice is IGNORE THE IBM STATUS DISPLAY!

15:30 BP current increased to ~ 4V. Jet ch. high current → slow trip
Paused the run 14557 and waited for optimization.
↳ restart run but dead time is high

16:00 Slow trip again.
Hill & Krehbiel on Shift.

Weird background condition; what is good for one experiment may be good or bad or indifferent to another. too often some telephoning we decided to set the totally mistimmed PETRA to the original data file again and to dump the beam if that does not help. But lo and behold! without losing usual beam, BP goes to 2.7 Volt. We resume data taking with about 16.5 % DT. 73 %
but now things are worse elsewhere.

16.42. They are still playing with PETRA – up's and down's in background. They seem to work with scrapers, trying to optimize their position between good background condition and low lifetime.

RUN	DATE	Start	Stop	I^+	I^-	dead time	time [sec]	records (in)	records (out)	Bll $\times 10^6$	TO-reject $\times 10^6$	T1-acc (sum)	T2-acc (sum)	T1-b.t2	T_2-b.t1 T2
14552	29/7/83	7.40	8:22	3.26	3.82	15.8	2481	8001	7669	645	102	4921	8497	915	2270
14553	〃	8:22	8:33	304	3.56	14.8	646	2025	1948	168	25	1312	2044	238	566
14554	〃	11:03	11:16	3.82	4.00	9.5	735	1383	1337	191	18	708	1480	243	433
14555	〃	12:00	12.41	5.19	5.42	15.7	2199	5159	5048	572	89.9	2395	6766	807	2173
14556	〃	13:42	14:12	4.97	5.09	12.9	1735	3680	3613	451	58	1827	4690	632	1513
14557	〃	15:04	16:39	4.96	5.09	23.3	3297	8001	7872	858	200	3582	73147	7046	8 3705
14558	〃	16:39	ca 17.20	3.36	3.46		2892			752	94.8	3272	5521		
14559	〃	18:52	19:21	5.01	5.08	20.3	1651	4029	3947	429	87	1791	5752	645	1855
14563	〃	20:30	21:14	5.02	4.90	26.7	2661	8002	7859	692	185	2332	5375	830	3823
14566	〃	21.20	21.57	4.21	4.10	9.8/	2166	4109	3934	563	55	2243	4315	702	1168
14567	〃	22.01	23.12	3.78	3.68	8.9	4143	7545	7084	1078	96	4489	7056	7314	4306
14568	30/7/83	1:44	2:06	4.94	5.07	13.2	1208	2656	2586	317	42	1283	3133	446	1031
14569	〃	2:46	3:52	5.29	5.30	11.7	3879	8001	7762	1010	118	4161	9041	1288	3063
14570	〃	3:57	5:05	3.90	3.92	2.7	4221	8001	7593	1099	104	4696	7835	1410	2292
14571	〃	5:05	5:48	3.26	3.27	7.9	2563	4516	4229	667	52	2805	3874	861	1080
14572	〃	6:20	7:19	5.12	5.23	14.4	3436	8002	7715	894	129	4183	9313	1325	2784
14573	〃	7:20	0821	4.17	4.25	11.2	3700	8002	7652	963	108	4542	8157	1376	2223
14574	〃	0822	0929	3.58	3.63	9.8	4002	8002	7579	1042	102	4789	7511	1384	1938
14575	〃	0929	0945	3.10	3.15	8.3	915	1789	1691	238	20	1050	1502	342	393
14576	〃	1251	1356	5.00	5.25	11.4	3886	8001	7744	1012	116	4193	9227 9227	1269	2712
14577	〃	1357	1502	3.94	4.10	9.8	3898	8002	7626	1015	100	4631	7566	1334	2020
14578	〃	1502	1525	3.34	3.46	9.0	1327	2636	2483	346	31	1582	2292	445	579
14579	〃	16:49	16:59	4.94	5.01	18.3	586	1356	1321	153	28	629	1741	203	615
14580	〃	17:04	17:09	4.60	4.64	11.4	267	619	596	69	8	283	636	95	191
14581	〃	19:35	20:43	5.06	4.89	11.0	4025	8001	7726	1048	115	4154	9035	1291	2622
14582	〃	20:43	21:55	3.95	3.77	9.3	4284	8002	7623	1115	104	4588	8085	1291	2242
14583	〃	21:55	22:12	3.30	3.12	7.0	1004	1880	1784	261	23	1117	1806	316	481
14584	〃	22:40	23:46	4.55	5.05	10.8	3926 8002	8002 7715	7775	1022	111	4365	8607	1339	2602
14585	〃	23:47	23:51	3.66	4.05	10.1	252	523	501	66	7	268	535	79	175
14586	〃	23:52	1:11	3.59	3.98	8.0	4653	8002	7635	1210	96	4883	7155	1474	164
14587	3/8/83	1:12	1:21	2.94	3.26	7.3	534	901	852	138	10	569	738	179	197
14588	〃	1:24	1:35	2-24	2.49	6.0	611	926	861	159	9	634	649	185	163
14589	〃	3:05	3:17	5.19	4.46	11.9	595	1186	1164	154	18	567	1492	170	551

N50	MIP	TOF	<L> $\times 10^{30}$	$\int L dt$ Bhabha Run	$\int L dt$ Exp	IBM/ TAPE	BP [V]	T_2 Rej Fr. (%)	Ev Bhabha Σ	MH	E_{beam}	REMARKS
ON	ON	ON	1.83	3.63	32.19	IBM	1.3	66	32	1	19.895	
〃	〃	〃	1.58	0.45	32.64	〃	1.3	68	4	0	〃	Beams dumped
〃	〃	〃	2.19	1.99	19.89	〃	~2.0	60	15	1	21.515	Beams lost
〃	〃	〃	3.17	8.35	28.24	〃	2.8	65	63	1	〃	Beams lost
〃	〃	〃	3.08	4.11	32.35	〃	2.75	66	31	0	〃	Beams lost
〃	〃	〃	2.15	6.49	38.84	〃	2.6	77	49	3	4	Normal end
〃	〃	〃	0.81	1.99	40.83	〃					〃	Beams dumped Need Logon Data from Panel or TV
〃	〃	〃	2.57	4.24	45.07	〃	2.75	67	30	0	〃	Beam Lost. Runs 14560 - 14562: No data, Need problem.
〃	off	off	2.46	6.49	50.56	〃	2.6	—	49	7	〃	During Need reload, Mprocs was off.
〃	on	on	2.28	4.51	55.07	〃	2.3	61%	34	0	〃	Run 14564 - 565: forget them!
〃	on	on	1.10	6.24	6.24	〃	2.1	67%	47	7	21.530	Energy raised ~~during~~ with beams staying in
〃	〃	〃	3.16	4.91	11.15	〃	2.75	62%	37	1	〃	Beam lost
〃	〃	〃	3.01	11.41	22.56	〃	2.80	62%	86	3	〃	
〃	〃	〃	1.98	8.89	31.45	〃	2.1	62%	67	1	〃	
〃	〃	〃	1.56	3.58	35.03	〃	1.85	61%	27	0	〃	Beams dumped Beam of the Lumi
〃	〃	〃	3.0	11.41	46.44	〃	2.7	65%	86	0	〃	
〃	〃	〃	2.15	7.96	53.40	〃	2.2	62%	60	3	〃	
〃	〃	〃	1.60	6.50	59.90	〃	1.75	62%	49	2	〃	
〃	〃	〃	1.39	1.06	60.96	〃	1.75	57%	8	0	〃	Change energy ; dump beams
〃	〃	〃	3.04	10.50	10.50	〃	2.35	64%	79	2	21.565	
〃	〃	〃	2.09	7.97	18.47	〃	2.1	60%	60	2	〃	
〃	〃	〃	1.56	1.73	20.20	〃	1.8	60%	13	0	〃	Lost beams
〃	〃	〃	3.22	1.06	21.26	〃	2.7	66	8	0	〃	NO TRIGGER
〃	〃	〃	3.03	1.73	~~2~~	〃	2.5	59	13	0	21.530	Energy changed ! at the end of RUN
〃	〃	〃	2.87	12.76	34.02	〃	2.6	63	96	3	21.545	
〃	〃	〃	1.99	9.04	43.06	〃	2.3	63	68	2	〃	
〃	〃	〃	1.57	1.46	44.52	〃	1.8	63	11	0	〃	Beams dumped
〃	〃	〃	2.65	11.29	55.81	〃	2.5	63	85	3	〃	
〃	〃	〃	2.37	0.13	55.94	〃	2.0	60	1	0	〃	
〃	〃	〃	1.95	9.47	9.47	〃	1.8	61	71	1	21.590	
〃	〃	〃	1.64	0.93	10.40	〃	1.6	61	7	0	21.596	Run stopped for energy change
〃	〃	〃	0.77	0.40	0.40	〃	~1.6	62	3	0	21.626	Temporary energy change Beams dumped
〃	〃	〃	3.36	1.87	12.27	〃	2.8	64	14	3	21.590	Beams lost
					Total Sum	83.7	110	nb^{-1}				

by it a sudden a swell condition: 1.7 Volt BP, Deadtime & around 7% (Beams 2x 3.2 mA)
Hamm at PKR says: Hopefully we can leave it ~~that~~ in that position. But current goes down linearly instead of exponentially. Kado's boss (e⁻ side) gives yellow light!
For the moment Histogram percentage up to 100 %. (New adventure game: Find the case where the % number lies!)

17.05 Since current ran down to .2T. 3 mA and Lumi ∝ 1 × E30, we decide to have a new fill at 17.15.

17.20 Possible cause of low beam lifetime: transmitter out of phase. She do a re-phasing program which may take to ~~the~~ then command "Down" which was displayed, NORD hangup. Console Printout TRANSM!! plus some 30 random characters. NORD lamps: Interrupt, Paging, Protect Ring 1 2 + 0; Level 7 Segment Flickering between 08 - 12 - 14 (distinguishable with Stop - Continue etc.) Other Lamps Steady
Reload NORD and Conf. 2DAS 7. Attempts to ~~she~~ display histogs of last run produced histogs of Run 14542.

During Injection the T1TEST Program was run and detected an error in the TOF Latch for TOF ~~28~~ 29 - 35; (N = 8.) If (six or more "ones" were written into it (but only then!) (maximum 7) there was a chance of about 1/4 to loose about half of the bits. It is not clear whether this happened also for bits loaded from the front. The module was replaced by another one. Test programs o.k. now!

18.20 Beams up again! till 19.27 then lost.

19.30 Short break

20.20 Beams up again. NORD problem; After the Run-Start-procedure it went as far as to print the proper line on the console, accepted ~~f~~ about 3 events then nothing happened. Command terminal responded to F1, same game again. Cured by the procedure written on the yellow sheet with green tape. b) EXIT etc.
(~~If~~ I remember right, the TV said RUN.....was Last, and ~~once~~ on occasions the message "No trigger bits" flashed up.)

20,31 High deadtime, 40%. Histogram fraction reduced to 50%. Deadtime down to 28%. (This was random; up to 38% again) after optimisation for TASSO, Deadtime down to 23 %.

21.00 Stop & Go traffic at IBM; High deadtime.

Note: The NORD Problem before Run 14563 caused the MIPROC's to go off.
~~f~~ maybe cause! → This was unfortun. not noticed during Run 14563

Inverse Nanobarn Poll: Point 21.515 CELLO 43 JADE 50,56 TASSO ~~47~~ 51 Mark J 66
Hardware Problems
Takes no data at present

21.25; Collimators in: Fine conditions: DT 9.7 % | So we take another ca 7 nb. for CELLO.

21.40 TASSO call (Neumann): They have enough data for the present point, but have trigger problems and cannot take data. They asked for a chance of repair. We agreed until the end of fill.

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

21.57. Run Stop. Energy Rise. At Run Stop Console Message: DISC Drum Transfer Error
TV-Display says "DISPLAY DRAWING N50 Hist." which is a lie

22.40 Extremely low life times of beam (7h) with unknown reason. DUMP pending.
Before dumping, PETRA wants to find the cause.

24⁰⁰ = 0⁰⁰ Minke + Takeda on shift: waiting for new fill

08:00 Murphy / Zinnge on shift

08 30. Integrated luminosity so far at this energy since last night: JADE 53.4 nb⁻¹
CELLO 38
Mk J 39.4
TASSO 45
175.8 nb⁻¹

0930 JADE 59.9, CELLO 46, MkJ 42, TASSO 53.5; Σ = 199.4 nb⁻¹.
So we request beam dump, increase energy. In any case the yellow lights have come on.

0943. Increase PETRA energy to 21.545. Stop RUN 14575.

11⁴³ Vacuum leak in the North

11 56 There is now no leak, but PKR say they have to increase the RF power very slowly

1248 Start run at 21.545 GeV (run 14576). BP water is 2.85 V.

16⁰⁰ Takeshita & Haidt on shift

16³⁵ Filling at 21.545 GeV ready

17²⁰ Stop and restart run because of 'NO TRIGGER' with ERROR37: I6X ERROR

17⁰³ Last run has only 21.515 and 21.530 GeV

21.50 We asked PKR to dump the beams at 22:10.

23:30 TASSO PROPOSED TO GO UP 21.590 GeV at NEXT FILLING.
We asks other experiment, CELLO 35, TASSO, 50, JADE 55 MARJ 50 : SUM 190

23:38 We ask to PKR next ~~e~~energy at 23:50 to 21.590 GeV.

23.49 Now at 21.590 GeV (new run 14586)

31/7/83

0:00 Chin + Bowdery on shift

-01:20 "Energy Change" message unexpectedly appears on the PETRA monitor. We phone PKR and they say that there will be a temporary energy change for reasons relating to the transmitters. Rather surprisingly, the energy goes up to 21.626 GeV. (Frequency change?)

31.7.83

Anyway the experiments have all agreed to a new fill. PKR will reset the energy and then dump.

01:34 Beams dumped.
2:30 Short break because of a broken transmitter.
3:05 New fill ready
3:17 Beams lost
PETRA has a computer problem (SEDAC system)
5:40 PKR announce restart at 07:00 ⇒ This means there will be no more luminosity runs this run period.

Shift crew run down the magnet prior to making their departure.

Status: Magnet OFF , JDAS OFF

6:00 Here ends the first 1983 run period. Long live the second 1983 run period!

8:00 all pumps, except heat shield, are switched off
all DLP pow supplies switched off R. Felst

Autumn '83

12.9.83
15:40 Magnet to 2500 A to test ID-High Voltage, $T_{in} = 40°C$, $T_{out} = 68°C$ (Magnet water).
17:30 Magnet power off, magnet water pumps off
Rimkus

24.9.83
16:10 Magnet auf 2500 A auf Wunsch Herrn Jegel's
22:00 magnet O.K. R. Felst
23:00 maquet O.K. H. TAKEDA

25.9.83
8:00 Wasserschaden DESY, Wieder Betrieb? magnet turned down (Treacher) inlator off
magnet coil pumps ~~off~~ on R. Felst

25.9.83
1509 (wintertime) magnet → 2500 A. according to PKR request.
1915 Magnet again at 2500 A. DL8 system has been checked. Mem crate 11 without power, will be repaired. There is a problem with AC2099's, to be investigated. M. Ohm

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks

25.9.83
14:50 Mem-crate 11 – power restored. (30A fuse). Booster fan was shorted – replaced. AB.
21:30 Magnet 0.15 2500 A, R. Felst

26.9.83 8:00 (winter time) Hills and Heros

8:38 Beate has appointed TASSO as co-ordinator

Nord Disc backup & directory regeneration done ok

10:45 Break until 17:15 : wakeleak LINAC
12.30 BP HV set to disc value.
14:40 magnet current to 1250 A
14:45 Mem crate 7 without power. Error symbol for Mumi. group
16:00 Barlow & Bartels on shift.

Nord-50 status

Default program – Has new Z-vertex package + LC block number corrections
OLD-N50DAR – Version we ran with at end last session.

Analysis :- All should be selected except pattern recognition. Histograms at 25%.
Rejection :- J.O. Cosmics & Zorn Cosmics should be on – rest off.

HEM

17:20 Trouble with linac + DESY no e+
16:30-18:00 Disk Ø broken. Hr. Teske diagnozes probable head crash (over telephone). We now run on the second Disk, backup since this morning. The broken disc is not to be touched until tomorrow, when Hr Teske comes.

19:40 2 x 3.7 mA at 21.503 GeV
runs up marginal, worse wpc chambers
various DL8-failures caused by touching cables + units.
work on missing TOF's
About every 10-15 Mins we get time outs from DL8's at various places.
DL8 #17 in crate 4, branch 6 switched off (Start out)

26.9.83

Dead channels TOF - TDC #40
#62

Note: There is a TOF-counter #0 on the display but no cable #0. Cables start with #1.
TOF-channel with white cable #36 is dead no signal from detector on the first patch pannel

TOF-channel (#40) with white cable #41 signals into TDC ok

22:30 Injection
TOF-Mirror 2099 has to be off, causes read errors
23:10 Call from Heinz: The Australians wone the last America's cup race and thus got the trophy. The US ship was beaten in the most exciting race of the series.

Status of JADE-debug:

① Verify that TDC-channel #40 with cable #41 is dead by swapping cables. TOF channel #35 with white cable #36 is dead no signal at patch pannel.
② check TOF-channel #62 with cable #63 (white)
~~#35 with cable #36~~
③ DL8's tend to give trouble out:
keep pressing 'Return' to continue the runs:
if a DL8 stays on (red light) or stays off all the time it is a candidate for an exchange. Try to pull it out and give the printed circuit plane a treatment ~~with~~ with the green 'DL8-eraser'
if all DL8's in the crate flicker the crate controller should be given a gentle treatment.
④ TOF-mirror 44 should stay off, it gives trouble
⑤ The lead glass has been checked by Rimkus he says it's ok
⑥ The tagging system has been checked by Meier + Wagner ok.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks

26.9.83

⑦ BP-counters have not been checked (least important)
Triggers have not been checked

⑧ No beam steering has been made yet.
PKR (Kolanoski) wants to test the new collimators only later when more stable conditions are reached and injection + acceleration is less painful.

23:50 Injection into PETRA works ok ~ 5.4 mA/beam. The beams get lost during acceleration at ~ 9-10 GeV.

27.9.83 0^{00} A. Ball, R. Felst

0^{35} e^+ 3.80 mA e^- 4.23 mA
$AL = 1.6\ 10^{30}\ cm^{-2}/sec$, $SL = 19.5\ 10^{27}$

1) TOF-counter #36 dead, HT looks OK
all others look O.K. up to the end of the discriminators, leave it to the experts

Für Beate
three HV seem also not right
according to printer

30

Für R.D.H und Kollegen

275932

1^{30} start to send data to IBM, though not everything is working properly

26.9.83

Dead channels TOF - TDC #40
#62

Note: There is a TOF-counter #0 on the display but no cable #0. Cables start with #1.
TOF-channel with white cable #36 is dead no signal from discr on the first patch pannel

TOF-channel (#40) with white cable #41 signals into TDC ok

22:30 Injection
TOF-Mirror 2099 has to be off, causes read errors
23:10 Call from Heinz: The Australians won the last America's cup race and thus got the trophy. The US ship was beaten in the most exciting race of the series.

Status of JADE-debug:

① Verify that TDC-channel #40 with cable #41 is dead by swapping cables. TOF channel #35 with white cable #36 is dead no signal at patch pannel.
② Check TOF-channel #62 with cable #63 (white)
~~#35 with cable #36~~

③ DL8's tend to give time out:
keep pressing 'Return' to continue the runs:
if a DL8 stays on (red light) or stays off all the time it is a candidate for an exchange. Try to pull it out and give the printed circuit plug a treatment ~~with~~ with the green 'DL8-eraser'
if all DL8's in the crate flicker the crate controller should be given a gentle treatment.

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26.9.83

⑦ BP-counters have not been checked (least important)
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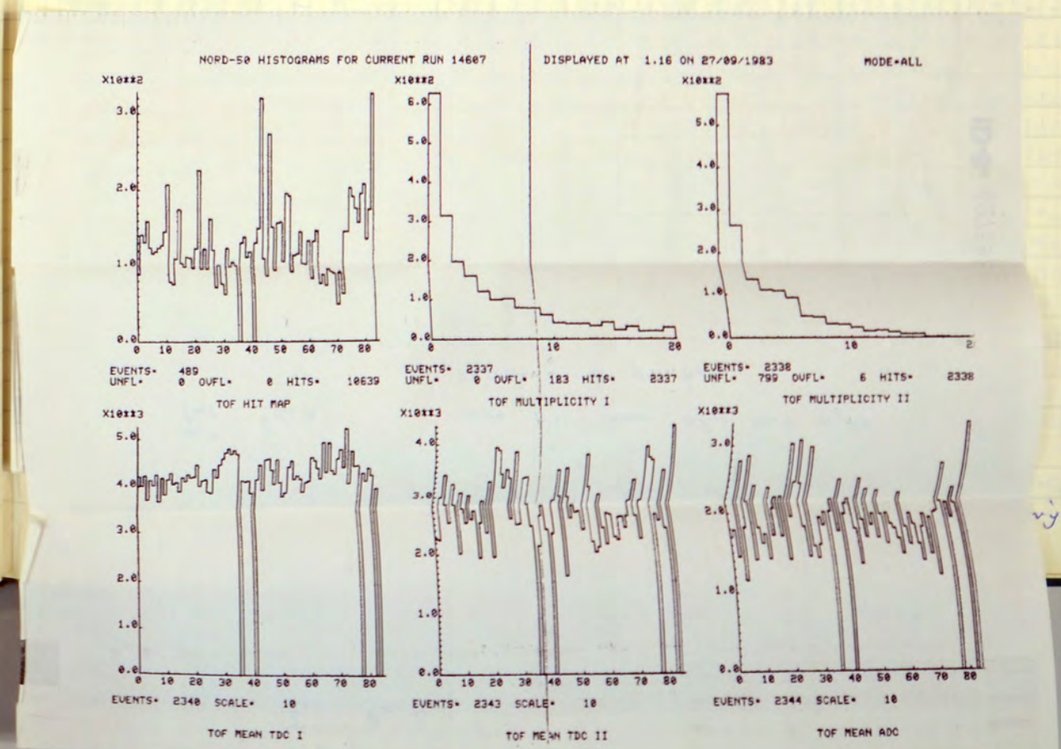
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ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T₂ Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks

⑦ BP-counter have not been checked (least important)
Trigger have not been checked

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PKR (Kobarupt) wants to test the new collimators only later when more stable conditions are reached and injection + acceleration is less painful.

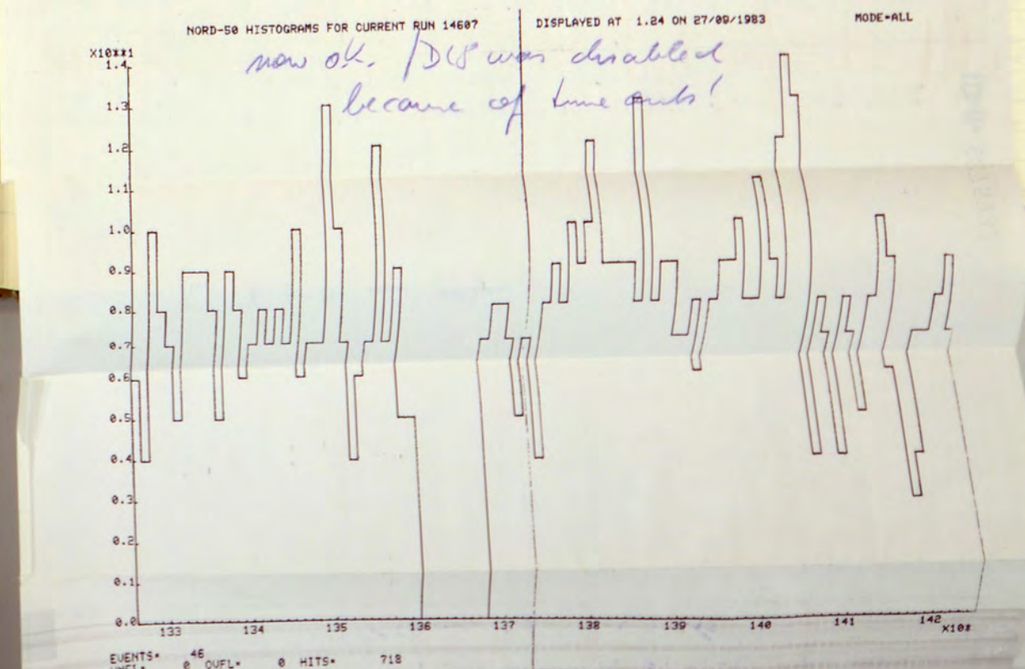
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27.9.83 0⁰⁰ A. Ball, R. Felst

0³⁵ e^+ 3.80 mA e^- 4.23 mA
$AL = 1.6\ 10^{30}\ cm^{-2}/sec$, $SL = 19.5\ 10^{28}$

1) TOF-counter #36 dead, HT looks OK
all others look O.K. up to the end of the discriminators, leave it to the experts

First Scale ~~three~~ HV seem also not right according to printer



Run	date	start	stop	I^+	I^-	% dead time	time (sec)	records in	records out	10^6 all	TO trg	T_1 occ mm	T_2 occ mm	T_2 tot 2 $E_2 > 6$ GeV	T_2 tot 17 2T · E4 · 2Tr
14607	27.9.	1^{25}	2^{02}	3.14	3.52	48	1976	7178	6552	514	249	3575	0	684	3220
14608	"	4:12	4:26	2.96	2.82	16.1	697	2393	2332	182	29	1354	0 ??	294	639
14609	TOF	CALIBRATION		RUN											
14610	"	"		"											
14611	27.9.83	15.10	15.32	3.66	3.85	27.2	1286	4516	4232	335	91	2138	0 !	543	1773
14612	28.9.83	1:02	1:15	4.08	4.08	58.3	533	1773	1730	139	81	570	0	162	857
14613	"	2:09	2:50	4.19	3.97	60.8	2249	7643	7363	585	356	2532	0	654	2998
14614	"	2:58	3:10	3.39	3.26	35.5	656	2329	2192	171	61	922	0	298	855
14615	"	3:17	3:35	3.15	3.04	29.4	1051	3704	3452	274	80	1490	0	453	1200
14616	"	6:53	7:24	3.88	3.75	40.0	1737	6019	5737	452	181	2274	0	715	2938
14617	"	8:32	8:36	4.03	4.23	25.1	186	680	646	48	12	291	0	91	255
14618–14625				I.D.	-Test runs		(mag tape)								
14626	30.9.83	17:24	17:27	3.65	3.79	86.6	108	241	237	28	24	29	0	6	74
14627	"	17:30	17:53	3.57	3.71	46.8	893	1121	1051	232	108	735	0	218	15
14628	"	21:15	21:17	3.51	3.60	45.9	92	337	318	24	11	104	0	19	200
14629	"	22^{26}	22^{36}	3.56	2.65	44.8	380	1089	1039	99	49	1906	X	110	535
14630	"	23 13	0 18	3.06	3.17	28.8	3905	8002	7002	1016	304	4017	—	954	2039
14631	1.10.83	0 19	0:55	2.48	2.57	9.2	2024	4183	3473	527	48	2591	—	545	928
14632	"	4:51	5:52	3.38	2.36	9.4	3595	7401	6373	936	88	4607	—	900	1700
14633	"	6:05	7:19	2.76	1.90	7.9	4224	7608	6239	1100	87	4837	0	960	1614
14634	"	IBM link failure after 41 events.													
14635	"	13:42	14:06	2.44	2.41	8.4	1345	2419	2039	350	29	1360	0	251	528
14636	"	14:13	14:36	2.27	2.24	8.7	1372	2505	2146	357	31	1390	0	280	587
14637	"	14:37	15:05	2.13	2.11	13.4	1586	2524	2117	413	56	1418	0	284	501
14638	"	20^{50}	22^{05}	2.6	2.5	16.7	4134	8002	6922	1076	180	4340	0	842	2945
14639	"	22^{30}	23^{32}	2.0	2.1	10.4	3653	6286	5195	951	99	3818	0	736	1437
14640	2.10.83	0:46	1:39	3.8	3.9	23.6	2471	5878	5346	642	152	3010	/	718	2071
14641	"	1:42	2:37	3.15	3.22	11.3	3338	8001	7070	869	98	4543	—	971	1984
14642	"	2:38	3:30	2.57	2.63	18.1	3069	6005	5194	799	145	3594	/	779	1452
14643	"	6:33	7:41	2.55	2.55	12.4	4542	8002	6805	1182	146	4702	/	944	2258
14644		7:50	8:54	2.10	2.12	11.2	3142	5817	4834	818	114	3588	—	710	1423
14645	"	10 11	10:34	4.17	4.26	21.2	1372	3680	3405	350	74	1895	0	487	1186
14646	"	10.36	11:26	3.80	3.89	26.1	2943	8002	7448	575	203	3701	0	915	2413
14647	"	11 37	12:06	3.03	3.12	20.2	1721	4748	4347	448	96	2317	0	573	1740

N50	MIP	TOF	<L>	∫Ldt Bhabha Run	∫Ldt Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	E_{beam}	Remarks
												TOF ok
on	on	off	0.48	0.58	0.53	IBM	2.20	?	4		21.503	3.5V first run
"	"	off	0.59	0.13	0.66	"	1.60	0	1		"	" beam lost LD trip
"	"	off	1.22	1.32	1.98	TAPE FM103	2.1	0.2	10	7	21.509	2.3V ID preamplifier voltage (#4) of one half of one side tripped during or before this run. Ring
on	on	off	1.09	0.40	2.38	IBM	2.7	0	3	0	21.500	6.5V e+ beam lost
"	"	"	0.84	2.25	4.63	"	2.7	0	17	0	"	6.0V (10V)
"	"	"	1.04	0.40	5.03	"	2.3	0	3	0	"	3.5V (10V)
"	"	"	1.02	0.66	5.69	"	2.2	0	5	1	"	3.0 (10V) beams lost.
"	"	"	1.49	2.12	7.81	"	2.2	0	16	1	"	2.7 (8V) beams lost
"	"	"	1.92	0.21	8.07	"	2.2	0	2	0	"	3.6 (10V) beam lost
"	"	"	0.29	0.00	0.00	"	1.82	0	0	0	21.575	No Trigger last 7 - Run 6 Trigger
"	"	"	1.06	0.93	0.93	"	2.2	0	7	1	"	Beams lost
"	"	"	1.38	0.18	1.06	"	2.0	0	1	0	"	Beam lost
"	"	"	0.87	0.37	1.43	"	2.0	X	2	0	"	
"	"	"	1.17	5.06	6.49	IBM	0.6	—	38	0	21.575	
"	"	"	1.37	2.13	8.62	"	0.6	—	16	2	"	beams lost.
"	"	"	1.47	6.40	15.02	"	0.6	—	48	1	"	
"	"	"	0.90	2.66 3.79	17.68	"	0.5	0	20	0	21.575	beam lost
							1.3 0.8					
												stopped after IBM link problem.
"	"	on	0.95	1.73	19.41	"	0.8	0	13	0	21.575	
"	"	on	0.80	1.47	20.88	"	0.7	0	11	1	"	stopped (collimators)
"	"	"	0.69	0.67	21.55	"	0.4	0	5	0	"	(e+ lost)
"	"	"	1.09	4.13	25.68	"	0.5	0	31	0	"	
"	"	"	0.72	1.60	27.28	"	0.45	0	12	0	"	beams lost
"	"	on	2.07	5.60	32.88	"	1.0	/	42	1	"	IBM problem
"	"	"	1.66	5.20	38.08	TAPE FM1184	0.7	—	39	1	"	TAPE FM1184
"	"	"	0.96	2.66	40.74	IBM	0.6	—	20	3	"	
"	"	"	1.02	3.34	3.34	IBM	0.8	—	25	1	21.590	new energy
"	"	"	0.67	2.10	5.44	"	0.5	—	15	1	"	Tof Rate 0.4V
"	"	"	2.68	2.27	7.71	"	0.9	—	17	0	"	stopped to retrieve all trigger input
"	"	"	1.80	5.34	13.05	"	0.85	—	40	1	"	Tof rate 2V
"	"	"	1.26	2.00	15.05	"	0.8	—	15	4	"	" " beams lost IDump

2 events triggered ineffectively, rather 24, from 020611 on

27.9.83

1 50 e^+ = 2.8 mA e^- = 3.1 mA $\int L = 0.4 \times 10^{30}$ $\int L = 10.4\ 10^{28}$ (decreasing with current)
due to background ?
μ chambers 523, 624 disconnected $I_s > 5\mu A$ — will trip entire H.T. station (besides running chambers!)
μ cham. endwall layer 5 v high background.

0200 Beam lost. ID trip

Problems from standard histograms:
1) trigger pattern changed a lot — where is the list "trigger bit ↔ trigger name" gone ?
deadtime much too high
2) TOF - counter missing #36, #41
3) beam pickup signal look funny
4) 1 DL8 missing (see ③ on page 116)
5) T3 - trigger crazy (probably due to a blown fuse - fixed)
6) Bhabha - luminosity only ~1/2 of the trigger one
7) TASSO and Mark J claim to have twice the luminosity we have - but are both not certain

2 30 problems with linac 2 magnet → 2500 A

4:05 New fill ready. Magnet → 7500 A. Start run 14608. BP 1.6 V TOF 1.1 V (3V range)
Dead time reasonable (~16%). $\int L \sim 0.6 \times 10^{30}$.

4:30 Beam lost. I.D. trip.
→ Why is 'T2 accept sum' (+ linac T2 trig w fr.) zero on run sum ???
T3 ok now.
Move LINAC 2 trouble magnet → 2000 A.

8.30 Linac 2 doesn't work, there's a vacuumproblem in the synchrotron and Mark J is in the experimental area.
TOF calibration done
DL8 being worked on by Amprus, it was tested by Matsumura and found ok.
So they put it in again.

14.55 Stable beams: 21.509 4.05 mA / 3.86 mA
BP ~22 V
TOF ~3 V
AL 1.70 · 10^{30}
run up the MAG to 7500 Amp.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

27.9.83

15.30 Background increasing. Deadtime ~40%.

I removed the trigger Tagg. Sept. < 1T because it was sky high. I changed a few TOF high voltages. So there will be error messages from the high voltage program. But I would like to get a TOF TDC bit map before I change values!

16.00 M. Olsson + R. Diekmann

Disc Status

This morning Herr Teske checked the Far disc. No head crash - the pack seemed to be damaged. After some "Finger trouble" we put the scratch pack on the drive, formatted & checked it and then copied BACKUP C (which had been running through the night) to the Scratch. This worked. So we now run on the scratch pack on the Far drive. We should probably purchase two new packs. HEA

28/09/83 00:00 Riesberg ; Fünfl

States at the beginning of the shift:
Last stable beams were lost 8 hours ago
Since then all beams got lost during acceleration
Our magnet is at 7500 A
ID: All missing wires (in Run # 14611 only) are present with pattern (RDH)

0:43 Looks promissing: Beams at 21.546 V, Switch on counters
BP-rate 2.5V, TOF-rate 6.5 (range 10V) high.
I^+ = 4.30, I^- = 4.28 mA
PKR: No background optimization for the time being. Try to switch on detector
ID-Anode current ~~supposed~~ very high

1:02 Run 14612 started
I^+ = 4.07, I^- = 4.07 mA
BP-rate 2.7V
TOF-rate 6.5 V (range 10V) } fluctuations
AL = 1.13×10^{30} Deadtime 57% !
Deadtime meter fluctuates 40% to 70%

BW Color TV screen full of error messages
Jet chamber high current channels 13, 21 and others
YSPY : TOF TDC no hits in 40 etc, etc

1[15] e^+ beam lost. Mean current in Ring 1 was 4 μA
Conclusion : Extremly bad beam conditions.

2[05] New fill ready. I^+ = 4.23 I^- = 4.02 mA E_{beam} 21.500
BP = 2.4 V
TOF = 4.5 V (range 10 V) → 6 V

Run 14613 started
AL = $0.47 \cdot 10^{30}$, SL = 3.72×10^{28} low!
Dead time 77 %

→ Again terrible background
Run stopped because of time outs in DL8 # 170.

3[17] Run 14615 started I^+ = 3.15 I^- = 3.04 BP = 2.2 V TOF = 2.9 V (10 V) or 2.3 V (3 V)
AL = 1.13×10^{30}, SL = 24.3×10^{28}, Dead time 30 %

3[35] beams lost.

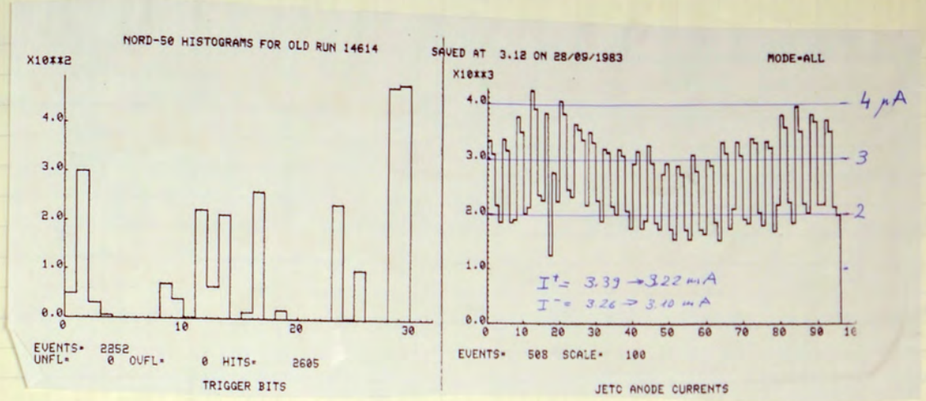
Our chamber current is about a factor 1.5 higher, and the deadtime is about a factor 3 higher than under similar conditions in July.

Tasso says that their background conditions are not bad, but still worse than in July. They can take data. The Trigger rate is 4 Hz (ours 10 Hz and higher) and their deadtime is around 18 %

→ Our background has to be minimized by beam steering. Wait for better (cleaner) machine. Eventually we have to pull out one or two more triggers.

Note on histograms: Positron timing and electron timing are on the edge or outside of the histograms 10, 77, 78

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks



6[50] New fill is ready I^+ = 3.91 I^- = 3.78
BP = 2.1 V
TOF = 2.5 (3 V) ⇒ 3.1 (10 V) much better

Run 14616 Deadtime 25 %

7[05] TOF = 5 V (10 V) ; deadtime 40–60 %
AL = 1.65×10^{30}
SL = 24.7×10^{28}
TCOR = 12.6/sec 369 Signal hits/event

7[23] beams lost.

08.00 Wednesday 28/9/83 Alfred Petersen & Fred Loebinger.

08.30 Stable beams I^+ = 4.03 I^- = 4.23
BP = 7.2 V TOF = 3.6 V (10 V)

8.40 beams lost. Transmitter fault. At least 1 hour breaks
Magnet down to 2500 Amps.
Krehbiel's disco lights in the hall have been disconnected as they represented a fire hazard.

09.30 Beate removes trigger bit 26 (Tagg. ITB4) from trigger.

14.20 Power failure.

15.00 Power back.
μ system gas + H.T. switched back on O.K.
Magnet back on (1000A).
NOMAD back on
Lead Glass back on

-Ve tryggers in Run summary probably due to faulty scalar/scalar input. (PKR)

16.00 Baines, Weber on shift
16:41 PKR estimate ~~to repair~~ will take 3→4 hours.

IN CROSS-SECTION SUBCONTEXT GET FATAL RUN TIME ERROR WHEN TRYING TO LIST DATA.

19:48 problem with linac 1 and synchrotron power supply.
20:20 PKR finally admits, there could be no luminosity before 2300 hrs., most likely not before tomorrow morning.
23:30 PROBLEMS WITH INJECTION ~~CONTINUE~~ PKR CAN GIVE NO ESTIMATE OF RESTART TIME.
24⁰⁰ PKR says could be 2 hours to fix things, could be Tomorrow morning.
29.9.83 Barlow on shift.
5⁰⁰ "Injection" – but nothing is injected.

8⁰⁰ R. Felst and H. Rieseberg on shift.

At the big PETRA-computer crash yesterday afternoon (at the power failure), the new file for the injection line (bidders etc.) got lost. Though there is some beam in the injection pipe, their phase is wrong.

Herr Hase exchanges terminal # 9
~13³⁰ Change of PETRA from injection energy to 1.228 GeV. No hope for injection?

Activities: to - pulser runs to tape RDH
z - trigger tests JO., Riege, ~~Bastian~~

16⁰⁰ H. Matsumura for A. Ball & A. Wagner
18⁰⁰ A. Ball & A. Wagner
~20⁰⁰ 5mA on 5mA at 7 GeV = progress

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev F_T (%)	Bhabha Σ	MH	Ebeam	Remarks

0.00 Friday 30/9/83 Thomas Hagestedt & Fred Loebinger

00.30 We have beams at 21.57s, but they are thought to be bad. However it is agreed that we keep them for ~½ hr to get things going before the dump and refill. Try to switch counters on. BP & TOF have to be put on manually, they will not switch on with normal automatic procedure.
Backgrounds are terrible BP ~ 7 V, TOF 12 V (30 V scale). [I^+ ~ 3.5mA, I^- ~ 2.5A]
01.05 Beams lost

Subsequent attempts to switch on BP & TOF counters worked automatically from c/room

06.20 New beams, but our backgrounds impossible
BP ~ 5 V, TOF 11 V (30 V scale) [I^+ 2.24 mA, I^- = 3.05 mA]
06.25 Beams dumped.

PKR happy for us to leave our magnet at 1600 A during injection ~~test~~ attempts

07.30 New beams BP ~ 3.5 V, TOF 8.5 V (10 V scale) [I^+ 2.16 mA, I^- 2.27 mA]
Run magnet up to 7500 A.

07.40 Backgrounds now much better BP ~ 1.8 V, TOF ~ 1.6 V (3 V scale).
Try to switch I.D on get H.V. Input alarm. – reset O.K & then switch on works.
07.48 Try to start run!!! — get "No trigger bits".
07.50 Beams lost.

8⁵⁰ Warming & Takeda on shift
9³⁰ Seem solved the "no trigger bit" problem: one power supply had not been reactivated after the yesterday power failure

12⁰⁰ no beams so far, trouble with Linac 1
Restart 15⁰⁰.

16⁰⁰ Cords & Chin on shift.
17 23 Start Run 14626
17 35 Get ch. High Current Finally Part 29.
17 26 No triggers Level 7 – Pause Run & Restart to cure. Does not cure it.
Now trying – Stop Run.

17:29 Run 14626 Stopped, because of No Triggers level 1.

17:30 Run 14627 started. Some problems. no triggers level 1. Pause Run.

Also YSIY error 2) HV Wrong.

Restart Run – still no triggers level 1. Pause Run

17:35 Restart Run.
17:36 I BH Error 53
17:38 O. Key Now.
17:53 Beams lost

22:20 LG linear sum power supply failure: The control box was replaced. (Minder Hamacher)

23:10 after Run # 14629 DL8 #170 (wires 1360-67) replaced. Timeout error. Rubber helps only for a few hours. Rbg.

The mean anode current in the ID is still very high; 3.5 μA/cell at $I^+ = 2.9$, $I^- = 3.1$ mA. Resolution is bad, dE/dx is impossible, lifetime unknown. R

Problems

1.) TOF counters: 2 missing
4-5 have ø<TDC>
HV needs to be adjusted
2.) beam pick-up: signals are shifted
3.) histograms for e^+ fanout, e^+ (NIM UNIT), e^- (NIM UNIT) are empty
4.) NONSENSE ON RUN-SUMMARY FOR T2 SUM & REJ. EV. FRACTION

1st October 1983

00:00 Matsumura & McCann

00:19 At start of run 14631, get several TOF HV warnings on console – but manual readings wildly contradict the console output. No action taken yet.

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

06:30 When new fill is ready, we have trouble switching on due to TOF & BP HV.
– eventually we discover that we only requird to reset mainframe 54.
But why didn't it properly reset automatically?

04:50 finally switched on. This time, no TOF/BP HV error messages on system console.
– but the errors do come eventually, and even more than usual.
In particular, now have CAMAC MAGNET reading error – the magnet current reading in the HV room looks OK, so we continue.

05:05 Problem in LG bitmap barrel II. See folder.
05:50 Run 14632 stopped due to I.D. Ring 3 trimcoils.

LG bitmap barrell II is OK in new run. DL8 # 178 replaced

07:10 TASSO say that all of the other experiment have collected ~40–45 nb⁻¹, whereas we have only collected ~17 nb⁻¹ (@ 21.575 GeV). Despite our problems, there is no way this can be true if the beam conditions are ~equal at all intersection regions. So maybe that's why we have much low BG – PKR are steering the beams round about us! We complain to PKR and they say they will try to sort it out in the next filling.
— KEEP PESTERING THEM. IT'S PROBABLY NO ACCIDENT, SINCE TASSO ARE COORDINATING AND THEY ARE OPPOSITE US!

07:15 Beams lost.

07:40 Summary of current problems:
(i) 2 bins are empty in the TOF bit map
– associated (probably) are holes in TOF <TDC> I and II and Trigger 1 I/P and op holes and trigger 2 I/P hole.
(ii) POSITRON FANOUT and ELECTRON/POSITRON (NIM UNIT) histograms are empty.
(iii) Error reports for TOF/BP/TAGG HV keep appearing on system console.
(iv) Nonsense on run summary for T2 SUM and REJ. EV. FRACTION.
(v) Intermittent LG barrel problem ?? — KEEP WATCHING LG barrel bitmap – once per run.

08:00 Ball, Becker.
'Short' break – magnet → 2500 A.
09:05 PKR: magnet → 4500 A
REFORM job submitted

9^{30} Talk to TASSO about Lumi discrepancy:
The statement that the other experiments have 40-45 nb^{-1} was based on a measurement of CELLO only.
MARK J has 28 nb^{-1}
TASSO had a problem they have 22-25 nb^{-1}
Thus no reason to worry our lumi measurement runs ok also compared to previous runs of last summer.

Background:

When stable conditions are established with the beams optimized in our interest. We should ask PKR to close the collimators:

nominal opening 12 mm

'Nord-West links und rechts no. 31'
horizontal
That are "collimators in the ring, which should reduce the flow of off-momentum particles and thus mainly influence our dead time.

W. Bartel

13:17 Beams ready at 21.575 GeV. BP ~ 1.3V TOF 45 (10V range)
Start run 14634 — after 40 events IBM error. Doesn't go away. Jet-chamber current is high.
Stop the run: 38 events to TAPE.
Try I.D again — current off scale so switch off immediately and inform PKR. They will try to optimize.

13:38 BP now 0.7V, TOF 15 V. Jet C. current looks much better. Start run 14635.
Dead time 8%. I.D. anode current around channels 10-30 on histogram still quite high (max 30)
Several HV errors reported by YVOLTS. Minor(?) voltage differences (~100V) channels 2,13,15,18 MFR 54
channel 27, MFR 55. Attempting to reset using F14 autocontinue results in error message from YVOLTS
- mixed MFR or channel.

14:00 Will now try the collimators referred to above. Stop run (DT was 8%, BP 0.7, TOF 1.5)
Run down I.D just in case. This run 14635 has ~ 2000 records onto. ~~By~~ Run 14636 with collims in.
No effect on TOF & B.P. rate — run up I.D: current looks about the same — almost full scale. Dead time ~ 95% — slightly worse. Background in jet chambers unaltered.
Take about 2000 events in this run for an check comparison.

ON/OFF N50, MIP, TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

Open collimators again. Since the dead-time was low anyway, it was unreasonable to expect much improvement. However, at least they don't make things worse!

14:37 Start run. 14637

15:00 Lumi: JADE : 0.8 $\times 10^{30}$
TASSO : 1.5 " "
CELLO : 0.8 " "
MARK J : 1. (±0.2) " "

15:04 Beam lost. Run 14637 ended.

16^{00} - 24^{00} Meinke, Yamada

20^{50} The TV screen shows luminosity-Run BUT there was no ~~sting~~ sign of "switch on high voltage" with acoustic signal!
again HV errors detected by YVOLTS, MFR 53: ch. 0, MFR 54: ch's: 13, 15, 18, 27

Part of HV System TOF/TAC is not read out, disregard error messages!
I shall try to fix it on Monday.

22^{30} Lumi: TASSO = 1.3 · 10^{30} cm^{-2}s^{-1}
JADE = .85 "

22^{40} "IBM" BUSY occured for the 4-th time since 2 hours.
23^{20} Beam lost

2. Oct. 1983.
0:00 ~ Minowa, Sato
Injection
0:46 Run 14640 start.
1:20 ~ IBM BUSY continually, IBM DOWN is coming and going,
1:39
STOP Run 14640 ~~1:39~~
START Run 14641 writing to TAPE
found PETRA Information link down is also
2:38 start Run 14642, use IBM LINK, OK

2.10.83

3:13 Tasso says Σ Lumi (all PETRA) ≒ 240 nb^{-1} at Eb = 21.575 GeV.
and proposes to go up in the next filling
JADE has 40 nb^{-1},
We agree to change the Eb because we had 54nb^{-1} at this Eb in July.

7:20 Tel. From TASSO: Machine group want to study of some instability occured at this energy. It takes ~2 hours after this filling.

8^{00} Finch, Olsson ~~~ IBM busy ~100 seconds
latches 2:1, read out error, DMA Time out.

10^{30} I found one T2-cable in the Rucksack not connected (segm. 24, wire 2). This must have been disconnected since begin of this period. OK from Run 14646 on. Why did nobody see the ~~robot~~ hole in the T2 input histogram? Why didn't YSPY see it? RDH - Turned off! seep 136
TOF counter 13 found without HV (Teletype printout, T1 missing input YSPY). Reset HV in Detector control → OK.
IBM busy for long periods (>100 secs) happens rather frequently. IBM operator doesn't know anything. This should be checked with IBM experts!
Muon crate 1 frequently appears missing, for few seconds.

11:33 Problems with DL8. Pull Nr 92 out, rubb contacts → OK.

12:39 Beathe rang to say: High volt error messages (TOF/TAC) should no longer occur - if they do WORRY ABOUT IT!

15^{00} Small beam loss, Sender-Busfail. Message that we shall remain on standby. Beam energy now 21.662 GeV acc. to Monitor. This was due to freq. change → to save the beam. A few events with this energy are in data of R 14648-9
Observation(?): After ID-trip, the first start up attempt gives HV-input alarm. It can be reset at once and 2nd attempt is successful. This happened now ~~twice~~ thrice.
TASSO reports having 23 nb^{-1}, we have 18.
IBM Busy very frequent during last hour: 15-17^{30} Calling experiments: TASSO, Cello, XBall, Argus: none is responsible. There are still 3 online modules operating: TAV, MKO, ARV. TAV is FS VAX (not guilty, they pleade), MKO is a machine group module (PKR doesn't know) and ARV is probably a ARGUS module. For this info, use Newlib. (CC ONLINE))

ON/OFF N50, MIP, TOF	<L> ×10^{30}	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

Spitzer/Zschorn on shift

1^{10} Start run 14652 after a long injection.
"IBM busy" happened again, though PKR had killed their program.

1^{20} Muon crate 1 frequently off. ~~MIP~~ (for a short time only)
1^{30} Jet ch. high current (faulty part 17) appears frequently
2^{00} Yellow "beam disco-light" is on but everything seems to be o.k.
2^{15} This IBM problem still appears and it's the reason for the high dead time
2^{15} DMA timeout readout err. branch 2 crate 4
2^{55} XSPY detected error, "Trigger 3 I/P missing = ST34 GP4"
We can't see anything wrong at Trigger 3 I/P histogram

3.10.83 0^{00} Detroit on shift

0:55 Beam lost. → Break
3:88 Restart
4:20 IBM busy Error 53, linked again

5:25 TASSO requested new fill

8^{00} Yamada & Heidt on shift

8^{14} IBM error 53
8^{29} IBM error 53
8^{34} IBM error 53
8^{35} " / 3DAS error 44 - timeout branch 2 crate 1 : latches
9^{00} ID anode current histogr. looks funny. Dark content per event ok. Reload 2DAS ⇒ this histogram ok again RDH
9^{25} IBM error : call Mündemann
10^{11} YSPY : trigger 1 output missing 45
Run summary 14660 did not come out automatically
10 35 IBM BUSY
11 No refill until 6 p.m. (injection impossible)
11^{10} TOF HV was down for about 30 minutes since end of the run 14660.
YSPY detected a missing Trig. I out put in RUN 14661.
12^{20} Beam lost, ring magnet down to 1000 A

Run	date	start	stop	I^+	I^-	% dead time	[sec] time	Records In	Records out	10^6 All	$\frac{10^6}{TD}$ Rej	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_1 > 6GeV$	T_2 Bit 17 $2T_0 E_4 2T_0$
14648	2/10	14⁴⁶	15⁰⁶	3,45	3,11	20.5	913	2436	2239	237	49	1135	–	959	950
14649	"	15⁰⁶	15¹⁰	3,41	3,08	14,1	175	481	421	45	6	232	—	42	149
14650	"	15¹⁰	16¹¹	3.41	3.07	13.0	3218	8002	7056	837	109	4174	–	976	2451
14651	-"-	16¹²	17⁰⁶	2.66	2.24	27.2	2928	5966	5229	762	207	3148	–	771	2008
14652	-"-	19⁰⁹	19⁵⁸	3.84	3.84	21.8	2930	8002	7386	763	166	3765	–	988	2992
14653	-"-	19⁵⁸	20⁴⁵	3.27	3.27	18.7	2778	8002	7344	723	143	3695	–	1047	3089
14654	-"-	20⁴⁶	21²²	2.81	2.82	24.4	2791	6163	5571	726	177	3356	–	893	1876
14655	-"-	22:55	23:47	4.20	3.89	29.6	2975	8001	7435	773	228	3694	–	1094	3504
14656	"	23.47	0.55	3.47	3.25	16.2	3071	7468	6648	758	129	4140	–	1173	1998
14657	3.10.	3:58	5:26	3.03	2.85	13.0	4672	8001	6734	1214	157	5028	~	1125	1438
14658	"	5:28	5:54	2.33	2.23	7.9	331	646	543	86	6.8	431	–	116	89
14659	"	8:06	8⁵⁸	3.13	2.84	32.6%	3043	8002	7486	792	298	3539	–	1024	5142 (?)
14660	"	9:01	10:22	2.69	2.47	17.6	4856	8002	6670	1264	223	5257	–	1364	1361
14661	"	10:23	12:00	2.20	2.01	31.7	5779	7512	6116	1504	476	5324	–	1311	1049
14665	4.10	11:03	11:59	2.58	2.56	16.9	3121	6469	5610	812	137	3410	–	833	4724
RUNS		14662	–	14664	*	14666	ARE	JUNK							
14667	4.10	14:19	14:52	3.8	3.8	29.8	1862	6360	6034	485	144	2107	–	607	2419
14668	4.10	14:55	15:15	~~3.2~~ 3.3	~~3.2~~ 3.2	30.8	1152	3231	2993	300	92	1255	–	334	2256
14669	"	15:17	15:57	3.16	3.12	35.2	1873	4227	3654	484	172	1940	–	486	1774
14670	"	17:11	17:38	3.78	3.62	40.7	~~1662~~	~~4135~~	3844	417	170	1762	–	520	~~3~~1627
14671	"	17:40	17:53	3.43	3.30	22.2	931	2517	2344	190	42.3	973	–	254	735
14672	"	17:54	18:15	3.29	3.15	32.5	1217	2857	2598	316	102	1333	–	349	848
14673	"	18:20	18:56	3.05	2.91	35.5	2123	4284	3818	553	196	2110	–	555	1203
14674	Junk	–	–												
14675	"	18:58	19:20	2.72	2.60	12.8	1289	3284	2881	336	43	1717	–	485	~~842~~
1568	"	19:21	20:17	2.56	2.44	11.0	3332	7970	6937	867	95	4386	–	1214	~~2506~~ 1893
14677	"	21:55	22:34	3.96	3.90	46.2	520	1980	1715	135	63	663	—	214	1221
14678	"	22:54	23:40	3.91	3.67	14.8	2733	8001	7435	711	105	3651	–	1124	2788
14679	"	23:42	0:33	3.33	3.12	11.9	3052	8001	7173	793	94	4105	–	1241	2156
14680	5/10/83	0:34	0:49	2.83	2.63	10.6	925	2253	1989	240	25	1217	–	360	1362
14681	"	1:54	2:34	3.75	3.51	13.5	2360	6645	6645	614	83	3188	–	934	2254
14682	"	2:39	3:22	3.26	3.06	10.9	2629	6506	6506	683	74	3462	–	963	1620
14683	"	4:52	5:39	3.81	3.83	13.0	2571	6731	6731	669	87	3304	–	942	2214
14684	"	5:42	6:22	3.23	3.21	11.1	2345	5870	5202	610	67	3099	–	887	1550

N50	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 Fr (%)	Bhabha Σ	MH	Ebeam	Remarks
on	on	on	1,96	2.54	~~16.44~~ 17.59	1817	4.0	–	19	0	21.590	Trf tab ~ 2V
"	"	"	1,54	8,27	17.86	"		–	2	0	21.665-590	few events at end
"	"	"	1.42	5.60	23.46	"	0.7	–	42	0	21.590	Trf tab 0.8V
"	"	"	,80	2.27	25.73	"	,65	–	417	#1	21.590	beams dumped
"	"	"	2.05	5.07	30.80	"	1.05	–	38	0	21.590	
"	"	"	1.59	3.87	34.67	"	•0.8	–	29	2	"	
"	"	"	1.13	2.94	37.61	"	.75	–	22	0	"	beam lost
"	"	"	1.84	4.00	41.61	"	1.2	–	30	3	"	
"	"	"	1.35	3.87	45.48	"	.7	–	29	0	"	beam hit
"	"	"	1.22	5.07	50.55	"	0.8	–	38	1	"	
"	"	"	0.81	0.13	50.68	"	~0.5	–	1	0	"	Beam Dumped
"	"	"	0.59	1.79	52.47	"	0.9	–	11	0	"	Same Energy
"	"	"	0.81	3.95	56.42	"	"	–	32	0	"	
"	"	"	0.44	2.80	59.22	"			21	0	"	
"	"	"	0.30	2.54	2.54	"	0.6	–	19	1	21.605	Run energy
"	"	"	1.62	2.54	5.08	"	0.9	–	19	2	21.605	CAMAC CRATE PROBLEMS (CURRENTS MAY NOT BE CORRECT ON TAPE. GOOD RUN, ENDED DUE TO CAMAC CRATE PROBLEMS. CURRENTS FROM PKR MAY BE WRONG. LOST ONE PULSE, 50 BEAMS DUMPED
"	"	"	1.32	1.20	6.28	"	"	–	9	0	"	
"	"	"	0.66	0.40	6.68	"	0.7	–	3	1	"	
"	"	"	1.43	2.14	8.82	"	0.9	–	16	0	"	new fill
"	"	"	1.38	1.60	10.40	"	0.7	–	12	0	"	
"	"	"	1.16	1.60	12.00	"	0.6	–	12	0	"	
"	"	"	0.99	2.81	14.81	"	0.6	–	21	0	"	
"	"	"	1.26	1.34	16.15	"	0.6	–	10	1	"	–
"	"	"	0.92	3.07	19.22	"	0.5	–	23	0	"	Beam dumped
"	"	"	1.72	1.07	20.29	"	.8	–	8	0	"	Beam lost
"	"	"	2.89	5.75	26.04	"	.8	–	43	2	"	
"	"	"	1.45	4.81	32.85	"	.7	–	36	1	"	
"	"	"	1.32	1.20	34.05	"	.6	–	9	0	"	Beams lost
"	"	"	1.98	4.54	38.59	IBM tape	.8	–	34	2	"	N50 Rejection OFF, tape writing for tests
"	"	"	1.53	3.07	41.66	" "	.6	–	23	1	"	" " " Beams lost
"	"	"	2.06	3.87	45.53	" "	.95	–	29	0	"	
"	"	"	1.57	6.41	49.94	" "		–	33	2	"	Beams lost

3.10.83 16^{00} Howard Mills & Gus Weber on shift

17.50 "No refill before 22.00 hrs"
Wagner wants to be called at home at 23.00 in case the chances are good for luminosity at 24.00 hrs. Otherwise only TAKEDA will come at 24.00, then Wagner will come at 4.00 to-morrow morning.

Magnet had been set to 1000 amps. It slowly climbing up by itself! Cannot control via computer or hand. Informed E-group. Running down & up cures. After 20 mins it trips!

20^{30} Magnet 'Ok'

Investigating the 'Zero T_2 Sum' - Compared with old runs, entry 43 in Scalar histograms is empty - this is supposed to be T2 sum.

Can this be due to a "End of run & run summary while stand. hist are in progress?

Cross-section display problem - there is a run summary in the middle of the file. I've seen this before on occasions. Maybe a ~~garbage collection~~ regenerate directory would be a good idea (contact D.Cords).

Note - We are getting a lot of "J.O." triggers (b.t 14) - most of which are cosmics (& rejected online) but no "Zorn" triggers (b.t 15) - is there a problem?

21.12 "Restart not before 23.00 hrs." Squeckerton magnet ~~failed~~ installed and re-cabled, vacuum good, but new magnet sheds water leak; they try to fix it

22.45 PKR's estimate is now "not before midnight"

4.10.83 0^{00} Takeda on shift

"Restart not before 1:00" on the TV screen. 3:00

4^{00} A. Wagner on shift and no sign of beams
4^{15} "Restart not before 5.00"
5^{15} Error 37; 10X error } appears ~ every minute
Address 50224; level (Dec.): 1
before this: Camac error during magnet reading - MUX channel not set.

ON/OFF N50.MIP.TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

try to reload NORD-10: errors appear again - see terminal P/O.
This seems to be a DVM error -: when trying to change the magnet setting, I get as error message: YHAGN: *** DVM ERROR *** MUX CHANNEL CAN NOT BE SET.

7^{15} TV screen says now "Injection".

7^{45} After waking up D. Cords, we get instructed on how to stop the reading of the magnet (F14, F3, F7). That stops the error messages, but sets the field value to 0 Gauss, which probably upsets the analysis. Remark! B = -4.8kG in Run Summary
Experts should try to fix the problem before data taking restarts. OK!

8^{00} STEPHENS & J. WAGNER ON SHIFT
— Ball masquerading as Stephens.

08:56 New fill ready, Ramp up magnet by hand (remembering statutory 2mins pause at 5000A). Beam comp. control off. Beam energy initially 21.590 — Jasso call to suggest raising it immediately. We have 59mA!
Energy 21.605 BP 1.5V TOF 9.5V!! — electrons being steadily lost. — all gone!

10:25 New fill ready. Try to start run. Immediate NORD crash, level 9 — possibly connected with inability to set parameters due to no magnet reading? Reload NORD. Switch off magnet reading via F14. Try to start run — NORD hangs immediately. DVM/MUX or CAMAC hardware?
Fan failure in Serial Camac 3CC10. This is the reason for magnet control failure. Watch fan for further failures!
Obs! Special care must be taken if fan is to be switched on/off. STOP NORD - switch off PIO RTX - switch off fan
switch fan on - switch on PIO RTX - start up NORD.

11:20 TAGGING HV PROBLEM DURING RUN STARTUP → AUSTIN HAS RESET POWER UNITS & NOW EVERYTHING IS RUNNING FINE.

11:30 IBM BUSY FOR 93 SECONDS → SECOND ONE THIS SHIFT. → 2350 KNABBG

12:00 I.D. trip. Beams lost. Energy → 0, looks like PETRA magnet trip.

~~11:~~14:20 ANOTHER FAN FAILURE IN CAMAC 3CC10. FOLLOW INSTRUCTIONS & RESET. TAKING DATA NOW WITHOUT INFORMATION FROM PKR → CURRENTS & ENERGY PUT IN BY HAND.

14:40 YET ANOTHER FAN FAILURE → NEED TO GET THIS UNIT REPLACED. ALSO ANOTHER 97 SEC IBM WAIT.

14:45 Many of this "muon crate missing" Austin Ball is aware and is looking into the problem for the moment ignore it unless it stays on for some time.

7) 6348

Σ HV
Σ INPUT
ALARM

15:23 ID TRIP → RESET ~~ALL CONTINUE RUNS~~ → TRIPS AGAIN
RESET AGAIN & THIS TIME IT WORKS.

15:30 Discovered that the SPY-MASTER had things set up so that the T2 trigger histograms were not inspected - must have been left from last running period. All ISPY options set back to default. (HBR)

15:45 HAVE HAD ABOUT 10 90-SEC IBM BREAKS THIS AFTERNOON. COMPUTER CENTER IS NOW WELL AWARE OF THE PROBLEM. JUST LOST 1 ELECTRON BUNCH. PHONE OLSSON TO START REPLACEMENT OF CAMAC CRATE 3CC10 FAN UNIT.

16:00 Sat, Fiber on shift. Fan in serial Camac, 3CC10, now exchanged.

17:11 Run 14670 started
3 IBM BUSY ~90 sec, 120 secs, ~160 sec respectively occured.

17:38 Run 14670 stopped to check some myriac program by ~~Dr~~ D. Cords.

17:40 14671 started

18:56 ~ 'IBM ERROR 54 ---' message can't be removed.
But ~~Run~~ continues without problem.

~~20~~:05 TASSO says; ~~Beam Dump~~ Beam Dump at 20:15.

23:30 We are not experiencing "IBM BUSY" errors since about 19:00.

0:00 5/10/83 Howard Mills & Dieter Haidt on shift

New Nord-50 histograms - SYNRAD (Synchrotron Radiation measurement - counts hits on LUMI trigger events). Available under *JET-CHAMBERS

ON/OFF N50, MIP, TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks

6:15 We submit 4 REFORM jobs - by 8:00 all had run.

Jobs for day shift!

a) Collect (from Herr Masbender's office) a couple of boxes of tissues
b) Ask someone (H. Hado?) to check his Electron & Positron NIM unit reciedit since histograms are all in overflow (ie timing has moved) since start of running period. Seems so, that the TOC-start pulses have different timing now → ask Krebbiel HK.
c) Thersa TOF TDC low - is this right?
d) Get PhR to mend their magnet alarm system! Every kill in the night has ended with beams being lost due to trips!

8:00 Mc Cann, Schmidt on shift ACCESS FOR 3 HOURS.
8:45 Magnet OFF.

9.50 Exchanged Camac Scaler Slot (T2 acc, rej etc pulses)
Tested as fast as possible.

Checked TOF counts 36; it does not draw any current.
So either the cable is not connected or broken. It is now connected (thanks to Hado's sportive efforts)

10:15. Shut down at least up to 15:00. The machine group have to change windows of cavities
10:45 We hereby abandon our shift - except to check the status every hour.
Schmidt (3538) McCann (3469)
14:00 Magnet set to 500 A it may be ramped by the NORD again
16:00 Nozaki + Minowa onshift
17.33 Beams ready. Magnet → 7500 Amps.
17:35 Background Optimization
17:45 Start Run 14687
17:50 LG-timings are checked all ok. (M.M)
~18:00 Random trigger rate was too high ask Nowak
We Checked the Clock signal. 50 Hz was used and changed to 1 Hz.
Therefore the time and luminosity on the run summary sheet are wrong.
18:15 Time out error on ~~TOF~~. TOF1, ID ERROR ~~54~~ 55
False interrupt from a LG micro ERROR 55

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Run	DATE	START	STOP	I^+	I^-	$\frac{D}{T}$ %	TIME	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TQ rej $\times 10^6$	T_1 ADC sum	T_2 ADC sum	T_1 BIT 2 E.>66eV	T_2 BIT 17
14685	5/10/83	6:56	7:33	3.76	3.95	12.1	2210	5850	5320	575	69	2877	—	841	1635
14686	"	7:35		3.32	3.40	11.2	1031	2587	2308	268	30	1396	—	425	654
14687	"	17:45	18:15	3.18	3.90	17.8	54594	5669	5222	455	81	3055	4975	187	1190
14688	"	18:18	18:18	2.26	3.53	16.0	20	70	55	5	8	15	69	58	28
14689	"	18:27	18:30				15/	423	380	39	5.8	188	370	34	123
14690	"	18:33	19:26	2.74	3.41	12.3	3182	8002	7001	828	102	3779	8068	927	2313
14691	"	19:27	20:15	2.35	2.95	11.1	2882	6794	5883	750	83	3403	6572	883	1840
14692	"	22.22	23:08	3.75	3.77	14.9	2743	8002	7324	714	107	3555	8279	925	2821
14693	"	23:08 0:00	23:59	2.80	2.85	13.2	3042	8001	7196	790	104	3662	8307	927	2596
14694	6-10	0:00	0:48	2.79	2.84	14.9	2865	8002	7200	746	111	3583	8555	907	2855
14695	"	0:48	1:47	2.44	2.49	11.0	3512	8001	6983	914	101	4067	7686	1053	2198
14696	"	1:58	2:57	2.05	2.10	9.5	3189	6856	5788	830	79	3865	5909	904	1529
14697	"	3:58	4:06	3.77	3.76	89.4	467	1544	1536	122	104	253	2486	60	1681
14698	"	4:19	4:33	3.53	3.51	24.8	782	2906	2716	204	51	1120	3586	329	1553
14699	"	5:51	6:33 6:33	3.73	3.73	27.8	2120	8002	7538	551	153	3172	9046	859	3989
14700	"	6.33	7:01	3.50	3.27	23	1662	6041	5645	432	99.6	2483	6928	703	2937
14701	"	8:28	8:48	3.85	3.92	15.1	1135	3156	2880	295	44.6	1425	3269	358 1184	1184
14702	7.10.83	11:41	12:36	3.36	3.66	15.7	3001	8002	7175	781	123	3759	8367	872	2725
14703	"	12:37	13:34	2.82	3.11	16.3	3079	8001	7160	802	130	3779	8607	882	2383
14704	"	13:34	13:47	2.38	2.62	11.7	709	1837	1585	184	21	958	1759	205	483
14705	"	16:02		1 pedestal event !											
14706	"	16:04	16:51	2.54	2.43	17.7	2776	7997	7216	723	128	2762	5368	627	1822
14707	"	16:55	17:07	2.24	2.13	6.4	677	1181	934	176	11	758	794	155	167
14708	7.10.83	19:31	20:34	3.66	3.83	27.1	2870	8002	7381	731	198	3393	8748	871	3473
14709	"	20:34	21:12	2.98	3.17	16.6	2026	5719	5135	527	87	2666	6165	682	2196
14710	7.10.83	23:48	0:44	3.76	3.90	16.2	3102	8001	7157	807	130	3813	7934	930	2700
14711	8.10.83	0:44	1:23	3.03	3.26	10.8	2266	5387	4709	589	63	2874	4858	710	1530
14712	"	4:25	5:01	3.91	3.88	14.2	1473	3965	3469	382	54	1975	3895	453	1145
14713~14715		Lost due to IBM trouble.													
14716	8.1083	5:22	5:58	3.40	3.38	13.2	2152	5911	5047	560	74	2808	5948	682	1700
14717	"	13:18	14:04	4.10	4.44	12.8	2691	6962	6182	700	89.7	3493	6830	746	1765
14718	"	16:09	17:29	4.33	4.23	12.1	3303	8000	7083	860	104	4005	7683	865	2068
14719	"	17:30	18:17	3.38	3.37	16.2	2823	8001	7213	735	119	3681	8975	898	2945
14720	"	~~18:51~~ 18:17	18:59	2.99	2.97	12.2	2468	6112	5339	642	78	3071	6299	660	1915

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N50	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int Ldt$ Bhabha Run	$\int Ldt$ Exp	IBM/TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks
ON	ON	ON	1.94	4.68	54.62	IBM	.9	—	35	1	21.605	(last few events may have 21.620 Gev!
"	"	"	1.71	2.14	2.14	"	.7		16	0	21.620	Beams lost yet again
"	"	"	2.07	4.42	6.56	"	.7	58	33	0	21.620	Time: First part of run — 50 Hz clock. Computer problem
"	"	"	1.82	0.04	6.60	"	"					"
"	"	"	1.93	0.29	6.89	"	"	57	2	0	"	"
"	"	"	1.45	5.62	12.51	"	0.7	57	42	0	"	
"	"	"	1.16	4.01	16.52	"	0.7	57 ~~58~~	30	1	"	beam dump
"	"	"	1.94	5.35	21.87	"	0.8	57	40	-6	"	
"	"	"	1.49	4.52	26.39	"	0.7	57	40	1	"	
"	"	"	1.17	2.81	29.20	"	0.7	57	21	1	"	
"	"	"	0.88	2.54	31.74	"	0.6	58	19	0	"	
"	"	"	0.70	1.74	33.48	"	"	58	13	0	"	BEAM DUMPED
"	"	"	0.13	0.13	33.61	"	1.25	64	1	0	"	Beam stopped - high background optimization - again. Bp 1.5 → 2.0
"	"	"	1.43	0.80	34.41	"	0.8	~~58~~ 59	6	1	"	Beam lost.
"	"	"	1.49	3.35	37.76	"	0.95	59	25	1	"	
"	"	"	1.49	2.54	40.30		0.85	59	19	0	"	Beams lost.
"	"	"	1.05	1.19	41.49		0.9	57	12	1	"	Beams lost
"	"	"	1.43	6.02	47.51	"	2.2	58	45	3	"	
"	"	"	1.31	3.75	51.26	"	1.8	59	28	0	"	
"	"	"	1.11	0.94	52.20	"	1.8	59	7	1	"	dump
"	"	OFF	0.80	2.27	54.47	"	2.0	10	17	0	"	
"	"	ON	0.80	0.67	55.14	"	1.8	55	5	0	"	dump
ON	ON	ON	1.22	4.01	59.15	IBM	2.2	57	30	1	21.620	
"	"	"	1.05	2.01	61.16	"	1.6	58	15	0	"	beams lost
"	"	"	1.87	6.16	6.16	"	1.9	57	46	0	21.635	New Energy
"	"	"	1.42	2.68	8.84	"	1.7	58	20	1	"	beams lost
"	"	"	1.09	1.61	10.45	"	2.2 ~~1.8~~	57	12	1	"	
ON	ON	ON	0.60	1.74	12.19	F11180	1.7	59	13	1	"	TAPE beams lost
"	"	"	3.88	6.30	18.49	IBM	2.0	58	47	1	"	beams lost MH locked Live Beam gas!
"	"	"	1.96	6.43	24.92	"	2.1	57	48	1	"	TOF ≒ 1.1 V
"	"	"	1.37	4.42	29.34	"	2.0	59	33	0	"	" ≒ 1.1 V
"	"	"	1.08	2.41	31.75	"	1.9	59	18	0	"	" ≒ 1.1 V

5/10/1983.

DMA error ERROR 5-1

18.30 Nord program was reloaded and the system works again.
22.20 New Fill is ready.
22.31 JOAS READOUT ERROR 44 DMA timeout and Timeout br 2 crate 1 : Latches.
23.30 Same errors as above occur twice.

6/10/83

0000 Stopleus & Wagner S. on Shift.
0120 TASSO CALLED → PROBLEM WITH POSITRON SOURCE; HAVE TO STAY WITH THIS FILL UNTIL THEY FIX IT.

4:06 Have to stop Run # 14697 because of unstable beam condition further optimization and also run down I_D. B_P 1.5 → 2.0

5:52 Pause Run # 14699 for further optimization - also run down I.D. (B_P > 2.)

5:56 further optimization finished B_P steady at ~0.9

6:49 JOAS readout error 44 - Timeout branch 2 crate 5 : backplane ADC
7:00 Beams Corr. SHORT BREAK.

8:00 Yamada & Cords on shift
8:20 New fill ready. Beams are unstable.
~8:45 I.D. trip. (Quality) because of high background. After a few min. $\bar{e}$ beam was lost.
9:05 Vacuum leak in DESY
~9:15 Power Failure !!

9:50 10-Pressure reading active again in the data taking, from R 14702

16:00 Finch, Schmidt on shift
20:35 LG (Zone 10) HV restored. M.M.

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

7.10.83

0:00 Dieckmann + Schneekloth
0:15 PKR: no beam till 10:00, switched magnet off, leave counting house.

8:00 McCann and Chin on shift — Restart 10:00.
9:30 Had to reload BMS to start Test run. (Otherwise N50 not operational → -1 error for Histograms).
10:15 Injection.
11:00 "Luminosity Run" — but wrong energy; energy being changed.
TOF HV did not go on automatically — had to be switched on manually.
BP rate ~3 V but fluctuating wildly. Complained to PKR.
Tagging HV had to be switched on manually.
12:00 Search for sources of sync rad. around the experiment
1. The cage around the new collimator at 43 m should be thicker. We measure 10 mm now.
2. Increasing the thickness of lead between the wall of the hall and the shielding blocks decreases the γ-flux by a factor of 2.
3. The pedestals of the cable trays should be blanked with more lead.
(W. Bartel)

12:00 TASSO say they can't run with present conditions. We are running with BP ~ 2.0 (but fluctuating) and deadtime ~15-20%.

The magnetic field is reported by the NORD to be off the nominal value — but it says values of ~ -4847, -4845, which are completely normal!?? Nominal value overwritten in RT-common. Cure by [redacted] (After Exit from JOAS)

12:20 W. Bartel at PKR: Collimator at 12 mm (both of them), which leaves a margin of 1.5 mm. Average deadtime seems to be slightly reduced by this change, although it's difficult to say when the meter reading is fluctuating so much.
We already have standard lists for early part of this run — compare them with standard lists for next run.

13:25 No triggers - devel 2. - due to I.D. trip (no acoustic alarm).
- Cured by following Krehbiel's magic instructions!

15:50 New fill ready, but BP ~ 7 V. "Background Optimisation."

15[58] We asked for further optimisation insofar as the present conditions were not stable – they managed a considerable improvement in a minute or two while I gave them feedback via telephone. BP ~ 2V and fluctuations ≤ 0.4V.

16[02] Start run 14706 (14705 = 1 pedestal event!)
Armbrus & Steffen on shift.

17[05] beams dumped for refill

19:00 Hellenbrand replaces Ambrus

21:12 RUN 14709 beams lost + ID trip
short break afterwards

0[00] 8/10/83 Nozaki & Takeda on shift

2008 JDAS READOUT ERROR 4X DMA Timeout, Timeout br 2 crate 1: Latches.
1:25 Beams were lost. → short break started.
2:45 Magnet 7500A → 5000A
3:10 New fill ready. magnet 5000 → 7500A.
3:19 Beams lost during b.g. optimization.
Short break again. magnet → 3000A
4:20 New fill. magnet → 7500A
4:30 Beam Pipe current suddenly jumped from 2V to 10V.
PKR said that no change was done in the optics at that time and they could not reduce the beam pipe current.
It was found that one of the BP counters was causing the trouble. We pulled it out at the BP current sum-up panel.
→ We don't understand the reason.
Did the background localize on a single BP counter?
Did one BP counter become noisy suddenly?
Expert should check the BP current monitor. This is a frequent trouble with discriminator! Sometimes they give excessively long pulses. Since the pulses are directly integrated, the meter reading goes up. Exchange discriminator

5:00 Run stopped due to IBM busy.
IBM ERROR 54.
IBM JADE DISC USED N/A ← What does this mean? not active?
(NOT AVAILABLE)
– due to link down no % displayed

ON/OFF N50	MIP	TOF	<L> ×10[30]	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

RUNS 14713, 14714 junk due to IBM trouble

We decided to ~~disturb~~ write onto MT. during writing data onto MT!!
But after a few minutes, JDAS asked
TRY IBM LINK AGAIN ? <YES> OR NO :
hang-up is
<YES> → No events since IBM link is down.
NO → Run was forced to stop.

No way out! → Reload clever Nord.

RUNS 14715 was lost during this trouble.

5:58 Beams lost → ID trip Start of short break. magnet → 2000A

8:00 Mills and Schmidt on shift.

Still problems with the cooling systems at PETRA.

13:18 Run 14717 start.
Took ~ ½ hour for beam optimisation and for BP current to be low enough

14:04 Beams lost

14:25 Magnet current lowered to 1500A because this 'short break' will take at least one hour

16[00] Ambrus + Minowa on shift
Lead Glass timing checked. all ok within ±4nsec.

18[55] HV (TOF) error MFR 53 CH 13 0.246 should be 2.670 reset by hand.

1900 Beams lost.

2334 error message YPARA 11 Branch 2 Crate 7 bits written 177777 (oct) bits read 177577 (oct)
stop run 14726

2335 start a new run. No error message this time.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

0:00 9/10/83 Kuhlen & Chrin on shift

0:43 Run started, after a 10 minute wait for acceptable B.P. current. (Run No 14728)

1:20 Beams lost Short Break.

2:20 Thermal problems with Petra's M6 M7 in position No 100.
Estimated restart - 2 hours.
Magnet current → 3000 Amps

4:30 Injection, magnet current → 7500 Amps

4:40 Beams lost whilst injecting.

5:00 Short break, magnet current → 3000 Amps

6:00 New Injections, magnet current set to 7500 A

6:30 Beams lost whilst injecting.

7:00 Injection

8:00 Dieckmann, Meier

8:01 the brightness of the color TV is changing with 2 Hz

11.34 E_B increased to 21.650 GeV

11.35 Beam dumped after a very short run (97 ents). T2 reject event fraction is ~17%! How is that possible?

12.24 FLUKE-Datalogger below Gas-Alarm Unit gives Alarm due to a previous power failure. Date and time needs to be reentered. This is not possible without the key which is not available. — We eventually found the key and reentered date and time, but the alarm is still there.

12.25 We discovered that the alarm did not come from the Datalogger but was a 'Magnet-Heat-Shield-Flow' Alarm. We resetted the alarm.

14.31 Magnet switched off (200 A) due to PETRA break.

15:20 Cooling-water problems - no beam before 18:00

16:00 Nye, Schiemann on shift.

18.00 INJECTION, SET MAGNET TO 7500 Amps

18.45 LUMI-RUN STARTED BUT BACKGROUND STILL TOO HIGH (~2.7→3.0) FOR US TO TURN ON HV's. PHONED TASSO (COORDINATING) WHO PHONED PKR.

19.09 BEAMS LOST - TASSO WERE NOT RUNNING EITHER (DUE TO HIGH B/GND) BUT CELLO & MARK WERE.

19:10 SHORT BREAK

19:50 WE SET THE MAGNET TO 200 Amps

20:24 INJECTION → MAGNET TO 7500 AMPS

22:20 PROBLEMS TURNING ID HT ON. GREEN LIGHT ADAMANTLY REFUSES TO STOP FLASHING.

22:30 PHONE CALL TO HELLENBRANDT SOLVES PROBLEM! MAGNET POWERED DOWN ⇒ ALARM 'IN RUCKSAC' STOPS IDHT BEING TURNED ON ⇒ RESET ALARM & ALL'S WELL.

10.10.83 0^{00} Finch + Heuer on shift

1.00 Beam pipe current fluctuates continually 1.5 ~ 1.75

4.00 Finch & Steffen on shift.

4.27 Slow ID trip

8.00 Chrin + Meinke

9:25 No triggers - level 2 - Cause - I.D. trip due to b.p. current fluctuations.* Cured by following instructions Richbiel's

9:30 No triggers - level 5 - Cured by pressing - stop run button (red), reset event (white), start run (green) in that order.

* Note: PKR claim that only we were registering bad b.p. fluctuations.

10:00 No triggers - level 2 - Again - I.D trip due to b.p. again bad b.p. current fluctuations run "paused"

10:14 run "continue"
slow ID trip again, we complained to PKR but they don't know what to do collimators are in (at 12mm).

10:20 other experiments (Tasso, Cello) claim to have no problems
PKR moved collimators several times in and out → no effect at all ←

10:50 can't switch on because of background

10:59 we have asked to clamp the beams

13:00 Problems injecting - short break, magnet → 3000 A

146 Run	Date	Start	Stop	Run I+	Start I−	Dead Time (%)	Time (sec)	Records in	Records out	All ×10⁶	TØ Rej ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit2 E17GeV	T2 Bit17 2T·E4·2T1
14721	8.10.83	19:51	20:35	4.44	4.25	46.1	2589	8002	7080	674	310	3379	9578	617	4302
14722	"	20:35	21:16	3.88	3.70	26.3	2416	8002	6922	629	165	4007	8175	688	3167
14723	"	21:16	21:59	3.43	3.27	29.0	2542	8002	7003	661	192	3806	8706	723	3590
14724	"	21:59	22:47	3.05	2.91	12.0	2848	8002	6522	741	89	4815	6077	785	1783
14725	"	22:47	23:33	2.70	2.59	12.5	2738	8002	6357	712	89	5023	5854	751	1898
14726	"	2334	2334	2.44	2.33			18	18			short	Run		
14727	"	2335	23 47	2.43	2.33	9.1	720	1542	1298	187	17	895	1280	175	350
14728	9.10.83	00:43	1.21	4.05	4.05	12.1	2245	5792	5146	583	90	2976	5316	672	1428
14729	9.10.83	8:16	9:17	4.22	4.15	17.3	3062	7223	8001	797	138	3441	9165	740	2510
14730	"	9:18	10:05	3.60	3.52	24.5	2816	8002	7344	724	179	3199	9367	724	2534
14731	"	10:06	10:56	3.17	3.09	14.0	2982	8002	7154	775	109	3692	8335	831	2116
14732	"	10.56	11.17	2.81	2.73	13.2	1227	3260	2860	322	42.4	1502	3297	296	984
14733	"	11.35	11.36	2.57	2.51	6.6	30	117	97	8	0.5	61	33	10	15
14734	"	12.33	13.25	4.01	4.40	10.6	3125	7400	6555	812	86	4024	6309	869	1664
14735	"	22:34	23:50	3.89	4.07	12.7	3346	8002	7045	870	110	4058	7646	731	1962
14736	"	23:51	0:34	3.24	3.51	12.1	3528	8002	6946	917	111	4081	7846	888	2333
14737	10.10.83	0:35	1:44	2.86	3.01	8.2	4092	8001	6677	1064	87	4880	6160	950	1477
14738	"	1:44	2:33	2.45	2.59	7.5	2884	5736	4465	751	56	3425	3990	629	913
14739	"	3:50	4:49	4.44	4.27	11.5	3278	8002	7158	852	98	4041	7335	834	1943
14740	"	4:49	5:46	3.77	3.65	10.8	3374	8001	6945	878	95	4363	6855	901	1791
14741	"	5:47	6:49	3.26	3.16	9.4	3713	8002	6856	966	90	4522	6517	859	1557
14742	"	6:49	7:15	2.81	2.73	8.9	1488	3042	2551	387	34	1827	2311	367	539
14743	"	8:27	8:28	3.90	3.52	0	0	38	37	0	0	"	0	2	5
14744	"	8:28	9:44	3.87	3.50	14.0	3789	8002	6774	986	138	4556	6335	873	1658
14745	"	9:45	10:18	3.25	2.92	9.2	1059	2321	1973	274	25	1296	1812	257	413
14746	"	22:22	[redacted]	4.38	4.48	14.1	3015	8002	7160	784	111	3671	8347	802	2167
14747	"	23:13	0:06	3.81	3.91	12.6	3181	8002	7044	827	104	3893	7883	827	2000
14748	11.10	0:07	0:38	3.31	3.40	11.7	1390	3434	3012	361	42	1733	3134	366	862
14749	"	0:42	1:45	3.03	3.12	10.6	3695	8002	6903	961	102	4304	7005	882	1751
14750	"	1:45	2:10	2.60	2.69	8.7	1445	3008	2523	376	32.8	1708	2386	348	587
14751	"	3:33	4:23	4.51	4.54	14.8	3027	8002	7260	787	116	3667	8558	856	2127
14752	"	4:24	5:15	3.84	3.89	13.9	3051	8002	7080	794	110	3941	7969	864	1970
14753	"	5:15	6:28	3.30	3.36	11.8	3275	8002	6948	853	100	4149	7214	887	1695
14754	"	6:29	7:02	2.72	2.78	9.7	1939	4279	3639	504	98	2377	3456	470	770

147	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks.
	ON	ON	ON	1.18	3.08	34.83	IBM	2.3	59	23	2	21.635	TOF = 2.7 V
	"	"	"	1.39	2.95	37.78	"	2.0	58	22	0	"	
	"	"	"	1.03	1.34	39.12	"	1.8	59	10	1	"	
	"	"	"	1.00	2.41	41.53	"	1.7	56	18	Ø	"	0.8
	"	"	"	0.75	~~1.47~~	43.00	"	1.6	57	11	1	"	
							IBM	—	—	0	0	"	
	"	"	"	0.65	0.13	43.13	IBM	1.3	58	1	0	"	Beams dumped.
	"	"	"	2.07	4.15	47.28	IBM	2.0	57	31	1	"	Beam lost
	"	"	"	1.44	3.08	50.36	IBM	2.1	59	23	0	"	
	"	"	"	1.26	1.88	52.24	"	1.8	58	14	1	"	
	"	"	"	1.23	3.22	55.46	"	2.0	57	24	3	"	
	"	"	"	1.01	1.47	56.92	"	1.7	56	11	0	"	last run old EA; MH/L = .26
	"	"	"	1.83	0	0	"	1.6	-17?	0	0	21.650	
	"	"	"	2.10	~~6.57~~	6.57	"	1.5	55	49	1	"	Beams lost
	-"-	-"-	-"-	2.00	4.96	11.53	"	2.40	57	37	2	"	
	-"-	-"-	-"-	1.39	5.23	16.76	-"-	2.0	57	39	0	-"-	
	"	"	"	1.11	2.42	18.18	"	1.7	57	18	2	"	
	"	"	"	0.85	2.01	21.19	"	1.4	57	15	Ø	"	Beams dumped
	"	"	"	1.30	5.64	26.83	"	2.4	55	42	1	"	
	"	"	"	1.18	4.83	31.66	"	2.1	56	36	2	"	
	"	"	"	1.02	4.16	35.82	"	1.9	56	31	1	"	
	"	"	"	Ø.71	1.21	37.03	"	1.7	56	9	Ø	"	Beams dumped.
	"	"	"	0	0	37.03	"	2.0	—	0	0	"	Niproc start table was ? in incorrect postst. Run stopped.
	"	"	"	1.47	5.23	42.26	"	2.0	54	39	0	"	~~Run stopped because of background~~
	"	"	"	1.38	1.07	43.33	"	1.8	54	8	0	"	run stopped because of background
	"	"	"	1.99	5.10	48.43	"	2,3	56	38	1	"	
	"	"	"	1.50	3.49	51.92	"	1.9	56	26	2	"	
	"	"	"	1.27	2.15	54.07	"	1.9	56	16	1	"	MH/L = .24
	"	"	"	1.05	2.82	2.82	"	1.9	56	21	3	21.665	New energy
	"	"	"	0.88	1.48	4.30	"	1.8?	55	11	0	"	
	"	"	"	2.02	5.64	9.94	"	2-2.5	58	42	0	"	
	"	"	"	1.58	3.49	13.43	"	2-2.5	58	26	2	"	
	"	"	"	1.15	2.55	15.98	"	17-20	56	19	0	"	
	"	"	"	0.96	1.21	17.19	"	"	55	9	1	"	~~Beams~~ dumped

16:00 Meier, Kawamoto

16.30 when running up the magnet a 'Magnet-Heat-Shield-Flow' alarm occurred again (as on sunday afternoon). We resetted the alarm and did nothing else. ← reset

16.40 Magnet current fluctuates by 20 A. Heat-Shield Alarm appears again.

16.45 Magnet is stable now.

18.18 Cooling Water for magnet is ~10° too high
incoming water: 40°C
outgoing water: 72°C
we phoned K-Group. They are working at the problem and recommended to reduce the magnet current.
We informed PVR.

18.25 Magnet current down to 4000 A.

19:00 now: incoming water: 56°C
outgoing water: 65°C
→ we switched magnet to 1500 A and phoned the K-group. They just finished to repair the 'turbos'. So we wait what will happen with the temperatures.

19:06 Now there is no water cooling at all ($T_{in} = T_{out} = 60°C$)
→ we switched off the magnet completely

19:55 The K-people think that our magnet might be heated by the DESY central heating system! They are waiting for an expert.

20.12 PETRA starts running without us and our magnet.

20.17 We are lucky - PETRA lost the beams!

21:54 K-people fixed magnet cooling. We run up the magnet

11/10/83 0:00 with beam in PETRA → Bowden & Kobayashi

01:32 NORD problem (apparently). Trigger box stopped with "ACCEPT EVENT" light on. PAUSE & CONTINUE cured the fault

2:09 Beams dumped

5:00 Magnet Read Error: magnet is OK ⇒ a CAMAC problem

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

8:00 Dittmar & Anton on shift

8:10 high Deadtime ~30%. Start new Run (new 1st)

11:00 high fluctuations in beampipe-current
Inner detektor can not switched on
beampipe-counter 4 removed from alarmbox (1σ)

11:23 beams lost

12:00 Break run down Magnet to 2000 A

13:45 PETRA starts Injektion raised Magnet to 7500 A

Reason for no Bhabha Luminosity (BL) on Colour TV is now understood. Will be corrected during a convenient Kill.

14:50 HV-settings of Beampipe-counter were wrong due to last Powerfailure. We resetted them.
BP: 2.1 V → 2.4 V

15:04 high fluctuations in beampipe-current
beampipe-counter 24 removed from alarmbox (2σ)

16:00 Clarke + Heintzelmann

~17:00 power failure → beams lost, Nord hung up, run summary lost.
Restart Nord
Set Leadgl HT

18:50 MF ready

21:50 Run 14766 soft chamber trip but data taking continues. Interlock cable at triggerbox was pulled out → counts without ID hits. (~20 events)

12.10.83 0^{00} A. Ball + R. Dittmar

0^{30} IBM error 54, then 53 with message on the terminal: transf. error 53, tuberror 0, Cross Cnt 1
Starting a new run as Petra link down ⇒ Put in values by hand

0^{40} seems to work again

0^{55} DMA timeout + timeout branch 2, crate 1
4 4

Run	Date	Start	Stop	Run Start I+	Run Start I−	Dead Time %	Time sec	Records in	Records out	All ×10⁶	TØ Rej.6 ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 B:t2 E>66eV	T2 B:t1 2T. E42Tr
14755	11/10/83	7:43	8:05	4.64	4.64	32	1299	3668	3425	338	108	1406	4606	335	1687
14756	4	8:05	9:01	4.34	4.35	15.3%	2915	8001	7277	758	116	3741	8475	884	2222
14757	"	9:03	11:16	3.71	3.74	14.3	3178	8002	6995	827	118	4116	7405	869	1762
14758	"	11:17	11:19	2.66	2.71	11.2	137	359	309	35	4	179	790	38	74
14759	4	14:33	15:32	4.23	4.33	14.9	3105	8002	7218	808	120	3536	9519	764	2196
14760	" beams lost	15:33 no summary	16:23	3.24	3.37	19.8	2983	8002	7251	776	164	3353	13485	750	2086
14761	"	18:51	18:57	4.69	4.89	20.5	336	918	860	87	17.9	372	1605	85	305
14763	"	19:33	20:20	4.44	4.52	24.2	2823	8001	7380	785	148	3326	12695	770	2577
14764	"	20:21	21:06	4.44	4.57	17.1	2720	8001	7381	708	121	3426	9923	788	2378
14765	"	21.07	21.50	3.88	3.96	17.6	2609	8001	7341	678	119	3472	9773	791	2394
14766	"	21.51	22.36	3.43	3.52	21.7	2472	8001	7356	642	139	3212	10448	712	3024
14767	"	22,37	23.15	3.03	3.15	21.6	2250	7567	6997	584	126	3043	9505	676	2975
14768	12/10/83	00:04	00:36	482	510	19.3	1901	5447	5029	495	955	2371	7115	576	1680
14769	"	0:40	1:26	4.27	4.54	17.5	2727	7281	8001	710	124	3630	9639	871	2247
14770	"	1.26	2:15	3.67	3.93	14.3	2923	8002	7168	761	108	3876	8205	851	2033
14771	"	2:16	3:04	3.17	3.41	14.2	2872	8002	7187	748	106	3888	7951	871	2403
14772	"	3:05	3:19	2.77	3.00	13.4	861	2181	1916	224	30	1177	1976	293	587
14773	"	3:54	4:35	4.91	4.91	28.9!	2429	8002	7545	632	183	3137	10997	803	3778
14774	"	4:35	5:22	4.27	4.28	15.1	2793	8002	7293	727	110	3785	8471	876	2376
14775	"	5:23	6:12	3.68	3.69	14.5	2955	8002	7139	769	111	3975	7807	887	2136
14776	"	6:13	6:41	3.18	3.20	11.7	1679	4276	3747	437	51.0	2260	3866	448	1003
14777	12/10/83	8:01	8:45	4.50	4.57	24.9	2640	8001	7461	687	171	3774	11566	772	3667
14778	"	8:46	9:43	3.69	3.91	11.1	3389	8002	6920	882	98	4454	6797	989	1636
14779	"	9:43	10:47	3.10	3.36	8.8	3780	8002	6783	984	86	4828	5536	945	1279
14780	"	10:47	10:59	2.61	2.90	7.9	670	1404	1184	174	14	892	862	790	202
14781	"	12:10	12:57	4.53	4.56	24.4	2808	8001	7384	730	178	3258	10242	834	3865
14782	"	12:58	13:16	3.82	3.84	10.9	1024	2389	2105	267	29	1316	2053	285	575
14783	"	15:21	16:17	4.41	4.52	14.6	3040	8002	7184	791	115	3754	8655	827	2372
14784	"	16:18	17:07	3.75	3.90	10.3	2871	6682	5786	746	76	3689	5437	706	1201
14785	"	17:21	18:28	3.21	3.35	8.1	3943	8002	6746	1026	83	4990	5388	945	1056
14786	"	18:28	18:46	2.78	2.91	7.5	998	2020	1651	259	19	1361	1204	265	214
14787	"	19:37	19:53	4.67	4.69	21.5	908	1968	1768	236	51	1020	1751	199	464
14788	"	20:29	21:30	4.61	4.14	11.6	3577	8002	7002	930	107	4485	6324	966	1597
14789	"	21:30	22:33	3.91	3.51	8.6	3758	8001	6845	978	84	4913	5542	1009	1177

N50	MIP	TOF	<L> ×10³⁰	∫Ldt Bhabha Run	∫Ldt Exp	IBM/ Tape	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks
ON/OFF												
ON	ON	ON	1.61	2.02	19,21	IBM	1.9	60%	15	0	21.685	high Dead time Run stopped
4	2	2	1.75	3.63	22,84	"	1.95	58%	27	0	"	
"	"	"	1.75	4.17	27,01	"	1.9	57%	31	3	"	
"	"	"	1.20	0.13	27,14	"	1.7	54%	1	0	"	beams lost
4	2	4	1.65	5.11	32,25	"	2.3	61	40	2	"	
4	"	4	1.20	3.49	35,74	"	2.2	63	26	0	"	
"	"	"	2.37	1.07	36,81	"	2.5	73	8	1	"	beams lost
4	4	4	2.64	7.93	44,74	"	2.4	63	59	3	"	
4	4	4	2.16	5.64	50,38	"	2.4	61	42	0	"	
"	"	"	1.84	4.84	55,22	"	2.3	61	36	1	"	
"	"	"	1.35	2.69	58,01	"	2.1	62	20	3	"	
"	"	"	0.98	2.42	60,43	"	1.9	60	18	1	"	Beams dumped
"	"	"	2.86	4.98	4.98	"	2.6	64	37	2	21.680	
4	4	4	2.18	5.25	10,23	"	2.4	61	39	1	"	
2	2	2	1.70	6.32	16,55	"	2,25	58	47	1	"	
4	2	4	1.36	3.36	19,91	4	2.0	57	25	2	"	wrong line
4	4	4	1.01	1.88	21,79	4		58	14	0	"	
4	4	4	2.26	4.84	26,63	"	2,6	63	36	0	"	optimisation throughout – high D.T.
"	"	"	2.15	5.25	31,88	"	2.3	58	39	1	"	
"	"	"	1.62	4.57	36,45	"	2.0	56	34	1	"	
"	"	"	1.2	2.69	39,14	"	2.0	56	20	0	"	L.G. power supply HV3 tripped.
on	on	on	1.89	7.00	46,14	IBM	2.7	65	52	0	21.680	
4	4	4	1.49	4.04	50,18	"	2.2	56	30	1	"	
4	4	4	1.09	3.90	54,08	4	1.9	52	29	1	"	
4	4	4	0.87	0.67	54,75	4	1.8	51	5	0	"	beams lost
on	on	on	1.49	4.98	59,73	IBM	2.4	61	37	0	21.680	
"	"	"	1.80	1.61	61,34	"	2.1	56	12	0	"	beams lost; short break
on	on	on	2.06	9.28	70,62	IBM	2.3	58	69	1	21.680	
4	4	4	2.00	4.57	75,19	"	2.1	54	34	1	"	
4	4	4	1.53	5.66	5.66	4	1.9	53	42	2	21.695	New energy
4	4	4	1.28	1.35	7.01	"	1.6	54	10	0	"	Beams dumped
"	"	"	2.47	1.48	8.49	"	2.3	56	11	1	"	Beams lost
"	"	4	2.32	7.28	15.77	"	2.1	54	54	2	"	
"	"	4	1.95	7.28	23.05	"	1.9	54	54	1	"	

The machine is now able to get ~5 mA per beam at 21.4 GeV. This results in ~320 ~~hads~~ Synchrotron radiation hits and more than 3 μA current/cell in the ID!
Background conditions otherwise are pretty good!
μ-chambers also see a lot synch. rad.

2[15] Again DMA timeout

2[15] Mark J would like a fill, Cello agrees. But Jasso and we can convince them to leave the present fill in for some more time since our lumi has dropped only from ~7 to ~1.7 × 10[30].

4[10] After > ½ hour of optimisation, we have reasonable BP (2.5 V) and TOF (2.5 V) readings, but 30% ~~dead~~ deadtime.

4[30] Following much fruitless complaining, (during which we registered deadtimes up to 45%!!) sudden improvement occurred. TOF rate → 1.5 V. D.T. → 15%.

~~Wrong~~ Good! DMA timeout, timeout latches + chambers. Then no triggers, pause + continue – then "JDAS readout

06:00 error 46, MP-16 out of seq YY = 1". Run continued OK.

06:50 Alarm + control interface for L.G. registers alarm. Check LG H.V. Supply HV3 has tripped off with overcurrent. Phone Minowa. Switch off/on results, after a few seconds, in a further trip. Minowa on his way. Run 14776 ended. Unable to continue data-taking.

06:55 Mark J ask for new fill in ¼ hour. How can we refuse??

07:20 Beams dumped.

07:50 L.G. problem fixed. New fill ready. TOF ~ 2.7

8:00 one LG counter had short circuit (15 T 17). This counter has been disabled. M.M ☺

8:00 Junge and Hellenbrand on shift

16:00 Takeda + Kuies

16:30 HV wrong error message
TAG-MFR = 63 CHAN = 0 HV = 1.343 SHOULD BE = 1.293
I could not find any instruction manual to fix the problem.
No Lancaster people could be ~~found~~ found, maybe ~~they~~ they are listening to Goldhaber's talk.
Leave it as it is for the time being.

16:50 Mark-J phoned. Energy increase in 15 minutes. We agreed.

17:15 We found the instruction manual for TAG-HV, attached to the glass wall above the dot printer. According to the manual, the wrong HV was corrected.

ON/OFF N50	MIP	TOF	<L> ×10[30]	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

17:21 New energy $E_0 = 21.695$ GeV

19:45 Trigger box hung up. Cured by the ~~Krebsie~~ Krehbiel's instruction manual.

19:53 Beams lost

20:25 New fill ready BP ~ 2.2 V Start run 14788.
JDAS READOUT ERROR 44 DMA timeout } 2 times
" TIMEOUT branch 2 crate 1 : Latches }

18/10/83

0:00 Takeshita, Becker

0:09 New fill ready. When we switch on LG one of Power supply (#6) was over current. so we once switch off and on.

2:24 JDAS Error 44 branch 2 crate 1 latches
" " " " 2 " 5 leadglass

3:24 " " " " 2 " 1 latches

5:33 New fill

6:20 NO TRIGGER BY ① (Accepted event lamp ON) – STOP RUN and START NEW RUN (RUN 14797)

6:34 JDAS Error 44 branch 2 crate 1 latches

6:50 " " " " 2 " 1 latches
" " " DMA timeout :
→ "No events for ... seconds"
Pause / Continue cured the problem

08.00 Minowa / Clarke.

08.30 Shutdown for ~ 4 hrs. Magnet Current down to 0. Magnet switch off completely by Barkel. JADE interlocks broken.

11[00] Additional shielding installed
① 4 mm of lead between tunnel wall and exp. shielding both sides
② >4 mm on top of the beam pipe T-piece between the getter pumps
W. Bartel

Note – Magnet current set to 0 amps.

16 [00] Matsumura / Schneekloth

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RUN	DATE	START	STOP	RUN I+	RUN I-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TΦ REJ $\times 10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 BIT 2 $E_1 > 6$ GeV	T_2 BIT 17 2T $E_{4.2T}$
~~14790~~	12.10.83	22:33	23:33	3.37	3.02	7.7	3562	7009	5858	926	71	4613	4332	906	805
14791	13.10.83	0:12	1:04	5.01	4.72	12.3	3069	8001	7188	799	98	4106	7306	950	1933
14792	"	1:04	1:56	4.37	4.11	11.4	3117	8002	7108	811	93	4487	6393	995	1572
14793	"	1:57	2:54	3.80	3.57	10.3	3407	8002	6972	887	92	4754	6130	961	1404
14794	"	2:55	3:58	3.30	3.10	8.5	3812	8002	6775	992	84	5062	5505	1007	1140
14795	"	3:59	4:05	2.87	2.69	7.5	326	685	577	85	6	451	412	74	82
14796	"	5:33	6:20	4.72	4.75	158	2810	8002	7303	731	116	3467	6163	738	1592
14797	"	6:21	7:17	4.16	4.19	12.2	3357	8001	7038	874	107	4448	6482	911	1609
14798	"	7.18	8,17	3.6	3.65	9.5	3551	8002	6936	924	87	4737	5919	958	1466
14808	"	20:27	21:22	3.83	3.42	12.5	3250	8002	7122	845	106	3601	8680	720	2793
14809	"	21:21	21:41	3.21	2.88	14.6	1092	3009	2680	284	41	1243	3516	284	1264
14810	"	21.54	22:50	3.11	2.78	12.3	3288	8002	7028	856	105	3849	8273	807	2677
14811	"	22:50	22:53	2.74	2.46	10.6	130	381	323	34	4	206	255	25	88
14812	14.10.83	0:32	1:29	4.81	5.13	12.9	3062	8002	7195	796	103	3849	7925	800	2219
14813	"	1:30	2:24	4.17	4.46	11.6	3253	8002	7115	851	98	4133	7122	890	1274
14814	No Data; Tune														
~~14815~~															
14815	14 "	2:30	3:31	3.56	3.84	9.2	3648	8001	6895	950	87	4711	6164	994	1482
14816	"	3:32	4:30	3.05	3.31	7.8	4072	8002	6680	1059	82	5142	5600	1069	1275
14817	"	~~5:50~~ 5:59	~~6:27~~ 6:27	2.59	2.83	7.3	443	956	776	115	8	647	517	107	119
14819	"	5:20	6:08	4.99	5.02	14.3	2873	8001	7232	748	107	3895	8122	864	2228
14819	"	6:09	7:01	4.31	4.35	12.1	3077	8002	7134	800	97	4210	7057	944	1490
14820	"	7.01	7.57	3.68	3.72	10.1	3341	8002	6942	870	88	4664	5974	930	1259
14821	"	7:58	8:04	3.16	3.20	8.5	330	742	639	85	7.3	447	484	83	97
14822	"	8.07	9:13	3.08	3.13	8.1	3881	8002	6798	1010	82	5054	5358	964	1011
14823	"	9:13	10:19	2.64	2.69	7.9	3914	7807	6421	1018	81	5042	5048	916	886
14824	"	11:05	11:57	4.65	4.80	15.1	3063	8001	7302	797	120	3917	9573	852	1804
14825	"	11:57	12:50	4.02	4.16	13.3	3098	8002	7180	805	107	3987	8015	888	1558
14826	"	12:49	13.44	3.50	3.62	12.0	3195	8002	7059	831	99	4209	7345	954	1473
14827	"	13:44	14:15	3.07	3.19	14.2	1877	4375	3786	486	~~69~~ 59	2361	5055	470	728
14828	"	18:05	19:04	3.98	3.99	14.6	3444	8002	7088	896	130	3847	8485	737	2138
14829	"	19:03	20:05	3.97	3.98	9.9	3608	8001	6988	938	93	4558	8240	907	1901
14830	"	20:06	21:09	3.46	3.47	8.9	3771	8002	6852	981	87	4661	6088	912	1298
14831	"	21:01	21:42	3.01	3.03	9.1	1962	3864	3225	510	46	2397	2657	815	508

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N50	MIP	TOF	<L> $\times 10^{30}$	$\int L dt$ Bhabha Run	$\int L dt$ Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	E_{beam}	Remarks
ON/OFF												
ON	ON	ON	1.36	5.93	28.98	IBM	1.75	54	44	1	21.695	Beams dumped
"	"	"	2.18	~~5.667~~	34.64	"	2.4	56	~~3542~~	1	"	
"	"	"	2.47	7.95	42.59	"	2.1	54	59	1	"	
"	"	"	1.86	6.74	49.33	"	1.8	56	50	3	"	
"	"	"	1.41	6.33	55.66	"	1.8	56	47	3	"	
"	"	"	1.01	0.13	55.79	"	1.6	55	1	0	"	(new fill)
"	"	"	2.45	6.74	62.53	"	2.4	56	50	2	"	
"	"	"	1.98	5.79	68.32	"	2.1	54	43	1	"	
"	"	"	1.46	4.45	72.77	"	1.9	54	33	1	"	Beams dumped
"	"	OFF	2.07	5.67	5.67	IBM	2.2	57	42	3	21.710	New Energy μP off
"	"	"	1.46	0.94	6.61	"	2.0	57	7	2	"	
ON	ON	ON	1.26	5.40	12.01	"	2.0	57	40	2	"	
"	"	"	0.88	0.13	12.24	"	1.8	48	1	0	"	
"	"	"	3.40	9.71	21.95	"	2.4	56	72	1	"	new fill
"	"	"	2.60	7.69	29.64	"	2.1	52	57	3	"	
							~~1.7~~					
"	"	"	1.95	6.61	36.25	"	~~1.8~~	55	49	1	"	
"	"	"	1.14	5.35	42.19	"	1.6	56	44	0	"	
"	"	"	1.13	0.13	42.32	"	1.4	52	1	0	"	Beams dumped
"	"	"	3.16	7.29	49.61	"	2.3	58	54	0	"	
"	"	"	2.66	6.75	56.36	"	2.3	55	50	3	"	
"	"	"	2.07	6.91	63.27	"	2.0	54	52	1	"	
"	"	"	1.93	0.27	63.54	"	1.7	53	2	0	"	same fill
"	"	"	1.41	5.94	5.94	"	1.8	54	44	0	21.725	New energy
"	"	"	1.11	4.19	10.13	"	1.65	55	31	0	"	beams dumped
"	"	"	2.65	7.43	17.56	"	2.5	62	55	1	"	
"	"	"	2.23	6.92	24.48	"	2.4	58	43	0	"	
"	"	"	1.85	5.67	30.15	"	2.3	56	42	0	"	
"	"	"	1.42	2.70	32.85	"	2.1	66	20	1	"	beams dumped;
"	"	"	1.81	~~3.65~~	~~36.50~~	"	2.4	59	27	3	"	
"	"	"	1.44	~~7.84~~	~~44.34~~	"	2.1	53	58	3	"	
"	"	"	1.52	~~4.59~~	~~48.93~~	"	1.9	53	34	2	"	
"	"	"	1.29	~~1.76~~	~~50.69~~	"	1.9	54	13	0	"	beams dumped.

13.10.83 ✓

18:00 Magnet 7500 A

20:00 new fill ready , Unable to start run , message " TOF2 AC2099 no response"

20:15 µP TOF Problem switched off RUN 14799 ~ 14807 junk.

21:55 : AC2089 in Crate 4 with loose contact, now OK. The screw is broken, should be repaired!

20:15 MARKJ phoned and asked for access after this fill. They forgot a cable and are unable to take data!

2155 Histogramm new pick up electrons is empty, all entry in overflow
checked Kado's boxes, everything looks fine . phoned H. Kado . He knows the problem

2252 beams dumped

0.00 Finch, Spitzer

1:43 We got no 'switch on HV' message & on DETRA TV, we get curious ear tone from TV occasionaly, I rang PICR - they hope to fix it.

3:20 Magnet water temperature : IN : 40° OUT: 41°

3:40 Voltage L6/BP Power supply 5 HV = 1.870 SHOULD BE 1.970
We can't find how to reset this so leave it.

8:00 Knies & Takeda

8:07 New energy 21.725 GeV.

8:15 Preattenuator of e^--Pick-up-unit changed to 3 dB (previously 6 dB) HK

9:35 JDAS ERROR 44 DMA timeout , branch 2 crate 1 : Latches

10:10 There will be an access at DESY (synchrotron), and a new fill should be ready before that. Beam dump in 10 min.

11:05 Run 14824 started with test version of NORD-50 program which marks grazing Lead glass cosmic events, but as yet does not reject them. The run summary shows how many of these events are found for rejection BUT they are not actually rejected (until next group meeting)

14:15 PETRA asks to switch off HV ; beams are HERA dumped

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

RF Power

14:15 ~~Sender~~ failed, SHORT BREAK

~~16.00 Nozaki + Weber~~

16.05 Nord system restarted - I get "ILLEGAL MONITOR CALL" whilst in the editor - HER

16:30 Default Nord-50 program is now the latest version
Magnet current is run down to 3000 A

17.24 Magnet current up to 7500 A

18.04 New fill is ready.

18.50 Histogram for DL8 bit ratio (FQ8 (jet ch), F12) looks funny (all zero except for one channel)
The Histogram for the run 14827 is O.K. ⇒ could be a histogram problem! S. Komamiya

18.54 JDAS READOUT ERROR 44 — Timeout br 2 cr 1 : Latches.

19.29 Run 14829 Histogram for DL8 bit ratio is OK.

19.39 JDAS READOUT ERROR same as above

19:53 JDAS READOUT ERROR 85 — MP-16 analysis incomplete YY=1.

21:28 MarkJ phoned us. New fill will be in 20 minutes.

21:28 JDAS READOUT ERROR 44 DMA Timeout, Time out br 2 cr 1 Latches occurs twice.

21:34 The same errors occur 3 times.

21:41 RUN DOWN on request of MARKJ, who has a broken wire in one chamber

22:30 New fill is ready.

22:52 PICR is adjusting orbit. We still have high BP current ~ 2.7 and 20% dead time. They did not touch the collimator during injection, but we not sure whether it is in or not.

22.48 JDAS Readout error 44 DMA Time out
" " " " Time out branch crate 1: Latches,
" " " 44 " " lead glass

23.45 B.P. current 2.65 as PICR to close collimators; they promise, reluctantly, to do it, but we do not see any effect ~~of this~~ on the B.P. current.

0.00 - 8.00 Hill, Peters 15. 10. 83

0.05 JDAS Readout error 44 Time out branch 2 crate 1 ! we touched the branch 4 helped !

0.27 " " " " " " " " " "

0.29 New energy 21.740 GeV

5.00 JD HV goes down ~~[illegible]~~ no alarm (light current)

6.00 Jet chamber high current

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RUN	DATE	START	STOP	RUNSTART I+	RUNSTART I−	Dead Time (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T# REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT2 E>7.8 GeV	T2 BIT 17 2T. Ex. 2T.
14832	14.10.83	22.32	22.50	4.66	4.64	15.2%	972	2622	2405	252	39	~~11.30~~ 111	3890	220	721
14833	14.10.83	23.40	0.05	4.74	4.41	16.9	1357	3317	3043	353	60	1497	4279	334	779
14834	15.10.83	0.05	0.30	4.40	4.39	23.0	1489	3285	2945	388	90	1616	3364	336	627
14835	15.10.83	0.33	1.29	4.02	4.06	10.9	3375	8001	7070	877	95	4263	6895	873	1367
14836	15.10.83	1.30	2.32	3.48	3.47	10.1%	3736	8002	6837	972	98	4512	6264	846	1298
14837	"	2.34	3.12	2.97	2.96	8.4	2312	4684	3937	602	50	2791	3395	537	674
14838	"	3.45	4.40	4.74	4.72	13.0	3158	8002	7198	922	106	3879	8199	856	1783
14839	"	4.41	5.40	4.04	4.02	12.9	3322	8002	7082	865	111	4178	7099	853	1479
14840	"	5.41	6.25	3.42	3.40	9.9	2554	5872	5058	664	65	3284	4557	697	986
14841	"	7.01	7.55	4.63	4.61	13.3	3230	8002	7017	841	112	3965	7562	846	1568
14842	"	7.55	8.50	3.97	3.96	11.2	3275	8002	6980	852	96	4211	6994	870	1461
14843	"	8.51	9.48	3.44	3.43	10.2	3438	8001	6918	895	9186	4463	6537	959	1510
14844	"	9.50	10.03	2.98	2.98	9.1	698	1587	1338	182	17	914	1164	183	243
14845	"	10.51	11.38	4.72	4.75	18.0	2807	8001	7306	730	132	5378	9365	751	3021
14846	"	11.45	11.58	4.13	4.11	15.6	793	2244	2066	206	32	1012	2480	246	794
14847	"	12.01	12.52	3.98	3.96	12.7	3058	~~8002~~ 8005	7423	795	101	3993	7578	941	1956
14848	"	12.51	13.54	3.49	3.47	10.1	3516	8002	6877	915	93	4414	6374	877	1503
14849	"	13.55	14.27	2.87	2.85	9.2	1594	3475	2955	415	38	2024	2619	410	630
14850	"	15.29	16.28	4.39	3.99	10.6	3528	8002	7017	918	97	4153	7127	848	1465
14854	"	16:50	17:50	3.54	3.24	9.7	3544	8001	6898	936	90.5	4562	6207	924	1263
14855	"	17.51	18.17	3.13	2.83	10.3	1560	3659	3167	406	41.9	1950	2982	405	702
14856	16.10.83	0:47	1:40	4.57	4.42	17.1	3166	8002	7318	824	141	3180	11954	646	1829
14857	"	1:40	2:10	3.98	3.54	12.7	1767	4091	3586	460	58	2044	4539	389	684
14859	"	2:25	2:50	3.64	3.48	8.6	1515	3230	2702	394	34	1923	2241	337	417
14861	"	2:54	3:37	3.38	3.24	10.1	2522	5109	4275	656	67	3031	3489	564	620
14862	"	3:39	4:29	3.05	2.92	7.5	2970	5748	4716	773	58	3603	3708	670	678
14863	"	6:42	7:38	4.29	3.74	11.6	3295	7402	6448	857	99	3762	3426	698	1782
14864	"	does not exist					bad tape mounted								
14865	"	7:56	8:50	3.68	3.04	9.1	3232	6869	5960	841	76	3944	5344	736	1031
14866	"	(bad tape mounted)													
14867	"	8:52	8:58	3.17	2.58	8.6	50	173	138	13	1	104	63	15	16
14868	"	9.07	10:13	2.74	2.21	6.9	3907	7091	5793	1017	70	4795	4286	830	679
14869	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14870	"	15.25	16.26	4.36	4.05	12.4	3653	8001	7062	950	117	3924	8266	742	1509
14871	"	16.27	17.28	3.76	3.46	14.7	3640	8001	6988	947	139	4000	8195	815	1494
14872	"	17.29	18.34	3.25	2.99	9.0	3937	8002	6782	1025	92	4698	6156	855	1195

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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
ON	ON	ON	2.46	1.22	51.92	IBM	2.6	60	9	1	21.725	Beam loss due to RF-fast here
"	"	"	3.01	3.78	55.70	"	2.5	64	3	1	"	New fill
"	"	"	2.37	2.97	58.67	"	2.4	58	2	0	"	
ON	ON	ON	2.23	6.76	6.76	"	2.4	54	45	1	21.740	new Energy
"	"	"	1.72	4.60	11.36	"	2.1	53	31	1	"	
"	"	"	1.31	3.25	14.61	"	2.1	53	20	1	"	Beam dumped
"	"	"	2.91	6.63	21.24	"	2.5	58	44	0	"	
"	"	"	2.11	7.04	28.28	"	2.3	55	47	3	"	
"	"	"	1.69	4.19	32.47	"	2.2	52	22	2	"	Beams lost
"	"	"	2.70	9.20	41.67	"	2.1	55	51	2	"	
"	"	"	2.22	5.41	47.08	"	2.1	54	40	0	"	
"	"	"	1.54	4.60	51.68	"	2.0	54	34	0	"	
"	"	"	1.36	0.95	52.63	"	2.0	51	7	0	"	Beams dumped
"	"	"	1.64	4.19	56.82	"	2.4	59	31	2	"	
"	"	"	1.52	1.76	58.58	"	2.35	58	13	0	"	end of Run energy
"	"	"	1.98	5.69	5.69	"	2.3	62	12	2	21.735	NEW ENERGY
"	"	"	1.59	6.50	12.19	"	2.1	53	48	1	"	
"	"	"	2.21	1.22	13.41	"	2.1	55	9	0	"	Beams dumped
"	"	"	~~2.18~~ 2.46	7.18	20.59	"	2.4	54	53	4	"	← Run 14851 – 53 bad no events see page 160
"	"	"	1.62	6.74	24.93	"	2.2	57	32	0	"	
"	"	"	1.33	1.76	26.69	"	2.1	54	13	0	"	Beams lost
"	"	"	2.72	7.05	33.74	"	2.4	65	52	3	"	
"	"	"	2.32	4.47	38.21	"		61	33	1	"	
"	"	"	2.01	2.71	40.92	FI1197 TAPE FI1197	2.1	51	20	1	"	
"	"	"	1.54	4.47	45.39	"	2.0	50	33	1	"	
"	"	"	1.44	3.66	49.05	IBM	1.9	52	27	1	"	
"	"	"	2.08	6.77	55.82	"	2.2	55	50	0	"	
"	"	"	1.48	6.23	62.05	FI1215		52	56	1	"	
"	"	"	1.39	.14	62.19	F22860	2	24	1	0	"	
"	"	"	1.19	4.03	4.63	"	2.0	54	21	0	21.790	New energy
"	"	"	—	—	—	IBM	2.2	—	—	—	"	Run 0 :- no run summary (p161- Run 30 problem)
"	"	"	3.01	10.04	14.67	"	2.3	58	74	0	"	
"	"	"	2.66	8.55	23.22	"	2.3	58	63	2	"	
"	"	"	2.21	9.09	32.31	"	2.3	54	67	2	"	

15/10/83

8⁰⁰ Nye & Warming on duty
9⁴⁵ we agree to dump the beams at 10⁰⁰
10⁴⁵ new fill ready, deadtime higher than normal
11⁴⁰ we agree to raise the energy at 11⁵⁵
11⁴⁵ Tasso sees no change in background between previous and their fill
13⁰⁰ 16 missing wires discovered in histogram (wire # 1072 - 1087 Ring 3 cell 10.4)
U8's checked: OK, U34 checked: voltages OK
Rolf Heuer called for advice: maybe threshold poti → that's it DVM reading 5.19 Volts instead of 0.15
when touching the poti, threshold jumped down to its nominal value.

16⁰⁰ Greenshaw + Kawamoto

16 27 Run 14850 finished:
just after start new run, error message comes ~~out~~ on printer.
"error 14 in 34611 at 110601: outside segment bound page no.: 163"
→ phone to D. Cords.
↳ "program YPARA was broken"
→ we rebuilt the program → looks O.K. (See JDAS operator's manual Appendix 5)
→ restart N50 → it does not help.
→ we lost runs 14851, 14852, 14853 (no events)
(we tried 3 times

18 25 Beams lost, I.P. tripped.
18:51 "Short Break" transmitter problem
+ feed back problem
22 50 New beams are ready B.P. current ~ 70 (even)
phone to PKR they will optimize the beams also ∧ Mark J has background problem
23⁰⁰ 'switch off HV' on TV → 'injection'
23¹⁰ magnet fluctuation
23:29 "Short Break"
16.10.80 → ¢
0:00 Heinzelmann, Kawamoto

2;10 ~~IBM~~ STOPPED RUN 14857 due ~~to~~ IBM error
* Message "IBM BUSY" on color TV
* IBM JADE DISK USE N/A"
2;25 RUN 14859 START. DATA WRITTEN ON TAPE. ← trouble with IBM link.

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

2;25 YVOLT Message comes just after RUN 14859 started
~~ERROR~~ W ~~LG~~ LG SYSTEM, SUPPLY/MAIN/FRAME 15
LG/BP SYSTEM HV CNTR; NO RESPONSE
← checked the corresponding LG HV by HV check program. ⇓ OK. No problem.

2;50 Message "IBM ON LINE COMPUTER UP" comes on color TV.
STOPPED RUN 14859 and tryed to ~~to~~ START NEXT run with IBM link.
However, IBM link was actually still in trouble. We started next RUN with the data writing on the TAPE. (14861)
4:00 Bartl replaces Heinzelmann
5:00 short break trouble with the feedback system
7:00 Frequent IBM-busy-problems.
Recommended cure: Pause the run until the IBM-message disappears from the color TV. Then continue.

7:40 IBM-link went down an IBM-technician is working on it.
Use write to tape

9⁰⁰ Heuer + Olsen
8⁵⁰ New tape mounted gave ZTAG error message: bad tape → caused a hard hang up → restart OK
9.05 New energy: 21.770
9.55 ZTAG error (1x): bad tape (# F 22 360), hopefully we can read it at the IBM
15¹⁵ Beams are back again, and IBM too
N-50 found clobbered, after playback earlier today. Reload N10 → OK

16⁰⁰ Hill + Chin

NOTE: By special request from Rolf Heuer
a new TOF current column, has been included next to the
B.P current column. Shift personnel should now enter TOF current as well
as B.P current at the start of each run.' Leave TOF Scale at 3 Volts

RUN	DATE	START	STOP	RUNS I+	RUNS I-	DEAD TIME %	TIME (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T∅ Rej ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1766eV	T2 BIT 17 2T E4. 2Tr.
14873	16.10.83	18:35	19:13	2.81	2.58	22.1	2263	6508	5889	588	130	2702	7648	593	2179
14874	〃	19:50	20:09	3.71	3.71	11.7	1085	2393	2062	282	32	1277	2087	217	623
14875	〃	22:02	23:04	4.39	4.33	11.5	3703	8002	70~~55~~	963	111	4081	7328	745	1293
14876	〃	23:05	00:06	3.67	3.53	9.7	3610	8002	6848	934	91.5	4574	6246	855	1100
14877	17-10-83	00:06	01:24	3.17	3.04	8.6	4160	8002	6618	1082	93.6	5040	5133	891	933
14878	〃	01:24	01:40	2.63	2.43	7.1	880	1705	1384	229	16.2	1099	1001	172	180
14879	〃	02:18	03:26	3.70	3.99	7.8	4078	8002	6775	1060	82.2	4954	5304	913	1023
14880	〃	03:27	04:39	3.09	3.36	8.2	4249	8002	6565	1118	91.3	5320	4681	1018	817
14881	〃	04:39	05:10	2.60	2.84	6.4	1862	3225	2615	479	30.4	2264	1736	397	290
14882	〃	06:30	07:30	4.60	4.64	10.8	3593	8002	7072	976	101	4361	6530	845	1289
14883	〃														
14884	〃	08:57	9~~08~~	~~4.73~~ 4.07	~~10.21~~	11.1	3835	8001	6817	998	111	4507	6147	830	1222
14885	〃	10⁰²	11¹⁰	3.90	3.31	11.9	4060	8001	6735	1057	126	4896	5220	911	953
14886	〃	11¹⁰	12²²	3.28	2.76	10.1	4306	8002	6561	1121	114	5258	4703	951	819
14887	〃	12²³	12³¹	2.77	2.32	8.0	486	863	703	127	10	578	466	111	210
14888	〃	15²⁷	16¹⁷	4.38	4.21	13.9	3350	6744	5889	872	121	3583	5783	624	1067
14889	〃	16²⁰	17³⁰	3.70	3.55	14.5	4117	8002	6833	1076	156	4727	5623	919	1023
14890	〃	17³⁰	18⁴³	3.08	2.95	8.3	4332	8002	6549	1127	93	5251	4794	957	837
14891	〃	18⁴⁶	19⁰⁴	2.55	2.45	8.7	1076	1804	1444	280	24	1208	1060	220	154
14892	〃	19⁴⁰	20²³	4.73	4.56	12.2	2456	5709	5051	639	77	3146	4578	618	947
14893	18.10.83	03⁰⁷	05⁰⁸	4.23	4.33	9.9	4227	8002	6875	1100	109	4517	5946	772	1048
14894	〃	05⁰⁸	06²¹	3.41	3.50	9.7	3138	5676	4787	818	79	3467	3755	634 ~~648~~	628
14895	〃	06¹⁰	07³³	2.85	2.83	7.5	4329	7581	6141	1127	84	4978	4673	809	901
14896	18.10.83	8⁴⁷	9⁹⁵	4.32	4.08	10.3	3611	7043	6070	940	97	4191	4770	788	884
14897	〃	09⁴⁹	09⁵⁵	3.66	3.~~44~~	18.0	253	456	378	65.6	11.8	277	314	57	63
14898	〃	09⁵⁹	10⁰⁵	3.58	3.36	8.7	344	727	621	895	7.8	427	449	80	76
14899	〃	10¹²	10~~18~~	3.45	3.25	17.1	312	604	506	81	13.9	370	393	73	95
14900	〃	11¹²	11²⁹	2.99	2.81	11.1	947	951	610	296	24	887	45	113	0
14901	〃	11~~43~~	12⁰⁰	2.78	2.61	TRIGGERS		698 WERE		IN CORRECT.			IGNORE	ALL	THREE.
14902	〃	12⁰³	12¹¹					292							
14903	〃	16⁴⁴	17²⁵	4.51	4.25	19.5	2387	4300	3772	698	117	2311	3604	447	659
14904	〃	17³¹	18¹⁹	3.96	3.73	26.2	2866	4829	4149	746	196	2798	3493	537	~~5~~96
14905	〃	19⁴⁴	20¹¹	4.56	4.77	34.3	1786	3099	~~2687~~	464	145	1661	2616	364	487
14906	〃	20¹⁷	20¹⁸	4.08	4.28	9.4	53	163	141	14	13	84	84	14	17
14907	〃	20:25	20:28	3.96	4.16	10.2	184	488	443	48	24	246	359	46	79

NSO	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Bhabha RUN	∫Ldt EXP	IBM/ TAPE	BP [V]	TOF [V]	T2 Rej Ev Fr. %	Bhabha Σ	MH	Ebeam	Remarks
ON	ON	ON	1.44	3.80	36.11	IBM	2.4	1.4	59	28	1	21.770	beams dumped
〃	〃	〃	3.00	2.17	38.28	〃	2.2	1.1	55	16	0	〃	beams lost
〃	〃	〃	3.62	12.62	50.90	〃	2.5	1.6	54	93	1	〃	
〃	〃	〃	2.70	8.95	59.85	〃	2.3	1.0	53	66	4	〃	
〃	〃	〃	1.80	6.11	65.96	〃	2.0	0.6	52	45	3	〃	
〃	〃	〃	1.89	1.22	67.18	〃	1.8	0.4	49	9	0	〃	beam dumped
〃	〃	〃	2.95	11.00	11.00	〃	2.2	1.0	51	81	1	21.785	New energy
〃	〃	〃	2.14	9.92	20.92	〃	1.8	0.5	52	73	1	〃	
〃	〃	〃	1.73	2.58	23.50	〃	1.65	0.7	54	14	3	〃	beams dumped
〃	〃	〃	3.71	13.04	36.54	〃	2.5	1.3	53	98	2	〃	~~beam~~
													beams lost after 46 events
〃	〃	〃	3.46	10.60	47.14	〃	2.3	1.1	52	88	4	〃	
〃	〃	〃	2.55	9.78	56.92	〃	2.1	0.8	60	72	2	〃	
〃	〃	〃	1.84	7.61	64.53	〃	1.7	0.2	51	56	1	〃	
〃	〃	〃	1.54	0.88	65.41	〃			51~~6~~	6	0	〃	beams dumped
〃	〃	〃	3.60	12.38	12.38	〃	2.4	1.0	53	91	2	21.800	
〃	〃	〃	2.79	10.88	23.26	〃	2.3	0.9	50	80	2	〃	
〃	〃	〃	2.26	8.57	31.83	〃	1.9	0.5	52	63	2	〃	
〃	〃	〃	1.86	1.77	33.60	〃	1.7	0.35	54	13	0	〃	beams dumped
〃	〃	〃	4.88	10.48	44.08	〃	2.5	1.4	52	77	1	〃	beams lost
〃	〃	〃	3.39	12.11	56.19	〃	2.2		51	89	2	21.800	
〃	〃	〃	2.55	6.67	62.86	〃	2.1	0.4	51	49	2	〃	
〃	〃	〃	1.90	8.04	8.04	〃	1.9	0.4	54	59	1	21.815	New energy beams dumped
〃	〃	〃	3.74	13.62	21.66	〃	2.3		49	100	1	〃	
〃	〃	〃	2.55	0.68	22.34	〃	2	0.35	53	5	0	〃	
〃	〃	〃	3.24	0.41	22.75	HD EXA TAPE	1.95	0.15	48	3	0	〃	
〃	〃	〃	2.98	1.09	23.84	IBM	1.90	0.37	46	8	1	〃	
〃	〃	-	ALL AT ZERO			〃	1.85	0.18	2~~4~~ku	ZERO)		-	NO LUMI (AND OTHER ITEMS?)
RUNS	〃					〃	1.80	0.7				'	NO LUMI - forgot it - wrong trigger
〃	〃	〃	3.97	8.85	32.69	〃	2.4	.7	53	65	1	〃	
〃	〃	〃	2.80	5.99	38.68	〃	2.4	0.7	51	60	2	〃	low cut
〃	〃	〃	3.74	6.40	45.08	-	2.2	0.6	5~~4~~	58	0		high dead time due to IBM - busy
〃	〃	〃	4.82	0.27	45.35	〃			47	3	0		
〃	〃	〃	3.43	0.68	46.03	KOAS			46	7	0		

16/10/83

20:10 Beams lost.
20:35 "Short Break". PKR say injection will commence in 5 minutes.
21:35 ~1hr later – injection.
22:00 Run 14875 started with Newfill.

17.10.83

0⁰⁰ Greenshaw & Cook on shift
0³⁰ ID tripped quietly (maybe due to PETRA transmitter problem)
1:01 ID tripped as above, no apparent PETRA problem.

8⁰⁰ T. Nozaki + S. Komamiya
9:03 JDAS READOUT ERROR 44 Timeout br2 cr1 Latches.
9¹⁴ "
9³⁰ "
9⁴⁰ "
9⁴⁵ "
10¹² HV wrong TOF ch3 HV = 2.993 should be 2.999
~10²⁰ IBM BUSY occurs every 5 minutes for ~20 sec.
11²⁰ trigger 1 output missing / 54 The reason is low statistics.
13⁰⁰ Temporary access for about 10 minutes.
STO Histograms updated to include the SYNRAD histograms – see page (136) ter
13⁴⁰ "Short break" on T.V.
15:21 New fill is ready. New energy 21.800 GeV.
15:28 JDAS READOUT ERROR 44 DMA timeout. Timeout br2 crate 1 = Latches.
15⁵⁸ Magnet Rest should ~~clear~~ water flow alarm, reset didn't show up again

16⁰⁰ Fest, Kobayashi
18⁴⁰ Mark-J asked for new filling at 19⁰⁰.
18⁴⁵ PKR recomended us to continue the run for at least half an hour because the specific luminosity is still high ($SL = 5.4 \times 10^{29}$, $I_+ = 2.51$, $I_- = 2.41$ mA).
20⁰⁰ IBM - busy, IBM - error 54 Fr. 54 etc. show up and stays after IBM seems to be back to normal, continue running after connecting Howard M. and Exit and connect IBM again ~~during filling~~ when team was lost with Howard on - telephone - line
~20²³ beams lost, but we accumulated already 176 nb⁻¹ this day, new record (after short down)

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

20³⁰ PKR tries to inject without success

23³⁰ short break magnet down to 2500 A

18/10/83 Nyge, Cochese on shift
1⁰⁰ Magnet up, according to PKR's request
1²⁰ Gas-people claim that it must be a leak in our gas circuit !! There is no gas coming back from chambers. It has been less and less ~~coming back since yesterday and now it's stopped~~ coming back since yesterday and now it's stopped completely. That must be checked!
3:10 "Injection" appears on PETRA TV (instead of "short break")
3⁵⁵ Run 14875 started
3⁵⁵ Reset Magnet trip alarm for ID.
5⁵⁸ Manually turned-on tag HV's Mainframe 63.
6⁰¹ ~~JDAS READOUT ERROR 44 DMA TIMEOUT~~ JDAS READOUT ERROR 44 TIMEOUT br 2 cr 1 = Latches – appears 3 times in row
Then 'no trigger' for a while
6¹⁶ The same timeout error
6¹⁷ "
6²⁷ "
6⁵⁰ "
6⁵⁵ "
5¹⁵ "
5³³ ~~Same timeout~~ error appears several times
6¹⁶ New energy – tripped HV Alarm to ID on powerup – took 5 mins to find it and turn it off!
(meanwhile, PKR Phone to remind us that we can turn the HT's on.....
I believe sarcasm to be the lowest form of wit!)

6⁴⁴ Same timeout error
7⁰⁰ " , several times
7³⁰ Mark J announces new fill in 10 minutes
7²² IBM busy for 10 sec
7⁵⁷ Deform job submitted

8⁰⁰ Hedgecock / Bethke on shift
8:15 phone A. Ball to come in and have a look after the gas system.
There is no evidence of a major gas leak in the muon-chamber gas circulation. —continued overleaf→
9:30 Readout error 44, Timeout br2 cr1 Latches now appears ~ every 10 minutes.
T.O. informed.

More about gasssssss .... Flows + returns of all chambers are unchanged. Increasing fresh gas input flow by 5–10 % restores the return pressure. This amounts to a 1% increase in the total flow to the chambers. No gas alarms are registering any reading. We will start a systematic search for leaks + inspection of joints. Meanwhile, no cause for alarm! AB.

9:45 Several ⟩DAS - TIME OUT - errors (see elbow) - stopped run 14896, started new one. again several errors (the same). Olsson arrives and watches it.

9:50 IBM - Error. probably severe problem, because TSO is anyway down today. Start new run 14898, on Tape HD613.

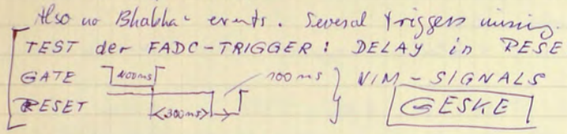
10^{00} IBM back. Several short runs, because ⟩.O. tries hard to find Time-out-bug.

10^{30} Stop data taking, ⟩.O. and D.C. try even harder (CAVIS-slogan).

11^{22} Start run 14900. No Lumi, no forward-counter-hits. HV ok. Again Time out 2/1. Phoned K.H. Meier.

Also no Bhabha-events. Several triggers missing. Must be some hardware-error?

18^{18}



14:36 All experts some, nobody wrote something into this book.
- Trigger-problem solved (as ⟩ heard); problem was one missing bit (must be unessential one)
- ⟩.O. and D.C. found nothing new (Timeout still appears ?)

15:50 New test version of Nord-50 program now available (DIT) N50DAR.
This a) Has histogram limits for pickups altered so one should see the peaks again.
b) Marks (but does not reject) possible Beam-gas candidates.
HEN

Finish

16:00 Bartel & ~~Lange~~ on shift

16:40 Geske + Riege: FADC-Trigger ausgebaut = removed

16:50 During Run 14903 frequent IBM-busy signs.
Ask IBM-operators: Only one machine is active. It is overloaded.
They say it will get better, when TSO and IPS-users disappear later on.

17:10 With Nortkemper of R1 we are having the IBM-hang ups. He finds out that all experiments hang simultaneously. Phone F58

ON/OFF N50	MIP	TOF	<L> ×10^{30}	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

17:30 Run 14904
We get. IBM ERROR 00, however data taking seems to proceed normally. The Disc space used increases, IBM-link still ok.
F58-people say, everything looks normal.
What the hell is ERROR 00. There is no description of it
All of a sudden the message disappeared

17:55 Phone Dalpiaz at home:
F58 knows about the problems, however the experts Rothweiler and Trost are not here today. They will ~~not~~ continue to work on this problem tomorrow morning.
The problem is a synchronisation problem between the IBM and our F58 Mainframe. I guess we have to live with this problem until tomorrow morning.

18:05 The system is slowly deteriorating now we get also DMA-time out errors more frequently than before. About every 3 hrs.

What is IBM-JOB ERROR CHECK 2257?

18:15 Beams lost with ID-trip

19:50 High dead time due to IBM-busy
frequent DMA-time out errors

20:10 Stop the runs, reload Nord.

20:15 IBM-link down write data to Tape
DMA-failure again D.E.O. - takes over

20:30 Mark) phones the other experiments want to change the energy by 2 MeV.
We have to agree because $\frac{\Sigma}{\text{exp}} \sim 250\ \text{nb}^{-1}$

20:55 MKJ 81, Celle 67, Tasso 50 Jade 46
IBM is back on again

21:00 New energy
HV OFF ID ALARM when HV OFF
HV ON - New run at new energy

21:10 SLOW ID TRIP - SOME BEAM LOST

21:14 FINALLY ALL LOST

22:45 Slow ID trip, then 'SWITCH OFF HV' - but PETRA still has beams!

22:48 - Short break -

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Run	Date	Start	Stop	I^+	I^-	Dead time	Time acc	Rec in	Rec out	All $\times 10^6$	T_1 Rej 10^6	T_1 acc sum	T_2 acc sum	T_1 Bit 2 $E_T > 6$ GeV	T_2 Bit 17 $2T \cdot E4 \cdot 2T_{TH}$
14907	18/10/83	20:39	21:03	3.84	4.03	12.4	1419	3444	2992	370	46	1961	2528	387	537
14910	"	21:09	21:11	3.50	3.68	19.6	93	240	214	24	5	114	185	20	48
14911	"	22:03	22:45	4.65	4.74	16.2	2495	5854	5183	650	105	3130	4902	645	947
14912	"	22:56	23:43	3.74	3.35	13.7	2829	5531	4743	736	101	3216	3883	642	718
14913	19/10/83	1:20	2:11	4.42	4.51	11.4	3668	8002	6962	954	109	4469	6308	856	1857
14914	"	2:12	3:15	3.69	3.77	8.6	3796	8002	6822	988	85	4679	5728	930	1061
14915	"	3:16	3:33	3.12	3.20	8.6	1016	2058	1783	264	23	1198	1418	227	233
14916	"	10:50	11:48	3.50	4.04	12.7	3740	8001	6949	974	123	3923	7636	712	1645
14917	"	11:48	11:58	3.07	3.54	8.2	533	978	794	139	11	595	642	85	113
14918	"														
14920	"	12:15	12:26	2.88	3.34	9.2	605	1130	940	157	15	710	670	121	104
14921	"	12:29	13:11	2.79	3.24	8.0	2532	4439	3670	659	53	2963	2764	567	435
14922	"	13:15	13:48	2.51	2.93	7.4	1980	3466	2816	515	38	2301	2064	454	307
14923	"	14:26	15:19	4.60	4.47	18.8	3190	8002	7234	831	156	3558	8178	718	1291
14924	"	15:20	15:59	3.92	3.82	11.4	2329	5917	5212	606	69	3040	5149	611	711
14925	"	16:02	16:32	3.48	3.40	10.3	1785	4269	3712	464	48	2240	3627	431	460
14926	"	16:35	17:12	3.17	3.11	10.5	2173	4816	3938	565	62	2724	3735	493	415
14927	"	17:14	17:23	2.80	2.81	8.7	511	1044	890	133	12	582	820	101	100
14928	"	17:50	17:54	2.65	2.61	7.8	229	455	400	60	5	258	367	61	32
14929	"	20:14	21:05	4.85	4.92	14.5	2964	8001	7288	771	111	3575	8477	740	1791
14930	"	21:04	21:58	4.15	4.22	12.3	3183	8002	7148	828	101	4066	7303	857	1019
14931	"	21:59	22:50	3.56	3.62	10.9	3035	7158	6210	789	86	3882	5991	772	739
14932	20/10	0:31	1:24	4.25	4.00	12.8	3174	8002	7270	826	105	3574	8463	729	1266
14933	"	1:26	2:23	4.07	3.39	15.0	3037	6843	6007	791	119	3459	6108	659	772
14934	running	became	of	computer	problem										
14935	"	2:35	2:43	3.40	2.29	14.6	160	355	306	42	6	175	263	37	37
14936	"	2:45	3:36	3.32	2.72	9.2	3011	6118	5176	784	72	3367	4879	614	537
14937	"	5:16	5:21	4.48	4.39	0	0	28	27						
14938	"	5:22	5:27	"	"	0	0	16	16						
14939	"	5:27	6:25	4:33	4:25	11.5	3338	8002	7162	869	100	3905	7359	773	952
14940	"	6:26	7:04	3.67	3.60	14.3	2216	4868	4322	576	82	2504	4178	503	489
14941	"	7:07	7:11	3.28	3.22	29.4	187	382	325	49	14	201	225	42	39
14942	"	7:17	8:07	2.85	2.79	11.3	3009	6274	5400	783	88	3513	5384	655	640
14943		TEST	Run		ONLY			MIC - PROCS		WORLE		OFF			

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N50	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ Tape	BP V	TOF V	T_2 Rej Fr. (%)	Σ Bhabha	MH	E_{beam}	Remarks
ON/OFF													
ON	ON	ON	3.40	6.13	52.16	HD188			48%	1	0	21.845	stopped for energy change
"	"	"	2.40	0.14	0.14	IBM			48	1	0	21.830	Beam lost
"	"	"	4.34	10.50	10.64	"	2.4	1.3	53	77	4	21.830	
-	-	-	2.62	5.46	16.10	"	2.1	0.75	50	54	2	"	beam lost
"	"	"	3.63	1473	30.83	"	2.2		53	108	3	"	
"	"	"	2.75	10.09	40.92	"	2.15		51	74	1	"	
"	"	"	2.03	1.91	42.83	"	2.05		50	14	0	"	beams lost
"	"	"	1.85	6.14	48.97	"	2.30	1.2	55	45	2	"	
"	"	"	2.57	0.68	49.65	"	2.0	0.6	51	5	2	"	run stopped manually
							2.0	0.6					run summary lost
"	"	"	2.23	1.09	50.74	"	2.0	0.6	49	8	0	"	run stopped manually
"	"	"	2.10	5.89	56.33	"	1.8	0.4	52	43	3	"	"
"	"	"	1.45	2.87	59.20	"			52	25	0	"	"
"	"	"	3.31	9.65	68.75	"	2.4	1.2	52	70	5	"	
"	"	"	3.03	7.05	25.80	"	2.2	0.85	52	51	3	"	stopped run to change energy
"	"	"	2.71	3.42	3.42	"	2.0	0.7	51	25	1	21.845	stopped by D.Cords
"	"	"	2.20	4.37	7.79	"	2.0	0.5	51	32	0	"	"
"	"	"	2.07	0.41	8.20	"	2.0	0.5	53	3	0	"	"
"	"	"	1.91	0.68	8.88	"	2.0	0.5	55	5	1	"	Beams dumped
"	"	"	3.95	12.29	21.17	"	2.4	1.55	54	90	2	21.845	* Beginning of run : T_{46} HV off!
"	"	"	3.39	11.75	32.92	"	2.15	1.05	53	86	5	"	
"	"	"	2.84	8.74	41.66	"	1.9	0.7	52	64	1	"	Beams lost. ID Trip
"	"	"	3.63	10.93	52.59	"	2.3	1.2	53	80	2	"	
"	"	"	2.75	7.65	60.24	"	2.1	0.75	51	56	1	"	
"	"	"				"	1.9	0.60				"	
"	"	"	1.66	0.55	60.79	"	"	"	47	4	1	"	Energy increased
"	"	"	2.00	6.57	6.57	"	1.7	0.45	51	48	1	21.860	Beam dumped
													computer problem run stopped
													" "
"	"	"	3.29	12.31	18.88	"	2.1	1.0	51	90	4	"	
"	"	"	2.65	4.92	23.80	"	2.0	0.7	50	36	0	"	
"	"	"	1.50	0.27	24.07	"	1.8	0.5	41	2	0	"	
"	"	"	2.23	5.75	29.82	"	1.8	0.5	53	42	1	"	

22:53 Really was 'short break' for other - 'SWITCH ON HV'!

23:00 The TOF-hit map has a very strange pattern (since long already) counters #72-84+#1 are extraordinary high. That was not the case in the preceding running period. Is it a strongly collimated background or is the setting of these counters different from the others? Running through the high rates in 72-84 are not seen in the corresponding PP's #30-42. Some expert should have a look at them.

The hit map is dominated by noise. There is no coincidence in id. But the HV may be a little bit high. Thresholds of discriminators were checked. They are all equal. In "Lattes" where coincidence is demanded you don't see this pattern any more.

23:40 Beam loss with ID-trip

18.10.83

0.00 Mrnowa, Schmitt on shift.

1:08 Start run 14913

3.33 beams lost, „short" break power suply failure

6:02 Restart not before 8:00. Run down JADE magnet to ~~0~~ 1000 A.

8:00 – 16:00 Warning. Yamada on shift

8:00 PETRA injection started. But they have difficulties to complete refilling.

9:00 Information from W. Bartel: Hochveller is working on the IBM link error problem. Although he still doesn't know how to pinpoint the ~~prob~~ origine.

10:30 New fill ready.
run up magnet to 7500 A.

10:45 start new run

10:50 5X DMA timeout branch 2 crate 1 Calchas

10:54 { 1X ~~time~~ timeout branch 7 crate 5 LG ADC
1X DMA timeout branch 2 crate 1

~~11~~ 11:36 1X DMA timeout branch 2 crate 1

11:55 2x " " " "

11:58 run 14917 stopped for D. Cords, he wants to implement a new pgm into RTR 20ts

12:02 Herr Kirchbiel goes vandalizing with his big hammer in the electronics room

12:03 Nord hang up, timeout branch 3 crate 3
restart Nord, initialize Microproc
run 14918 ended abnormal due to Nord hang up

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Run 14919 terminated at event 2 (Microproc not running)

12:20 Run 14920 short run OK.

12:30 run 14921 first results from D. Cords error traceback: 0402100 002060 000002 010300 000000 ?

13:20 Call from M-J. The next fill is planned at ~~4~~ 13:45.
present ∫Lat (nb⁻¹)
CELLO 42. JADE 56, TASSO 41, M-J 50

14:20 New fill ready.

14:30 The triggers { #20 ((2TBG-NS)* <7T * 2 All tracks in ID
#31 (TBG colliwan [2]) * 2 Fast (Coplanar) Tracks in ID } ~~trig~~ are reinstalled during the run 14923.
One CAN ~~DO~~ Not use them for phyo. analysis for Runs [14432 – 14923]

16:00 Kirchbiel and Diedrich on shift

17:15 Concerning DMA timeout problem: 1) It is suspected that it comes from a missing LAM at the end of DMA transfer. The connection at the rear of System Crate have been checked. Lets hope now. J.O. + D.C.
1) IUE cable between RTX unit and System Crate has shaky connections. If one touches it, one can produce almost any error. Therfor we exchange it.

17.54 Beams dumped

18.30 " up again, but lengthy optimization. Indeed we have TOF 7,9, BP. 2.6
We tentatively run up the ID. Just when it was up, sudden increase in background rates; ID trip, sight and sound "switch off!". ~~DO~~ We obey.

19.58 Beam up again. This time better backgr. conditions. During "Optim." things went worse for us → ToF 2.1 V.
We complain. It seem to help.

20.10. Error Message: Tag HV all zero. (on Console printer.) This was during Run 14929. HV on again after ca 700 Nord-10-Events. Cured by local HV-on at the LeCroy

20.12 O Grief! We've got one of those old wicked timeouts again. ← which? you should write down branch & crate. D.C.

20.35 another 6 Timeout Errors in one minute.

22.50 Beams lost. ID trip.

20.10.83 21 Timeouts since 18:00

0.00. Ambros, Menke on shift

12:43 time-outs (1:10,

1:50 Muon wire 9 was permanently missing. went in NW Hall, works again.

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2:05 ⊛ permanent time-out branch 3 crate 2
followed by "no trigger" 1 we paniced the run
2 JDAS readout error 45 – MP-16 analysis incomplete YY=1
we stopped the run and tried to cure the problem as indicated in the manual:
"Log: FIS, FY, SP."
new run started
run stopped by itself ; same procedure repeated ; now success!

23 2:40 after 350 trigger same problem as described above

1[illegible] Muon crate 9 had to be reset for the 3rd time Disgusting!
0 3:35 often problems as mentioned above ⊛
3:40 beams will be dumped
1 5:18 have to stop the run because of same problem
3: the time-outs are always in coincidence with muon crate 9 missing Hmmm!
6
could only start after initial load of Mproc
8 Muon crate 9 now permanently missing. Reset does not work any more
5:36 expert called! See Muon Folk-Nature Log Book for details. Mu crate 9 now functioning

[illegible] 7:00 run stopped because of time-out error : no trigger anymore

8:00 Hill/Zeller on shift

8:10 Switch off high voltage appears on PETRA TV. After that "short break".
10:00 ring DAQ-y up asking what happens - they tell us we have got an access!
Restart ≈ 13 h.

8:25 Magnet current down to 2000A – during this procedure "Magnet status error - power switch off or inhibited"
We hope it was on purpose - people are working

10:30 V34 # 21.3 (wires 1408-1423) which went off during last run (# 14942) repaired R

14:00 TOF-TDC replaced in second crate, N=5 (Counters 35, 36, 77, 78) Kluhbird
14.00 Optimistically switched magnet back on.
14.15 "Short break"

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhabha Σ	MH	Ebeam	Remarks

15.30. "Injection"
15.59 Still waiting!
16[00] HRS. JUNGE & HEDDECOCK
17[20] SWITCH ON HV APPEARS — Experts have to we stand by! START RUN: (TS EXPERTS DEPART)
JDAS ERROR 44 TIMEOUT BRANCH 2 CRATE 1 : LATCHES

CARC	CAMF	WCR	MODE	COST	WDOG	ISR	IVR
00402100	001060	000002	027000	010300	000000	00000	000120

YSM ERROR — TOF TDC Nº HITS Nº 75 1111
CONTROL KEYS ON LUN 9 DO NOT RESPOND — SWITCHED OFF / BACK ON - SWITCHED ON LINE
BLOCK OFF THEN IT CONTINUES NORMALLY. STRANGE!!!
TOF TDC NO HITS Nº 75 RECURS — HISTOGRAM CONFIRMS IT IS MISSING. HERR KRENGEL ARRIVES AT RIGHT MOMENT.
after looking at signals from TOF counter, the fault disappears (again). (YSM GIVES LATER Nº 40 NO HITS)
TIMEOUT — do above.
TIMEOUT — " "
20[27] — BEAMS LOST — ID TRIPPED off.
21:32 'short break' appears

21/10/83 0:00 Takeshita & Hellenbrand

Luminosities 27.860 GeV : TASSO 75?, CELLO 55; MARK J 65; JADE 53
↗ RUN 14947 with new Energy (27.875 GeV)
2:06 JDAS READOUT ERROR 44 – TIMEOUT Br 3 cr 2 : Muon chamber
RUN 14947 : Background is very high . dead Time ≈ 30% (prob ≈ 70%)
4:34 JDAS READOUT ERROR 45 – MP16 analysis incomplete : YY=1
" " " " 44 – Timeout branch 2 crate 1 : Latches.
— All most all the time "Muon Crate Missing Faulty Part 9" —
From 8:00 ≈ PLR ACCESS TRANSMITTERS.

21-10-83 08:00 Greenshaw & Schneekloth

08:05 Magnet current down to 1500 Amps a break 'til 12.00

12:55 TV again showing non-zero energy magnet up to 5000 A

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME	TIME (SECS)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T0 REJ ×10⁶	T1 ACC SUM	T2 ACC SUM.	T1 BIT2 E1>6GEV	T2 BIT 17 2T. E4. 2T.
14944	20/10/83	18:20	19:18	4.10	4.29	12.3	3393	8002	7093	883	109	3738	7862	723	983
14945	"	19:18	20:21	3.50	3.68	9.6	3625	8001	6891	943	90.6	4141	7039	770	730
14946	"	20:21	20:40	3.00	3.17	9.0	1070	2237	1868	278	25	1226	1764	224	177
14947	21/10/83	1:40	2:28	4.68	4.75	26.9	2861	8002	7414	745	200	2798	10775	581	2696
14948	"	2:29	2:39	4.09	4.13	12.0	556	1380	1226	145	17	654	1302 ~~415~~	123	175
14949	"	4:31	5:19	4.50	4.57	30.4	2863	8001	7451	746	227	2787	10992	562	2737
14950	"	5:20	6:21	3.87	3.97	9.4	3697	8002	6909	962	91	4152	7211	720	900
14951	"	6:22	7:31	3.28	3.38	8.1	4135	8002	6702	1076	87	4531	6610	755	664
14952	"	7:31	7:58	2.78	2.82	7.3	1568	2943	2458	408	30	1744	2267	278	208
14953	"	14:31	15:45	3.66	3.72	8.6	4141	8002	5998	1078	92.7	4124	7017	574	753
14954	"	15:44	15:49	3.06	3.04	8.9	202	404	308	54	48	214	309	35	32
14955	"	17:42	18:02	3.36	3.20	9.5	974	2046	1598	254	24	997	2068	144	328
14956	"	18:02	19:09	3.20	3.03	9.3	3972	8001	6213	1034	96	4142	7225	637	1179
14957	"	19:09	19:19	2.72	2.53	7.2	570	1036	761	148	10	594	807	91	105
14958-62	Funk runs due to IBM connection error						—								
14965	"	23:48	0:16	3.00	2.57	6.7	1612	2860	2104	420	28	1691	2111	253	186
14966	22/10/83	2:34	2:40	4.75	4.61	12.4	176	469	394	45	6	491	472	36	67
14967	"	2:42	3:17	4.60	4.50	11.2	2066	4919	4037	537	60	2314	4413	399	675
14968	"	3:24	3:36	3.98	4.11	10.0	666	1583	1248	173	17	693	1874	150	183
14969	"	3:37	4:38	3.99	3.86	9.8	3679	8002	6309	956	94	4087	7308	714	919
14970	"	4:39	5:48	3.39	3.21	8.1	4141	8001	6146	1077	87	4439	6755	763	761
14971	"	6:20	7:06	5.17	5.16	19.4	2723	8002	6969	708	137	3071	11073	675	1596
14972	"	7:06	7:43	4.47	4.47	13.9	2133	5651	4720	555	77	2618	5565	528	793
14973	"	7:44	8:23	4.04	4.04	13.5	2314	5605	4544	602	81	2758	5040	517	632
14974	"	8:25	9:24	3.64	3.64	11.2	3501	8002	6422	910	101	4058	7131	759	842
14975	"	9:24	10:30	3.17	3.17	8.6	3912	8001	6198	1018	88	4397	6600	777	670
14976	"														
14977	"	10:52	10:53												
14978	"	12:07	13:04	4.74	4.00	15.5	3315	8002	6393	863	134	3365	8795	588	1069
14979	"	13:05	14:3	4.18	3.40	12.4	3490	8002	6540	908	113	3870	7469	693	906
14980	"	14:03	15:07	3.70	2.97	9.4	3784	8002	6303	985	93	4217	6883	768	783
14981	"	15:07	15:10	3.28 ~~3.50~~	2.6	9.3	113	287	225						
14982	"	17:59		4.19	3.80	19.0	2999	8001	6723	780	148	2880	11140	513	1627

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Bhabha Run	∫Ldt Exp. 21.82	IBM/TAPE	BP [V]	TOF [V]	T2 Res. Ev Fr.(%)	Σ Bhabha	MH	E beam	
on	on	on	3.67	12.45	4227	IBM	2.3	0.94	52	91	6	21.860	
"	"	"	2.81	7.8	50.07	"	2.05	0.74	51	57	4	"	
"	"	"	2.35	2.60	52.67	"	1.85	0.53	50	19	0	"	BEAMS LOST
on	on	on	3.12	9.59	9,59	IBM	2,3	—	57	70	1	21.875	NEW ENERGY
"	"	"	3.62	1.37	10,96	"	2,1	0.9	51	10	0	"	Beams lost
"	"	"	2.99	6.71	17,67	"	2,4	2.0	58	49	1	"	
"	"	"	2.96	10.14	27,81	"	1,9	0,85	53	74	1	"	
"	"	"	2.08	9.31	37,12	"	1,7	05	53	68	2	"	
"	"	"	1.94	1.92	39,04	"	1,5	0,3	54	14	1	"	Beams dumped
"	"	"	2.05	7.26	46.30	"	2.0	0.65	51	83	1	"	
"	"	"	1.60	0.27	46.57	"	1.7	0.6	50	2	0	"	Beams lost
"	"	"	2.65	3.01	49.58	"	1.8	0.8	55	21	0	"	Stop
"	"	"	2.21	7.94	57.52	"	1,7	0,7	56	18	2	"	
"	"	"	1.80	.82	58.34	"	1.4	.3	53	6	0	"	Beam dumped
							2.2					"	
							1.7					"	
"	"	"	1.96	2.47	2.47	Type FH-111	1.6	0.3	51	26	1	21.890	Beam lost
"	"	"	4.15 ~~1.45~~	0.55	3.02	FH 111	2.3	4.3	52	4	0	"	Run stopped
"	"	"	~~3.96~~	6.86	9.88	FH 191	2.1	0.8	51	150	1	"	
"	"	"	3.43	2.47	12.35	FH 180	2.1	0.8	50	18	1	"	Run stopped
"	"	"	2.69	7.68	20.03	IBM	2.0	0.7	52	56	4	"	
"	"	"	2.07	6.86	26.89	"	1.8	0.5	53	50	2	"	Beams dumped
"	"	"	4.00	11.11	38.00	"	2.6	1.9	61	81	1	"	
"	"	"	3.50	7.00	45.00	"	2.2	1.3	59	51	0		stopped because of time out Attach 2 crate 1
"	"	"	2.83	6.86	51.86	"	2.1	0.9	50	50	1	"	stopped because of "No trigger".
"	"	"	2.34	8.20	60.06	"	1.8	0.5	51	62	3	"	
"	"	"	1.87	7.31	67.37	"	1.7	0.5	52	50	3	"	
			0	0									very short run.
							~~2.4~~	~~1.5~~				21.905	very short run. Beams dumped
"	"	"	2.51	5.49	5.49	"	2.4	1.5	53	40	0	"	
"	"	"	1.93	5.91	11.40	"	—	—	51	43	1	"	
"	"	"	1.55	6.32	17.72	"	2.0	0.6	54	44	1	"	
"	"	"		0.27	17.99		1.8	0.4	.	2	0	"	beams lost!
"	"	"	2.36	7.17	24.13	"	2.4		53.4	52	~~1~~ 2	"	

Remarks
BEAMS LOST
NEW ENERGY
Beams lost
Beams dumped
Beams lost
Stop
Beam dumped
Beam lost
Run stopped
Run stopped
Beams dumped
stopped because of time out Attach 2 crate 1
stopped because of "No trigger".
very short run.
very short run. Beams dumped
beams lost!

11:00 New version of Nord-50 program installed. This will reject LC grazing cosmics if the Flag (under N50-OUTLOC) is set, as agreed at yesterday's group meeting. 5% are kept as a check. Any reject candidate events that are kept have the reason stored in the N50S bank. This is displayed on the event display
1 - T_2 check, 2 - PDi cosmic, 3 - 5.0 cosmic, 4 - Zom Cosmic, 5 - LC grazer, 6 - T_2 Bgas.

Classes 1 & 2 are not currently active. First run - 14953

(Apologies for temporary loss of chronological order!)

13:10 Magnets 7500 Amps. Injection starts.

Note Run 14953 - no data (test)

14?1 start run 14953

14?7 CELLO have to turn their magnet down: takes ~20 mins, watch background.
Initially
TOF 0.65 V BP 1.9 V
Do not change.

14 57 Frequent occurence of "muon crate 9 missing" message. Manchester group waiting for replacement part, until then live with it. (Hopefully not coming tonight)

14:57 JOAS readout error 46 - Timeout branch 2 crate 1 : Latches
15:02 " "

15:16 CELLO Magnet back on.

As test switched component between Muon crate 9 and muon crate 13
Result: now muon crate 13 missing appears frequently

15:26 JOAS readout error 44 br. 2 cr. 1 Latches
15:36 " "
15:45 " "
(15:44 start run 14954
15:49 beams lost

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks

16.00 Spitzer, Becker

17.40 Start Run 14955
17.50 "muon crate missig" part 13 - frequently
17.58 "No triggers for ... seconds"
STOP - START NEW RUN helps
18:18 JOAS Err 44 branch 2 crate 1 - latches
"muon crate missing" part 13 - frequently!
18.51 Timeout
22.10 Start run: "IBM ONLINE-JOB ERROR 5"
try to write on tape - system hangs
try to ~~reload~~ Nord
call to Coords - he comes
11.00 Reload Nord, Rebuild System.
11.32 Increase of energy → 21.890
23.48 Start Run IBM Problems → Tape
23.55 IBM link not o.k.

24:00 Bartel to Nyg on shift
0:15 Beams lost without TO-trip Transmitter failed
0:20 Horkwitsch called in to repair the IBM-link
2:38 Run stopped (after ~ 2 minutes) - no triggers - possible CAMAC hang-up.
Try re-starting run.
2:40 "started run 14967" - Muon crate 4 missing - reset - OK
2:55 Message to Howard:
The Sigvad histograms showing the hits in the individual rings
bad language! are buggered. They all have 0 hits See output run # 14967
3:35 IBM link back up. Stopped run and started new one, writing to IBM
Note Run 14969 I* is bigger than 14968 I* (and record to Nord50, end I* on 14968 was bigger than start I*) - ?
7:45 Run 14972 stopped because of continuous time-out error
(JOAS READOUT ERROR 44, BRANCH 2 CRATE 1, LATCHES)
8:00 Haidt & Yamada (LC)
8:20 No trigger. → "pause" + "continue" didn't help. → Run stopped manually
We followed the recipe at the trigger box.

Fixed

22/10-83 GESKE, 9^00h, Z-TRIGGER with FADC in #7.1... 7.2 of V34 installed - READ OUT continued

12^39 Replace status board in muon crate 13. This cures the "Muon crate missing" problem.
Switching off the crate caused havoc to the data acquisition – 3 DAS errors 44, 46, 44 and 45 and then it stopped. "Continue" got it going again.
Roger Barlow.

16^00 McCann & Steffen on shift.
17^00 PETRA is still down: problems with HF
18^00 To trace the timeout problem, there are now errors # 40..44. Please, note down their frequency per run on a separate sheet. D.C.

Now have beam again. Start run 14982.
24^00 Barlow and Hedgecock.

0:14 PKR raise energy to 21.920
04^40 YSFA TRG 3 I/P MISSING ST 28 GP2 — EVERYTHING LOOKS NORMAL

6^30 "Kurze Unterbrechung". Restart some time after seven.
Run magnet down to 1000 A
7^22 Injection starts. Magnet at 7500 A.

8^00 F. Foster and S. Komamiya
8^55 'break' on T.V. → run down magnet current to 500
9 10 ! Magnet back to 7500 A. injection
10 14 Lumi.
10 21 Start run 14995 Muon Error 2 YPARA2 Crate3 no response – reset OK.
10 29 Int. Jet chamber high current – reset. BP up to 2.8 Power run

12^25 $\sum_{\text{all exp.}} \int \text{Lumi} > 240\ \text{nb}^{-1}$: MK-J wants to change Ebeam without dumping the beams. We agree. Hours 2 Room 2.

12^30 Timeout Br=2 Cr=1 Latches
12^40 Beam energy was changed to 21.935 GeV
Background is stable and low.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks

12^55 MK-J want to have new filling at ~13^00
56 Timeout Br=2 Cr=B1 : Latches
13 39 New fill ready – good background 2.3 ∴ turn on.
13 42 Start run 14,998
Get occasional muon crate #1 missing indication.
16 00 Nowka + KAWAMOTO on shift.
19:54 JET CH. TRIPPED DUE TO HIGH CURRENT.
19:55 BEAMS LOST. RUN 15003 STOPPED.
21 00 At start of run 15004 beam pipe current was fluctuating
Removed counts 19 from linear adder, now ok.

22 20 Get T3 input missing, varying numbers, trough, so I assume it's statistics.
28 GP2
Asked Mark J for energy change: Jade 62
Mark J 53 ← TDC problems.
Tasso 43 ← off for 2 hours
Cello 60

24.10.83 0.00 Sigfrid Ditlich & Thomas Kopietz on shift
1:00 start with new filling and new energy: 21.950

3:00 "No triggers". Trigger-box Level 5 Stop Run 15010, start 15011
Data-taking now O.K.
4:15 "no triggers" level 5. Stop run 15012, start 15013 → ok
4:20 " " " " 15013, " 15014 → now ok,
but how long??
4:26 "Error in HV-System 1 Supply 15, CG/BP, no response. This is the 3rd message of this type during this shift! Happens every 1 hour, but everything looks ok.
7:20 CG Trigger power failure. Rack 5 : ±15 V weg, Spannungsausfall (rail) on. Switched off + on → ok.
PKR tries to refill since 2 hours. They always loose beams before accelatating.
Reason unknown up to know.
08 00 FFOSTER MATSUMOTO on shift
[So far ∫Lumi TASSO 42 CELLO 32 MARK J 38 JADE 35]

RUN	DATE	START	STOP	RUN START I^+	RUN START I^-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL TRIGGERS $\times 10^6$	Tϕ RESET $\times 10^6$	T1 Acc. SUM	T2 Acc. SUM	T1 BIT2 $E_1 > 6$ GeV	T2 BIT 17 2T. $E_{e^-} 2T_r$
14983	22.10.85	18:52	19:50	3.75	3.38	17.1	3475	8002	6667	904	154	3507	8531	672	1183
14984	"	19:51	20:58	3.30	2.96	10.5	3654	8002	6326	950	100	4230	7258	768	865
14985	"	20:58	21:19	2.82	2.57	10.3	1189	2655	2100	309	32	1401	2440	266	280
14986	"	22:06	22:57	4.30	4.31	16.4	3016	8002	6907	785	128	3213	10574	633	1364
14987	"	22:57	23:54	3.74	3.77	11.1	3343	8002	6507	870	67	3915	7523	711	2196
14988	"	23:54	0:18	3.23	3.28	10.1	1341	3055	2985	349	35	1522	2719	262	287
14989	23.10.85	00^{23}	01^{30}	3.02	3.06	8.4	4017	8001	6214	1045	87	4523	6380	766	652
14990	"	01^{30}	01^{49}	2.60	2.65	7.8	1061	2006	1513	276	21.5	1204	1465	209	136
14991	"	02^{23}	03^{11}	4.85	4.99	16.9	2874	8002	6917	747	126	3293	9857	730	1299
14992	"	03^{11}	04^{07}	4.18	4.29	12.3	3238	8002	6666	842	103	3819	7747	783	1016
14993	"	04^{07}	05^{07}	3.60	3.70	9.9	3538	8002	6410	920	90.7	4189	6783	742	876
14994	"	05^{07}	6^{09}	3.11	3.24	8.5	3686	7446	5724	959	81.3	4237	5986	784	685 1883
14995	"	10 22	11 34	4.29	3.97	9.9%	3802	8001	6396	990	98.2	3785	7898	649	875
14996	"	11^{35}	12^{40}	3.48	3.26	9.9	3870	7609	5851	1007	99.3	4163	6632	675	753
14997	"	12^{45}	13^{02}	2.96	2.81	8.4	1402	2717	2034	365	30.7	1550	2159	253	226
14998	"	13^{42}	14.40	4.33	4.25	11 1%	3429	8002	6503	892	99.3	3764	7813	766	947
14999	"	14 41	15^{38}	3.79	3.72	10.9	3424	8001	7842	891	87.8	4148	6914	680	727
15000	"	15^{38}	16^{43}	3.31	3.24	9.8	3814	8002	6270	992	98	4205	6797	738	744
15001	"	16 43	17 34	2.89	2.83	8.1	3003	5937	4539	781	63	3252	4695	573	468
15002	"	18:35	19:28	4.42	4.05	14.4	3164	8002	7814	824	118	3512	8652	699	1452
15003	"	19:28	19:58	3.84	3.54	10.4	1665	3679	2942	434	45	1850	3357	313	403
15004	"	21:04	21:55	4.22	3.97	14.8	3005	8001	6763	782	115	3270	9199	633	1774
15005	"	21 56	22.55	3.70	3.49	10.3	3566	8001	0?	928	95	4090	7184	727	1001
15006	"	22:56	0:01	3.23	3.03	9.0	3950	8002	6242	1027	93	4430	6390	771	702
15007	24.10.85	0.02	0.24	2.11	2.64	7.8	1281	2467	1873	333	26	1450	1877	246	169
15008	"	1:06	1.58	4.88	4.75	14.3	3063	8001	6777	797	113	3472	9122	735	1016
09	"	1:59	2:57	4.19	4.09	12.0	3242	8002	6606	843	101	3899	7731	800	2411
10	"	2.53	3:09	3.13	3.54	14.2	460	1105	906	119	16	544	997	110	95
11	"	3:10	4:10	3.50	3.41	10.1	3559	8001	6364	925	93	4112	6834	777	717
12	"	4:10	4:16	3.05	2.97	8.7	277	601	577	70.6	6.2	295	469	52	43
150013	"	4:16	4:23	3.01	2.93	8.6	355	776	610	92.3	7.9	418	573	73	49
14	"	4:23	5:19	2.96	2.58	4.3	3316	6597	5121	862	80	3638	5111	624	494
15015	"	8:52	9:09	3.18	2.91	7.8	3298	5787	4315	858	67	2970	5158	419	512
15016	"	13:29	14:30	3.51	3.11	14.6	3620	8001	6482	942	178	3455	8562	586	1272

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$ $cm^{-2} sec^{-1}$	$\int L dt$ Bhabha Run (nb^{-1})	$\int L dt$ Exp (nb^{-1})	IBM/ TAPE	BP [V]	T2 Rej. Event Fraction (%)	Bhabha Σ	MH	Ebeam (GeV)	Remarks
"	"	"	2.14	7.55	31.68	IBM	2.2	53	55	0	21.905	
"	"	"	2.08	7.28	38.96	"	1.9	54	53	1	"	
"	"	"	1.86	2.22	41.18	"	1.7	56	16	1	"	Beams dumped
"	"	"	3.31	9.61	50.79	"	2.6	59	70	1	"	
"	"	"	3.08	8.79	59.58	"	2.4	52	54	3	"	
"	"	"	2.56	~~8.24~~ 2.06	~~51.82~~ 61.64	"	2.1	49	15	0	"	Tof [V] 0.4
"	"	"	2.26	6.19	6.19	"	1.9	~~451~~	45	3	21.920	0.4
"	"	"	1.92	1.51	7.70	"	1.7	52	11	0	"	0.23 BEAMS DUMPED
"	"	"	4.29	11.83	19.53	"	2.6	58	86	2	"	2.1 NEW FILL
"	"	"	3.36	11.97	31.50	"	2.4	52	87	2	"	1.25
"	"	"	2.61	9.77	41.27	"	2.05	50	71	1	"	0.7
"	"	"	1.86	6.88	48.15	"	1.95	52	50	1	"	0.55
"	"	"	2.89	9.35	57.50	"	2.5	52	68	4	"	NEW FILL
"	"	"	2.28	6.74	64.24	"	1.8	54	43	2	"	0.55
"	"	"	1.79	2.62	2.62	"	1.6	52	19	0	21.935	0.45 Ebeam changed without dumping the beams
"	"	"	2.68	~~9.69~~ 9.50	12.12	"	2.2	52	69	1	"	1.1
"	"	"	2.56	9.78	21.90	"	2.4	50	71	2	"	0.9 TOF 0.3
"	"	"	1.71	6.20	28.10	"	2.0	50	45	1	"	0.6
ON	ON	ON	1.22	2.75	30.85	"	2.0	48	20	0	"	0.55 dump
"	"	"	3.24	10.19	41.04	"	2.5	54	74	1	"	1.25
"	"	"	2.87	3.58	44.62	"	2.1	52	26	1	"	0.75 BEAMS LOST, DUMPED
"	"	"	3.19	10.33	54.95	"	2.2	54	75	5	"	1.15
"	"	"	2.52	7.30	62.25	"	2.1	51	53	1	"	0.85
"	"	"	2.04	6.06	68.31	"	1.8	50	44	3	"	0.35
"	"	"	1.69	2.07	70.38	"		52	15	3	"	Dumped
"	"	"	4.30	~~9.79~~	9.79	"	2.5	56	71	3	21.950	1.7
"	"	"	3.35	11.45	21.24	"	2.3	53	83	4	"	1.2
"	"	"	2.81	1.24	22.48	"	2.2	51	9	0	"	1.0 + trigger
"	"	"	2.53	7.17	29.65	"	2.1	49	52	1	"	0.7
"	"	"	2.05	0.00	29.65	"	2.0	45	0	0	"	0.6 no triggers
"	"	"	2.20	0.97	30.62	"	1.85	47	7	0	"	0.55 "
"	"	"	1.90	4.83	35.45	"		49	35	1	"	dump
"	"	"	1.02	3.57	39.04	"	1.95	51	24	0	"	new fill requested
"	"	"	2.80	8.96	48.00	"	2.3	52	65	2	"	1.7

8:55 HV Read Errors Main Frame 15

9 03 Trigger 2I Missing Cell 1 $\phi \sim 15$ Wires Missing
V34 threshold ? Now O.K.

9:15 LG Crate Power Supply down switched off – on O.K.

9 23 New fill requested 9-45 – very poor lumi with preset filling – all event ages!

9:23 HV Read Error Main Frame 15

9 49 Start new fill

10 25 " kurze Unterbrechung "

10 45 PKR says ~ ½ hour – "kicker" problem.

11 00 temporary change to TP program
⇒ message "NO TRIGGERS FOR ..." may occur more often. D.C.

11 26 Injection starting

13 22 nearly there ....

13 29 New fill established but very high "dead time". Ask PKR to optimize – not they are not too hopeful – BUT within 1 min dead time goes down from 70% (!) to 20%.

14:29 HV Read Error 15

" HV Wrong

15 22 Ask around for $\int L$ dt
^ wait ~ 1 hr.
Suggest new fill in 1 hour.

$\int L$ dt	
TASSO	59
CELLO	60
MARK J	57
JADE	56

16⁰⁰ Barlow, Takeda on shift.

16¹⁰ Ring PKR and ask for new fill at 21.965

16³⁰ Short break due to ~~vacuum~~ vacuum problem in the west area.

17⁴⁵ New fill

18¹⁵ We asked PKR to put in the collimator, but they hesitated to do it. They claimed that the collimator had been out for a long time and the orbit might be disturbed by putting it again. So we asked PKR to phone W. Bartel.

18⁴⁰ Collimator is in after all. 12 mm
BP current 2.4 → 2.8 ▽

19:05 LG power supply for linear sum modules failed
Reset → OK.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int L$ dt Bhabha Run	$\int L$ dt Exp	IBM/ TAPE	BP [V]	T_2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	Remarks

20⁵⁷ JDAS error 44 on Branch 2 crate 1, continually. Stop and restart run.

[25.10.83]

0.00 Warming + Minowa

4.00 Takeshita + Minowa

7:50 at the end of Run 15029, energy was changed from 21.965 → to 21.980.

8⁰⁰ Ambros & Haidt on shift

8¹⁵ Ask for new filling

14²⁰ Minor modification made to Nord-50 program to change Jete mean hits/wire histogram (HENA)

16⁰⁰ Kuhlen + Komamiya

16³⁰ "injection" since ~ 8⁰⁰, MK-J want to know the reason for the problem. Even PKR do not know it!

17⁰⁰ TASSO want to have an access for 30 minutes.

18⁵⁰ GESKE, END of test run for FADC – digitizer

19³⁵ New beams ready. Background looks O.K.

19⁴⁰ { Inner detector HV was switched off without any alarm
Trigger (at least T1 READOUT) was working after the I.D. trip.
Just before "JDAS ERROR 46-HP-16 out of sequence; YY=0" was on the JDAS control screen.

21⁰⁰ Time out 44 Br = 2, Cr = 1 Lat=hrs

21⁰⁴ IBM busy + IBM error 53 (IBM JADE DISC USE N/A) – what does it mean? non-active?
↳ automatically cured.

21⁴⁰ IBM busy, IBM error 53, stop run 15033

21⁴⁵ Sedglan trigger power failure. „Spannungsausfall" Rack 5; switched off/on → O.K.

21⁴⁸ IBM ~~on~~ link available again → start run ~~15034~~ 15034

22¹⁰ We asked PKR for new filling

22²⁰ IBM busy + IBM error 53 phone to 3219/3462 but no response

23³⁰ "standard histograms" does not work: TOO QUICK, DISPLAY BUSY
reload Work → o.k.
Run 15035 was a test run, no data, no histograms

184 RUN	DATE	START	STOP	Run I+	Run I-	Dead Time (%)	Time (Sec)	Records in	Records Out	All ×10⁶	TØ Rej ×10⁵	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E1 >6GeV	T2 Bit 17 2T.Eq.2Tr
15017	24.10.83	14:30	15 35	3.03	3.39	10.1	3839	8001	6302	999	101	3791	7980	633 1064 ~~864~~	692
15018	〃	15:35	16:18	2.62	2.95	8.8	2513	5044	4946	654	57	2684	4169		364
15019	〃	17:51	18:45	4.50	4.32	15.4	3187	8001	6817	829	127	3044	10746	593	1158
15020	〃	18:45	19:44	3.95	3.99	11.9	3437	8002	6609	894	106	3599	8578	689	1196
15021	〃	19:44	20:46	3.50	3.36	10.5	3694	8002	6353	961	101	3986	7813	723	1203
15022	〃	20:46	21:00	3.06	2.92	8.7	746	1516	1175	194	16.8	814	1269	151	159
15023	〃	21:00	21:46	2.97	2.83	8.0	2696	5178	3795	701	56	3127	3913	512	382
15024	25.10.83	1:24	2:21	3.98	4.04	12.0	3396	8002	6576	884	106	3460	8701	648	1174
15025	〃	2:21	3:33	3.28	3.39	7.9	4284	8002	6067	1115	88	4499	6681	719	691
15026	〃	3:34	4:04	2.78	2.90	7.6	1783	3315	2435	464	35	1957	2522	288	250
15027	〃	4:57	5.59	4.12	3.71	10.2	3681	8002	6430	958	98	3901	7621	721	946
15028	〃	6:00	7:09	3.45	3.17	8.0	4159	8002	6082	1082	87	4502	6466	715	594
15029	〃	7:09	7:50	2.96	2.71	7.2	2386	4407	3326	621	45	2629	3253	418	285
15030	〃	7:51	8:48	2.72	2.49	6.9	3342	5855	4271	870	60	3484	4444	544	376
15031	〃	19 38	20 48	3.89	3.96	9.6	3886	8002	6222	1014	98	3959	7662	603	871
15032	〃	20 48	21 02	2.95	3.10	8.0	846	1547	1158	220	18	845	1316	126	118
15033	〃	21 08	21 40	2.79	2.92	7.1	1856	3258	2383	483	34	1866	2698	257	253
15034	〃	21 58	22 23	2.49	2.59	6.6	1674	2859	2049	436	29	1716	2167	254	212
15035	26.10.83	02:50	03:32	3.28	3.68	11.7	2330	4409	3313	606	70	2348	3695	342	413
15036	〃	03:36	04.59	2.91	3.32	8.3	4587	8001	5855	1194	99	4634	6508	722	630
15037	〃	05.02	06.02	2.40	2.78	9.0	3199	5489	3939	833	75	3385	4022	503	343
15038	〃	0635	06.50	4.28	4.35	11.1	887	2217	1786	231	26	1078	1934	168	274
15039	〃	06.52	07.51	4.03	4.13	9.8	3524	8002	6443	918	90	4036	6993	763	861
15040	〃	07:51	08:52	3.43	3.53	8.6	3571	7370	5746	929	80	4130	6072	775	676
15041	〃	08:55	9:33	2.90	2.99	14.5	2110	4288	3350	549	80	2240	3588	333	403
15042	〃	9:37	10:33	2.56	2.68	14.2	2739	5145	3884	713	101	2863	4147	476	420
15043	〃	18:01	18:00	3.31	3.44	23.0	2605	6898	5912	678	155	2569	8751	405	1294
15044	〃	19:11	19:37	2.72	2.61	10.2	1568	3411	2690	407	41	1554	3652	255	414
15045	〃	22:24	23:13	4.2	4.14	24.1	2869	8001	6903	746	179	2842	10706	504	1898
15046	〃	23:13	0:15	3.46	3.36	9.5	3733	8001	6241	971	92	3961	7298	639	801
15047	27.10.83	0:16	0:52	2.66	2.65	8.1	2062	4037	3027	536	43	2209	3332	375	347
15048	〃	0:53	1:37	2.36	2.39	7.4	2583	4768	3508	672	49	2801	3661	497	350
15049	TDC Calibration														
15050	〃	22 13	23 19	3.54	2.65	11.7	3715	8001	6322	967	113	3588	8839	532	942

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

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N50	MIP	TOF	<L> ×10³⁰/cm²sec	∫Lat Bhabha Run	∫Lat Exp 48.0s	IBM/ Tape	BP [V]	T2 Rej Ev Fr. (%)	Bhabha Σ	MH	Ebeam	TOF Remarks
ON	ON	ON	2.43	9.24	57.24	IBM	2.3	52	69	1	21.950	
〃	—	〃	1.77	4.14	61.38	〃	2.1	49	80	1	〃	TOF 0.4
ON	ON	ON	2.68	7.46	7.46	〃	2.6	59	54	3	21.965	1.7
〃	〃	〃	1.71	6.21	13.67	〃	2.3	54	45	2	〃	1.3
〃	〃	〃	1.36	4.97	18.64	〃	1.9	~~35~~ 54	36	2	〃	0.6
〃	〃	〃	1.62	0.55	19.19	〃	1.75	52	4	0	〃	0.45 Time out
〃	〃	〃	1.34	4.14	23.33	〃	1.65	54	30	0	〃	0.4 Beams dumped
〃	〃	〃	2.86	10.77	34.10	〃	2.25	54	78	1	〃	0.95
〃	〃	〃	2.22	7.18	41.28	〃	1.80	53	52	2	〃	0.60
〃	〃	〃	1.81	3.45	44.73	〃	1.55	53	25	1	〃	0.35 Beams dumped
〃	〃	〃	2.65	9.39	54.12	〃	2.20	53	68	1	〃	1.30
〃	〃	〃	2.00	6.63	60.75	〃	1.90	52	48	5	〃	0.50
〃	〃	〃	1.50	2.62	63.37	〃	1.70	51	19	0	〃	0.12 ← Energy changed in during the run
〃	〃	〃	1.07	2.90	2.90	〃	1.60	53	21	0	21.980	0.30 beams dumped
〃	〃	〃	2.69	9.40	12.30	〃	2.1	53	68	4	〃	0.8
〃	〃	〃	2.41	1.66	13.96	〃	1.8	53	12	0	〃	0.45 IBM link error
〃	〃	〃	2.13	3.46	17.42	〃	1.7	54	25	1	〃	0.33 IBM link error
〃	〃	〃	1.72	2.87	20.29	〃	1.55	53	24	0	〃	0.30
〃	〃	〃	2.92	7.19	27.48	〃	2.0	51	52	2	〃	0.55 IBM link error
〃	〃	〃	2.22	11.62	39.10	〃	1.7	54	84	3	〃	0.4
〃	〃	〃	1.62	4.70	43.80	〃	1.5	54	34	0	〃	0.3
〃	〃	〃	4.15	3.32	47.12	〃	2.3	55	24	1	〃	1.0 IBM link error
〃	〃	〃	3.36	10.93	58.05	〃	2.1	50	79	5	〃	0.9
〃	〃	〃	2.59	8.99	67.04	〃	1.9	53	65	4	〃	0.6
〃	〃	〃	1.89	2.63	2.63	〃	2.0	50	19	0	21.995	ENERGY CHANGED DURING FILL
〃	〃	〃	1.48	4.99	7.62	〃	1.8	51	36	1	〃	BEAMS DUMPED
〃	〃	〃	0,76	1,52	9,14	IBM	1.8	54	11	1	〃	
〃	〃	〃	0,52	0.83	9,97	TAPE	1.7	55	6	0	〃	Beams dumped
〃	〃	〃	2.91	7.06	17,03	IBM	2.0	57	51	4	〃	
〃	〃	〃	2.31	7.20	24.23	IBM	1.7	51	52	2	〃	
〃	〃	〃	1,75	3.32	27,55	〃		51	24	0	〃	
〃	〃	〃	1.38	4.62	31.57	〃	1.6	53	29	2	〃	Beams dumped
〃	〃	〃	1.54	4.85	36.42	〃	1.92	57	35	2	21.995	TOF 0.6 ⇔ TO NEW BOOK.

0.00 Wednesday 26/10/83 Nozaki & Loehrer.

0.30 Petra has "injection problems". PKR do not know what they are, nor how long it will take to sort them out.

02.50 Stable beams. start run.

03:30 > IBM ERROR 53 SUBER 000000. We wait for ~ 1 minute then the error message disappears.
03:40

05.45 Twice have following sequence of events:
IBM ERROR 53. we pause. ~ 2 mins later fault clears.
We continue. Immediately get no trigger do rest at Krehbiel's box.
Then immediately get 1 JDAS readout error 44.
Then it all works O.K. (till the next time).

We regret new fill for 06.00.

06.30 Stable beams and we're off again!

06.45. IBM ERROR 53.
07.00 TASSO phone to say that they are having trouble with the IBM link (ours is OK at the moment)

07.50. Integrated luminosities from around the ring:

JADE	58
TASSO	60
MARK J	49
CELLO	40
	207 nb^{-1}

08:00 STEFFEN & J. WAGNER ON SHIFT

TASSO	68
JADE	66
M-J	56
CELLO	56.5

TIME TO RAISE ENERGY → 246.5 nb^{-1}

08:53 RAISED ENERGY TO 21.995 GeV/BEAM DURING FILL.
09:30 TWO IBM ERRORS IN A ROW → & PROBLEMS WITH PETRA LINK

ON/OFF N50	MIP	TOF	<L> ×10^{30}	∫Lat Bhabha Run	∫Lat Exp	IBM/ TAPE	BP [V]	T$_2$ Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks

9^{00} small talk with Schilling (K2). This resulted finally in a working graphics terminal at 10^{00}

10^{22} since 9^{00} we have IBM-problems. Mönke-meyer has been contacted but Knobbe is the right person to search for.

10^{30} BEAMS DUMPED

13^{40} Power supply for LG linear sum (Rack 5) was replaced with the spare one. Takeda + Minowa + Takeshita

14^{30} "Leadglass Trigger Power Failure" Box 1+2 : Spannungsausfall
Switch off + on again cured it.

14^{40} happened again.

15^{00} Old power supply (LG linear sum) was installed back. The new one ~~seems to~~ does not seem to be completely repaired. → to EPOS.

16^{00} Dittrich & Heinzelmann on Shift.

18^{30} IBM-ERROR 53 IBM link again
19^{00} " 54 ~~IBM~~ IBM down

27.10.83
0^{00} Hill & Takeshita
0:49 JDAS ~~ERROR~~ 44. Br2. Cr1 Latches. → we Stop Run and start new Run.
4:00 Warning replacing Takeshita
4:38 LG power supply tripped "Lüfterausfall", we switch it off and on again, OK.

08:00 Greenshaw, Kobayashi
09:00 Break - machine studies. PKR want magnet left on, they are doing tests on ramping process.
11.53 PKR is setting up all files again. It will last several hours.

16^{00} Hedgecock and Cords on shift
17^{20} IBM hangup problem was due to both CPU's accessing two ~~accessing two~~ channels in the 2701 I/O device. Problem hopefully cured by allowing for only one channel, forcing all I/O through one CPU.
⇒ However, if hang-ups occur again, they should be noted in the logbook (information from Knobbe, R1)

ON/OFF			<L>	∫Lat	∫Lat			T2					
N50	MIP	TOF	$\times 10^{30}$	Bhabha Run	Exp	IBM/ TAPE	BP [V]	Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks

22^{05} SWITCH ON HV appears. BP current & TOF voltage look stable and low.
22^{15} START RUN 15050 — MUON CRATE MISSING 11 — Blocked crate 11. From the front all LED/LAMPS ARE OFF. Ring Paul Hill. He will come in.

22^{30} luminosity is low;
PKR says they have problems with the transmitter power and have experts coming in.
Therefore they ~~have~~ don't want to refil before 2300 4.

24.00 Fuse blown on crate 11. Crate replaced.

the story continues in log-book Nr. 12

you find the new toy-booth on top of the old ones

R. Frosh

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Lat Bhabha Run	$\int$Lat Exp	IBM/ TAPE	BP [V]	T_2 Rej Fr. (%)	Ev	Bhabha Σ	MH	Ebeam	Remarks