JADE-LOG BOOK XIII 15051 - 16284

Ein Brunnen-Erzeugnis

JADE LOG BOOK

Nº XII

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T_0 REJ $\times 10^2$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T, E4, 2Tr

ON/OFF N 50	MAP	TOF	⟨L⟩	$\int$Ldt BHABHA Run	$\int$Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T. REJ. FRAC.	Σ ENERGY	M.H	E BEAM	REMARKS.

LOG Book # 12.

27.10.83

23.16 — START RUN 15051

28.10.83 00^{01} Roethiger, Feist take over, "injection" - shetas

2^{10} Kilmir ready

3^{50} Team Tom

4.35 New beams, start run.

7.15 Beams dumped.

28.10.83 Minova, Weber on shift

8.00 "injection" all morning without Success

12.00 "Wiedereinschalten nach Feuer-Alarm". Apparently there was a false fire-alarm in DORIS breaking the interlock and causing all pumps at DORIS and PETRA to go off. They are now resetting it, a procedure that takes time!

13.40 still no change

15:43 JADE MAGNET SET TO 1000 Amp.

16^{00} John Nye & A. Wagner

Cello requests short access to the experiment: granted.

16^{34} JADE MAGNET SET TO 7500 Amp: machine adjustment in progress.

18^{00} Chris replaces Nye.

19^{10} we get beams at last, but problem with ID: can't be switched on! With help of H. Nabumura problem is traced to a misplaced cable (my fault)

19^{40} we try to start run: but: (Run No 15057)

Memory out of Range At 101252

101252/ 141631300 12 LDR 13, 0012, 03, 14

Memory Out of Range	
Last Start Address	162300
Last Memory Reference Address	377546 10652
Last Data to/from Memory	245404000001
Breakpt Register 1 (BP):	077140
" " 2 (BQ):	100000

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	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.E4.2Tr	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	$\int L dt$ BHABHA RUN	$\int L dt$ EXP.	IBM/TAPE	BP (V)	TOF (V)	T_2 RES. FRACT.	Σ BHABHA	M.H	E_{BEAM} GeV	REMARKS.
15051	27.10.83	23¹⁶	23⁵¹	2.56	1.84	7.1	1482	3297	2357	516	37	1880	2839	244	247	ON	ON	ON	1.04	1.38	37.80	IBM	1.4	0.34	56%	10	0	21.995	beams dumped
15052	28.10.83	2.17	3.20	3.93	3.33	10.5	3774	8001	6251	982	103	3850	8030	628	1193	"	"	"	2.44	9.69	47.49	"	2.0	0.65	54	70	4	"	
15053	"	3²¹	3⁵³	3.24	2.69	8.1	1830	3525	2621	476	38	1937	3021	305	311	"	"	"	2.01	3.68	51.17	"	1.7	0.45	54	17	1	"	
15054	"	4.37	5.43	3.79	3.21	8.9	3972	8002	6126	1034	92	4129	7402	597	895	"	"	"	2.16	6.65	57.82	"	1.85	0.70	54	48	2	"	
15055	"	5.44	7.00	2.89	2.30	7.2	4556	8002	5755	1186	85	4685	6562	724	632	"	"	"	1.29	5.26	63.08	"	1.55	0.35	55	38	0	"	
15056	"	7.01	7.14	2.39	1.86	6.7	790	1357	969	205	14	785	1095	118	79	"	"	"	1.02	0.97	64.05	"	1.4	0.25	55	7	0	"	Beams dumped
15057	"	–	–	–	–																								
15058	"	19.51	20.40	3.77	3.98	10.2	1113	2492	1996	289	29	1210	2411	205	303	"	"	"	3.22	3.19	67.74	"	2.20	0.4	53	23	0	"	
15059	"	20.18	20.18	3.50	3.71	9.3	30	59	73	7	0.7	34	62	7	9	"	"	"	2.84	0.14	0.14	"	1.8	0.4	61	1	0	22.010	New Energy — Beams lost
15060	29.10.83	1.39	2:35	4.40	4.30	13.4	3322	8001	6440	865	116	3336	9657	582	1616	"	"	"	2.69	8.74	8.88	"	2.4	1.6	56	63	2	"	Cell 1.1 gate width problem
15061	"	2:38	3:43	3.63	3.54	9.6	3939	8002	6213	1025	98	3809	8096	618	1104	"	"	"	2.05	7.35	16.23	"	2.0	0.8	54	53	0	"	
15062	"	3.44	4:57	3.11	3.02	7.8	4373	8002	5967	1138	89	4268	7060	718	785	"	"	"	1.41	5.13	21.36	"	1.75	0.5	53	37	0	"	
15063	"	4:57	5:04	2.69	2.61	6.9	333	605	445	86	6	311	495	41	48	"	"	"	1.35	0.55	21.91	"	1.6	0.3	49	4	0	"	BEAMS DUMPED
15064	"	5:52	6:53	4.61	3.65	10.6	3639	8002	6388	947	100	3754	8191	698	1173	"	"	"	2.61	9.01	30.92	"	2.2	1.2	54	65	3	"	
15065	"	6:54	8:02	3.85	2.98	8.6	4083	8002	6112	1063	91	4154	7248	777	849	"	"	"	1.88	7.67	38.59	"	1.8	0.6	54	49	2	"	
15066	"	8:02	9:20	3.13	2.39	7.1	4596	8001	5769	1196	85	4668	6397	734	555	"	"	"	1.47	6.66	45.25	"	1.6	0.35	54	48	2	"	
15067	"	9:20	9:34	2.61	1.93	6.3	768	1530	952	200	12	803	939	128	72	"	"	"	1.14	7.39	46.64	"	1.4	0.20	52	10	0	"	BEAMS DUMPED
15068	"	20.18	21.13	3.38	4.24	12.7	3310	8002	6510	861	109	3338	9267	562	1318	"	"	"	2.66	7.35	53.99	"	2.1	1.1	55	53	4	"	
15069	"	21.14	22.04	2.82	3.55	8.4	2974	5648	4191	774	65.1	2981	5111	458	551	"	"	"	2.14	6.13	59.12	"	1.7	0.35	54	37	1	"	beams Lost
15070	30.10.83	00.47	1:51	3.18	2.76	8.7	3819	7499	5682	993	862	3848	6781	824	858	"	"	"	2.44	9.15	68.27	"	2.1	1.1	54	66	3	"	
15071	"	01.55	03:17	3.13	2.71	6.6	4876	7844	5531	1268	83.2	4535	6556	646	586	"	"	"	1.32	5.55	5.55	"	1.5	0.25	55	40	1	22.025	New Energy, beams dumped
15072	"	05:52	07:02	4.22	3.67	10.8	4161	8002	6187	1081	117	3796	7221	539	769	"	"	"	2.26	8.61	14.16	"	2.1	0.55	48	62	1	"	
15073	"	7:02	8:14	3.29	2.76	7.3	4565	9002	5884	1197	86	4375	6741	663	673	"	"	"	1.52	5.83	20.09	"	1.75	0.30	52	42	5	"	
15074	"	8:18	8:20	2.71	2.23	6.5	3613	5847	4126	839	61	3502	4612	430	368	"	"	"	1.17	3.61	23.70	"	1.50	0.25	55	26	0	"	beams dumped
15075	"	10.04	11:15	3.27	3.74	8.2	4226	8002	6033	1099	90	4335	6901	688	688	"	"	"	2.30	10.00	33.70	"	1.80	0.43	53	72	3	"	
15076	"	11:15	12:12	2.69	3.10	7.3	3388	5997	4450	881	64	3485	4852	548	474	"	"	"	1.73	4.17	37.87	"	1.60	0.27	54	30	1	"	
15077	"	12:15	13:34	2.34	2.71	6.6	4772	8002	5679	1159	91	4868	6212	706	535	"	"	"	1.31	5.83	43.70	"	1.50	0.20	55	42	0	"	
15078	"	13:34	13:48	1.97	2.29	6.2	780	1307	911	202	12	801	944	112	83	"	"	"	0.96	1.11	44.81	"	1.30	0.15	54	8	0	"	beams dumped
15079	"	14.33	15:39	3.63	4.09	8.9	3891	8002	6316	1012	91	4012	7178	650	795	"	"	"	2.76	10.75	55.56	"	2.1	0.6	51	17	2	"	
15080	"	15.39	15:53	2.97	3.44	8.5	814	1618	1228	211	18	850	1417	133	450	"	"	"	2.54	1.81	57.37	"	1.9	0.38	52	13	0	"	beams lost
15081	NO EVENTS OUT.																						2.1	0.6					
15082	"	17:41	18:42	4.09	3.86	9.2	3611	7474	5786	940	87	3768	6781	584	807	"	"	"	2.97	9.17	66.54	"	2.1	0.6	51	66	0	"	
15083	"	18.46	19:56	3.33	3.15	8.0	4182	8002	6100	1085	87	4404	6706	730	651	"	"	"	2.08	8.76	8.76	"	1.8	0.4	52	63	0	22.040	New Energy
15084	"	19.57	20:55	2.77	2.63	7.4	3468	6402	4706	902	67	3703	5024	554	440	"	"	"	1.46	4.59	13.35	"	1.7	0.3	52	33	0	"	Beams dumped.
15085	"	21:29	22:19	4.27	4.22	10.1	2970	6778	5460	773	78	3227	6293	553	477	"	"	"	3.33	7.93	21.28	"	2.2	0.8	50	57	1	"	Beams lost.

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T_1 & (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 BIT 2 $E_\gamma > 6$ GEV	T_2 BIT 17 2T. EL. 2Tr

27.10.83
23 45 new filling requested

20 07 change of energy requested : new energy should be : 22.010 GeV
20 12 New energy 22.010

but, helas, we have only time to collect 0.09 nb^{-1} before loosing the beam.

Integrated luminosity at 21.995 GeV
Cello 60, Tasso 56, MarkJ 70, Jade 67 nb^{-1}
Σ = 253 nb^{-1}

29.10.83

0 00 T. Kawamoto and H. Rieseberg

PKR : They have still the biggest problems to inject! Nothing has changed to the positive by the adjustment of the machine on Thursday (to 27.10.83) and Friday.

0 42 Beams $I^+ = I^- = 4.1$ lost at 21.5 GeV
1 24 Beams ready with old energy. We ask to go one step higher to 22.010 GeV
1 35 Filling ready with high currents:
$I^+ = 4.44$, $I^- = 4.32$, BP = 2.4 V, TOF = 1.7 (3V-Range), $SL = 33 \times 10^{28}$
Run 15060 started

Problems with ID cell 1.1 (wires 0-15) : Threshold seems to be too high, but voltage is ok. It is a gate width problem, bad potentiometer in V34 ~0? in Run 15061

Histograms : Forward counters MEAN ADC and TDC, Channels 6÷9 and 22÷25 now ~ zero.

4 25 Cello 16 nb^{-1}, Tasso 19, MarkJ 16, Jade 20. Luminosity is now down to 1.36×10^{30}.
We ask a refill for 5?.
5 45 New fill ready with asymmetric beams $I^+ = 4.6$, $I^- = 3.7$, BP = 2.2, $L = 2.5 \times 10^{30}$
Run 15064 started
7 45 Double pulse in e^--timing, though yellow light is not yet on. $I^- = 2.5$ mA, low
Lumi still good : $L = 1.7 \times 10^{30}$, $SL = 44 \times 10^{28}$

RUN	DATE	START	STOP	ON/OFF N 50	MIP	TOF	$\langle L \rangle$	$\int L dt$ BHABHA RUN	$\int L dt$ EXP.	IBM TAPE	BP [V]	TOF [V]	T_1 RES. FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

8 00 Bethke, Kuhles
10 00 A. Wagner for S. Bethke
12 00 R.D. Heuer for A. Wagner

since 9.40 attempts to inject. The old decrease of PETRA - synchrotron oscillations during injection - is back again. They cannot reach > 3.5 mA per beam. Also trouble with RF power

disease? (filter broken, beam dead!)

13 30 S. Kowamiya for R.D. Heuer
16:00 Kobayashi, Heier
20:18 PETRA problems solved, we have beam again
20:55 Luminosities:

	JADE	TASSO	CELLO	MARK-J	Σ
	52 nb^{-1}	43 nb^{-1}	44 nb^{-1}	43 nb^{-1}	182 nb^{-1}
	60 "	56 "	50 "	50	at: 00?8 - 52
	65 "	[illegible]	55	57	

30/10/83 00:00 Olsson and Greenshaw
0041 Beams again
Forward counters mean ADC, TDC for 6-9, 22-25 still off, nobody has cared so far!
1 31 Cello and MarkJ-3 are close to 60 nb^{-1}, we wait for new beam energy at 1 45.
05:00 Leadglass Trigger Power Failure Alarm! Not cured by prescribed switching on and off, no brain finds. "Short break" at moment due to: (i) cavity problems, (ii) power supply failure; so wait & see if PETRA will be up again tonight before phoning "expert".
05:25 Problem solved with expert help. When attempting to reset LG Trigger power push yellow button on record crate down in rack 5.
05:09 (nR) Repeated JOMS Readout error 4K messages - Event Branch 2 crate! - Latches blindly touched anything (knust!) and it went away.
07:12 Yipy error 4 - Trigger 3 input missing.

8:00 Peterson, Schmidt on shift
9:20 Beams dumped.
13:04 New fill ready start run 15075
13:48 beams dumped
14:33 new fill ready start run 15079
15:53 beams lost

16:00 McCann, Becker
17 30 First beam ready. PKR crew rounded mystified when I asked them to close new collimators! Is this automatically?
Tried to start run 15081, but NO triggers. Just STOP and START RUN again and now it goes (15082) — but complains of error in system crate Ø !!!

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T→0 (SEC)	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. 2Tr

18^{30} $\int L dt$ ($E_b = 22.025$ GeV) JADE 65 nb^{-1} MARK-J 87 TASSO 60 CELLO 67 Σ 249
∴ Increase E_b to 22.040 at 18:40.

21^{24} New fill, start run 15085
22^{22} Beams lost.

NOTE: The high-pitched whistling sound in the Hall seems to be coming from the little box marked "Hitzeschild Durchflußwächter 6" i.e. Heatshield monitor in the pit at the +z end of the experiment (towards MARK-J). We don't know if this means ~~that~~ that anything is wrong – everything is operating OK and S. Bethke checked I.D. temperature etc. Maybe it's to do with the drop in ambient temperature or something, but it would be re-assuring to find out! W. Bartel is away at the moment. Does anyone know anything about this ??

31.10.83

0^{00} Nye/Zeibere on shift

0^{20} CELLO reports trouble with background, will ask PKR to check it. We don't see any problem in our region.
0^{35} Background optimization appears on PETRA TV, perhaps due to CELLO request
2^{21} JDAS READOUT ERROR 44 – TIMEOUT branch 2 crate 1 latches ? appears many times.
2^{25} O.K. again, we did nothing.
5^{20} After 2h of "injection" PETRA gives up and announces "short break". We ask them what is the trouble. The answer is that they can't get positrons. 6^{20} Beams! (currents low)
6^{20} Trigger 3 I/P missing (YSPY detected error).

7^{30} $\int L dt$ (E=22.040)

JADE	50 nb^{-1}
CELLO	33 nb^{-1}
MARK J	50 nb^{-1}
TASSO	42 nb^{-1}
Σ	175 nb^{-1}

8.00 Yamada/Hell on shift.
8.39 "Short Break" PKR say they have 'transmitter problems'
Magnet run down to 2000 amps.
Mr. Seidel stops the whistle in the hall. It was just a turbulence in the heat shield water flow Reg

RUN	ON/OFF N 50	MIP	TOF	⟨L⟩	$\int L dt$ BHABHA RUN	$\int L dt$ EXP.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T_1 REJ. FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

9^{50}: We called PKR. They say: The transmitter prob. has been almost solved. New filling will start soon. Magnet up to 7500 A again.
10^{30} New fill started but did not proceed at all.
10^{50} "Short break" again. Problem with the cooling system of the RF cavities. Necessary time for the break is not known yet. "~30 min or longer" they say. Magnet current reduced to 1500 A.
11^{00} B. Naroska called. "If the cooling prob. is serious, it will take several hours to repair. They will find out in half an hour or so if it is needed."
11.30. Break. Restart ~15.00. ~18:00
15:00 Krehbiel & Takeda on shift
18:30 We found that our magnet was totally off. Called K-people
18:45 Restart ~20:00 (Note!)
20:22 Magnet ready again. The handle was ~~70 kV but~~ [illegible] some overload switches had to be reset. We set the magnet to 1500 A.
20:34 short break. No time given.
22.52 Still short break, but electrons circulating at 5.992 GeV
23.04 "Injection" We ran up the magnet

1.11.83
0^{00} Schwerdtfeger + Komamiya
0.57 Beams are ready
1.00 beams pretty lost, ID trip
1.35 start run 15091 no muon chamber response (crate # 1) → reset → OK
1.38 V34 for DL8 #1 give no response → fuse (–12V) for V34 was exchanged → looks O.K. (wire map) for run 15092
1.40 beams lost, ID trip ← hole in wire map
2^{25} $\int \mathcal{L} dt$ $E_b = 22.040$ GeV

Mark J	54	nb^{-1}
Jade	55	"
Cello	34	"
Tasso	42	"
Σ 4 exp.	185	nb^{-1}

At $E_b = 22.040$ GeV, our hadronic cross section (on line) is very low.
3.35 μ crate missing #6 → reset → O.K. → Tsec clock was accidentally set to 50 ys
4.20 $\int L dt$ Mark J 68, JADE 71 CELLO 51, TASSO 49 nb^{-1} Σ 239 nb^{-1} not really
4.25 beams lost

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T1 RECORDS (SEC)	RECORDS IN	RECORDS OUT	ALL x10⁶	TΦ REJ x10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>6GeV	T2 BIT 17 2T.E4.2Tr
15086	30/31.10	23 54	0 50	4.49	4.64	11.8	3337	8002	6571	867	102	3503	8535	643	1120
15087	31.10	0 51	1 55	3.74	3.93	9.4	3846	8001	6255	1000	94	3971	7402	718	888
15088	-"-	1 55	3 08	3.22	3.41	12.3	4335	8002	6134	1127	138	4385	6711	736	671
15089	-"-	3 10	3 14	2.70	2.88	7.1	146	367	203	38	3	146	209	22	18
15090	31.10	6 20	7 10	3.37	2.67	9.5	3612	7055	5556	940	89	3445	7644	497	931
15091	1.11.	1 36	1 43	4.18	4.48	20.4	2080	1438	1281	98	20	761	1285	52	216
15092	"	2 09	2 48	4.03	4.49	18.1	funny! 116776	8002	7013	608	110	4523	7183	458	886
15093	"	2 48	3 29	3.44	3.87	15.3	funny 121782	8002	6909	632	97	4788	6144	452	749
15094	"	3 29	4 13	2.99	3.39	13.1	funny 129386	8002	6845	674	88	5094	5485	440	678
15095	"	4:13	4 25	2.62	3.00	12.6	134200	2171	1816	178	22	1420	1332	102	189
15096	"	5 41	5 47	4.22	4.10	19.2	716085	1173	1044	84	16	637	1041	68	152
15097	"	Technical Test Run — no data													
15098	"	19 49	20 41	3.91	4.06	13.4	3040	8002	6718	790	153	3085	10603	490	1572
15099	"	20 41	21 02	3.37	3.51	11.0	1217	2689	2139	316	35	1248	2781	209	275
15100	"	21 05	21 55	3.19	3.33	9.9	2987	6445	4993	777	77	3216	6157	513	668
15101	"	21 56	22 21	2.89	2.99	11.3	1307	2766	2173	340	39	1370	2566	218	282
15102	2.11	2:56	2:58	3.97	4.09	78.4	69	92	82	18	14	23	90	8	22
15103	"	3:00	4:05	3.92	4.04	19.7	3779	8002	6421	984	194	3431	9127	591	982
15104	"	4:05	5:05	3.29	3.43	11.3	3591	8002	6334	935	105	3656	8284	653	879
15105	"	5:06	6:11	2.87	2.99	9.4	3932	8001	6158	1023	96	3927	7457	737	780
15106	"	6:12	6:42	2.51	2.62	7.5	1065	1928	1399	277	21	1080	1593	172	144
15107	"	12 27	13:27	4.36	4.13	16.8	3070	8002	6702	665	134	3188	9708	613	1194
15108	"	13:28	14:38	3.50	3.17	17.6	4159	8002	6247	1083	191	3896	7686	684	856
15109	"	14 38	15 50	3.05	2.75	10.5	4228	8002	6076	1100	115	4131	7070	711	711
15110	"	15 51	15 57	2.68	2.40	8.3	391	781	596	104	9	379	622	73	62
15111	"	21:10	22:16	3.52	3.08	9.6	3935	8001	6280	1025	98.5	3862	7816	668	917
15112	"	22:16	23:31	3.02	3.54	8.8	4157	8002	6098	1082	95.3	4124	7702	719	799
15113	"	23:31	00:05	2.48	2.94	7.7	2007	3731	2747	522	40	2041	3112	373	297
15114	03/11	3.22	4.27	4.18 2.95	2.84 2.47	9.9	3887	8002	6180	1011	100	3667	8259	583	922
15115	"	04:28	05:36	3.76	2.51	9.2	4067	8001	6211	1059	97	3771	7952	645	821
15116	"	05:36	6.44	3.39	2.23	8.5	3992	7627	5763	1039	88	3813	7023	644	801
15117	3.11	12:19	13:18	3.67	3.47	11.5	3510	8002	6360	916	105	3471	8712	556	938
15118	-"-	13:19	13:20	3.26	3.07	8.4	33	91	76	8	0.7	37	54	7	9
15119	4.11	0:31	1:29	4.19	4.33	17.7	3204	8001	6664	834	148	3196	11030	546	1317
15120	"	1:29	2:31	3.59	3.77	9.9	3715	8002	6230	967	96	3976	7575	731	867
15121	"	2:32	3:25	3.14	3.31	9.1	3110	6586	5043	809	74	3445	5740	586	661
15122	JUNK														

RUN	DATE	START	STOP	ON/OFF NSO	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp.	IBM/TAPE	BP (V)	TOF (V)	T2 REJ. EVENT FRACT.	ΣBhabha	M.H.	E_beam	REMARKS
15086	30/31.10	23 54	0 50	04	04	04	3.37	9.46	30.74	IBM	2.4	2.2	53	68	2	22.040	
15087	31.10	0 51	1 55	-"-	-"-	-"-	1.53	5.98	36.72	-"-	2.0	0.5	52	43	0	-"-	
15088	-"-	1 55	3 08	-"-	-"-	-"-	2.03	7.79	44.51	-"-	1.8	0.36	52	56	0	-"-	
15089	-"-	3 10	3 14	-"-	-"-	-"-	1.49	0.48	44.93	-"-	1.7	0.25 0.27	54	8	0	-"-	Beams dumped
15090	31.10	6 20	7 10	-"-	"	"	1.08	5.28	50.21	—	1.7	0.8	53	38	0	-"-	Beams dumped
15091	1.11.	1 36	1 43	"	"	"	0.08*	1.53	51.74	"	2.1	1.3	54	11	0	"	beams lost
15092	"	2 09	2 48	"	"	"	0.07*	8.07	59.81	"	1.9	1.2	57	58	1	"	*) Check factor 50 too fast
15093	"	2 48	3 29	"	"	"	0.05*	5.84	65.65	"	2.0	0.9	54	42	2	"	so L = L*50
15094	"	3 29	4 13	"	"	"	0.04*	4.59	70.24	"	1.9	0.7	54	33	2	"	
15095	"	4:13	4 25	"	"	"	0.03*	0.83	71.07	"			51	6	1	"	beams lost
15096	"	5 41	5 47	"	"	"	0.06*	1.11	1.11	"	2.1	1.3	56	8	0	22.054	Beams lost
15097	"	Technical Test Run — no data								4	~~2.3~~	~~1.2~~					
15098	"	19 49	20 41	"	"	"	2.52	6.27	7.38	"	2.3	1.2	59	59	2	"	
15099	"	20 41	21 02	"	"	"	2.04	1.95	9.33	"	2.0	0.8	54	26	1	"	
15100	"	21 05	21 55	"	"	"	1.93	5.29	14.62	"	2.0	0.65	53	58	0	"	
15101	"	21 56	22 21	"	"	"	1.71	2.51	17.13	"	1.9	0.6	51	27	0	"	
15102	2.11	2:56	2:58	"	"	"	0.62	0.00	17.13	"	2.2	1.0	42	0	0	"	stopped due to timeouts
15103	"	3:00	4:05	"	"	"	2.60	9.19	26.32	"	2.1	0.9	55	66	1	"	
15104	"	4:05	5:05	"	"	"	2.08	5.85	32.17	"	2.1	0.9	53	42	3	"	
15105	"	5:06	6:11	"	"	"	1.54	6.96	39.13	"	1.9	0.6	51	50	1	"	
15106	"	6:12	6:42	"	"	"	0.99	1.67	40.80	"	1.7	0.4	53	12	0	"	E.-Saving starts
15107	"	12 27	13:27	"	"	"	3.00	6.96	47.76	"	2.3	1.4	56	50	1	"	
15108	"	13:28	14:38	"	"	"	1.82	6.54	54.20	"	2.0	0.7	52	47	2	"	
15109	"	14 38	15 50	"	"	"	1.48	4.87	59.07	"	1.9	0.5	51	35	1	"	
15110	"	15 51	15 57	"	"	"	0.60	0.70	59.77	"			51	5	0	"	Beams lost
15111	"	21:10	22:16	"	"	"	2.73	9.28	9.28	"	2.1	0.75	53	67	0	22.000	
15112	"	22:16	23:31	"	"	"	2.00	8.17	17.45	"	1.8	0.55	55	59	2	"	
15113	"	23:31	00:05	"	"	"	1.52	3.19	20.64	"	1.6	0.35	52	23	0	"	
15114	03/11	3.22	4.27	"	"	"	1.74	4.85	25.49	"	2.2	0.75	52	35	0	"	
15115	"	04:28	05:36	"	"	"	1.33	5.54	31.03	"	2.0	0.66	52	40	1	"	
15116	"	05:36	6.44	"	"	"	1.12	4.02	35.05	"	1.9	0.50	51	29	1	"	Beams dumped
15117	3.11	12:19	13:18	"	"	"	2.40	8.45	43.50	-"-	2.2	0.60	53	61	2	-"-	
15118	-"-	13:19	13:20	"	"	"	2.72	0.14	43.64	-"-	—	—	39	1	0	-"-	Beams lost
15119	4.11	0:31	1:29	"	"	"	2.94	7.90	51.50	"	2.0	0.65	61	57	3	"	
15120	"	1:29	2:31	"	"	"	2.74	10.95	62.45	"	1.9	0.5	53	79	0	"	
15121	"	2:32	3:25	"	"	"	2.30	6.65	69.10	"	1.8	0.5	51	48	2	"	Energy changed
15122	JUNK																

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (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, E4, 2T

-4845

5 ^{20} Beams ready with new energy 22.055 GeV
5 ^{41} start run 15096
5 ^{47} beams lost
6 ^{30} energy saving time, magnet down to 500 A

1/11/83
8 ^{00} Clarke, Bethke on shift
9 ^{20} "Vakuum Reparatur, restart ~12 ^{00}"
12 ^{00} "Injection" → Magnet to 7500 A
Machine studies until ~ 19.00 hrs

15 ^{00} New version of Nord-50 program installed with Peter Stelton's new Z-vertex package. Old version in OLD-N50 DAR. First run will be 15097 ITEM

16 ^{00} G. Kuies & A. Wagner
according to PKR no beam until end of 'energy saving time' (19^4).
magnet → 1000 A
19 ^{20} magnet → 7500 A
19 ^{50} start data taking
21 ^{02} no triggers; on DEC writer: Error 37 IOX error address 50417
stop run, start new run ↷ ok
21 ^{36} again hang up, no trigger ↷ new run
21 ^{59} read out error 44 – time out branch 3 crate 2 Muon Crates
22 ^{00}

CARC	CARF	WCR	MAR	MODE	DMACOST	PIOCOST	IIR	IVR	WDOG
691320	4020	0000	553314	121002	030100	140204	0	20	0
–"–	–"–	–"–	521515	–"–	–"–	–"–	"	"	"

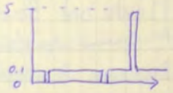
2*
+ no triggers
+ error 45 – MP-16 analysis incomplete
22 ^{24} beams become unstable and are lost

2.11.83 0 ^{00} Meier & Takeshita
2 ^{55} RUN 15102 start and readout error 44, 46 same as above. → Restart new RUN.
3:04 'Timeout branch 3, crate 2' $^{(1-2)}$ together with 'MP-16 out of sequence; 44 = 1' occurs now every few minutes. It is always possible to continue running after pausing the run.
3:25 'no triggers'; Following the instructions for such a case we reached 'level 5' and solved the problem.

RUN	ON/OFF N50	MIP	TOF	$\langle L \rangle$	$\int L dt$ BHABHA Run	$\int L dt$ Exp.	IBM – TAPE	BP $\langle V \rangle$	TOF $\langle V \rangle$	T. RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

5:48 present L's: JADE TASSO CELLO MJ
$1.4 \cdot 10^{30}$ $1.2 \cdot 10^{30}$ $1.2 \cdot 10^{30}$ $1.3 \cdot 10^{30}$
this is very low, but taking into account the problems which can be expected for a new filling as well as the energy saving time at 7:00 all 4 experiment agreed to keep this filling as long as possible

8 ^{00} S. Yamada, R. Fest on shift, einarbeit Stanzeit, 8 ^{10} magnet → 7500 A
10 ^{20} problems with cavity control magnet → 3500 A
11 ^{30} on request from PKR magnet back to 7500 A
12 ^{30} Filling ready, run started
"muon crate 1 missing" is flashing often
13 ^{00} strong background fluctuations, paused run and ran IQ down, PKR (Hr Kox) is watching but doesn't no what to do about it.
13 ^{10} background reduced and stable – experts don't know why – continue run
13 ^{46} JDAS read out error. Time out br 3. cr 2. muon ch:
no trigger. ~30 sec.
tried: pause + cont it worked
JDAS read error. 46 MP-16 out of seq. YY = 1
JDAS read error. T-out. br 3. cr 2 THL III
Some work was going with the Z trigger module, which was installed without notice some minutes ago.
14 ^{00} Z trigger module is taken out. No T-out error any more
14 ^{38} $\int L dt$ from all experiments.
CELLO 53.6 JADE 54 nb^{-1} MJ 60.7 nb^{-1} TASSO 53 nb^{-1}
14 ^{52} Runs 15107 + 15108: Histogram "D18 bit check" looks crazy:
2 channels (11, 160) are zero
1 channels (175) is "5" → theoretically impossible (only 0...1 pam.)
all other channels are "0.1" exactly; statistically impossible
(should be: around 0.5)
all other histo's quite ok.
Histogram ok. again at start of run 15109. Possible explanation: error in sampling (? Vank H. Mills) S. Bethke



15 ^{30} Cello – 57 / JADE – 58 / MARK-J – 63 / TASSO – 58 nb^{-1}
16:00 Dieckmann & Circenbeau
16:30 Vacr modification made to VELETA PM
16:40 Run down magnet to 1000 Amps
19:00 Magnet run up to 7500 Amps

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T_1 & T_2 (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 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 $2T \cdot E_4 \cdot 2T_{TR}$

ON/OFF N50	MIP	TOF	⟨L⟩	$\int L\,dt$ BHABHA Run	$\int L\,dt$ Exp.	IBM → TAPE	BP ⟨V⟩	TOF ⟨V⟩	T_1 RES. FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

21:10 New fill ready, start data taking at 22.000 GeV
21:49 DL8 bit ratio on before (see entry for 19:52). Was OK earlier in this run - 15111
22:09 JDAS Readout error 46 - Timeout branch 2 crate 5 Lookbyes ADC's
22:17 New run 15112 DL8 bit ratio O.K
22:23 Jet current high. ID tripped. Run paused, ID brought up again, run restarted.

03/11/83 Clarke / Zunge on shift
00:05 new filling
beams very poor, but in light of time taken over last fill the general consensus amongst all groups is that we continue with what we've got.
06.45 Beams dumped - by request from PKR.
Magnet at 1000 amps.

8:00 M. Zachara & A. Wagner
Inspection of the heat shield cooling system. No obvious flaw was found.
As preventive maintenance 1 diaphragm + 1 valve exchanged, 1 vieve cleaned.
~10:00 Magnet trip — Water level too low / K-group informed —
10:40 Magnet ok again
12:45 Start run 15117
13:15 beams lost ID trip
14:20 X-sect display Luminosity Fudge factors altered after discussion with M. Minowa. This raises the R for Nt/Blumi plot.

16:00 Mönke and Boudery on shift (McCann will come at about 18:00)
18:30 McCann on shift.
23:59 Dieckmann & Haidt on shift
4/11 0:21 Magnet run up, filling ready at 22.000 GeV
2:46 $\int L\,dt$: Celle 51; Mark J 59; Tasso 64; Jade 65; $\Sigma = 239$
Petra (22.000 GeV)

We propose to continue the Energy Scan at 22.07 GeV, as the point at 22.000 GeV is low.
The other experiments agree.
3:48 For unknown reason MP-16 status OFF (run 15123 TRIG ~3600), reset to ON same for TOF Miproc
Possible reason: At start of Run 15122 the IBM was not available, we stopped the run and started ~~the second~~ Run 15123
We get several JDAS Readout Errors: TOF1 Counters. Set ~~the~~ TOF Miproc to OFF. Errors disappear.
Start Run 15124 with TOF OFF; Set them to ON → Readout Error. We stop this Run after 50 sec and start Run 15125 with TOFSTATUS ON. Now all is ok.

6:24 New fill ready
6:45 Energy saving
8:00 Kobayashi & Takeshita
9:00 Start injection. Magnet → 7500 A.
10:55 Short break for some cavity test. Magnet → 1000 A
14:00 RF system problem in PETRA.

16:00 T. Kawamoto and H. Riesberg

16:30 "Restart" shifts from 16:00 to 19:00
Problem with our magnet: Current is 1330 A, cannot be made lower, only the RAISE operation works. Call K.

19:00 End of energy saving time
Some up-down exercises cured our magnet problem
The acceleration of the already stored beams has started. Magnet → 7500 A
19:18 Beams ready.
Some initial problems: NORD 50 BUSY cured by EXIT and RELOAD, Sender emptied with automatic HF tuning → very high background and wrong energy for some minutes.
19:38 RUN # 15128 started $L = 1.7 \cdot 10^{30}$ $I^+ = I^- = 3$ mA
This is the first run after 13 hours. (The crane in the hall is now above the beam line for backscatter studies)

Talk to PKR: Today two serious faults have been discovered - and repaired - at the emittor in the south hall. The instabilities at injection energy should be now less severe (or perhaps even disappeared).
4/11 At the injection ~~start~~ during the Startekotzen it looked good, though 2.3 mA / bunch were not yet reached.

Histogramming error: Histogram # 28 DL8-BIT-RATIO was correct at the beginning of the run, then, after about 2000 weed it corrected into a pathological shape (as indicated on page 14). When cleared it did not fill-up again

21:30 Stop Run 15129 for beam dumps, SL was $45 \div 50 \times 10^{28}$

22:55 Beams ready, Run # 15130 started
SL ≈ 48×10^{28} $L = 2.8 \times 10^{30}$

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	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 BIT 2 $E_1 > 6$ GeV	T_2 BIT 17 2T. E4.2T.	N50	MIP	TOF	$\langle L \rangle$	$\int L dt$ Bhabha Run	$\int L dt$ EXP.	IBM TAPE	BP [V]	TOF [V]	T_2 REJ. FRACT.	Σ BHABHA	M.H	E_{BEAM}	Remarks
15123	4.11.	3:30	3:58	2.74	2.95	10.8	1586	4224	3499	413	44	1646	2655	291	272	ON	OFF	OFF	1.91	2.65	2.65	IBM	1.6	0.4	10	19	0	22.070	New Energy
15124	"	3:59	4:00	2.60	2.80	8.7	54	178	129	14	1	92	91	11	19	"	"	"	1.14	0.14	2.79	"	"	"	31	1	0	"	
15125	"	4:00	4:53	2.59	2.79	8.0	3103	5986	4382	808	64	3411	4833	509	466	"	ON	ON	1.75	4.32	7.11	"	1.6	0.35	53	31	0	"	Beams dumped
15126	"	6:24	6:48	3.95	4.03	24.5	1272	3573	3117	331	81	1280	4704	235	682	"	"	"	2.97	3.21	10.32	"	2.4	1.6	57	23	1	"	Energy saving began
15128	"	19:38	20:51	2.98	3.11	8.3	4317	8001	5835	1123	93	4344	6942	608	744	"	"	"	1.79	6.14	16.46	"	1.8	0.5	52	44	1	"	N2 Run 15129 exists
15129	"	20:51	21:36	2.58	2.72	7.2	2669	4694	3369	695	50	2711	3819	416	416	"	"	"	1.54	4.60	21.06	"	1.5	0.3	54	33	1	"	Beams dumped
15130	"	22:58	0:03	3.50	3.65	9.3	3867	8002	6166	1006	94	4124	7294	652	821	"	"	"	2.53	8.51	29.57	"	1.9	0.7	52	61	1	"	
15131	5.11.83	0:03	1:12	3.04	3.18	8.4	4088	8001	6049	1063	89	4392	6705	744	690	"	"	"	1.99	8.51	38.08	"	1.8	0.5	52	61	0	"	
15132	"	1:12	2:10	2.64	2.77	7.8	3394	6329	4620	882	68	3679	5085	569	505	"	"	"	1.53	4.88	42.96	"	1.6	0.3	53	35	1	"	Beams dumped
15133	"	4:23	4:47	3.57	3.77	11.9	1338	3179	2499	348	42	1464	3171	226	411	"	"	"	2.69	3.21	46.17	"	2.2	1.6	54	23	0	"	Beams lost
15134	"	7:48	8:46	3.99	3.87	11.6	11928	8001	6389	890	103	3767	7901	655	899	"	"	"	3.00	9.90	56.07	"	2.15	0.9	52	71	2	"	
15135	"	8:47	9:50	3.44	3.38	9.9	11461	8002	6224	976	95	4064	7156	734	787	"	"	"	2.24	8.23	64.30	"	2.00		51	59	3	"	
15136	"	9:99	10:14	3.05	2.95	9.6	1362	2835	2190	354	34	1476	2404	258	248	"	"	"	2.06	1.81	66.11	"	1.90	0.5	50	13	1	"	
15137	"	10:16	11:26	2.90	2.81	8.4	11205	8002	5938	1096	91	4566	6618	722	640	"	"	"	1.66	5.45	5.45	"	19	0.5	52	39	0	22.085	NEW ENERGY
15139	"	11:27	11:56	2.54	2.46	7.3	4180	3054	2249	443	32	1793	2369	277	229	"	"	"	1.29	1.92	7.27	"			52	13	0	"	
15139	"	12.47	13.51	4.30	4.07	11.3	3514	8002	6485	914	105	3761	7873	723	973	"	"	"	2.79	8.80	16.07	"	2.1	1.0	52	63	2	"	
15140								1000												1	17.07		2.0	0.6				"	Next crash level 14
15141	"	14:06	15:08	3.43	3.33	9.3	3700	8002	6157	963	90	4278	6768	727	717	"	"	"	2.13	6.70	23.77	"	1.95	0.6	51	48	1	"	
15142	"	15:09	16:18	2.92	2.89	9.2	4142	8002	6025	1077	97	4526	6387	807	586	"	"	"	1.57	5.17	28.94	"	1.75	0.4	52	37	1	"	
15143	"	16:18	16:51	2.36	2.43	7.2	1928	3569	2574	502	36	2183	2528	385	219	"	"	"	1.19	1.82	30.76	"	1.55	0.3	52	13	1	"	Beams dumped
15144	"	18:16	19:19	3.88	3.86	9.7	3690	8001	6372	960	93	4116	7188	737	827	"	"	"	2.77	10.61	41.37	"	2.05	0.8	52	76	3	---	NEW FILL
15145	"	19:19	20:26	3.31	3.33	8.7	3945	8002	6153	1026	89	4427	6688	787	700	"	"	"	2.04	7.12	48.49	"	1.78	0.5	52	57	2	"	
15146	"	20:26	21:35	2.83	2.91	7.7	470	919	887	122	9.5	507	722	98	72	"	"	"	2.09	0.14	48.63	"	1.6	0.35	57	1	1	"	NO TRIGGERS — STOP RUN.
15147	"	20:36	21:48	2.77	2.84	7.7	4296	8002	5888	1117	86	4817	6221	807	582	"	"	"	1.50	5.86	54.49	"	1.57	0.33	54	42	3	"	
15148	"	21:48	22:29	2.38	2.45	7.1	2399	4228	3038	624	44	2634	3160	430	280	"	"	"	1.19	1.82	56.31	"	1.92	0.25	55	13	0	"	BEAMS DUMPED
15149	"	23:57	0:51	3.56	3.97	26.2	3194	8002	6816	891	217	3196	10250	624	2370	"	"	"	2.23	6.98	63.29	"	2.05	0.87	58	50	0	"	
15150	6.11.83	0:52	1:12	3.93	3.50	11.8	1201	2854	2310	313	36.7	1400	2964	269	529	"	"	"	2.15	1.95	65.24	"	1.8	0.8	8056	2	0	"	Beams lost
15151	"	11:44	12:43	4.04	4.13	13.9	3764	8001	6289	900	125	3536	8545	610	1119	"	"	"	2.88	7.55	7.55	"	2.2	1.1	53	54	2	22.100	
15152	"	12:44	12:45	3.45	3.55	11.4	127	8001	88					42	75	"	"	"	1.57	0.28	7.83	"			32	4	0	"	
15153	"	12:45	13:49	3.44	3.54	9.7	3792	8002	6247	986	95	3918	7320	608	787	"	"	"	2.60	7.97	15.80	"	1.9	0.8	50	57	0	"	
15154	"	14:02	15:09	2.43	3.03	8.1	4040	8002	6074	1043	93	4388	6631	743	1914	"	"	"	1.91	7.13	22.93	"	1.8	2.45	51	51	2	"	
15155	"	15:09	16:05	2.56	2.66	7.9	3353	6374	4722	872	69	3639	5113	603	484	"	"	"	1.67	3.64	26.57	"	1.7	2.40	52	26	1	"	Beams dumped
15156	"	16:44	17:40	4.09	3.99	12.5	3314	8001	6578	863	108	3824	7575	713	855	"	"	"	3.06	8.67	35.24	"	2.3	?	51	62	5	"	
15157	"	17:40	18:39	3.55	3.47	10.2	3524	8002	6419	917	93	3981	7017	771	690	"	"	"	2.40	8.25	43.49	"	2.15	0.875	49	59	4	"	

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T1 & T2 (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. $E_{4.2}$ Tr

ON/OFF N 50	MIP	TOF	$\langle L \rangle$	$\int L dt$ BHABHA Run	$\int L dt$ Exp.	IBM TAPE	BP $\langle V \rangle$	TOF $\langle V \rangle$	T. RES. FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

5.11.83. 00:00 Hellenbrand a Chrin on shift.
8:00 – We had a smooth shift!

8[00] Howard Mills & Tatsuo Kawamoto On Shift
9[10] L= CELLO 57, MJ 54, TASSO 58, JADE 61 tot 230 nb^{-1}
9[50] Agree to change energy @ 10:10
13[25] IO tripped - no obvious reason why.
Gould plotter "came to pieces in mehands" – brilliant shift crew devise patent method of keeping the REMOTE switch on. (Commonly known as batching!)

16[00] Hedgecock & Kobayashi
16[40] Ask for new fill.
18.15 Switch on and start new run 15144.
22[15] CELLO 38.50 MARK J 53.00 TASSO 55.00 JADE 55.5 TOTAL 202.00

6.11.83 0[00] Dubnit & Minowa on shift

[30] Petra - problem for long time run down magnet to 1000 A
8[00] There is a HV short in a transmitter North right.
It has not been localized yet. So we wait.

JADE 65.2 nb^{-1}
M.J 63.7 ;
Cello 46. ; They have problem with PDP.
TASSO 63.8 ; –
238.7 .

Asked PKR to go to 22.100 GeV.

08.00 Naroska & Nozaki on shift

9 40 Finally beams were injected and lost at ~16 GeV.
But now nothing is happening any more.
Transmitter in West area had tripped this time.
11.20 Injection again.
11.40 Luminosity run 22.100 GeV 4.14 mA / 4.05 mA BP 2.1 TOF 4.0
DT 26.3%
DT ~10%

After orbit corr

We are getting "muon crate 10 missing" every few minutes.
Person on call is not available.

JDAS ERROR 44 TIMEOUT BRANCH 3 CRATE 2 : Muon chambers.

Telephoned A. Ball : he suggested switching off crate 10 and on again. Seemed to have improved situation.
14.24 JDAS ERROR 44 Timeout Br 3 Cr 2 : Muon chambers.

16.00 Bowdery & Knobloch on shift

We arrive in time to see the beams being dumped. Let's hope we see new beams before midnight!

16.45 We are running! but we get a JDAS ERROR 44 TIMEOUT Br 2 Cr 5 LG ADCs.

19:17 RF Transmitter tripped. The automatic system compensated for the trip but the energy of the beams changed to 22.146. After a few minutes the transmitter was restarted and data taking resumed at the normal energy (22.100)
20.00 Beams dumped.
20.00
20.50 There seem to be a parasitic e^+ bucket filled after the good one, some 8 msec later. PETRA says they have seen it for days.

Kado's Pickup at electron side was exchanged. Spare unit was put in. Hopefully this cures the "jump" problem. The new peak is at bin 357, about where the old "second" peak was.

21:35 JADE = 60nb^{-1} TASSO 50nb^{-1} MARK J 56nb^{-1} CELLO ~~53~~ 53 nb^{-1}
21:50 IBM BUSY appears frequently on the ~~show~~ monitor screen. → High deadtime. Its lead to find CelP against this stop-and-go traffic. called Kuhlmann. He suggests that someone had remaining access to our disc, but he does not know how to find him out. Problem suddenly goes away.

22:18 JADE 66nb^{-1} TASSO 55nb^{-1} MARK J 60nb^{-1} CELLO 58nb^{-1} Σ = 239 nb^{-1} now
22:26 Energy change ⇒ 22.115 GeV (beam energy) 240nb^{-1} now exceeded.
23:36 New fill at 24.00
0[00] Kawamoto & Haidt on shift
2:45 YSPY DETECTED "TOF TDC NO HITS ; 75" . THE SAME MESSAGE THERE WAS BEFORE ~10 min
:55 THIRD "TOF TDC NO HIT; 75" MESSAGE CAME. ### ///
checked HISTOGRAM → hole in TOF hit map at #75
hole in TOF ADC TDC at #75, 32?

*

18 RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	TIME (SECS)	RECORDS IN	RECORDS OUT	ALL TRIGGERS $\times 10^6$	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.E4.2Tr
15158	6/11/83	18:59	19:17	2.99	2.93	11.9	1030	2133	1724	268	31.8	1062	2360	196	193
15159	"	19:21	20:05	2.63	2.64	8.3	2613	5207	3971	680	56.2	2797	4211	499	392
15160	"	20:36	21:37	4.04	3.96	12.1	3409	8002	6513	887	107.6	3723	7948	~~4277~~ 722	831
15161	"	21:38	22:31	3.06	3.38	16.2	3140	6360	5094	817	132.8	3190	5517	~~1537~~ 680	548
15162	"	22:34	23:39	2.64	3.00	8.9	3877	8002	6190	1008	89.5	4229	6612	746	677
15163	"	23:39	0:05	2.29	2.63	8.5	1557	3156	2470	405	34.3	1750	~~293~~ 2496	335	252
15164	7.11.83	0:39	1:39	3.67	3.77	10.4	3561	8002	6449	926	96	3849	7392	761	841
15165	//	1:39	2:42	3.08	3.18	9.5	3768	8002	6251	979	93	4112	6873	764	1997
15166	//	2:42	3:49	2.67	2.74	8.3	4013	8002	6156	1043	87	4332	6523	831	1752
15167	//	3:49	4:02	2.33	2.39	8.1	690	1347	1045	179	14	736	1104	129	275
15168	"	4:48	5:51	2.91	4.19	9.2	3812	8002	6362	991	91	3275	7110	752	730
15169	//	5:52	6.55	2.47	3.59	8.2	3743	7505	5759	975	80	4146	6024	762	560
~~15170~~	"	10.26	10.26	3.98	3.92			46	39						
15171	"	11.03	12:04	4.07	3.96	10.8	3596	8002	6667	936	101	3745	7840	657	835
15172	"	12.04	13.04	3.44	3.25	11.6	3610	~~8002~~ 7554	6330	939	108	4438	6465	607	724
15173	"	13:04	14:07	2.99	2.78	8.2	3711	7180	5446	966	78.8	4117	88 11	686	653
15174	"	14.09	14.20	2.62	2.44	8.7	661	1646	924	172	15	755	891	123	82
15175	"	14.51	15.54	4.00	4.01	9.9	3688	11506	6414	959	94	4040	7198	720	794
15176	"	15.54	-16.50	3.36	3.24	9.1	3301	6807	5300	859	78	3792	5483	709	607
15177	"	2.38	2.47	3.95	3.85	11.5	531	1218	989	138	16	558	1990	104	151
15178	"	22.18	22.44	4.35	4.33	11.9	1506	3554	2941	392	47	1519	3758	259	1234
15179	"	23.18	0.45	3.65	3.64	8.9	3999	8002	6184	1040	93	4059	7226	644	733
15180	8/11/83	0.46	1.23	2.91	2.81	10.6	5455	3966	2995	561	59	2218	3161	349	295
15181	"	1.23	2.24	2.64	2.55	7.2	3643	6537	4765	949	67	3502	5070	625	446
15182	"	2.53	3.59	3.81	3.70	9.1	3922	8002	6248	1020	92	4171	7129	744	779
15183	"	3.59	4.54	3.08	2.83	8.0	3235	6252	4754	841	67	3451	5004	575	495
15184	"	10.38	11.42	3.84	3.77	10.4	3757	8002	6340	978	102	3644	8287	596	1059
15185	"	11.46	12.23	3.28	3.23	9.2	2111	4361	3389	590	50.8	2162	3914	880	484
15186	"	12.23	13.36	3.04	2.99	7.7	4387	8001	6013	1141	87	4385	6825	737	701
15187	"	13.42	14.01	2.59	2.56	6.8	1518	2577	1899	395	27	1494	2035	261	171
15188	"	14.45	15.09	4.35	4.30	11.3	1373	3186	2596	357	40	1416	3184	269	427
15189	"	15:10	15:53	4.04	4.04	10.6	2867	6413	5012	746	73	3107	5858	601	648
15190	"	15:59	16:29	3.55	3.60	9.8	1761	3779	2843	458	45	1852	3375	328	359
15191	8/11/83	19:30	20:28	4.20	4.19	12.8	3458	8002	6441	900	115	3398	8834	609	981

19	N50	ON/OFF M16	TOF	$\langle L \rangle$	Bhabha $\int L dt$ Run	$\int L dt$ Exp.	IBM / TAPE	BP [V]	TOF [V]	T_2 REJ. FRACT.%	Σ Bhabha	Σ MH	E_{beam}	Remarks
	ON	ON	ON	1.76	2.10	45.59	IBM	1.9?	0.6?	60	15	1	22.100	Run stopped due to transmitter trip, Beams not lost.
	"	"	"	1.46	3.77	49.36	"	1.75	0.4	50	27	0	"	Beams dumped
	"	"	"	2.72	10.49	59.85	"	2.4	1.35	52	75	4	"	
	"	"	"	1.94	6.85	66.70	"	2.05	0.65	49	49	≠1	"	IBM BUSY problems
	"	"	"	1.66	6.16	6.16	IBM	1.9	0.55	49	44	2	22.115	New energy
	"	"	"	7.41	7.68	7.84	"	1.7	0.4	50	72	1	"	
	"	"	"	2.54	9.52	17.46	"	2.1		51	68	5	"	
	"	"	"	2.08	7.28	24.74	"	2.0	0.65	49	52	1	"	
	"	"	"	1.46	5.60	30.34	"	1.85	0.50	50	40	2	"	
	"	"	"	1.22	0.42	30.76	"	1.6	0.4	51	3	1	"	BEAMS DUMPED
	"	"	"	2.22	9.44	39.20	"	1.8	0.4	51	54	4	"	New Filling
	"	"	"	1.74	7.28	46.48	"			51	52	1	"	
								~~2.2~~	~~0.7~~					Beams lost - transmitter fail
	"	"	"	2.95	11.62	58.10	"	2.2	0.7	51	83	3	"	
	"	"	"	2.10	6.16	64.26	"	2.0	0.45	51	40	2	"	
	"	"	"	1.57	6.86	71.12	"	1.7	0.26	53	69	2	"	
	"	"	"	1.26	0.70	~~71.82~~ 1.30	"	1.55	0.2	51	5	1	22.130	New energy / dump
	"	"	"	2.88	7.85	9.11	"	1.9	1.2	"	52	1	"	
	"	"	"	2.14	5.61	14.72	"			51	40	0	"	Dump for energy saving
	"	"	"	3.55	2.10	16.82	"	2.2	0.8	55	15	1	"	Beams lost
	"	"	"	3.95	5.94	22.76	"	2.25	0.8	52	33	2	"	Beams lost, 10 trig
	"	"	"	2.41	7.43	30.19	"	1.9	0.5	51	53	4	"	
	"	"	"	1.67	4.07	34.26	"	1.6	0.7	51	29	0	"	
	"	"	"	1.31	5.19	39.45	"			57	37	1	"	Beams dumped.
	"	"	"	2.51	9.53	48.98	"	~~1.7~~	0.8	52	68	3		
	"	"	"	1.70	4.77	52.75	"	1.7	0.8	51	34	2		
	"	"	"	2.82	9.25	62.00	"	2.2	1.0	53	66	2	"	
	"	"	"	2.44	5.19	67.19	"	1.8	0.5	58	37	1	see →	DURING RUN Energy changed 22.13 → 22.145
	"	"	"	1.86	8.42	8.42	"			52	60	1	~~22.145~~	
	"	"	"	1.43	1.68	10.10	"	1.5	0.3	53	12	0	"	BEAMS DUMPED
	"	"	"	3.71	4.07	14.17	"	2.3	1.1	61	29	0	"	
	"	"	"	3.01	9.55	23.72	"	2.0	0.8	50	68	0	"	Septant threshold raised to .250
	"	"	"	2.76	4.85	28.57	"	2.0	0.7	57	24	1	"	beams lost
	on	on	on	3.36	10.95	39.52	IBM	2.2	0.9	53	78	1	22.145	continue on page 24

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ & T₂ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ. ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T.E4.2Tr

7.11.83

6:55 ENERGY SAVING TIME. RUN 15169 STOP, MAG. CURRENT ⇒ 1000 A.

08:00 Nariska Cucarhan.

FROM RUN 15166 – 15169 TOF COUNTER 75 has no hits.

FOR ITEM: TOF MEAN ADC / TDC is empty for old histograms!

9.02 Magnet up.

CELLO 36.8 nb⁻¹; TASSO 38 nb⁻¹; MARK-J 37; JADE 46.5

10.26 Filling ready, lost immediately, Sendeausfall NR

11.00 Next fill ready.

12:11 JDAS readout error 44 – Tmeant board 2 crate 5 : Leadglass ADC

12:21 " "

12:23 JDAS readout error 44 – Tmeant board 3 crate 2 Muon chambers

TOF COUNTER 75 No hits on and off, finally I exchanged its cable to TDC. Now it seems quiet.

Z-Trigger: Manual Reset 13.00, Now data are coming up again (Geske)

14.05 Change energy to 21.130 GeV / I.D. was left on.

14.10 beams dumped

Following consultations with P. Steffen, the "BINZ" value in the Z-vertex package in the Nord-50 changed from 100 to 140 to be compatible with the actual resolution of the inner detector. First run with this is Run 15175 HBM

14.50 New filling ready.

16⁰⁰ Olsson, Chrim

16⁴⁵ Step, Magnet to 1000 A

ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM – TAPE	BP [V]	TOF [V]	T. RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

18:30 Nge takes over from Chrin.

18⁴⁵ Notice that Magnet has gone to 1400 A and increasing. No reaction per computer and manual. Call K, May come and reset "something" on Power Supply. Up to 7500 A again.

R15177. Krehbiel, by testing, accidentally switched off LG Power Supply. Some results may look funny!

Concerning thresholds of Septums.

Present setting DVM 0.184 V ~ 150 MeV (Rough estimate)

Last years settings .407 ~ 180 MeV 0251 ~ 100 MeV

The last years setting correspondance was found in software analysis. Present one is only rough guess. It should be evaluated in an off line analysis before being trusted. Note that gains have been changed since last years settings. The correspondence

8 Nov.

00⁰⁰ Steglow and Fl. Nels. on shift

Reform jobs – at about 2am the high priority line appeared but TSO went down. By 3:30 TSO had recovered but the two MED priority reform jobs backed still not run. These were cancelled & resubmitted (YEN tapes 073 & 074), plus new 075 submitted at high priority. At 073 ran almost immediately

5:25 Attempt to refill – during ramping the beams were lost – power supply failure. Since it takes ½ – 1 hr to fix we lower magnet current.

All 3 REFORM jobs have run

6:40 still no beams. Magnet is (as often the case) unstable at 1000 amps – it walks up to 1500 approx. Tried 500 amps but does something. A bit of a nuisance this – energy saving & the magnet draws more than one expects! At third attempt it stays at 500 A

ZSEND – new version – counts in MONZ the number of events read by ZSEND. Note for D. Cords / S. Olsson – ZSEND used to count in MONZ but some thing sets this to zero – is this ZREAD?

8⁰⁰ 8/11/83 DIETRICH & J. WAGNER ON SHIFT

(NO BEAM – ENERGY SAVING STILL)

9⁴² RAMP UP MAGNET → PKR WILL TRY TO INJECT.

10³⁵ NEW FILL.

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T6 RECORDS (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	Tϕ REC $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T. EL. 2Tr

You must describe more fully otherwise there is no hope of solving problems. – Did EXIT/RESTART work?

10^{50} WE SEEM TO HAVE PROBLEMS WITH JDAS → IT WON'T DISPLAY HISTS ON TEXTRONICS SCOPE. WILL WAIT TILL END OF RUN & THEN EXIT & REENTER JDAS.

11^{05} JADE 62nb^{-1} TASSO 62 MARK-J 58 CELLO 60 (CELLO SAYS: "PKR WANTS TO WAIT FOR NEW FILL TO RAISE ENERGY", BUT THIS REPRESENTS A CHANGE IN POLICY, SO WE ASK CELLO TO ASK PKR AGAIN IF THEY CAN RAISE THE ENERGY NOW DURING FILL)

12^{20} Run 15185 PKR changed Energy 22.13 → 22.145 without any sound or the TV-screen etc. so this Run contains for some minutes (ca 5 min) Events with high energy

15^{05} RUN STOPPED TO ALLOW OLSSON TO CHANGE LEVELS ON OLSSON TRIGGER (T1 Accept bit 14 Septant threshold raised to .550 from .184 after consultation with TAUEDA and offline analysis results). This is now valid (DVM reading) from R15189 onwards.

16:00 Warming + Hellenbrand on shift
16:29 beams lost, RUN 15190 stopped, after that ENERGY-SAVING-TIME, magnet → 2000 A magnet run down to 0A, isolator off
We go to the Robin Marshall Show in the auditorium, see you again at 18^{30}
18:30 Here we are again
run magnet up to 7500 A
19:20 new fill ready
19:55 JDAS readout error 44 - timeout branch 2 crate 5, Readplan ADC's
00404520 004507 000010 0532323 026000 010100 140204 000000 000020 000000
21:02 JDAS readout error 44 - timeout branch 3 crate 2, muon chambers
00601320 004020 000000 0551550 121002 030100 140204 000000 000020 000000
22:11 JDAS readout error 46 - MP-16 out of sequence, YY=0
followed by "no triggers for ... seconds", PAUSE-CONTINUE cured it
22:35 beams dumped
22:55 new fill ready, very quick, very efficient PKR crew ☺

RUN	ON/OFF N 50	MIP	TOF	$\langle L \rangle$	$\int L dt$ BHABHA Run	$\int L dt$ Exp.	IBM – TAPE	BP $\langle V \rangle$	TOF $\langle V \rangle$	T. RES. FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

9 Nov. 1983

0^{00} ~ 8^{00} Bowdery + Yamada on shift
0^{23} Energy change: Now we go to 22.160 GeV.

1:13 2 x JDAS Error 44 TIMEOUT in the latchas' crate. Seems okay now though.
(00402100 002060 000000 0535463 027000 030300 140204 004000 000120 040000)

1:46 Transmitter trips. Some beam lost. PKR decides to have a new fill (all the beam now lost) so we had no choice!

2:20 CELLO has asked PKR about the delay in starting injection. Apparently there is a problem with a power supply for a quadrupole(s) and it may take 30 minutes more to fix. (It did!)

5:15 Beams dumped. No multihadronic events at this energy after 26.5nb^{-1}! Is this the end of hadronic physics at e^+e^- storage rings?

7:00 Energy saving time. We collected just over 40nb^{-1} this shift. 4 MH events in the last run too.

8^{00} Ambrus + Meinke on shift.
12^{15} Liquid glass Lambda power failure, event reset okay now
12^{30} JDAS readout error 44
00601320, 004020, 0, 0535565, 121002, 030100, 140204, 0, 000020, 0

16^{00} Matsumura (for Heinzelmann) and Bethke (for Maroska)
16^{30} "Energy saving time", magnet set to 500A.

Matsumura wants to use this time for fastening up the ID-HV-Motor.
For this time, don't switch on any Detector-HV. First contact Matsu, Tel. 2570

1930 Petra has problem with a cavity NL. It trips when they have almost accelerated to the top. But there is no visible reason for the trip.
21.30 accelerating again.
Lost 50% of positrons at ~10 GeV, then everything at 12 GeV.
22:00 Beams at 18 GeV.
22.08 22 "
22.10 top "
Start run 15205.
Check standard histograms.
DT ~ 17%
L ~ $3.2\ 10^{30}$ SL ~ $35 \cdot 10^{28}$

Info from IBM: Both CPU's are broken. The error has not been localized yet. They are trying hard to get at least 1 machine working for On-line.

RUN	DATE	START	STOP	RUN I⁺	RUN I⁻	START I⁺	START I⁻	DEAD TIME (%)	T₁ in (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T·E4·2Tr
15192	8/11/83	20:28	21:28	3.65	3.65			10.8	3574	8002	6253	930	101	3680	7756	662	830
15193	"	21:35	22:34	3.15	3.14			11.6	3508	7642	5900	912	106	3821	6749	598	693
15194	"	23:03	0:02	4.33	4.33			11.0	3495	8002	6275	909	100	3861	7400	705	861
15195	9/11/83	0:02	0:31	3.73	3.75			10.1	1681	3736	2885	437	44.4	1876	3298	390	344
15196	"	0:32	1:38	3.46	3.50			10.0	3908	8002	5922	1017	102	4355	6601	762	716
15197	"	1:38	1:49	2.96	3.03			8.1	587	1188	843	152.7	12.4	674	916	107	109
15198	"	3.11	4:13	4.18	4.15			9.8	3672	8001	6142	956	93.6	3892	7318	682	2419
15199	"	4:13	5:15	3.51	3.50			8.9	3660	7547	5644	952.8	85.1	3973	6496	734	666
15200	"	6.10	6:54	4.17	4.08			10.4	2664	5697	4435	667	70.0	2658	5321	473	658
15201	"	11:04	12:08	4.37	4.38			9.9	3799	8002	6160	989	98	3804	7561	641	852
15202	"	12:08	12:15	3.66	3.75			9.4	341	762	570	89	8	353	605	69	77
15203	"	12:18	13:31	3.58	3.67			9.1	4153	8001	5843	1081	98	4213	6860	727	733
15204	"	13:31	14:24	3.08	3.12			7.8	3153	6008	4240	820	64	3334	4735	565	472
15205	"	22.17	23.05	4.18	4.40			20.1	2784	~~11226~~ 6763	5600	724.6	145.9	2575	8937	310	1600
15206	"	23.10	23.21	3.68	3.78			10.7	629	1370	1067	163	17.5	620	1435	99	222
15207	"	23.23	00:27	3.12	3.21			8.8	3733	7427	5386	971	85.5	3146	6715	665	696
15208	10/11/83	00:33	01:07	3.06	3.15			11.8	1143	4123	3070	506	59.6	2511	2938	332	278
15209	"	05:27	06:05	4.09	4.08			10.6	2187	4497	3491	569	60.4	1964	4800	304	416
15210	"	06:10	06:50	3.69	3.68			9.9	2355	4840	3654	613	60.5	2341	4503	441	452
15211	"	15:26	15:53	4.37	4.51			20.8		4049	3393	475	129	1435	5905	?	?
15212				about 100 events													
15213	"	16:03	16:51	4.00	4.12			19.5	2817	5927	4709	733	142	2485	7176	419	721
15214	"	19:38	20:08	4.65	4.79			16.3	1682	4080	3313	437.7	71.5	1740	5092	348	633
15215	11.11.83	23.32	23:38	4.16	4.52			92.6!)	295	1562	1549	77	7.1	1485	84	1416	13
15216	12.11.83	3:21	3:46	4.09	3.87			30.3	1457	4082	3512	378	115	1853	6197	938	801
15217	"	4:43	5:44	3.75	3.50			11.3	3640	8002	5959	946	106	4220	7221	1258	707
15218	"	5:44	6:38	3.19	3.12			13.0	3203	6446	4693	833	108	3817	4899	1194	465
15219	"	6:42	7:16	2.92	2.77			8.9	2017	4046	2935	525	46	2433	2867	805	281
15220	"	12.44	13.35	4.20	3.86			26.2	3003	8002	6801	781	205	3447	11048	1408	1165
15221	"	13.35	13.52	3.69	3.27			54.9	966	4167	3925	251	138	3502	1166	3034	121
15222	"	14.45	15.43	3.45	4.13			13.4	3440	8002	6283	895	120	4197	7050	1557	903
15223	"	15.43	16.37	2.96	3.48			10.2	3201	8002	6250	832	85	5010	5286	2423	555
15224	"	16.37	17.31	2.63	3.09			9.9	3188	8002	6271	829	82	5357	4711	2770	459
15225	"	17.30	17.43	2.37	2.79			18.4	681	2390	~~2073~~	177	32	1877	832	1392	70

RUN	DATE	START	STOP	RUN I⁺	RUN I⁻	START I⁺	START I⁻	DEAD TIME (%)	T₁ in (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T·E4·2Tr
15226	13.11.83	0:25	0:54	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15227	"	1:00	1:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15228	"	1:35	2:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15229	"	2:10	2:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15230	"	2:45	3:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15231	"	3:20	3:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15232	"	3:55	4:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15233	"	4:30	5:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15234	"	5:05	5:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15235	"	5:40	6:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15236	"	6:15	6:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15237	"	6:50	7:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15238	"	7:25	7:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15239	"	8:00	8:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15240	"	8:35	9:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15241	"	9:10	9:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15242	"	9:45	10:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15243	"	10:20	10:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15244	"	10:55	11:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15245	"	11:30	12:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15246	"	12:05	12:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15247	"	12:40	13:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15248	"	13:15	13:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15249	"	13:50	14:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15250	"	14:25	14:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15251	"	15:00	15:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15252	"	15:35	16:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15253	"	16:10	16:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15254	"	16:45	17:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15255	"	17:20	17:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15256	"	17:55	18:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15257	"	18:30	19:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15258	"	19:05	19:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15259	"	19:40	20:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15260	"	20:15	20:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15261	"	20:50	21:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15262	"	21:25	21:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15263	"	22:00	22:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15264	"	22:35	23:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15265	"	23:10	23:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15266	"	23:45	0:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15267	14.11.83	0:20	0:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15268	"	0:55	1:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15269	"	1:30	2:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15270	"	2:05	2:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15271	"	2:40	3:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15272	"	3:15	3:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15273	"	3:50	4:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15274	"	4:25	4:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15275	"	5:00	5:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15276	"	5:35	6:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15277	"	6:10	6:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15278	"	6:45	7:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15279	"	7:20	7:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15280	"	7:55	8:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15281	"	8:30	9:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15282	"	9:05	9:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15283	"	9:40	10:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15284	"	10:15	10:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15285	"	10:50	11:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15286	"	11:25	11:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15287	"	12:00	12:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15288	"	12:35	13:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15289	"	13:10	13:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15290	"	13:45	14:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15291	"	14:20	14:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15292	"	14:55	15:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15293	"	15:30	16:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15294	"	16:05	16:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15295	"	16:40	17:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15296	"	17:15	17:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15297	"	17:50	18:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15298	"	18:25	18:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15299	"	19:00	19:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15300	"	19:35	20:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15301	"	20:10	20:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15302	"	20:45	21:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15303	"	21:20	21:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15304	"	21:55	22:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15305	"	22:30	23:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15306	"	23:05	23:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15307	"	23:40	0:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15308	15.11.83	0:15	0:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15309	"	0:50	1:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15310	"	1:25	1:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15311	"	2:00	2:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15312	"	2:35	3:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15313	"	3:10	3:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15314	"	3:45	4:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15315	"	4:20	4:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15316	"	4:55	5:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15317	"	5:30	6:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15318	"	6:05	6:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15319	"	6:40	7:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15320	"	7:15	7:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15321	"	7:50	8:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15322	"	8:25	8:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15323	"	9:00	9:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15324	"	9:35	10:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15325	"	10:10	10:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15326	"	10:45	11:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15327	"	11:20	11:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15328	"	11:55	12:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15329	"	12:30	13:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15330	"	13:05	13:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15331	"	13:40	14:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15332	"	14:15	14:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15333	"	14:50	15:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15334	"	15:25	15:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15335	"	16:00	16:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15336	"	16:35	17:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15337	"	17:10	17:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15338	"	17:45	18:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15339	"	18:20	18:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15340	"	18:55	19:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15341	"	19:30	20:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15342	"	20:05	20:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15343	"	20:40	21:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15344	"	21:15	21:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15345	"	21:50	22:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15346	"	22:25	22:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15347	"	23:00	23:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15348	"	23:35	0:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15349	16.11.83	0:10	0:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15350	"	0:45	1:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15351	"	1:20	1:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15352	"	1:55	2:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15353	"	2:30	3:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15354	"	3:05	3:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15355	"	3:40	4:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15356	"	4:15	4:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15357	"	4:50	5:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15358	"	5:25	5:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15359	"	6:00	6:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15360	"	6:35	7:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15361	"	7:10	7:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15362	"	7:45	8:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15363	"	8:20	8:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15364	"	8:55	9:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15365	"	9:30	10:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15366	"	10:05	10:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15367	"	10:40	11:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15368	"	11:15	11:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15369	"	11:50	12:20	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15370	"	12:25	12:55	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15371	"	13:00	13:30	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15372	"	13:35	14:05	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15373	"	14:10	14:40	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15374	"	14:45	15:15	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15375	"	15:20	15:50	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15376	"	15:55	16:25	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15377	"	16:30	17:00	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15378	"	17:05	17:35	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15379	"	17:40	18:10	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15380	"	18:15	18:45	3.87	3.87			10.3	1737	3600	2722	420	46	1722	3000	1	1
15381	"	18:50	19:20	3.87

RUN	DATE	START	STOP	RUN I⁺	RUN I⁻	START DEAD TIME (%)	T₁ & T₂ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T.E₄.2T₇

22.24 Phoned Cello to tell them that we have enough luminosity at this point
Deadtime went up to ~45%. Petra says they changed nothing
2TBG is <7TOF gave the highest rate, switched off ⇒ deadtime 15-20%
Changed histogramming percentage to 20%
Jetch anode currents ~2.3 μA
Synrad hits just below 300. So I don't know why we have such a deadtime problem now. Maybe it's caused by writing to tape?
Now 14%. TOF 1.0 BP 2.15
Trigger back in and histo rate at 100% again. Currents have decreased to 2×3.8 mA.

Summary:
Currents 4.2/4.4 TOF 1.5 BP 2.5 TCOR ~8 → 40% deadtime
" 3.7/3.8 " 1.0 " 2.15 " ~4.4 → 12% "

11.00 Stop run, tape full
11.01 Cello calls to announce energy change.

10. Nov. 1983

0:00 W. Bartel & R. Marshall on shift.
The computer center looks awful. Half a dozen of computer units are open with electronic units sitting on it besides. Cables are all over the place.
We write on tape.
1.05 Beams lost with slow ID - trip
2:30 'Shot Break'
PKR suspects that one of the separator plates does not work properly. Somebody went into the tunnel for visual inspection of the faulty part.
2:45 Restart 5:00, run down magnet
5 20 Petra back
6:30 1 error #46 MP-16 out of sequence; Y4=1

8:00 A. Ball and H. Rieseberg on shift
IBM-Computers are all up.

8:43 'BREAK. RESTART NOT BEFORE 10:00'
Mr. Dogele tells that a transmitter in the East area has tripped: There are sparks across an isolator

RUN	ON/OFF N 50	MP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T.REJ. FRACT.	Σ ENERGY	M.M	E_BEAM	REMARKS.

in the out-door high voltage installations. Actually they are cleaning the isolator. If the isolator is broken inside, the repair will take longer time. In this case the run could be continued at E_{beam} = 21.5 to 21.7 GeV.
Also in the Nord area there is a transmitter breaks down: Sparks on the high frequency side.
— More will be known around 9:30 am.
The separator plate problem was fixed in the night already.

9:55 RESTART NOT BEFORE ~~11:00~~ → 13:00 (10:20)

13:20 Mr. Fues from CELLO (coordinating) calls: Power supply of the ~~east~~ above mentioned East transmitter is really down. → No high energies for the next two days.
Max. beam energy is around 21.6 GeV. Which energy to Rosa?

Beate Naroska says that there is an under region in the sum plot.
~~According to the sum plot (which was read by Mr. Böhm to Mr. Fues) the points are 21.500 and 21.485 GeV~~
It was decided to start with point 21.410 GeV and to step upwards with the normal step width.
13:40 Magnet → 7500 A
13:50 Injection starts

14:15 New information from B.N.: Last attempt to repair the power supply of the transmitter was successful. Highest energy can be reached!

15:20 New filling ready at 22.175 GeV
I^+ = 4.37, I^- = 4.51, BP = 2.4 V, TOF = 1.3 V (3 V range)
Run 15211 started. $L \approx 3.0 \cdot 10^{30}$
15:47 TOF rate goes to 2.8 V (3 V), TCOR 5 → 11 Hz, Deadtime 15 → 40%. Same as last night (see preceding page).
Beate Naroska phones with PKR: Not understood beam bursts.

15:53 Nord crash on level 3
Reloaded & next run started. After ~100 events everything stopped. NIO was in idle loop but would not respond to any interrupt or terminal. Restarted again.
Run 15213 ended – Then Disc transfer error (Nord). Decided to rebuild SINTRAN & SDAS & to copy the disc

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Ø (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T Ø REJ. ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E, >6GEV	T₂ BIT 17 2T. E4. 2Tr

16.00 Nozaki & Stephens on shift
16.30 No trigger. Level 5 we managed according to the Krabbiel manual.
16:45 Energy saving time started.
19:35 Beams is back.
19:50 Vspy error 4 Trigger trigger 1 58 missing
Output " 1 66 "

20⁰⁸ Magnet Trip. Run stopped.
Vorrat bei: Okers Niveau <.
called MKK.
Find water leak under the magnet!! MKK not sure what is involved in the repair. They would need to break the interlock.
Call Nowoka and she will talk with Norfolk and Hans Bartel. and will try & contact Richard Hedgecock.

WATER LEAK NOT ACCESSIBLE. JADE HOFF
ALL HV's .#. ARCHIES WILL BE OPENED
TOMORROW AT 7⁰⁰ hrs

NO NIGHT SHIFT!!

11.11.83
CELLO: 22.190 has been started, 13 nb⁻¹
Conditions were worse because of lacking compensation.

New Nord-50 program installed - has "more correct" T2 - Zvertex marking from Run 15215
Still not get rejected online. HEM

ON/OFF N50	MUP	TOF	⟨L⟩	SLdt BHABHA RUN	SLdt EXP.	IBM TAPE	BP (V)	TOF (V)	T.REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

18⁰⁰ Lead glasses have been checked.
Five counters at the ⊖ end cap side were ~~⊖~~ completely wet. (PMT, box etc.)
After having ~~them~~ dried them ~~⊖~~, HV could be turned on without trouble.
All the counters were checked by Xenon flash lamp and found to be alive.
Yamada, Takeda, Mikuwa

20.11 At least one tagging counter segment did not survive. Counter 91 has a broken signal cable connector at the base. K. Heier

Bechmann, Fest in shift
20³⁰ Interlock set
21³⁰ Magnet ↑ 7500 A, M. Ruiskey tests Inner detector → OK

12/11/83

0⁰⁰ Hill, Bethke on shift
1³⁰ 1 LGEC counter makes an abnormal high rate and high pulse height, which caused Esh,tot trigger always "on". The counter is #71 in the EC ⊖, ie #23 in oct 3. That is one of the 5 severely wet counters. For temporally treatment, the HV. cable (crate #21. connector #118) was pulled out. Since it is an outer ~~ring~~ edge counter, it does not affect on the Bhabha rate so much. (<1%) Yamada

3²⁰ Beams ready, started run 15216
First minutes of run: dead-time ~50%, Ybam decreasing to 19%.
3²⁷ Deadtime rising again: ~31.1 %, 7-10 evts/second. Again high trigger-bit 2
3⁴⁰ reason (probably): End-cap-LG Block 14. Call Yamada again; but cannot reach him!
partial beam lost, slow ID-trip, Ybam beams totally lost.
4⁴⁰ new beams ready, start run 15217. Dead-time: 10% 4 evts/second
histogr. "energy endcaps" shows still a peak at ~250, but besides this it's rather well and also the hist "Hitmap endcaps". We leave Yamada sleeping and take data.
TOF-hitmap: no hits on channel 48 (probably the one without HV)
(also T1 input 28 and T1 output 36 missing)

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ RES ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>64GEV	T₂ BIT 17 2T.E4.2T₁

6:20 JDAS Error 44 Timeout br 3 cr 2, Munch.
after that: no trigger
Pause - continue : after Error 46 (MP-16 out of sync., YY=1) → all runs ok.
16:32 3x Time out 44, 3-2 → Stop run 15218 → no run-summary on printer!
Start run 15219
Old run-summary possible to look at it on screen, but no hardcopy possible.
Tried to print it on the line printer (5) → nothing happens, colour-TV says "Run summary printing" constantly.
17:15 Beams lost, run stopped. Not possible to get any run-summary on paper!
8:00 Hedgecock, Meier
9:00 'short break' ← kicker problems
12 30 BIGGY UP TO 22.190 WE AWAIT H V ON.
12 44 START Run 15220
TIME OUT JDAS ERROR 44 BR. 2 CRATE 5 GLASS ADC.

Sounds to me as if COUND was not online! '
Did you read sect 4.5 in operators Manual?

12:48 Deadtime at the beginning ~60% caused mainly by TAGG 17BG. After a few minutes deadtime is down to <30%.

Check Tof counters
Channel 47 had no high voltage → fixed
ADC channel 30 → cable like not connected or Dynode broken, anode is ok.

Channel 117 missing in JETC wire map. We phoned Riesberg. He recommended not to do anything about it. DL8 error. R

at the beginning of run 15220 we got the following message on the LP:
YPARA2 - ERROR IN MUON SYSTEM
CRATE=0 STATUS = 006414 (OCTAL)
" 006415 "
" 006416 "

#V-CHECKING SHOULD NO LONGER GIVE ERRORS!

ON/OFF N 50	MP	TOF	⟨L⟩	∫Ldt CHARM4 RUN	∫Ldt EXP.	IBM-TAPE	BP ⟨V⟩	TOF ⟨V⟩	TRES. FRAT.	Σ ENERGY	M.H	E BEAM	REMARKS.

13:42 : DT suddenly up to ~80%. Triggers are completely dominated by E(1). This is caused by a single (#27) spinning block in the -Z endcap. We phoned Minowa.
14:52 Problem with spinning EC block disappeared. We decided to leave it switched on.
16:00 Nozaki + Minowa on shift

17:45 EC. #27 was checked by an Oscilograph. It looked ok, not noisy.
18:00 Short break started.
18:10 Injection started.
18:40 New fill 13 ready
19.10 Beam dumped because setup of beam was tossed during background optimization which was asked by TASSO and also transmitter problem occured.
20.10 Trigger 1 Input 116, output 66 Missing. Endglow barrel group. Signale were checked by a oscilloscope and were found to be OK. Signal appears again in the histogram, too. We don't know the reason why it is curved and curved.
20.27 Missing channel 117 in JETC is due to a DL8 problem. Running suggested us to forget it.

0 00 TAKEDA & S. WAGNER ON SHIFT
5P & TOF CURRENTS ARE VERY HIGH → ASK PKR TO TRY TO OPTIMIZE → STILL HIGH, BUT WILL TRY TO SWITCH ON ANYHOW (TOF[V]=2.6 !!)
0 20 JET CHAMBER TRIP
0 23 Beams lost.
1 10 Short Break due to transmitter problem.
No time estimate for restart.

2 30 IBM down. Stop run 15233.
Write run 15234 onto magnetic tape.
But tape handler was not in order. → RUN 15234 junk.
Start run 15235.
5 45 Nord hang up without any message
No response at system terminal.
Restart Nord.
Run summary 15238 was lost

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T.E₄.2T₇
32															
15226	12.11.83	18:56	19:14	3.41	3.88	12.6	1041	2611	2114	271	34.3	1406	2247	592	243
15227	〃	19:55	20:58	4.01	4.18	12.0	3278	8002	6482	853	103	4146	7108	1592	767
15228	〃	20:58	21:07	3.44	3.59	11.0	489	1212	931	127	14.1	638	974	212	113
15229	〃	21:08	22:11	3.37	3.52	9.0	3772	8002	6070	982	88.8	4321	6562	1245	673
15230	〃	22:12	22:52	2.81	2.92	8.3	2346	4677	3390	611	50.9	2764	3534	750	335
15231	13.11.83	0:16	0:23	4.49	4.52	26.8	396	1029	899	102	27.5	419	1686	167	168
15232	〃	1:04	1:05	4.47	4.33	33.3	19	77	72	5	1.7	24	73	7	24
15233	〃	2:14	2:32	4.04	3.92	19.1	988	2549	2143	256	49	1130	3292	1109	475
15235	〃	2:44	3:29	3.90	3.62	10.5	2640	5929	4646	686	172	3093	5264	559	~~1560~~ 474
15236	〃	3:29	4:34	3.33	3.15	8.9	3882	8001	6033	1010	89	4513	6200	1454	~~1801~~ 594
15237	〃	4:34	4:37	2.88	2.74	11.2	130	399	341	33.6	3.8	268	219	172	27
15238	〃	5:35		4.38	4.43				2295						~~864~~ ~~2715~~
15239	〃	6:03	6:58	4.03	4.04	14.4	3235	8002	6655	840	121	3740	8910	1362	
15240	〃	6:58	7:21	3.50	3.49	14.1	1344	3668	3036	349	49	1975	3138	898	310
15241	〃	10:00	10:58	~~4.03~~ 3.45	~~3.91~~ 3.26	16.8 ~~12.0~~	3427	8001	6629	892	150	3559	9727	1094	1114
15242	〃	10:58	12:00	3.45	3.26	~~12.1~~		8000	6253						
15243	〃	12:10	12:34	2.73	2.45	8.0	1362	2686	1963	354	28	1525	2035	365	181
15246	〃	17:21	17:43	3.03	3.17	10.3	1273	3568	2948	331	34	1239	2564	283	227
15247	〃	18:05	18:33	2.75	2.85	9.5	1619	3396	3322	421	40	1850	2713	525	231
15248	〃														
15249	〃	21:53	22:11	4.24	4.17	34.3	806	2036	1765	210	72	712	483	167	433
15250	〃	22:15	23:01	4.01	3.92	19.3	2753	6521	5423	717	138	2413	10661	599	1037
15251	〃	23:07	8:08	3.50	3.42	10.4	3618	8002	6197	942	98	4346	6608	1491	~~1952~~ 708
15252	14.11.83	0:08	0:32	3.09	3.03	8.9	1373	2942	2202	357	32	1568	2358	441	247
15253	〃	1:13	2:12	4.43	4.28	17.8	3489	8002	6704	909	162	3262	11806	928	1082
15254	〃	2:13	3:13	3.76	3.49	11.4	3598	8002	6249	936	106	3793	8306	892	789
15255	〃	3:14	4:16	3.28	2.99	9.8	3708	8001	6119	965	95	4205	6799	1229	628
15256	〃	4:16	4:40	3.88	2.61	8.8	1426	2894	2153	371	33	1520	2433	369	251
15257	〃	5:31	6:05	4.56	4.64	22.1	1970	5186	4406	512	113	1875	7544	497	955
15258	〃	6:37	6:54	4.18	4.16	15.5	956	2215	1839	249	39	821	3211	212	371
15259	〃	14:38	15:36	3.45	4.37	11.4	3418	8002	6371	890	102	4301	6649	1672	784
15260		15:43	15:43	2.86	2.69	–	–	18	–	–	–	–	–	–	–
15261	〃	15:44	16:29	2:85	3:68	15.6	2611	8002	6824	680	106	5656	4181	3852	413
15262	〃	16:29	16:48	2.58	3.38	24.0	1114	4899	4805	290	696	3978	1532	3293	148

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp 49.44	IBM/TAPE	BP [V]	TOF [V]	T₂ REJ FRACT.	Σ Bhabha	M.H.	E_Beam [GeV]	REMARKS
33													
on	on	on	2.22	2.68	44.12	IBM	2.3	1.3	52%	19	1	22.190	Beams dumped.
〃	〃	〃	2.79	9.58	53.70	〃	2.3	1.5	51	68	4	〃	
〃	〃	〃	2.20	1.27	54.97	〃	2.2	1.05	48	9	1	〃	
〃	〃	〃	1.96	7.76	7.76	〃	2.2	1.05	49	55	1	22.205	cosmic ray! new energy
〃	〃	〃	1.65	2.68	10.44	〃	1.9	0.55	51	19	0	22.205	Beams lost.
〃	〃	〃	~~1.41~~ 3.54	1.41	11.85	〃	2.65	2.6	68	10	2	〃	Beams lost
〃	〃	〃	2.28	0.00	11.85	〃	2.5	2.4	59	0	0	〃	BEAMS LOST
〃	〃	〃	2.51	2.40	14.25	〃	2.3	1.6	61	17	1	〃	→ RUN 15234 lost
〃	〃	〃	2.16	3.85	18.20	FI1060	2.25	1.2	52	28	0	〃	
〃	〃	〃	1.81	6.77	24.97	IBM	2.1	0.9	50	48	2	〃	one event etc
〃	〃	〃	1.37	0.42	25.39	〃	—	—	53	3	0	〃	Beams lost
〃	〃	〃		2.40	27.79	〃	2.4	1.6				〃	Nord hang up. RUN 15238 lost
〃	〃	〃	2.53	8.05	35.84	〃	2.5	1.6	57	57	6	〃	
〃	〃	〃	2.23	2.96	38.80	〃	2.3	1.3	52	21	0	〃	Beams lost
〃	〃	〃	2.32	7.48	46.28	〃	2.6	2.2	59	53	3	〃	
–	–	–	1.97	5.93	52.21	–	2.0	0.6				〃	Nord problem. Run summary lost.
〃	〃	〃	1.58	3.11	53.32	〃	2.0	0.5	50	22	1	〃	Beams dumped.
〃	〃	〃	1.90	2.26	2.26	〃	2.3	1.0	15	16	0	22.220	run stopped, because of DAQ problem
〃	〃	〃	1.58	1.41	3.67	〃	2.1	0.75	49	10	0	〃	beams dumped
							~~2.8~~	~~2.4~~					Mipac did not work
〃	〃	〃	2.07	1.84	5.51	~~FI1114~~	2.8	2.4	72	13	0	〃	IBM link down
〃	〃	〃	2.10	7.35	12.86	FI1213	2.65	2.0	66	52	3	〃	〃
〃	〃	〃	1.82	6.22	19.08	FI1209	~~2.65~~	~~2.0~~	50	44	2	〃	〃
〃	〃	〃	1.62	1.70	20.78	IBM	2.05	0.65	48	12	1	〃	Data to IBM again
〃	〃	〃	2.65	7.77	28.55	〃	2.8	3.8	64	55	0	〃	
〃	〃	〃	2.27	8.76	37.31	〃	2.5	1.5	54	62	2	〃	
〃	〃	〃	1.74	7.35	44.66	〃	2.3	0.95	50	52	0	〃	
〃	〃	〃	1.46	1.98	46.64	〃	2.2	0.7	49	14	0	〃	
〃	〃	〃	2.05	4.52	51.16	〃	2.9	4.1	61	32	1	〃	Beams lost
〃	〃	〃	2.44	2.83	53.99	〃	2.7	3.2	61	20	0	〃	
〃	〃	〃	2.40	7.91	61.90	〃	2.3	1.2	50	56	0	〃	
〃	〃	〃	–	0.00	61.90	〃	2.1	0.7	–	0	0	〃	very, very short run
〃	〃	〃	1.80	5.24	5.24	〃	2.1	0.7	50	37	1	22.225	
〃	〃	〃	1.39	0.99	6.23	〃	2.1	0.5	49	7	1	〃	energy-saving-time

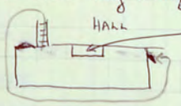
RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ B (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 66 GEV	T₂ BIT 17 2T. E4. 2Tr

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8⁰⁰ Barlow & Nye on shift.
8³⁵ Petra has a "kurze unterbrechung"
9¹⁰ Injection.
9³⁰ New fill. Background high. (TOF[M] 2.6 v again, and fluctuating). PKR say they are starting an "aercorrection program".
10⁰⁰ Optimisation complete. Conditions quiet. Start run.
11⁴⁰ More background optimisation. Jet chamber slow trip
12⁰⁰ NORD hung. Terminal 9 starts printing error messages: ERROR ØØ AT 123223; ILL. MONITOR CALL and will not respond to the keyboard. Pressing "ESC" on any other terminal immediately puts it into the same state. Display indicates data taking unaffected (and lights on PADAC IBM look seem normal) so wait till run end normally (almost) (IT hangs with "no Triggers" at event 8000). Master-Clear, and start next run.

15⁵³ Temperature of Hall >24°C (?!). Hooter sounds. Call Schult, who says call Technische Nordwest. Then power goes off as Temp >26° C. T.N. come and poke about. Petra crew come and reset power.

Probable air conditioning fault. Trigger room temp 27°C. Phone K again.
K engineer suggests intake air-temp too low. SCHULT SHOULD BE INFORMED (AGAIN!) TOMORROW A.M.
Meanwhile CHECK CONTROL PANEL FOR "FROSTQUITTIERUNG" EVERY 30 MINS.
Air-cond room downstairs (below control room). There is a 1905 key hanging by control room door, which opens back door of air-cond room



control panel – check for "frostquittierung" (red light) on.
reset via black button if necessary.

Try "dry run" – don't write data.

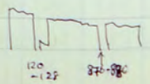
No Trigger bits
Time out 44 branch 2 crate 5. – Lead Glass ADC's. Call Minowa

16⁰⁰ Meinke + Komamiya

Minowa came. He checked ADC Processor for LG. [Please call the right person on call next time! (we skipped the dummy expert) M.M.]
He found two Trigger crates were off (Power). → Euro crates for trigger logic.
also some other read-out problem of 14 ADC's (only zeros) solved. – bad contact in Camac Crate
LG HV re-loaded.

17¹⁰ Energy of Petra has been increased now to 22.220 GeV despite arc complaints but we are ready to take data again

19³⁵ We have to change DL8; run stopped ← Holes in hit map for ID.
Connectors were cleaned as usual → hit map looks perfectly O.K.
1 DL8 was changed (wires 872-879) (old dead wire is coming back again)



ON/OFF	⟨L⟩	∫Ldt CHARM Run	∫Ldt Exp.	IBM – TAPE	BP ⟨V⟩	TOF ⟨V⟩	T. RES. FRAC.	Σ ENERGY	M.H	E BEAM	REMARKS.
N 50	MIP	TOF									

35

18³⁰ Beams lost
18⁴⁵ 'short break' on T.V.
21⁸⁵ Was filling, background too high to switch on; we have asked to try to improve the conditions
run 15249 / first 400 triggers of that run might have no hits in CD
we wanted to pause the run and switch off HV of CD, but pausing the run was not successful. (during optimisation)
22⁰⁰ IBM problem: Disk problem, IBM control room says it will take them some time to fix it
check standard lists
23⁰⁰ → TOF 29 dying, number of hits by synchro rod in ID is high ~350/event hits
Look at page 30 it has been dead since water leak (MX only)

14/11/83 0⁰⁰ Howard Mills & T. Mashimo On Shift

1:03 New fill ready but unstable beams
5:30 New fill ready. ~50% Read time at start run 15257 – lots ID hits + high trigger rate
After 5 mins DY falls to 18%.
6:05 Specific Luminosity rather low – SL=20, L=1.63. Then ID soft trips – beam almost all lost
6:35 New beams ready – run 15258 started
It's clear from this & my last night shift that Hadronic events are afraid of the dark!

6:45 Energy Saving

Maybe because of the Power-Failure-Overheat the Zero points of the TDC calibrations have changed. Differently for different groups. Typically 0.3 nsec. To F. Ryo

8⁰⁰ A. Wagner a Chin on shift.
9³⁰ Short Break (Temporary Access)
13⁵⁰ Mr. Schult inspected this morning the air conditioning (see preceding page) He claims, that problem is due to fact that "Sollwertgeber" is set to 15°. He changed it to 19°. As a consequence, the temp in the hardware compartment has risen to 22° degrees (at door) / 20° (at DL8).
I have lowered the "Sollwert" setting to 17° now, after consulting with Mr. Schult.
14³⁵ beames at last; problems during switch-on of HV system for TOF have to switch crate(3) manually → ON.
14⁴⁵ Temperature at DL8 now 18.5° (still too hot!!) Mr. Schult is now changing the setting of a thermostat in the airstream to the counting house. Please record temp. on 24h sheet until tomorrow. AW It is also cleaning the filters

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (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.E4.2Tr

16:00 Yamada, Heier
16:50 Magnet down to 1000 A.
16:52 At the end of run 15262 we got the following message on the LP:
ERROR 20 AT 67516; DISC/DRUM TRANSFER ERROR
HARDW. DEV. NR. 1540; UNIT: 0
ERROR 21; DISC/DRUM TRANSFER ERROR
DISC ADDRESS: 6366; STATUS: 44030
22.28 NORD hangup shortly after the display of an hadronic event
level 14, protect ring 3
run summary 15265 lost

15/11/83 0.00 Barrie Whittaker and Heinzelmann on shift.
1.00 Gould plotter is not printing the last 15-20 columns. Front water tray seems O.K. Back water tray has obviously been dry for some time. Run summary sheet 15267 not readable on the right hand side.
1.49 Beams lost I.D. tripped.
3.35 NORD hang up LEVEL 3. Reload Nord.
6.45 Energy saving time. Run magnet current down to 500A.

08:00 Heine / Finger on shift
9:10 Magnet → 7500
10:15 DL8 for wires 336-343 low (≈ 1/3 of normal value). Stop Run 15275, pull DL8. Didn't help. Will exchange it during next filling.
Gould plotter ok again (repaired by Dr. Hase)
10:43 Colour TV progr. crashed — Memory parity error. Then Disc/Drum errors
10:47 New energy, new run: we start with ≈ 95% dead time and Time outs branch 2/crate 1
Suddenly everything is ok again.
11:00 Time out Br. 2/cr. 1 ⇒ dead time 90%!
11:10 power failure LG trigger switch off/on ⇒ ok
11:15 Again dead time ≈90%, on the command terminal comes a series of "<" (line feed), then time out Br. 2/cr. 1. Stop Run (not so easy because of the frequent line feeds) and start new run.
11:20 μCrate missing from Run Book on 15/14
≈12.30 Cards, Olsen, Fuller working on Nord + Camac. Hardware checked, system newly generated
14.40 So far everything works
13.00 DL8 wire # 336-343 exchanged.

ON/OFF N 50	MIP	TOF	⟨L⟩	$\int$Ldt CHARM Run	$\int$Ldt Exp.	IBM TAPE	BP (V)	TOF (V)	TRES. FRAKT.	Σ ENERGIE	M.H	E BEAM	REMARKS.

16.00 Barlow, Weber on shift.
16^{45} Lose beams during injection. No point in refilling before 17^{00}
20.01 Finally new fill; we are running

0^{00} 16/11 Knies & Takeda on shift
6^{25} Energy saving time started. Run down the magnet to 1000A.

8^{00} Yamada, Becker

9^{02} Magnet current → 7500 Amps
9^{25} Stop run 15293 (HV down)
10^{50} a part of the beam lost. The automatic RF recovery system in operation ≈ 10 min. ID trip. Run 15295 was paused during the "ENERGIE ÄNDERUNG" period.
11^{00} Run continued.

		CARC	CARF	WCR	MAR
11^{19}	JDAS readout error 44 - DMA timeout :	00402100	00 2060	0	0564226
11^{46}	CELLO calls for a new fill				
12^{50}	new fill ready				
13^{09}	JDAS readout error 44 DMA timeout	00402100,	2060,	0,	514612, 27000, 30300, 140204, 0, 120, 0
13^{40}	" " " " " "	"	"	"	522546 " " " " " "
13^{48}	" " " " " "	"	"	"	557322 " " " " " "
14^{15}	" " " " " "	≈ X10. too many and too often to be recorded!			

The Modules and connectors of the system crate were pushed strongly. After some errors they disappeared.
14^{30} YSPY found an error:
V345 for the following DL8's gave no response: 101, 109, 115, 123, 137, 143
But in the wire map histogram there is nothing wrong seen. For the next run ½ of R3 was dead!
14.40 Event display prints only error messages endlessly. → display aborted.
ILLEGAL NHIT 380 . . . .
15^{00} Experts arrived to look the problems of ID electronics.
15^{20} Contact-problems of DL8-clock. After touching some cables it works again. Ambrus, Heinzelmann

16^{00} M. Zachara and H. Riesberg on shift

Today Result from Monday, 14.11. Return of the Jadites : Mark I Dragons = 6 : 1
Return of the Jadites : Tasso Tossers = 8 : 0

Run	Date	Start	Stop	Run I⁺	Run I⁻	Dead time [%]	Time [s]	Records in	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E_L>6GeV	T2 Bit 17 2T.E_L.2T_T
15263	14/11/83	20:05	21:05	4.21	4.39	17.1	3566	8001	6708	928	159	3312	13201	1012	897
15264	"	21:05	22:05	3.43	3.57	11.1	3455	8002	6425	899	105	4347	6856	1801	628
15265	"	22:04		2.94	2.80	8.6		1551 ev.	written		run	summary		lost	
15266	"	22:31	23:11	2.83	2.72	7.9	2391	4558	3278	623	49	2434	3675	468	344
15267	14/11/83	23.48	0.46	4.35	4.31	17.2	3424	8001	6714	890	153	3317	11045	909	1371
15268	15/11/83	00.47	1.44	3.63	3.48	11.5	3438	8001	6402	894	103	3934	7453	1226	974
15269	"	1.45	1.49	3.17	3.00	13.9	197	498	379	51	7	237	421	52	76
15270	15/11/83	2.53	2.58	4.11	4.36	46.3	290	755	683	75	35	245	1167	108	250
15271	15/11/83														
15272	"	3.46	3.55	3.92	3.88	23	538	1365	1188	140	32	508 827	1028 605	194	280
15273	"	5.10	5.55	4.32	4.03	46	2681	8002	7308	697	320	4641	7687	3514 !	1535
15274	"	5.57	6.44	3.92	3.61	12	2449	5495	4330	638	75	2592 8714	5624	740	625
15275	"	09:49	10:25	4.02	4.36	12.	2125	4694	3749	533	66	2107 2878	5222	558	546
15276	"														
15277	"	10.52	11.41	3.42	3.75	19.1	1455	3291	2677	379	72	1632	3300	633	315
15278	"	11:20	12:22	3.76	3.50	9.9	3693	8002	6067	961	95	4323	6452	1344	563
15279	"	12:22	12:49	2.48	2.75	8.3	1578	3203	2307	411	34	1880	2187	538	174
15280	"	14:15	15:16	3.68	3.50	10.6	3639	8002	6192	947	100	4025	7243	1100	719
15281	"	15:17	15:45	3.10	3.01	8.9	1666	3419	2598	434	39	1729	2899	426	276
15282	TOF	Calibration		Run	send to	IBM									
15283	15/11/83	20.01	20.57	4.18	4.18	15.4	3308	8002	6663	860	132	3675	9874	1370	916
15284	"	20:57	21:58	3.55	3.66	10.2	3568	8001	6328	928	95	4020	6986	1232	655
15285	"	21:57	23:04	3.07	3.18	8.7	3934	8002	5957	1024	89	4199	6665	910	602
15286	"	23:04	23:34	2.66	2.77	8.1	1742	3448	2471	463	37	1916	2694	369	251
15287	16/11/83	0:41	1:42	4.12	3.77	16.6	3655	8002	6551	952	158	3393	9478	851	1238
15288	"	1:43	2:24	3.36	2.96	9.4	2263	4767	3651	588	55	2379	4188	566	423
15289	"	2:26	3:09	2.98	2.59	8.3	2528	5040	3697	657	54	2716	4043	619	332
15290	"	3:42	4:44	3.87	3.82	11.9	3661	8002	6346	952	113	3685	8353	906	969
15291	"	4.44	4:45	3.10	2.96	10.0	24	66	56	6.3	0.6	18	51	4	7
15292	"	5:23	6:22	3.94	3.93	12.6	3406	7853	6389	886	111	3539	8464	940	842
15293	"	9:21	9:24	3.99	4.16	27.8	17	88	79	4	1	26	52	12	6
15294	"	9:27	10:28	3.92	4.09	12.3	3648	8002	6477	949	117	3485	9582	791	876
15295	"	10:29	11:48	3.38	3.53	8.4	4077	7854	5783	1061	89	4084	6654	821	593
15296	"	12:55	13:53	4.20	4.15	16.4	3473	8002	6678	904	149	3222	11187	810	1060

Run	ON/OFF N50	ON/OFF HIP	ON/OFF TOF	⟨L⟩ ·10³⁰	∫L dt Bhabha Run	∫L dt Bhabha Exp.	IBM Tape	BP [V]	TOF [V]	T2 rej. Fract.	Σ Bhabha	M.H.	E_Beam	Remarks
15263	ON	ON	ON	3.05	1061	16.84	IBM	2.9	2.8	67	75	1	22.235	
15264	"	"	"	2.52	6.79	23.63	"	2.6	1.6	53	48	4	"	
15265	"	"	"	2.28	1.84	25.47	"	2.2	0.7			at last	"	
15266	"	"	"	1.81	3.82	29.29	"	2.1	0.7	48	27	1	"	NORD hangup
15267	ON	ON	ON	2.95	9.77 ~~10.10~~	39.06	IBM	2.8	2.6	61	69	0	22.235	Guild platter problem
15268	"	"	"	2.40	7.93	46.99	"	2.5	1.5	51	56	3	"	
15269	"	"	"	1.59	0.14	47.13	"	2.2	1.0	46	1	0	"	Beams lost ID tripped
15270	ON	ON	ON	2.20	0.57	47.70	IBM	2.7	3.0	62	4	0	22.235	Beam lost
15271								2.6	2.3				"	Nord hang up Run Summary lost
15272	"	"	"	2.24	1.42	49.12	"	1.6	2.4	62	10	0	"	Beams lost
15273	ON	ON	ON	0.76	1.84	50.96	"	2.6	2.5	61	13	0	"	
15274	"	"	"	2.16	4.67	55.63	"	2.4	1.6	53	33	1	"	Energy moving time
15275	"	"	"	2.76	4.53	60.16	IBM	2.7	2.2	55	32	0	"	
15276	"	"	"					2.3	1.3					Nord crash → Run Summary lost
15277	"	"	"	2.31	3.68	3.68	IBM	2.5	1.5	55	26	0	22.250	
15278	"	"	"	1.90	6.52	10.20	"	2.4	1.25	48	46	0	"	
15279	"	"	"	~~1.34~~ 1.90	~~2.55~~ 6.52	12.75	"	2.0	0.6	46	18	1	"	
15280	"	"	"	2.36	8.60	21.35	"	2.3	1.2	51	53	2	"	
15281	"	"	"	1.86	3.40	24.75	"	2.2	0.9	47	24	0	"	Beams lost
15282								~~2.8~~ 2.2	~~2.2~~					
15283	"	"	"	2.94	10.05	34.80	"	2.8	2.2	61	71	3	"	new fill
15284	"	"	"	2.47	~~8.56~~ 22	43.02	"	2.5	1.4	49	58	2	"	
15285	"	"	"	2.06	8.50	51.52	"	2.2	1.0	48	60	2	"	
15286	"	"	"	1.62	4.25	55.77	"	2.0	0.6	49	30	3	"	Beams Dumped.
15287	"	"	"	2.22	9.78	65.55	"	2.6	2.0	56	69	1	"	
15288	"	"	"	1.78	4.96	70.51	"	2.3	1.0	48	35	1	"	
15289	"	"	"	1.48	2.55	2.55	"	2.1	0.8	48	18	0	22.265	New energy same fill
15290	"	"	"	2.27	7.52	10.07	"	2.5	1.8	53	53	1	"	
15291	"	"	"	1.81	0	10.07	"	—	—	49	0	0	"	Beams lost
15292	"	"	"	2.63	9.08	19.15	"	2.6	2.0	54	64	1	"	Beams lost
15293	"	"	"	3.42	0.14	19.29	"	2.7	2.0	38	1	0	"	10 HV down
15294	"	"	"	3.11	10.22	29.51	"	2.6	1.9	58	72	5	"	
15295	"	"	"	1.69	7.52	37.03	"	2.4	1.4	48	53	3*	"	new fill — 1 cosmic trg shower included.
15296	"	"	"	2.77	10.22	47.25		2.7	2.4	61	72	2	"	

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T1·6 (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T1 Acc SUM	T2 Acc SUM	T1 Bit 2 E1>6GeV	T2 Bit 17 2T.E4.2Tr
40															
15297	16/11/83	13.54	14:42	3.55	3.54	13.9	2873	8002	6689	748	104	2811	6314	566	674
15298	"	14:42	15:07	3.17	3.20	9.8	1433	4252	3554	373	36	1505	2657	345	266
15299	"	15:17	16:24	2.93	2.98	8.6	4033	8002	6003	1050	90	4291	6487	1072	586
15300	"	16:24	16:49	2.56	2.61	8.0	1444	2787	2000	376	30	1588	2088	340	178
15301	"	20⁰⁸	21⁰⁴	3.86	4.07	12.1	3385	8002	6525	881	106	3448	8238	842	883
15802	"	21⁰⁵	22⁰⁴	3.35	3.55	9.6	3512	7351	5588	914	88	3733	6577	835	649
15303	"	22¹⁰	22²¹	2.10	3.09	89	1554	4154	3358	404	36	1728	2486	447	225
15304	17/11/83	2:15	3:24	2.96	2.81	8.0	4103	8002	5786	1067	86	4603	6041	999	551
15305	"	3:24	3:44	2.58	2.45	7.4	1130	2141	1524	294	22	1283	1518	255	138
15306	"	4:32	5:39	4.11	4.32	12.6	3634	8002	6414	946	119	3656	7924	838	972
15307	"	5:40	5:42	3.25	3.69	9.7	83	252	197	22	2	104	169	21	48
15308	"	14:10						~300							
15309	"	14:22	14:32	3.78	3.89	12.3	554	1332	1086	144	17.7	554	1461	124	158
15310															
15312	COSMIC RUN WITH FULL DETECTOR ON → 6181 events to IBM														
15313	—" —														
15314	—" — → 148 —" —														
15316	18/11/83	14:53	15:02	} Junk due to TOF HV problem											
15317															
15319	19.11.83	17:40	~18:35	3.88	4.04	9.8		6745	5188						
15320	"	19:48	20:53	4.08	4.19	9.6	3843	8001	6120	999	96	3708	7608	720	854
15321	"	20:53	21:14	3.31	3.38	12.2	1184	2254	1615	308	38	1137	1959	196	227
15322	"	21:52	22:35	3.91	3.90	9.7	2453	5238	4019	639	62	2409	4916	476	594
15323	"	22:42	23:51	3.33	3.32	9.2	4055	8002	5913	1055	97	3931	7123	718	702
15324	20/11/83	23:51	0.45	2.79	2.81	8.4	3164	6164	4409	823	69	3248	5054	684	422
15325	"	3:31	4:32	4.27	4.13	10.4	3688	8001	6258	861	99	3630	7708	775	848
15326	"	4:38	5:46	3.60	3.45	R.3	4008	8001	5845	1041	127	4323	6463	1212	681
15321	"	5:46	6:06	5.04	2.97	80	1195	2392	1726	310	25	1338	1817	338	155
15328	"	0721	0824	3.62	3.79	9.6	3767	8002	6122	980	95	3984	7153	1099	747
15329	"	0824	0912	2.90	3.10	7.8	2939	5313	3769	739	57	2869	4206	597	402
15330	"	9:59	1057	3.70	3.94	24.4	3442	8002	6666	896	218	2891	10172	603	2347
15331	"	10.58	12:07	3.10	3.19	8.7	4123	8002	5776	1073	93	4114	6909	771	765
15332	"	12.06	1256	2.45	2.62	7.4	2897	5069	3465	754	55	2870	3880	499	322

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp.	IBM Tape #	BP ⟨V⟩	TOF ⟨V⟩	T2 Rej fract.	Σ e⁺e⁻	Σ M.H.	E beam	Remarks
						41								
15297	ON	ON	ON	2.21	5.25	52.50	IBM	2.5	1.5	23?!	37	0	22.265	From the end of 15297 ID error & see text in p.37 (wrong data; subtracted by hand)
15298	"	"	"	1.95	2.70	55.20	"	2.2	1.0	4!	19	1	"	
15299	"	"	"	1.53	5.39	60.59	"	2.2	0.8	49	38	3	"	
15300	"	"	"	1.36	1.99	62.58	"	2.0	0.6	49	14	0	"	Beams dumped
15301	"	"	"	3.03	10.93	73.51	"	2.6	1.9	50	77	3	"	
15802	"	"	"	2.28	8.02	81.53	"	2.3	1.2	49⁵⁰	47	1	"	
15303	"	"	"	1.40	2.84	2.84	"	2.1	.8	8?!	20	0	22.280	New energy!
15304	"	"	"	1.69	7.39	10.23	"	1.9	0.65	49	52	1	22.280	Start after LV trip, OLB and NORD trouble
15305	"	"	"	1.57	1.71	11.94	"	1.7	0.4	50	12	0	"	Beam dumped
15306	"	"	"	2.72	9.09	21.03	"	2.5	2	51	64	3	"	
15307	"	"	"	1.98	0.28	21.31	"	2.3	1.4	31	2	0	"	Beam lost
15308	"	"	"				"	2.6	1.7				22.280	Nord hang-up → no run summary
15309	"	"	"	3.09	1.71	23.02	"	2.5	1.6	53%	12	0	"	Beam lost
15310								2.5	1.2					No run summary! Never further data in this run.
15312						written to IBM								
15313						—" —								
15314						—" —								
15316														
15317														
15319	ON	ON	ON	2.78	9.24	32.26	IBM	2.35	1.4			1?	23.280	Nord hang-up → no run summary and beams lost
15320	"	"	"	2.79	10.80	43.06	"	2.35	1.5	49	76	2	"	
15321	"	"	"	2.23	3.13	46.19	"	1.95	0.5	49	22	1	"	Beams lost
15322	"	"	"	2.58	7.25	53.44	"	2.55	2.15	49	51	3	"	
15323	"	"	"	2.00	7.83	7.83	"	2.2	1.05	49	55	2	22.295	New energy
15324	"	"	"	1.46	4.38	12.81	"	2.0	0.46	48	35	1	"	Beams dumped
15325	"	"	"	3.07	3.86	22,87	"	2.4	1.70	48	70	1	"	
15326	"	"	"	2.01	7.26	30,03	"	2.1	1.0	48	51	2	"	
15321	"	"	"	1.81	1.57	31,70	"	1.9	0.65	49	11	2	"	Beams lost.
15328	"	"	"	2.02	7.97	39.67	"	1.9	0.7	49	56	0	"	
15329	"	"	"	1.49	4.84	44.51	"	1.9	0.7	49	34	1	"	Beams dumped
15330	"	"	"	1.55	4.41	48.82	"	2.4	1.9	54	31	0	"	
15331	"	"	"	1.68	6.94	55.86	"	2.18	0.83	49	50	3	"	asked PKR to reduce T2 dispersion to put in collimators → Emin increased
15332	"	"	"	1.18	3.13	58.89	"	1.9	0.55	49	22	1	"	Beams dumped

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Θ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E,>6GEV	T₂ BIT 17 2T.Eh.2Tr

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16^{10} Keep this fill ($L = 1.6 \cdot 10^{30}$) until power saving time.
Remarks to Problems in Runs 15297 and 15298 (see above)
Run 15297 first third of 2 , Run 15298 last ~~them~~ tenth of 2 → 6 nb⁻¹ from 7.95 nb⁻¹ lost.
Whole CAMAC Branch 7 missing → Error must be branch cable or ~~short~~ branch coupler

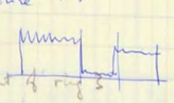
16^{31} JDAS READOUT ERROR 44 - DMA time out - like at 13^{09} ...
Fourth number (MAR) is 0556367
16^{50} Stop Run # 15300. Run down magnet to 1500 A. Energy saving time

17^{25} Terminal # 9 : No response. Power off/on → OK
19^{05} Magnet → 7500 A
19^{30} S. Komamiya for Rieseberg
20^{10} "Soft Alarm" for Jet chamber (beam pipe current was too high)
21^{10} Jdas readout error 44 DMA Timeout
21^{15} Cello want to increase the beam energy
21^{45} Jdas readout error 44 timeout branch 2 ~~crate~~ 6 lead glass ADC's
22^{15} Beam energy was changed to 22280 GeV without dumping the beams
22^{30} YSpy found that DL8's giving no response
101 102 116 121 123 129 130 136 142
V545 for following DL8S give no response 109

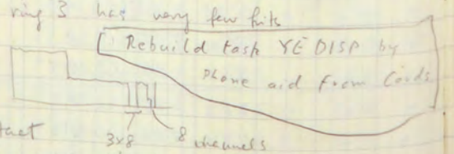
17. Nov. 1983

0^{00} Weekend Eberhard on shift

wire map looks funny ~~ring 8~~ have low rate
wires 780 - 1150 first ½ part of ring 5



We touched cables → does not work
during fighting with the trouble, we have had another trouble → Timeout branch 6 crate 5.
1^{00} we exchange Camac crate controller for branch 6 crate 5 → looks O.K
but the hit map looks still funny (first ½ of ring 3 has very few hits
→ NORD was restart → the big hole was disappeared
but now we have another holes



2^{20} DL8 wire # 1400 - 1407 was changed.
DL8 wire # 1384 - 1391, 1392 - 1399 cleaned the contact
DL8 wire # 1488 - 1495 touched, kicked → Looks all O.K.

3^{00} DMA timeout

CARC	CARF	WCR	MAR	MODE	DMACOST	PIOCOST	ISR	IVR	WD06
402100	2060	0	573603	27000	30300	740204	0	120	0

(leading zeroes omitted)

3^{15} Cello plan a new fill at 3^{45}
4^{51} DMA timeout same as at 3^{00} (except MAR = 55031)

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5'' JDAS Readout Error 44 Timeout branch 3 crate 2 : Muon chambers

CARC	CARF	WCR	MAR	Mode	DMACOST	PIOCOST	ISR	IVR	WD06
601320	4020	0	577406	12100	30100	140204	0	0	0

JDAS Readout Error 45 MP-16 analysis incomplete YY = 1
No Triggers since ... Pause / Continue Run → OK
6:15 Magnet to 1000 A new filling not until after energy saving time

08:00 Ball, beads on stage.
08:20 Discover Krehbiel still asleep on balcony! — moreover, he is not keen to move! 1st recorded instance of voluntary prolongation of night-shift!
10^{15} ramping up PETRA transmitter
14^{10} our first beams during this shift
14^{22} Nord hang-up level 14
14:31 Beam lost.
15:05 Have checked the Nord-50 histogramming code for the inner detector with Rolf Hever and he & I see no bug that causes funny happenings in the DL8 bit ratio. Beware that clearing the wire map will send the muon histograms mad. (HEH)

16:00
B. Whitaker, M. Zecher
17.00 Still no beam. Magnet → 500 A. Energy saving time.
19.20 Magnet → 7500 A.
20.00 Had beam for about 1 minute!

TOF HV MFR 54 had 3 channels tripped → caused Error 2 in Krehbiels Supervisor → no HV could be switched on. (Why!?!?)

22^{30} Power failure! Total!

Restart not before 3 a.m.!

0^{00} Friday 18th November 1983 Peter Steffen, John Allison (2788)
Temperature alarm in PKR. Action taken
Magnet pump alarms. Pumps restarted → but still cannot reset alarm. K group will come when they have time.
I have bridged the temperature alarm to the PKR and the ~~control~~ interlock.

→ I have not yet been able to contact them.

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\phi$ 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. 2Tr

the alarm box is broken. Probably a relay failed. Phone phone nr. Masshidlauschan (3753) to repair the unit.

W. Bartel

6.00 Lead glass trigger power failure: "Spannungsausfall" of unit in rack 5 (top)
6.50 " " " " "
0800 Narooka + Minowa
9.20 Magnet restarted → 1275 A
Masshidlauschan was phoned, he will come to look at the box.

14:20 PETRA injection started.
. Tokyo LG HV. re-loaded.

1600 P. Murphy + Leif Heuel

magnet walks up to ≈ 1640 amps. Did ~~reset~~ reset & Run to 600 A (HEA
19[10] magnet → 7500 A

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0[00] Becker, Dieckmann

0[05] call to PKR: probably no Beam tonight insagnet to 1000 A
0[10] Noord must have been hanging for some time, "Stop" sign is on. Reload & DAS

8[00] Allison & Takeda on shift
8[39] Magnet Trip: (A) Niveau Vorratsbehälter 4 (B) Durchfluss. Wassergek. Kobel <
(A) reset when Storing Location pushed, (B) remains.

Phoned K-people.
Almost all of the water in the Cu-circuit was lost. I suspect the heat exchanger is leaking and the water is pressed into the cooling lake. The 'Kontrollsubmitter' will observe the level of the Cu-water. In case we rapidly lose water call Engin: 82 10 23 or Tannenberger: 832 49 82

W. Bartel

ON/OFF N 50	MIP	TOF	⟨L⟩	$\int L dt$ BHABHA Run	$\int L dt$ Exp.	IBM TAPE	BP (V)	TOF (V)	TUBES FRAKT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

10[15] Magnet → 7500 A for injection
10[56] " Beam at 22.280 GeV.
" HIPROC no response" at the start of the run 15318[5].
11[03] Beams lost.

11[10] HIPROC reloaded and started.
12[12] Beams obtained. Lost after about 2 mins during ~~Beam Optim~~ "Background Optimisation"
13[18] " " " " 30 secs " " "
13[55] " " but "trouble with a transmitter." We cannot switch on HT yet.
14[08] HT on. Background Optimisation. 14[18] Beams lost.
14[51] RUN 15316 started at last.
14[58] ERROR FLAGS FOR MAINFR~~AME~~ 53 T F T
54 " "
55 " "
56 " "

TOF HV wrong. Run stopped.
2 of the LeCroy power supplies ~~out~~ were ~~set local~~ found to be ~~out~~ local. And we could not switch them on.

15[15] We ~~tried~~ tried to switch them on again and succeeded !? ⇐ not true
We started run 15317.
15[17] Beams lost.
RUNS 15316 – 15317 Junk.
15[59] Problem with DESY synchrotron transmitter. No time estimate for fixing.

Check TOF and BP High Voltages. They are all correct and all came on automatically and went off like they should (until the next power failure).

16[02] T. Mashimo & U. Schneekloth on shift
17[40] fill ready, start Run 15319
~ 18[35] Nord hang-up with level 3. At the same time beams are lost. No run summary
Nord restarted.
19:48 fill ready start Run 15320

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T_1 & (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 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T. E_4. 2T.

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21:07 Error message on the command terminal:
JDAS Readout error 44 — Timeout branch 2 crate 1 : Latches
CARC CARF WCR MAR MODE DMACOST PIOCOST ISR IVR WDOG
00402|00 002060 000000 05412|0 027000 030300 140204 004000 000120 000000

It seems to be not serious. The run continues normally.
21:14 Beams lost. Run stopped
21:52 new fill, start run 15322
22:30 Cello wants to increase the energy. ("240 nb^{-1} already collected")
22:42 The beam energy increased. (22.295 GeV) and the new run starts. (Run # 15323)
23:51 Run 15324 started

20. Nov. 83.
0:00 Nye + Solomont
0:45 Beams dumped.
3:30 new fill, start run 15325
5:10 JDAS Readout error 44 TIMEOUT branche 2 crate 1 : Latches. about 20 times error messages.
6:10 Beams lost.
7:22 new fill, start run 15328

0800 Dieckmann + Murphy.
0913 Beams dumped
1000 Run 15330 with new beams. High deadtime (up to ~40%) until collimators were adjusted.
16:00 Petersen, Meier
18:17 new fill readout error 44 - Timeout branch 3 crate 2 : Muon chambers about 10x
Austin Ball will come
19:10 new fill
19.22 Run 15334 has no muon data, Austin is working to solve the problem
21.17 Crate Controller of Crate 2, Branch 3 exchanged. This seems to help. But after a short time the timeouts reappeared. They are now much less frequent (~ 1/200 events).

21. Nov 83
0:00 Chris + Matsumura
Throughout shift - error 44 - Timeout branch 3 crate 2 : Muon chambers - every 5-10 minutes!

ON/SFF N50	MIP	TOF	⟨L⟩	$\int$Ldt Chroma Run	$\int$Ldt Exp.	IBM — TAPE	BP ⟨V⟩	TOF ⟨V⟩	TRES. FRAC.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

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6:45 Magnet 1000 A - Energy Saving Time
8:00 McCann + Bowdery on shift
Magnet off (as no beam expected until at least 11.00 as 1 GHz tests are going to start soon)
call K-people to repair Cu-water cooling circuit.
11.00 Greenshaw on shift while proper shift crew go to the software meeting!
12:18 K people say magnet now ready to go.
Computer disabled for magnet control (rhill)
12:30 McCann back. Magnet control via computer now enabled.
12:36 From Wulf Bartel: The heat exchange for the Cu cooling circuit has been replaced.
13:20 PKR phone and ask us to power up our magnet to allow them to inject ⇒ 7500A
14:00 Injection underway.
15:48 TASSO say that there will be no beam until after the energy saving time ≈ 19.00.

16:00 Hill, Bethke on shift
19:20 magnet up to 7500 A, Petra injecting, IBM down
21:00 Beams ready
21:15 every few minutes: Time out br 3 cr 2 (Muon chambers) } repeats several times
after 2 Timeouts: "no events", cured by "Pause" - return "Continue"
21:55 these errors became more frequently! Pushing crate-controller and cables on br 3 cr 2 doesn't help.
Stopped run 15345 and exchanged crate-controller in br 3 cr 1 (because 3,2 has been changed yesterday without any success!)
22:11 Started run 15346. Line printer-error-message: br 2 crate 7: bits written 177777, bits read 177577.
Timeout br 3 cr 2 still there!
Change crate-contr. in br 3 cr 3 → Timeout 3/3 ! ← The last grader plug was not exchanged! Therefore the fault. D.C.
(run terminates always during (be-pedestal-run). "Busy"-loops of system processor an!
Changed back old crate-controller in br 3 cr 3: Run proceeds, with old 3-2 - Timeout! So in this crate there seems to be some singular error. → Error in this crate due to missing last grader on exchanged CCAI. After restoration, error is back in Muon crate S.O.
Phoned D. Cards, he will come and do some tests.
22:42 Continue with run 15348 and old crate-controller in 3-3.

29/11/83 ~ 100 "Time out error" was examined by experts.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T_1 & (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T. E4.2T$_v$
15333	20.11.	18:15	18:22	4.07	3.97	23	671	1250	971	176	41	594	1179	148	136
15334	"	19:12	19:22	3.97	3.96	27	391	718	623	102	28	322	680	85	75
15335	"	19:43	19:43	3.52	3.53	20	29	68	55	8	2	24	51	5	12
15336	"	20:24	20:44	4.16	4.16	25	1127	2025	1614	293	74	813	2185	145	247
15337	"	21:08	21:12	3.45	3.51	11	153	374	287	40	4	164	269	24	37
15338	"	21:48	21:52	4.15	4.07	23	223	414	317	57,8	13	178	365	30	54
16339	"	21:55	23:17	4.06	3.35	14	4476	8001	5813	1164	164	3949	7064	619	715
16340	"	23:17	27:52	3.03	2.51	9	2014	3454	2323	524	47	1916	2736	290	226
15341	21.11	1:34	2:55	4.31	4.25	27.2	4735	8001	6231	1231	335	3517	8231	628	885
15342	"	2:55	4:10	3.41	3.38	16.8	4460	8002	5780	1160	195	4071	6786	692	662
15343	"	4:09	5:32	2.87	2.89	16.5	4868	8002	5585	1265	208	4348	6346	767	528
15344	"	5:32	6:43	2.42	2.51	11.6	4233	6920	4557	1102	128	4103	5178	645	387
15345	"	21:12	22:08	4.14	3.80	24.2	3231	5670	4263	840	203	2622	5566	470	640
15346	"	22:12	22:17	3.53	3.17	11.3	393	812	587	102	11	362	688	50	70
15347						am	dy								
15348	"	22:43	23:21	3.31	2.96	13.5	2261	5045	3875	588	79	3009	3449	1287	350
15349	22/11/83	1:06	1:42	2.52	2.20	10.0	2138	3490	2255	557	56	2024	2650	286	200
15350	"	3:11	4:31	3.24	3.28	13.1	4820	8001	5697	1254	164	4016	6896	654	624
15351	"	4:32	5:08	2.66	2.69	9.9	2143	3740	2578	557	55	2005	2969	351	218
15352	"	8:11	8:25	2,47	2,51	9,7	767	1243	837	200	19	685	1012	107	60
15353	"	5:27	5,38	2,40	2,43	11,5	567	956	632	148	17	552	686	75	56
15354	"	5:44	6.48	2.32	2.36	7.3	3740	6128	3943	974	91	3588	4659	528	319
15355	"	16:00	16:28	3.05	3.71	18.0	1630	2867	2087	424	77	1396	2554	256	288
15356	"	16:36	16:53	2.86	3.49	7.7	944	1827	1670	246	19	923	1535	133	147
15357						NO EVENTS				IBM ERROR					
15358	"	23:04	23:16	3.98	4.04	22.9	721	1309	1039	188	43	550	1339	108	146
15359	"	23:18	23:25	3.88	3.93	9.0	369	833	762	96	9	356	752	44	81
15360	23/11/83	057	214	3.25	4.01	15.3	4565	8002	5941	1189	181	3725	7859	597	752
15361	"	215	343	2.67	3.37	7.4	5252	9578	8786	1367	102	4819	8355	810	707
15362	"	3:45	3:53	2.24	2.88	1.4	489	1317	1317	127	1.8	515	715	109	0
15363	"	3:56	4:00	2.19	2.82	8.4	213	458	431	55	4.6	259	330	25278	28
15364	"	5:19	6:47	2.33	2.64	8.3	5247	8002	5166	1366	114	4469	6351	589	411
15365	"	6:48	4:49	1.95	2.21	6.4	72	142	92	19	1.2	77	89	10	8

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫L dt Exp.	IBM TAPE	BP [V]	TOF [V]	T_2 Rej Exact	Σ Bhabha	M.H	E_{Beam}	Remarks
15333	on	on	on	2.44	1.65	58.89 60.54	IBM	2.3	1.1	51%	9	0	22895	beam lost
15334	"	"	"	2.43	1.42	61.96	"	2.3	1.3	48%	10	0	"	no μ-data
15335	"	"	"	1.34	0.04	62,00	"	2.1	0.9	47	2	0	"	beam lost
15336	"	"	"	2.24	2.52	64.52	"	2.3	1.2	50	10	1	"	μ stopped μ-trouble
15337	"	"	"	2.35	0.36	64.88	"	2.2	1.1	32	3	0	"	beam lost
15338	"	"	"	2.22	0.49	65.37	"	2.3	1.3	47	3	1	"	
16339	"	"	"	1.69	7.55	7.55	"	2.3	1.3	48	53	2	22310	new Energy
16340	"	"	"	1.37	2.77	10.32	"	1.9	0.6	49	11	1	"	beam dumped
15341	ON	ON	ON	2.04	10.69	21.01	"	2.5	1.3	51	75	3	"	
15342	"	"	"	1.49	7.55	28.56	"	2.1	0.9	48	53	1	"	
15343	"	"	"	1.15	5.27	33.83	"	1.9	0.6	48	37	0	"	
15344	"	"	"	0.89	4.56	38.39	"	1.7	0.8	51	32	0	"	
15345	"	"	"	2.02	3.99	42.48	"	2.35	0.8	51	28	3	22310	
15346	"	"	"	1.36 0.00	0.00	42.48	"			44	0	1	"	IL = 6.52, BIL = 3.99 !!
15347														
15348	"	"	"	1.54	2.71	45.19	"	1.9	0.45	48	19	0	"	
15349	"	"	"	0.91	1.71	46.90	"	—	—	50	12	0	"	beams dumped.
15350	"	"	"	1.52	8.12	54.02	"	2.1	1.0	48	57	0	"	
15351	"	"	"	1.25	2.71	56.73	"	1.9	0.6	47	19	1	"	energy raised.
15352	"	"	"	1,20	0,86	0,86	"	1.7	0.4	51	6	0	22825	
15353	"	"	"	0,96	0,86	1,72	"	1,55	0,25	51	6	0	"	
15354	"	"	"	0.84	3.71	5.43	"	"	0,93	51	26	0	"	Beams dumped
15355	"	"	"	1.83	2.14	7.57	"	2.05	0.5	49	15	0	"	Run stopped for study of data-taking problem
15356	"	"	"	1.75	1.43	9.00	"	1.9	0.45	47	10	0	"	No μ-data
15357							"	2.4	1.5				"	IBM LINK error
15358	"	"	"	2.12	1.28	10.28	TAPE FM1101	2.4	1.5	49	9	0	"	write to TAPE
15359	"	"	"	2.53	0.71	10.99	"	2.35	1.35	45	5	0	"	No μ-FILTER. Written to tape. Beam lost
15360	"	"	"	2.08	10.13	21.12	IBM	2.6	1.2	50	71	1	"	with μ-filter
15361	"	"	"	1.61	9.42	30.54	"	2.15	1.0	48	66	0	"	Without μ-filter
15362	"	"	"	1.43	0.00	30.54	~	1.9	0.6	100	0	0	"	Run stopped – No Lvl1 out
15363	"	"	"	1.07	0.57	31.03	"	1.9	0.6	50	4	0	"	beams dumped
15364	"	"	"	1.09	4.71	35.74	"	1.6	0.3	50	33	0	"	with μ-filter
15365	"	"	"	1.01	0.07	35.81		1.5	0.3	47	0	0		with μ-filter Energy running time!! beams dumped

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T live (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	Tφ REJ. ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T. Eu. 2T.

[22 Nov 83]

0^{00} ~ 8^{00} Olsson + Yamada on shift

B^{30} TASSO 55 nb⁻¹; JADE 49 nb⁻¹;

YSPY error warning says: <muon digitizers missing>

Crate 11 gives error in initialization. It is also missing in timing map. Crate 14 also missing, without error in initialization.

R 15350 running with rather frequent Timeout errors. After data taking just stops; it can be brought on again by Pause/Continue. After such an activity, a MIPROC error occurs: MP-16 out of sequence: YY=1

Found an error in YPARA. After correction, YPARA sees that chambers 11 and 14 have errors (loop stopped at 10 before ...)

R 15353 ended in a burst of 10X 37 (CAMAC transfer error). We find no cause for it, everything is online. Start a new run, everything works again, in fact better: 4 Timeouts in 3500 events!

8^{50} Chrin + Schmidt on shift.

11:30 General μ CAMAC interfaces replaced. Now are now no error messages from YPARA at start of test runs. ~~Test~~ No further action possible before real data-taking restarts. AB.

12:30 magnet could not be set by the computer MAGN informed

12:40 magnet setting ok.

16^{00} Cartwright, ~~Wawawawa~~ Minowa

Repeated TIMEOUTs br 3 cr 2: μ chambers (4 in 1200 trigger)
Also data-taking hangups, fixed by Pause/Continue (like R 15350 above)

1^{28} Cords arrives. Run 15235 stopped. R15236 started without μ-chambers to see if "no triggers" problem is connected with μ-chambers TIMEOUTs.

16:53 run stopped. Energy-saving time.
No hangups in the run 15236.

17:00 Magnet to 1000 amp.

19^{45} Magnet back at 7500.
Austin & Cords have been studying timeout problem but have not solved it.
Conclusion: If problem recurs continue data-taking WITHOUT μ-filter (instructions on how to do this are supplied) & inform a μ-expert.

RUN	DATE	START	STOP	ON/OFF N 50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP (V)	TOF (V)	T RES. FRAT.	Σ ENERGY	M.H	E BEAM	REMARKS.

23:09 start run 15358 DATA written to TAPE
muon-timeout hangup HH!

23^{18} Run stopped. (6 hangups in 9 minutes)
Restart without μ-filter. Tim Greenshaw (duty μ-expert) informed.

23^{25} Beams lost

23. Nov. 83

0^{00} Darvill + Umemaniye
Transmitter was lost (PETRA)

0:57 jdas error time out branch 3 crate 2 (μ) ////////////////////
'pause continue' → jdas readout error 46 MP-16 out of sequence: YY=1

2 20 Run 15361
data taking without μ-chambers

3 50 'no latch bank' on colour T.V. We can't see how to make this message go away so we end run and try a test run. It works, so we begin a new run. The run start shows that we should have done this a long time ago!
T2 rejection fraction 100% for new run (Run 15362)

5 19 new beams ready beam current is low
start run with μ-filter (japanese method of counting)
Time out 44 branch 3 crate 2 μ-filter IIIT 5512

8^{00} Petersen & Mashimo on shift
9^{00} short break
9^{23} start injection
10^{56} Lead glass trigger power supply power failure! We switch off and on again. Run is working

09 00 – 13:00 All elements of μ CAMAC ~~the~~ examined + contacts cleaned. Missing response from crate 14 traced to faulty connection. As usual, all is OK during test-runs. Awaiting real data AB/TG

1459 Run 15366 started. But still time-out errors for μ chambers.
~~Also~~ [μ-filter taken out from the readout!
from the run 15368 on.]

The standard F01 runs without μ-filter!

52 RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T₁ Acc Sum	T₂ Acc Sum	T₁ BIT 2 E₁>6 GeV	T₂ BIT 17 2T. E4.2 Tr.
15366	23.11.83	14:59	15:20	4.74	4.79	53.2	1217	4872	4520	316	168	629	3156	158	245
15367	"	15:27	15:47	4.39	4.47	39.9	1045	1809	1508	273	109	706	2691	162	272
15368	"	15:54	16 34	4.13	4.21	12.4	2372	5520	5097	617	77	2251	6487	467	708
15369	"	21:56	22 56	4.52	4.30	11.3	3531	8001	7391	918	109	3423	9265	824	899
15370	"	23 05	23 45	3.80	3.70	11.1	2352	5348	4768	612	69	2115	6078	370	548
15371	"	23 57	0 09	3.52	3.33	10.0	491	1099	1015	128	13	480	1068	106	102
15372	24.11.83	0:26	0:28	3.32	3.15	9.0	87	12/11	92	23	2	92	159	18	16
15373	"	0:30	1 17	3.29	3.12	11.9	2775	8002	7574	722	86	5265	4818	3112	465
15374	"	1 17	2 03	3.02	2.86	8.4	2689	5770	5328	700	59	3291	4075	1225	1419
15375	"	2 43	3 44	4.16	3.97	12.3	3619	8001	7397	941	116	3908	8466	1213	738
15376	"	3 44	4 40	3.53	3.46	9.6	3340	8001	7363	869	84	4529	6059	1862	52?
15377	"	4 40	5 30	3.13	3.08	12.0	2981	8002	7569	776	93	5285	4528	3044	412
15378	"	5 31	5 58	2.83	2.83	8.8	1580	3952	3730	411	36	2674	2170	1385	175
15379	"	10:02	11:12	3.75	3.65	10.8	4156	8002	7321	1082	117	3621	8269	573	971
15380	"	11:29	11:38	2.95	2.93	7.5	523	974 [illegible]	885	136	10	526	744	74	68
15381	"	12:05	12:53	2.73	2.73	8.0	2835	5206	4778	738	59	3028	3735	804	295
15382	"	15:10	16.17	3.80	3.69	12.3	3970	8001	7474	1033	127	3617	8475	823	1115
15383	"	16.17	16:38	3.31	3.29	10.4	1192	2584	2381	310	32	1439	1994	496	223
15384	"	21:14	21:18	3.02	3.60	13.0	227	626	586	59	7.7	241	28.	32	95
15385	"	21:19	22:37	2.39	3.28	6.4	4611.	7455	6708	1200.	76.	4175	6115	519	564
15386	25.11.83	0:20	2:37	3.47	3.86	9.2	4429	8001	7321	1152	106	3599	7911	556	707
1587	"	1:34	2:04	2.75	3.06	7.2	1713	3068	2796	446	32	1490	2634	222	201
15388	"	2:19	3:22	2.50	2.82	6.4	3676	6183	5607	955	61	3389	4867	495	407
15389	"	4:35	5:41	4.08	4.15	11.6	3940	8002	7435	1025	119	3240	10281	608	876
15390	"	5:41	6:43	3.40	3.57	8.9	3556	6901	6363	925	82	3175	6292	593	543
15391	"	12:50	14.03	2.82	4.19	8.1	4337	8001	7317	1129	91	3672	7753	561	630
15392	"	16:11	16:40	3.98	3.44	10.4	1669	3219	2962	389	45	1314	4041	205	296
15393	"	22:13	23.20	3.98	3.94	11.8	3936	8001	6359	1025	121	3222	10582	626	846
15394	"	23.20	23.26	3.49	3.48	18.1	281	676	552	73	13	276	735	63	124
15395	26.11.83	2:29	3:50	3.67	3.52	10.5	4106	8001	6095	1069	112	3313	9178	556	961
15396	"	3:54	5:04	3.22	3.10	9.0	4180	8002	5091	1088	98	3723	7785	749	653
15397	"	5:09	5:32	2.89	2.79	8.5	1392	2797 2823	2050	362	30.8	1400	2338	297	185
15398	"	8:42	9:45	4.06	4.25	12.2	3727	8001	7431	970	119	3768	11004	640	897
15399	"	9:45	10:34	3.57	3.79	11.8	2829	6525	6049	736	87.2	3049	6720	914	626
15400	"	10:34	11:07	3.25	3.05	10.0	1969	4174	3772	572	57.3	1906	3985	423	384

53 ON/OFF N50	MIP	TOF	⟨L⟩	∫L dt BHABHA Run	∫L dt Exp	IBM / TAPE	BP [V]	ToF [V]	T₂ REJ FRACT.	Σ BHABHA	M.H.	E_BEAM	REMARKS
ON	ON	ON	2.21	3.00	38.81	IBM	2.8	3.5	71	21	0	22.325	
"	"	"	2.53	2.85	41.66	"	2.7	3.2	63	20	1	"	"
"	"	"	2.89	7.13	48.79	"	2.5	2.7	55	50	0	"	No μ-filter
"	"	"	3.07	8.85	57,64	IBM	2.6	2.6	55	62	2	"	No μ-FILTER DATA.
"	"	"	2.83	6,14	63,78	"	2.5	2.2	54	43	1	"	run stopped to check the μ-by
"	"	"	2.50	1.28	65.06	"	2.3	1.2	49	9	0	"	" " " " "
"	"	"	1.96	0.29	65.35	"	2.1	0.9	46	2	0	"	energy ramp
"	"	"	1.80	4.7?	4.7	"	2.15	0.9	? SAT IN TRIGOUT	33	1	22.340	No Skil no μ-filter. Poor quality run printout — time numbers missing
"	"	"	1.61	3.57	8.27	"	2.1	0.8	45	25	1	"	Beams dumped
"	"	"	2.44	8.00	16.27	"	2.7	2.5	56	56	3	"	
"	"	"	1.96	5.71	21.98	"	2.2	1.0	48	40	0	"	Missing digits in run-summary
"	"	"	1.46	3.71	25.69	"	2.2	1.0	46	26	0	"	~~shot~~
"	"	"	1.33	3.14	28.88	"	2.1	1.0	45	22	0	"	Beam lost
"	"	"	2.14	8.43	37.26	"	2.5	1.2	52	59	3	"	No μ-filter data
"	"	"	1.61	0.86	38.12	"	~2.0	~0.7	48	6	0	"	"
"	"	"	1.32	3.86	41.98	"	1.9	0.6	47	27	1	"	" Beams dumped
"	"	"	1.71	7.29	49.27	"	2.4	1.7	53	51	0	"	No μ-filter data
"	"	"	1.85	2.71	51.98	"	2.4	1.7	49	19	0	"	"
"	"	"	1.74	~~4.7~~ 0.5×	52.55	"	2.2	1.6	51	4	0	22.357	Beam Energy changed during the run wrongly.
"	"	"	1.42	5.71	58.26	"	1.8	0.6	51	40	0	22.340	Beam Energy corrected. (No μ-FILTER)
"	"	"	1.94	7.29	65,55	"	2.3	1.4	49	61	3	"	no μ filter
"	"	"	1.49	2.71	68,26	"	2.3	1.0	45	19	0	"	— " —
"	"	"	1.09	~~2.72~~	~~2.72~~	"	1.9	0.4	47	19	1	22.355	— " —
"	"	"	2.38	9.87	12.59	"	2.6	3.3	57	69	3	"	— " —
"	"	"	1.83	6.44	19.03	"	2.4	1.7	51	45	2	"	— " —
"	"	"	1.73	6.15	25.18	"	2.5	1.7	49	43	0	"	"
"	"	"	2.21	3.43	28.61	"	2.5	1.7	57	24	2	"	Beams dumped no μ Filter
"	"	"	2.46	8.87	37.48	"	2.6	1.9	58	62	0	"	
"	"	"	1.93	0.43	37.91	"	2.3	1.2	54	3	0	"	Beam lost
"	"	"	1.24	5.44	43.35	"	2.5	2.0	53	38	0	"	
"	"	"	0.99	4.16	47.51	"	2.4	1.3	50	20	1	"	
"	"	"	1.13	1.57	49.08	"	2.3	1.1	46	11	0	"	Beams dumped. (μ-FILTER DATA NORMAL)
on	on	on	2.49	7.73	56.87	IBM	2.6	2.3	60	54	1	"	No μ-Filter read out with μ-filters energy change
"	"	"	2.01	5.67	62.48	"	2.4	1.4	53	41	1	"	
"	"	"	1.74	3.43	65.91	"	2.4	1.4	49	24	0	"	

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Δ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	Tϕ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E, >6 GEV	T₂ BIT 17 2T. E4.2T₀

16^{00} A. Ball R. Felt on shift

21:51 New fill ready (at last!)
Start run 15369 — no muon filter.

23:42 YSPY examination of muon digitisers disabled, using SPY-MASTER.
24/11/83 Timouts still occur when a single empty (no chambers!) μ-crate is read into a single CAMAC interface, with no others in the CAMAC crate connected.
Cartwright + Ritchie on shift

0^{30} New energy 22.340 GeV

2^{59} JDAS readout error 000033 (hex) SUBERROR 000205 (hex)
(Timeout bit 2 or 5)

3^{13} YSPY error "Trigger 3 I/P missing ST 28 GP 2"
Assume this is associated with missing μ-filter

3^{48} Run histograms show 1 LG block in endcap giving spurious counts
(number 21)
Minowa says ignore it unless the deadtime is affected. It isn't, so we will.

5^{58} IΔ trip. Beams lost.
PETRA says no beam before energy swing → magnet to 1000 A.

8:00 Matsumura, Steffen

12:00 Riesberg replaces Matsumura

A. Ball and J. Olsson are investigating timeout problem in branch 3, crate 2
(Branch highway cables to and from μ-crate were exchanged for test, Timeouts still there!)
All elements of μ-CAMAC have now been changed

12:05 Run 15381 started — no muon data, still —, but A. Ball says that expert is coming

12^{51} JDAS Error 46, MP16 out of sequence, YY=0, No triggers Pause/Continue → ok

12^{53} Stop Run for refill

13^{36} SHORT BREAK. Not worthwhile to turn down magnet, says PKR

ON/OFF N50	MUP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TURB. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

14^{10} Air conditioner stopped for 7' to exchange air filters
14^{25} 23°C at the DL8's! Frost alarm, Reset → ok
↳ occurs easier if compressor was off

15^{07} New filling ready
Run 15382 started.
15^{18} Instabilities TOF rate 1.7 → 2.8
Dead time 10% → 50%
} for a few minutes

Something wrong with luminosity: $L \approx 1 \times 10^{30}$, SL = $15 \cdot 10^{28}$, beam lifetimes ≈ 15 h
15^{33} Luminosity gets back to normal $22 \cdot 10^{30}$ 34×10^{28} ≈ 4 h

16:00 Krehbiel + Minowa Cards replacing Krehbiel at 17^{30}
16:55 Magnet → 1500 A (Energy saving time)
19:35 Magnet up 7500 A.

25.11.83 A. Wagner + U. Schneekloth
0:20 start run 15386 (no μ filter)
1:34 start run 15387
2:19 " " 15388, new energy 22.355 GeV
3:12 stop for refill
4:35 new filling
6:15 "YSPY detected err", but no message on unit 36 (YSPY).
6:44 end of run 15390, magnet → 1000 A
7:30 computer disabled for magnet, magnet went to 1200 A, but shifts

8:00 Greenshaw Hill on shift
8:15 Bartel - Re enables computer magnet control and corrects fault
9:41 Heuer - Nord restart because problem with Lum 24 - hung
9:50 Computer control of magnet fails, disabled
9:55 Computer control of magnet reenabled, functions, magnet to 7500 amps
10:45 "Short Break"
Tasso say there is a lack of water for cooling in Cavity no 1.
They do not know how long the Break will last.
12:50 Beams at last!!

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Θ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T₁ E₄ 2T₂

1300 Large difference in beam currents ie e^- 4.19, e^+ 2.82 but PKR wants to keep the fill as long as possible to let the klystrons warm up. (?!)

13:40 Problems with LINAC, so there beams will be kept until problems solved.

14.10 Beams Dumped.

14.45 YTEXT + YRUNSM updated to provide text messages for new DMA/timeout error messages. HEU

16⁰⁰ Nasorka & Diekmann on shift

16:48 Magnet to 500 A. Energy saving time

19:07 Magnet to 7500 A

20.45 Beams ready, and lost 5 min later (3 ≡ transmitters failed)

22.00 Beams ready again.

background high: TOF 4.0 BP 3.0

OK for collimators in

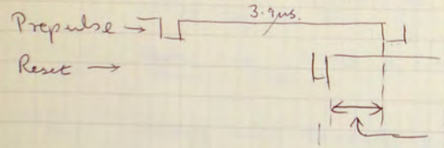
Deadtime ~ 20%, so it's ok

Anode currents ~ 3 μA.

Run 15393 started with F8 / 777736B / 2400B / 0 to include μ-Filter.

→ Suspect μ-CAMAC timouts caused by arrival of start pulse before digitiser RAM cleared, following T2 reject.

Timing of the reset pulse has been changed in order to improve time out situation.



This distance was ≲ 1 μsec after a T2 reject.
Now it is set to 1.1 μsec
try ≳ 1 μsec

T0-T2 dial
6.4
5.5
6.0

Frequent calc 14 missing. Actually there are holes in bitmap, so wait for Justin Ball on nightshift.

23.27 SLOW ID trip, Petra has lost a transmitter, but not the beam (yet?). "Short break". We pause run.

23.42 beams lost.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Θ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T₁ E₄ 2T₂	ON/OFF N 50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP (V)	TOF (V)	TRES. FRAT.	Σ ENARGY	M.M	E_BEAM	REMARKS.

You should have told next shift to start with F8 !!! — oops! Sorry.

26. 11. 83

0⁰⁰ Ball & Warming on shift

2²⁵ finally new fill ready

several times PAUSE / CONTINUE to exchange muon camac interfaces 13,14

5:08 Run 15397 started.

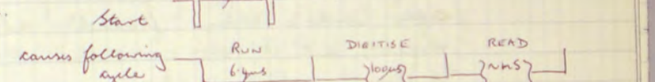
Multitude of minor faults, caused by frantic attempts to cure timout problem, now all fixed.

* * MUON CHAMBER DATA BACK TO NORMAL, STARTING FROM RUN 15397. * * AB. (---- phew!)

5:30

For those with morbid ~~curiosity~~ curiosity, there follows an abridged version of the story in the mu-system log:-

- Each Z-80 muon digitiser crate operates largely autonomously from other crates, NORD + CAMAC.
- "Start" is from gated prepulse } Hochtief's box.
  "Reset" " " fast clear }



- After "Reset", each Z-80 crate needs ~800 ns to clear the digitiser RAM (and charge "time difference" "Lightning" capacitors up to 3V)
  Any "Start" arriving within this time is ignored by crate, but NORD & rest of system are not informed of this

μ-CAMAC crate LAM = OR of module LAMs + no module BUSY

- If an event is accepted, but no μ-crates were started, timout occurs in μ CAMAC, since no LAM is generated.
  Shortest delay time between "reset" + "start" follows T2 reject. Delay is nominally ~ μs.
  Sporadic starts within clear time were occurring in this case, either because of modifications last summer to Z-80 crate status boards, or because of ~~T2~~ jitter in deadtime or T2 reject timing.
  Lengthening delay by 60 ns (see previous page) was sufficient to cure fault. This was done by making T2 reject happen ~60 ns earlier.

- Effect was masked until 3 days ago because a single crate (C2) had an obscure fault allowing "start" before the end of "clear RAM", which was detected offline + corrected, thereby un-leashing a more malicious breed of gremlin!

AB.

That was Warming's last shift for JADE, I wish good shifts to all my colleagues, Petra.
It is a pity that we don't have champagne to celebrate it.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Ø (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T. E4. 2Tr.

26. 11. 83, 8⁰⁰ K.H. Hellenbrand u. G. Kuies

~~Run mit T08 starten ! noch~~ Recipe on p. 56.

11:00 RUN 15408 last RUN with energy 22.355

change of energy during filling to 22.3700

11¹⁵ μ-filter readout included in standard readout (P1) again. DC.

16.00 Mc Cann & G Weber

17:30 YSPY checking of muon filter re-instated. AB.

20:22 after several aborted attempts, PKR succeeds in giving us luminosity

21:38 The Gould was pulling through several sheets at a time because the paper hadn't been "flexed" before it was put in. Now OK in that respect, but it doesn't write on the rightmost 20% or so of the paper! It sounds noisy somehow.

21.47 Slow ID trip caused by beam loss (transmitter failure)

22.35 new fill; background quite high at start of run 15408. PKR trying to reduce it. Other expt. seem to be better off. We have ~ 2% dead time.

22:44 JDAS READOUT ERROR 33 — Missing LAM branch 2 crate 5 : Leadglass ADCs.

23:00 dead time now ~ 11% int. after protest at PKR.

27/11/1983

0:00 Yamada, Meier

2.55 ID slow trip, TOF counter rate ~~fluctuated~~ increased rapidly.

7:59 The disc-space required for the preselected HH's and Bhabhas is not available (the REFORM-Job asks for 100 tracks) So we did the following:
The REFORM-Job (lines 17200-17600) has been changed temporarily in order to write to VTMP instead of FAST.
The following datasets have then be generated:

FNPEK.VTMP.FASTSL10.DS177
78
79
80

They should be copied ~~then~~ to FAST as soon as disc-space is available (will be done by Hinowa)

ON/SFF N50	MUP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt EXP.	IBM TAPE	BP (V)	TOF (V)	TRES. FRAT.	Σ ENERGY	M.H	E_BEAM	REMARKS.

8:00 DARVILL & S. WAGNER

8:15 Due to transmitter problems we have a "short break" which is predicted to last about 1 hour. We wind down our magnet current to 5000 A and call PKR to tell them, and ask them to call us before re-injection.

9:30 Things in PKR seem optimistic. They are about to inject so we wind our magnet back up to 7500 A.

11:43 We now have 59½ nb⁻¹ and feel sure that other groups must also have a similar amount and so call TASSO. They have still not called the others despite of a hint from us earlier, but say that they have only 52 nb⁻¹

12:05 Trigger has hung up at level 5. on restarting we get JDAS ERROR 33 Missing LAM Branch 2 crate 5.

We now do our own co-ordinating work.

JADE	62
Mark J	61
TASSO	52
CELLO	56
	231

12:27 Beams Lost - Run stopped

12:38 Tasso call to say that the next filling will be made at the next energy. (Wobbly)

14.46 Another Trigger hang up in and also a JDAS ERROR 33 Missing LAM branch 2 crate 5

16:00 Ambrus / Fringe

18:07 new energy 22.385 ⟶ 22.404, runs stopped, ID-HV down

20:00 JDAS READOUT ERROR 46 - MP-16 OUT OF SEQUENCE; YY=0
cured by PAUSE↵ CONTINUE↵

20:40 Beams lost partially; JDAS READOUT ERROR 33 - MISSING LAM BRANCH 2 CRATE 5 : LEADGLASS ADCs appeared again; then beams lost total

20:45 'short break' because of faulty transmitter or power supply.

28-11-83

00:00 Steffen / Greenshaw
Check of standard histograms: trigger 3 output: 1 channel high (#113)
run 15424 Forward counter: 2 channels missing (#23, 24)
Re T3 output (3,2) When power supply found to be oscillating. Corrected. Channel 113 still high, requires time to return to normal as HV setting too high (hysteresis effect)

5:26 JDAS readout error 66 MP-16 out of sequence No triggers.
Pause/ continue - no effect
Stop run, restart cured problem.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ. ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6 GeV	T₂ BIT 17 2T.E₄.2Tr.
15401	26.11.83	11:12	12:05	3.02	3.24	12.2	3141	8002	6580	818	100	4434	6878	2169	526
15402	"	12:06	12:18	2.72	2.95	9.2	668	1348	1055	174	16	595	715	148	110
15403	"	13:41	14:40	3.89	4.22	13.9	3473	8001	6548	905	125	3476	10039	1037	969
15404	"	14:40	15:34	3.42	3.79	12.0	3177	8002	6521	827	99.1	4340	6695	1969	673
15405	"	15:35	15:45	3.09	3.45	12.4	598	1676	1385	156	19.3	957	1189	510	126
15406	"	20:22	21:26	3.78	4.06	15.1	3799	8001	6480	987	149	3130	13405	671	810
15407	"	21:27	21:47	3.25	3.59	14.9	1164	2513	2070	302	45	1036	3986	292	239
15408	"	22:35	23:34	4.05	4.00	15.1	3457	8002	6497	899	136	3586	9665	1165	997
15409	"	23:34	23:37	3.46	3.52	9.5	152	342	278	40	3.7	142	320	37	37
15410	27.11.83	2:23	3:29	3.29	3.69	10.4	3870	8001	6176	1005	104	3500	8385	732	757
15411	"	3:30	4:33	2.89	3.31	10.5	3777	8001	6048	981	103	3858	8018	979	633
15412	"	4:34	5:39	2.61	3.00	11.7	3377	6788	5059	877	103	3318	6123	736	514
15413	"	9:14	10:18	3.98	4.07	11.4	3730	8002	6297	971	111	3386	8999	707	1026
15414	"	10:18	11:18	3.53	3.64	10.8	3530	8001	6228	921	100	3777	7553	969	762
15415	"	11:21	12:28	3.14	3.27	14.1	3762	8001	5850	1031	146	4048	6869	871	717
15416	"	13:40	14:42	3.62	4.25	11.6	3696	8002	6263	962	112	3512	8773	741	781
15417	"	14:42	15:45	3.19	3.80	11.1	3721	8002	6055	968	107	3940	7068	857	613
15418	"	15:45	16:50	2.82	3.40	9.0	3832	8001	5802	997	90	4110	6498	760	555
15419	"	16:49	17:58	2.51	3.05	8.1	4059	8002	5918	1056	85	4337	6275	843	505
15420	"	17:58	18:07	2.24	2.74	7.3	437	852	616	114	8	436	623	78	56
15421	"	19:33	20:37	3.85	3.85	16.1	3647	8001	6606	949	153	3717	12868	698	883
15422	"	20:37	20:40	3.35	3.41	16.9	106	270	214	27	5	106	437	28	23
15423	"	23:55	1:01	3.79	3.93	10.2	3889	8001	6057	1012	103	3627	8224	739	824
15424	28.11.83	1:02	2:08	3.27	3.46	9.2	3949	8001	5962	1028	94	3881	7219	726	671
15425	"	2:08	3:02	2.90	3.09	8.3	3150	6199	4447	819	68	3262	5026	611	458
15426	"	5:30	6:26	3.64	3.71	11.8	3349	7098	5534	871	103	2953	8061	585	1073
15427	"	6:28	6:49	3.29	3.40	9.7	1241	2554	1907	323	31.2	1221	2982	234	268
15428	"	21:30	21:50	4.19	4.23	25.2	1183	2969	2549	307	72	1586	3598	903	275
15429	"	22:44	22:54	3.73	3.73	13.0	554	1170	909	143	18	489	1581	102	196
15430 - 31															
15431	29.11.83	1:18	2:26	3.72	3.71	9.8	4097	8001	5934	1066	105	3489	8745	483	720
15433	"	2:26	2:43	3.30	3.31	9.1	954	1850	1391	248	23	831	1826	139	153
15434	"	2:49	4:00	3.19	3.19	8.7	4244	8002	5830	1104	95	3810	7484	641	586
15435	"	4:01	5:15	2.84	2.86	7.6	4453	8002	5625	1159	88	4081	6627	625	518
15436	"	5:16	6:34	2.54	2.55	7.5	4844	8002	5497	1208	90	4270	6320	619	468
15437	"	6:36	6:41	2.26	2.28	7.4	227	462	326	59	4	250	313	46	21

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha RUN	∫Ldt EXP	IBM Tape	BP (V)	TOF (V)	T₂ REJ FRACT	Σ Bhabha	M.H.	E_Beam	Remarks
15401	ON	ON	ON	1.46	4.58	4.58	IBM	2.4	1.4	53%	32	0	22.379	new energy
15402	"	"	"	1.14	0.72	5.30	"	2.3	1.1	48%	5	0	"	beams dumped
15403	"	"	"	1.89	5.87	11.17	IBM	2.8	3.0	59	41	3	"	
15404	"	"	"	1.77	6.16	17.33	"	2.3	1.3	50	43	0	"	
15405	"	"	"	0.80	0.57	17.90	"	2.3	1.3	46	4	0	"	beams lost
15406	"	"	"	2.21	~~2.02~~	~~37.33~~	"	2.6	2.1	66	49	2	"	new fill
15407	"	"	"	1.90	2.29	27.21	"	2.6	2.1	66	16	0	"	Beams lost
15408	"	"	"	2.03	6.59	33.80	"	2.7	3.4	58	46	2	"	new fill
15409	"	"	"	~~1.74~~ ~~0.00~~ !!	!! 0.00 !!	33.80	"	2.1	0.9	49	0	0	"	Beams lost
15410	"	"	"	1.61	6.02	39.82	"	2.5	1.6	51	42	0	"	
15411	"	"	"	1.25	4.30	44.12	"	2.3	1.3	53	30	1	"	
15412	"	"	"	0.96	2.58	46.70	"	2.2	1.1	48	18	0	"	Beams lost
15413	"	"	"	1.84	5.30	52.00	"	2.65	2.6	53	37	2	"	
15414	"	"	"	1.60	5.73	57.73	"	2.25	1.3	49	40	2	"	
15415	"	"	"	1.25	7.16	64.89	"	2.2	1.1	48	50	2	"	beams lost
15416	"	"	"	2.09	8.18	8.18	"	2.3	2.2	53	57	2	22.385	
15417	"	"	"	1.73	5.02	13.20	"	2.25	1.25	48	35	1	"	
15418	"	"	"	1.26	4.59	17.79	"	2.05	0.95	46	32	2	"	
15419	"	"	"	1.04	4.59	22.38	"	1.9	0.7	46	32	1	"	
15420	"	"	"	0.90	0.57	22.95	"	1.8	0.5	41	4	0	"	energy changed
15421	"	"	"	1.78	8.18	31.13	"	2.6	2.3	65	57	3	"	new fill
15422	"	"	"	1.25	0.14	31.27	"	2.5	2.2	67	7	0	"	Beams lost
15423	"	"	"	1.77	7.60	38.87	"	2.5	1.8	52	53	5	"	new fill
15424	"	"	"	1.46	6.02	44.89	"	2.3	1.2	48	42	3	"	
15425	"	"	"	1.20	3.59	48.48	"	2.1	.8	47	25	—	"	
15426	"	"	"	1.37	4.45	52.93	"	2.5	1.8	53	31	0	"	new fill
15427	"	"	"	1.17	1.58	54.51	"	2.2	1.1	49	11	1	"	beams dumped
15428	"	"	"	1.96	2.73	57.24	"	2.65	2.0	65	19	1	"	beams lost
15429	"	"	"	1.92	1.72	58.96	"	2.4	1.5	61	12	0	"	beams lost
15430 - 31							"	2.4	1.4				"	
15431	"	"	"	1.74	5.16	64.12	"	2.4	1.4	52	31	0	"	
15433	"	"	"	1.63	1.43	65.55	"	2.2	1.0	50	10	0	"	
15434	"	"	"	1.18	3.16	3.16	"	2.2	1.0	48	22	1	22.400	New energy
15435	"	"	"	0.94	3.02	6.18	"	2.1	0.95	44	21	0	"	
15436	"	"	"	0.82	4.02	10.20	"	2.0	0.60	46	28	0	"	
15437	"	"	"	0.78	0.57	10.77	"	/	/	41	4	0	"	beams dumped

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Φ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REC ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T. E4. 2Tr.

06:50 Beams dumped. Energy saving time. Magnet to ~~1000~~ 500 amps

8:00 S. WAGNER ≠ KAWAMOTO (ワグナー と 川本)
TASSO SAYS: NO BEAMS UNTIL AT LEAST 11.

12:20 YECOPY has been altered to print some debugging information on Terminal 36 for long events. During data taking T36 must not be used for logging in. This does not interfere with YSPY.

12:30 INJECTION STARTED (ANNOUNCED ON PETRA TV)

:45 MAGNET CURRENT → 7500 AMPS. JADE IS READY, BUT BEAM CURRENTS ARE STILL Ø.

~~72~~ ca 73⁰⁰ Magnet tripped by the cryptic fault: "Vorratsbeh. oberes NIVEA [sic!] <"
After Pressing "Alarm löschen" the magnet could be ramped up again.
We did not notice the magnet-trip until the beams where almost at full energy.

14⁰⁰ Somehow when we ~~rea~~ approached full magnet current the beams got lost.

Hopefully repaired Crate-Controller Joerger CCA-1, DESY-Inv. 35-1452 ~~d~~inserted into Branch 7, Crate 2. (Mechanically Rack 7¹⁵ Crate ~~#~~ 4)
Controller 70A-A-1 Jorway Ser. 425, II. Insl. 3809 removed and declared as "field-proven spare." If timeouts occur in branch 7, re-install old controller.

15²⁴ Nord restarted - was hanging on level 14. There may have been a power glitch beforehand. HEP. LG HV INITIALIZED.
THERE WAS ALSO ANOTHER MAGNET TRIP.

16⁰⁰ Bethke a Chin on shift.
19²⁰ "Injection", ran up magnet
21³⁰ beams ready, start ran 15428 → high dead time (up to 80%), ~20 ev/sec.
Find high T1 bit 2 (total (E-energy), also one Spike in End-cap hit-map.
Kawamoto will come.
21⁴⁰ dead-time decreases to ~12%, 4 evts/sec.
23⁰⁰ Beams lost shortly after fill ready, now for the 2nd time (both with ID-trips) due to high anode-current
Transmitter failure, short break (~¼ hour???)

RUN	ON/OFF N50	MUP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TRES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

29/11/83

0⁰⁰ Petersen & Kobayashi

1⁰³ Beams ready
mobile midi mini-4 LAM branch 7 crate 2 ERROR 33
we exchanged the LAM cable of crate 2 and 3. After that it runs.

3⁰⁰ Collected luminosity at $E_b = 22.385$ GeV

Mark-J	63 nb⁻¹
TASSO	54
CELLO	57
JADE	65
total	239 nb⁻¹

6⁴⁰ Beams dumped. Energy saving time. Magnet down to 500 A.

Note: Run 15434 was started a little bit too early, so that the beam energy was written to be 22.389 GeV, which should be 22.400 GeV actually.

08:00 DARVILL & KNIES
08:05 We notice that the magnets (PETRA) are being cycled. Try to call PKR to tell them that we intend to wind our magnet back up, but they are engaged. We wind our magnet up anyway, and it is up by the time PKR begin to inject.

10:31 At last we start a run. 15438

11:07 Dieter Cords calls and asks that we call him during the next break in PETRA operation (injection etc.)

11:20 I.D. slow trip - we see nothing wrong and so run the H.V. back up again.

14:22 Beams dumped for reinjection of a second filling before "energy saving time".

16⁰⁰ Kawamoto & Mashimo on shift

16⁴⁵ Energy saving time. ↑ Magnet current down. Run 15443 stopped

19¹⁰ MAGET CURRENT → 7500 Amps

20⁴⁷ Run 15444 started.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T₂E4.2T₁
15438	29.11.83	10:31	11:38	4.10	4.23	20.7	3727	8001	6617	970	201	2753	17603	~~512~~ 1115	1115
15439	"	~~11:38~~	12:44	3.48	3.71	11.6	3955	8002	6260	1028	120	3476	9803	735	2266
15440	"	12:45	13:56	3.06	3.31	9.6	4233	8002	6027	1101	106	3650	8353	618	653
15441	"	13:56	14:22	2.70	2.94	9.7	1480	2674	2154	365	37	1301	2904	204	219
15442	"	14:33	16:38	4.21	4.18	19.2	3672	8002	6712	956	183	2778	15354	558	1193
15443	"	16:38	16:45	3.72	3.72	15.4	~~0~~371	847	685	968	15	324	1152	56	107
15444	"	20:47	21:49	4.29	4.37	19.0	3686	8002	6687	958	182	2793	15513	604	1183
15447	"	21:52	22:01	3.81	3.90	39.1	518	1608	1441	135	53	340	1193	82	132
15448	"	22:06	23:08	3.72	3.81	13.8	3651	8001	6384	950	131	3078	10807	606	1359
15449	"	23:08	00:11	3.35	3.44	11.7	3767	8002	6274	980	114	3256	9471	561	1217
15450	30/11/83	00:13	00:30	3.03	3.12	10.5	788	1750	1388	205	22	763	1821	136	253
15451	"	01:04	2:01	3.79	3.69	20.1	3251	7142	5858	847	170	2841	10214	826	1144
15452	"	02:04	2:39	3.42	3.34	15.0	1811	4012	3263	472	71	1506	5931	260	752
15453	"	02:41	3:15	3.20	3.14	22.5	1922	3916	3138	501	113	1519	5722	270	715
15454	"	04:00	~~5:48~~ 5:30	3.48	3.43	16.5	3553	8002	6543	925	153	3525	9474	1269	1323
15455	"	5:00	5:29	3.10	3.07	11.6	1017	2187	1696	264	31	926	2506	159	356
15456	"	6:01	6:13	4.11	4.09	62.9	607	1500	1426	158	99	514	4685	371	383
15457	"	6:20	6:45	3.91	3.90	23.6	1422	3246	2777	370	88	991	6325	191	866
15458	"	9:49	10:43	3.90	3.93	36.7	3198	8001	7071	832	305	3084	12188	313	1905
15459	"	10:43	11:43	3.50	3.48	14.3	3586	8002	6473	933	133	2851	10895	532	1548
15460	"	11:43		3.16	3.13										
15461	"	12:22	13:01	2.85	2.81	11.3	2288	4819	3630	595	67	2140	5294	326	775
15462	"	14:28	15:15	3.28	2.84	15.3	2698	5804	4618	701	107	3568	3787	1848	377
15463	"	15:16	16:25	2.95	2.48	18.7	4080	8002	6141	1062	199	4973	5165	2186	497
15464	"	16:25	16:45	2.66	2.22	6.6	1128	1846	1258	294	19	980	1490	111	385
15465	"	20:07	21:11	3.86	3.69	11.5	3833	8002	6347	997	115	3750	8158	1254	849
15466	"	21:12	22:28	3.27	3.07	8.3	4549	8002	5713	1184	99	3961	7173	627	741
15467	"	22:28	23:22	2.82	2.64	7.4	3241	5788	4068	843	62	3001	4719	466	483
15468	"	23:54	1:01	4.23	4.09	55.5	5168	8001	7011	825	293	2735	12481	976	2312
15469	1.12.83	1:01	1:55	3.52	3.26	32.2	2684	6385	5470	658	224	2110	8085	509	1884
15470	"	1:56	2:50	3.13	2.83	23.4	3190	7736	6391	831	194	2820	9893	628	2098
15471	"	3:59	5:00	3.88	3.86	21.0	3625	8001	6755	943	198	3571	9825	1542	1188
15472	"	5:01	6:06	3.34	3.28	12.2	3906	8002	6341	1017	124	3251	10316	583	1051
15473	"	6:07	6:46	2.94	2.89	10.5	2310	4756	3676	601	688	2007	5246	329	717

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM/TAPE	BP (V)	TOF (V)	T₂ REJ. FRACTION %	Σ ENERGY	M.H.	E_BEAM	REMARKS
	ON	ON	ON	1.87	4.60	15.37	IBM	2.8	2.65	72	32	3	32.400	mach. d/Main ran again optimizing background.
	"	"	"	1.51	6.61	21.98	"	2.5	1.8	57	46	2	"	
	"	"	"	1.30	4.17	26.15	"	2.4	1.4	52	29	0	"	
	"	"	"	1.02	2.15	28.30	"	2.25	1.0	51	15	0	"	Beams Dumped.
	"	"	"	1.60	7.33	35.63	"	2.8	3.9	68	51	1	"	
	"	"	"	1.61	0.43	36.06	"	2.55	1.95	60	3	0	"	BEAMS DUMPED
	"	"	"	1.91	~~6.86~~ 6.89	~~43.42.95~~	"	2.9	3.8	69	48	4	"	
	"	OFF	OFF	1.15	~~0.57~~	43.52	"	2.6	1.9	0	4	0	"	Run 15445, 15446 skipped
	ON	ON	ON	1.24	4.31	47.83	"	2.5	1.8	58	30	2	"	
	"	"	"	1.06	3.59	51.42	"	2.3	1.3	54	25	1	"	
	"	"	"	0.89	0.43	51.85	"	"	"	51	3	0	"	DUMPED Main crash ~~98~~ many BEAMS
	"	"	"	1.26	2.73	54.58	"	2.6	2.4	62	19	0	"	
	"	"	"	1.03	2.59	2.59	"	2.5	1.85	61	18	0	22.415	NEW ENERGY
	"	"	"	0.83	1.01	3.60	"	2.4	1.6	62	7	1	"	Beams dumped
	"	"	"	1.08	4.75	8.35	"	2.6	2.1	57	33	2	"	
	"	"	"	1.00	1.29	9.64	"	2.4	1.4	55	9	0	"	RESET p.M. Main crashes 5, 6, 7, 8, 9, 12 many Beams
	"	"	"	0.71	0.29	9.93	"	2.9	4.5	81	2	0	"	run terminated - many SATCH HIGH cases
	"	"	"	1.23	1.44	11.37	"	2.8	3.9	67	10	0	"	BEAMS DUMPED
	"	"	"	0.92	2.88	14.25	"	2.7	3.5	63	20	2	"	
	"	"	"	1.08	4.75	19.00	"	—	—	58	33	1	"	
					?			2.2	1.2					← NORD crash RUN SUM lost
	ON	ON	ON	0.86	2.01	21.01	IBM	2.3	1.0	54	14	0	22.415	Beams dumped
	"	"	"	0.98	2.16	23.17	"	2.2	1.1	47	15	0	"	← DNA time out
	"	"	"	0.71	3.02	26.19	"	2.1	0.8	47	~~24~~26	1	"	
	"	"	"	0.79	0.29	26.38	"	1.8	0.7	48	~~4~~3	0	"	Beams dumped for energy saving time
	"	"	"	1.37	4.46	30.84	"	2.6	2.2	53	~~39~~43	0	"	
	"	"	"	1.00	4.03	34.87	"	2.1	0.9	49	~~28~~39	0	"	
	"	"	"	0.72	3.31	38.18	"	1.9	0.6	46	33	1	"	Beam dumped
	"	"	"	1.09	3.16	41.34	"	2.7	2.8	62	22	1	"	
	"	"	"	0.80	2.15	43.49	"	2.6	1.1	63	21	1	"	
	"	"	"	0.64	2.30	45.79	"	~2	~1.0	54	16	0	"	Beams dumped
	"	"	"	1.20	4.75	50.54	"	2.8	3.8	59	33	0	"	
	"	"	"	1.03	4.75	55.29	"	~2.6	~2	38	33	0	"	
	"	"	"	0.85	1.15	56.44	"	2.4	1.4	57	8	0	"	Beams dump (

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ & (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T. E4. 2Tr

29 Nov. 83 (cont'd)

2/50 Run 15444 was stopped by "STOP" command because the run didn't stop automatically at 8000 records. We tried to start new runs two times but failed. (JDAS didn't start taking data) Then we restarted JDAS. (Run 15447).

22⁰¹ We found MP-16 and TOF OFF! We restarted JDAS again with resetting the status of micros. (Run 15448) Run 15449 had a large deadtime.

30 NOV

0⁰⁰ S. WAGNER & WITTAKER ON SHIFT

0²⁰

JADE	51 nb⁻¹	54 (1:45)
TASSO	62	65
M-1	61	62
CELLO	55	58

229 nb⁻¹ → STAY AT SAME E FOR FIRST PART OF NEXT FILL

2³⁵ 2 MICPROC ERRORS & 3 DMA TIMEOUTS → FINALLY GOT AROUND THIS PROBLEM BY STOPPING RUN & STARTING NEW ONE.

2⁵⁹ LEVEL 5 TRIGGER HANGUP AGAIN ACCOMPANIED BY JDAS ERROR 33 → MISSING LAM B2 C5 : LG ADCS

5:10 'MUON CRATES MISSING' — 5, 6, 7, 8 & 12. — RESET O.K.

6:08 SPY ERROR — TRIGGER 3 I/P MISSING : ST 28 GP 2

FREQUENT OCCURRENCES OF JETCH HIGH CURRENT — BEAM PIPE CURRENT HIGH — 3V TOF RATE V.HIGH 4.5 — 5.0 V. / OPTIMISATION DURING RUN / RAN HV DOWN

6:45 BEAMS DUMPED FOR ENERGY SAVING → MAGNET RAMPED TO 500 A.

7:05 MAGNET HAS DRIFTED UP TO 1330 A. WILL NOT RESPOND TO MANUAL CONTROLS. HAVE CALLED MAGNET PEOPLE. THEY COME & TURN MAGNET OFF.

8⁰⁰ Schneekloth & Takeda on shift

9:25 magnet up to 7500 A

9:45 new fill ready, start run 15458

Dead time 90% at the beginning of the run, due to noisy end-cap counter #22. It may be still wet ?

The dead time decreased to ~30% after 5 minutes, and still decreasing.

The noisy counter became quiet after 10 min.

RUN	DATE	START	STOP	ON/OFF N 50	MP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt EXP.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TRES. FRAC.	Σ ENERGY	M.H	E BEAM	REMARKS.

Deadtime is still high → 2TBG & Coll 2 tracks (~40%) (a lot of beam-gas events)

10²⁰ PKR forgot to put in the collimator. We asked them to do it.

10⁴³ new run 15459, 11⁴³ start run 15460

12:15 NORD hang up of level 9, restart NORD — no run summary for run 15460

12²² start run 15461

13⁰⁰ Beams were dumped for a new fill

14²⁸ new fill, start run 15462

again high deadtime, due to end-cap counter

It disappeared after 5 min.

Tested Crate-Controller Norway, Ser. No. 473 II. Instr. 3797 tentatively inserted into Branch 4, Crate 7. (physically Rack 10, Top Crate.) Controller Jorgen A-7 DESY 35-7449 was removed as "field-proven" In case of trouble in Branch 4. re-install the old one!

15¹⁶ JDAS READOUT ERROR 45 - MP-16 analysis incomplete. DMA time out branch 2 crate 1 Latches ← many times Stop run 15462.

Start run 15463

Still DMA time out branch 2 crate 1 : Latches. Run does not proceed. Call Mr. Couds → He will come on 1/2 hrs 800.

15²⁵ Data taking starts going on without doing anything.

16⁰⁰ Bartel and Takeshita on shift

Talked to A. Piwinski about low specific luminosity. During the energy saving time he will do some measurements with Petra and he will help the people on shift to reduce the beam size during the fill after energy saving. We should gain at least a factor of two in specific luminosity by better tuning the machine.

16:45 Energy Saving Time. Magnet ~~down to~~ 500A.

19:15 Magnet current was 1375 A (~~ET not~~), up to 7500A.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T. E4. 2Tr

To all shift crews:
The high dead time ~ 40 - 50 % at the beginning of a run is due to a noisy end cap lead glass counter, you can see that on the histogramm: 'hitmap endcap' (F7). Block # 22 is bad.
After ~ 5 min the dead time goes back to normal.

3 22:00 There is no CPU - time left to submit a REFORM - job.
The next shift should submit reform jobs.

Lumi:

MARK J	36
TASSO	44
JADE	34
CELLO	

22:30 Visit to PKR: There is no hope to improve the luminosity this night. For improving the luminosity a so called time controller is needed, which displays the Ø - values of Petra. This unit is broken. Tomorrow morning experts will come in for repair. However, we should keep track of the luminosity improvement program. We give away a factor of 2 in lumi.

22:15 We agree to a new fill

1.12.83 0⁰⁰ Dietrich + Komamiya

0²⁰ dead time > 50% after ½ h of running
because of a noisy LG counter (end cap famous Counter # 22)
Takeshita is working on it.
We decreased the HV of End cap counter #22 but nothing changed and HIT-MAP (End Cap) is not dominated by #22. End cap (– side) ~~and~~ has many hits. We think bad beam conditions. all the counters of
it is because of
Cello side ← MK-J side

1⁰⁰ LG hit map endcaps looks asymmetric

1 43 Jdas read error 44 DMA Time out several times → pause / conti: does not help
dead time ~ 98%
same error occurred yesterday (see p 67)

RUN	ORB/SFF N 50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TRES FRAC.	Σ ENERGY	M.H	E BEAM	REMARKS.

1 55 stop run and start new run → does not help anything
Jdas error 45 MP-16 analysis was incomplete; yy = 1
Jdas error 44 DMA time out for 2 or 1

2⁰⁰ automatically cured. just before we try to call Olsson

2 40 Jdas error 44 DMA time out again → pause / conti. several times.
automatically cured.

2 50 Beams dumped for a new fill
3 55 New filling is ready
4⁰⁰ Very high dead time ~ 80% E(1) and 2TBG triggers are high.
may be due to a noisy end cap counter in end cap (#22)
4 10 dead time ~ 13% looks O.K.

6⁰⁰ JDAS - Restart - Error 22 missing Lam bound 2 crate 5 (Readout ADC's) occurred 2, Run continued

6 43 Beams dumped for Energy saving time / ramp down Magnet the 500 A.!

8⁰⁰ Cords & Takeda on shift

9 30 beams ready; start run New energy Eb = 22.430 GeV
9 45 we start with a trigger rate of 20 Hz which slowly goes down to 10 Hz → dead time very high;
asked PKR to close our collimators;
TASSO magnet is switched off, this may be a reason for our high background rate;
PKR is starting to do orbit corrections.
9 48 Missing LAM in Muon track.

10 15 Since 2-TBG trigger ~~can~~ gives a high rate as seen in the Trigger-bit-map, those events were checked by on-line graphics. Almost ~ 3/4 of the 2-TBG triggered events, were cosmic ray events. Maybe the z-vertex cut at the miproc is not effective with high synchrotron rad. backgrounds. (Z-vertex is not properly determined ? > Takeda

↑ look at results of miproc offline - command BW N505

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T tot (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T1 Acc SUM	T2 Acc SUM	T1 BIT2 E1>6GeV	T2 BIT 17 2T.E4.2Tr
15474	1.12.83	9.33	10:37	3.75	3.90	19.9	3790	8002	6712	981	195	2941	16360	571	1103
15475	"	10:37	11:46	3.25	3.35	10.2	4106	8001	6088	1068	108	3529	8707	570	844
15476	"	11:46	12 31	2.84	2.94	10.3	2675	5533	~~4245~~ 4507	696	72	2377	5807	394	860
15477	"	13:13	14:17	4.09	4.00	10.9	3809	8002	6450	991	108	3609	8780	919	875
15478	"	14:17	15:28	3.52	3.44	8.5	4137	8001	6084	1077	91	3867	7181	661	705
15479	"	15:28	15:47	3.04	2.99	7.6	1079	2019	1496	280	21	1043	1612	170	141
15480	2/12/83	0.31	0.40	388	4.11	24.3	487	1833	1660	127	31	~~1283~~ 1159	~~1109~~ 3336	1010	136
15481	"	1.44	2.45	4.00	4.31	16.5	3486	8001	6634	907	149	3986	8750	1893	859
15482	"	2.45	3.55	3.49	3.79	10.5	4177	8002	6319	1087	115	3094	10178	501	896
15483	"	03 54	05 07	3.06	3.35	8.8	4291	8002	6004	1116	98	3528	8076	516	715
15484	"	05 07	05 16	2.68	2.95	7.9	482	837	624	125	9.9	375	826	~~47~~	61
15485	"	05 45	06 46	4.00	4.32	18.4	3620	7769	6563	942	173	2546	16752	537	1061
15486	"	09:48	10:04	4.03	4.04	23.8	508	1201	1030	132	315	501	1894	235	174
15487	"	10:07	11:19	3.87	3.88	10.9	4269	8002	6205	1111	121	3237	10631	512	1017
15488	"	11:19	12:32	3.42	3.45	8.5	4333	8002	5879	1128	96	3912	7476	611	751
15489	"	12:33	13:04	2.98	3.01	7.9	1814	3297	2371	472	87	1700	2765	252	272
15490	"	13:12	14:05	2.77	2.80	7.0	3093	5364	3686	805	56	2888	4250	414	415
15491	"	15:15	16:19	4.10	4.02	13.9	3837	8001	6522	999	138	3253	11968	828	957
15492	"	16:20	16:52	3.63	3.55	12.0	1895	4829	4027	494	59	2854	3632	1477	358
15493	"	14:42	20:32	3.67	3.68	20.0	3041	8002	6816	792	156	4666	6720	2810	882
15494	"	20:33	21:14	3.66	3.68	24	2423	4205	6232	630	148	4859	4441	3331	474
15495	"	22:53	23:33	3.99	4.03	12	3583	8001	6503	932	108	~~9988~~	~~8314~~ 8441	1552	826
15496	"	23.33	0:41	3.55	3.59	9.1	4067	8002	6066	1059	96	3857	7521	841	793
15497	3/12/83	0:42	1:38	3.11	3.16	40.5	2045	2489	1782	532	215	1322	2102	263	231
15498	"	1:39	1:43	2.80	2.83										
15499	"														
15500	"	3 46	4 19	3.80	3.69	11.7	1935	4946	3641	503	59	3563	2927	1754	428
15501	"	4 19	5 34	3.52	3.44	7.6	4509	8002	5899	1173	89	4068	6723	694	623
15502	"	5 35	6 57	3.06	3.01	7.4	4257	7642	5462	1107	87	4138	6058	731	1619
15503	"	13 19	13 23	2.81	2.41	24.8	149	1048	1025	39	29	968	56	938	7
15504	"	14 53	15:51	3.85	3.74	15,0	3459	8002	6552	900	135	4667	6171	2412	579
15505	"	1551	17:00	3.45	3.36	9.7	4080	8001	6076	1062	103	3748	7885	809	847
15506	"	17 01	17 16	2.90	2.82	8.0	906	1776	1287	235	188	974	719	214	109
15507	"	18:57	20:07	3.58	3.61	8.5	4132	8001	5940	1076	92	3979	9024	698	722

N50	ON/OFF M.P	ON/OFF ToF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp.	IBM/Tape	BP ⟨V⟩	ToF ⟨V⟩	T. Rej. Fract.	Σ Bhabha	M.H.	Ebeam	Remarks
ON	ON	ON	1.61	5.04	5.04	IBM	2.4	4.3	72	35	0	22.430	NEW ENERGY
"	"	"	1.47	5.62	10.66	"	2.5	1.8	53	39	0	"	
"	"	"	1.26	3.36	14.02	"	2.2	1.1	51	15	0	"	
"	"	"	2.45	8.79	22.81	"	2.8	3.8	54	61	1	"	
"	"	"	1.93	8.50	31.31	"	2.4	1.5	48	59	2	"	
"	"	"	1.75	1.58	32.89	"	2.2	0.9	45	11	0	"	Beams lost
"	"	"	1.98	1.01	33.90	"	?2.6	?	57	7	0	"	Beam lost
"	"	"	1.26	4.18	38.08	"	2.6	2.8	58	29	1	"	
"	"	"	1.07	3.89	41.97	"	2.6	2.2	56	27	0	"	
"	"	"	0.80	2.16	44.13	"	2.4	1.4	49	15	0	"	
"	"	"	0.73	0.29	44.42	"	2.22	1.0	51	2	0	"	BEAMS DUMPED!
"	"	"	1.19	5.47	49.89	"	2.85	4.3	71	38	1	"	NEW FILLING.
"	"	"	1.01	0.29	50.18	"	2.5	4.3	67	2	0	"	stopped to reload NORD.
"	"	"	1.20	4.32	54.50	"	2.5	2.6	59	30	0	"	
"	"	"	1.80	8.07	62.57	"	1.4	2.4	50	56	3	"	
"	"	"	1.63	2.59	65.16	"	2.7	0.8	47	18	1	"	changing energy
"	"	"	1.28	4.18	4.18	"	2.0	0.7	47	29	1	22.445	NEW ENERGY
"	"	"	2.05	8.36	12.54	"	2.6	2.3	64	58	0	"	
"	"	"	1.96	3.32	15.86	"	2.4	1.5	51	23	1	"	
"	"	"	1.76	4.04	19.90	"	2.7	2.0	41	28	0	"	
"	"	"	1.52	2.60	22.50	"	2.4	1.3	53	18	0	"	
"	"	"	2.32	8.08	30.58	"	2.5	2.0	56	56	0	"	
"	"	"	1.86	7.07	37.65	"	2.4	1.4	50	49	0	"	
"	"	"	1.01	2.31	39.96	"	2.2	0.9	50	16	0	"	Time out errors near the end
													junky run Time out errors
										2			junky run Beams lost T1 small
"	"	"	1.76	3.~~97~~	43.13	"	2.4	1.6	60	22	1	"	stopped because of TOF ~~totally~~ mimmy
"	"	"	1.81	8.08	51.21	"	2.4	1.2	47	56	3	"	
"	"	"	1.33	6.78	57.99	"	2.2	1.1	47	47	0	"	Beam lost
"	"	"	0.23	0.14	0.14	"	2.1	0.65	46	1	0	22460	NEW ENERGY beams dumped
"	"	"	1.94	8.81	8.95	"	2.5	1.7	51	61	0	"	
"	"	"	1.67	7.22	16.17	"	2.4	1.3	51	67	2	"	
"	"	"	1.28	2.17	18.34	"	~2.4	~1.5	48	19	0	"	beam lost
"	"	"	2.15	9.96	28.30	"	2.4		48	86	1	"	

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T: 6 (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\phi$ RCI $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T.E4.2Tr

11^{50} TASSO called and proposed a new fill at 12^{30}. We agreed.
13^{10} new fill ready
15^{45} Beams lost.

16^{00} Olsson & Chrin on shift
16^{20} Energy saving Time. A little earlier for 2 reasons :- 1) A transmitter failure
Magnet reduced to 500 Amps. 2) Tasso want temporary access.
17^{09} Magnet found at 1360 A, taken down manually to 500 A
19^{10} " up to 7500
21^{00} Still no beam, injection always fails
21^{10} The beams they are a'coasting ____, accelerating ____ and lost at 22 GeV.
23^{10} " " " " " " "
24^{00} End of shift, & we have received zilch luminosity!

2/12/83 Bowdery and Whittaker on shift. Happy Birthday to me. J.B.W.

Printer is not working correctly. The right hand side of the printout is always missing (see p58)
04^{00} Hotspeak takes over from JBW. 46H!
06^{46} Switch off HV and run magnet down to 500A.

08:00 Ball / Zünje
09:00 Magnet up to 7500 amps
09:43 New fill ready. Start run 15486. TOF >4. Segment jet-chamber high current. Pause + switch off I.D. PKR performing orbit corrections.
09:54 continue. TOF ≈2.2. D.T. ~ 20%.
10:05 All NORD terminals except command terminal printing unstoppable series of error messages. Phone Howard, who recommends stopping run to reload NORD. Done! Start run 15487.

HV read errors. LG mainframe 15. Can't see anything obvious wrong with mainframe 15. Inform Yamada. Minowa has checked LG HV. – all OK. Call him if error message recurs.
13:05 our Lumi: 65 ; $\Sigma > 240$; changing energy to 22.445
14:05 Beams lost because of faulty transmitter.
14:25 short break ; trouble with electron-kicker at synchrotron.
15:15 Start run 15491 – new fill.

ON/OFF N50	MIP	TOF	⟨L⟩	$\int$Ldt BHABHA Run	$\int$Ldt Exp.	IBM – TAPE	BP ⟨V⟩	TOF ⟨V⟩	T_1 RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

16^{00} – 24^{00} Becker, Heintzelmann

Plotter will be received at Monday, 5.12.

16^{18} HV read error. LG mainframe 15 → call to final timeout
17^{00} Energy saving time. magnet → 1000 Amps

19^{41} Start VMM
19^{50} Trigger 2 Output missing : 48 144 (YSPY)
20^{12} HV read error. LG mainframe 15
20^{55} JDAS Readout error 33 missing LAM branch 2 crate 6 Readpl. ADC
YSPY Trigger 1 output missing & Histograms however look ok
YSPY Trigger 2 output missing
21^{20} Short breaks (Strahlverlust)
23^{58} YSPY : Trigger 3 IP missing ST 28 GP 7

3/12/83 0^{00} – 8^{00} Feist, Yamada
$\sim 1^{20}$ JDAS readout error 44. DMA-Time out branch 1 - crate 2 : Latches
402100, 2060, 0, 534442, 27000, 30300, 140204, 4000, 120, 0
too many times (almost) continuously!
despite of knifflig advice - changed crate controler without success / reloaded Nord before RUN 15499
still the same / phoned for Oborn – he will come
Tokuno with only latchcrate, 1Hz trigger rate : TIMEOUTS still present, after several Pause/cont suddenly gone. We wait now for next fill to be ready. Yamada: Branch 3 had BDeamnd on in TIMEOUT condition. B3 to be inspected next time it happens.

4^{15} 4 TOF T1 - Inputs missing, after checking all cables at the latches O.K. again stopped then Run 15500 and started new one
5^{40} ID trip.
8^{00} RIESEBURG & S. WAGNER
9^{00} Problems with injection : orbit
11^{00} When I try to logon under identifier RIESEB at Terminal LUN 35 the Nord hangs up at Level 13 (14 flashing). Also terminal 9 is not working. Message on the type: TRANSF!! several times. → after PASSWORD ⇒ We try to restart the Nord, 3 times :

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T⁰ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T⁰ RCI ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T.E4.2Tr

3.12.83

LOAD lamp stays on, CONTINUE lamp stays off, DISC-drive ∅ is runig, no fault light.

We phone Dieter Cords. On his advice: STOP, MASTER CLEAR, stop the disc, wait 40 sec, start again.
When the disc was nearly at the full speed it gave a "Bumm" and the FAULT light came on. D.C. told us 18°C in the disc-compartment

11⁴⁰ New filling is ready with low currents $I^+ = 3.3$, $I^- = 2.9$, BP = 2.2V, TOF = 0.8V
We have no computer!
Tasso asks if they should dump the beam. Instead of ~~your~~ our 'YES' the beam shall stay in for 1 hour to finish this point (we have 58 nb⁻¹ at 22.445).

11⁴⁵ Herbert Drumm, our earlier collaborator, is here ← "Caused Effect"

13³⁰ Disk drive (next to Nord) is broken;
when starting, ~~the~~ disk arm ramps in to the end;
afterward the disk could not be stopped from rotating;
brute force had to be applied: power off at the back and removal of the arm manually before taking out the disk pack. D.C.

We lost 1½ h of data taking, or (estimated) about 7 nb⁻¹

13²⁰ Test-Run (#15503) at the new energy: Nord is off. Then beams dumped.
Noisy lead glass end cap # 21

14⁵⁰ ~80% DEAD TIME AT START OF RUN 15504.
ECI) DOMINATES TRIGGER.
Normal after about 10 min

~15¹⁰ Several YSPY errors: Trigger 3 Input
Trigger 1 Output 33, 55
Trigger 1 Input 58
but histograms look ok.

→ Of course they do - in the middle of a run. YSPY detects things within a run - "believe your SPY"!

15²³ YVolts Error in HV-System, Mainframe 15

15⁴⁰ Call from Jan Olsson. He wants to investigate the TIME OUT problem more thoroughly. So, please call him if time out errors re-occur, preferably before 1 am.

ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM→TAPE	BP ⟨V⟩	TOF ⟨V⟩	T₁ RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

16:00 Barbl & Takeshita on shift.
16:19 YSPY ERROR: TRIGGER3 I/P MISSING ST28 GP2
17:00 Std. histograms during run 15506
- Main TDC fwd. counters has a hobble from #6 - 10. the trouble
This hobble started to develop on run 15449. However the hobble around #25 got smaller. THIS IS NORMAL!! CEH
Look at FWD counters during run 15506
17:15 Beams lost with slow ID-trip RF-failed
17:47 short break ~1hr DESY is down
21:00 A new feature of the data acquisition program has shown up. The run stops without printing the run summary. Thus there is no acoustical signal when a run stops.
21:35 Beams lost with a slow ID trip

4/12/83 0° Dieter Cords & Howard Tills On shift

During run 15512 (about 6900 events in 5200 sec) a transmitter was 'lost' (wireless el.) and energy went crazy. At same time ID tripped off.
1⁵⁰ trigger 1 input missing: 58 (TOF) several times.
Its clearly faulty. Expert is expected on next shift

05³⁰ ID RUNS DOWN DURING UNANNOUNCED BACKGROUND OPTIMIZATION! - BACK ON NORMALLY. E⁺ BEAM
8¹⁵ Sequence of Events: During Run 15517 permanently "Background optimization". Suddenly green left disco light flashes. (Soft ID trip) We pause the run. "Switch off the High Voltage." We enter "Down" Seem beams had oozed away - "Injection"
9.38 Beams on again

8⁰⁰ Krebbiel & Kawamoto on Shift (Bart-)
Funny effect: Gap in Trigger 1 Input Histogram 58, TOF-Counter 35. Counter 34 exceptionally high, twice as high. No gap in TBG (which uses total output as coincidence input in a 1:1 base) (T1 output)
No gap in TBG Hit map. ~~Strata too~~ (Counter 35 is right under peak.) (Histogram F12)
No gap in TOF Hit Map ("Counter" Subroutine)
Signals ~~from~~ at Latch Inputs fully present. (also neighbouring counters.) Can't be a program bug? No!
11.00 Gould plotter "geb den Geist auf" No Run Summary at all. No copy from Tektronix. Figures in log book from Tektronix Screen. Reload RT programs, to check bug above
Reload Mipros, A79.

RUN	DATE	START	STOP	RUN START I^+	RUN START I^-	DEAD TIME (%)	T_1 & T_2 (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\phi$ 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.
15508	3.12.83	20:15	21:28	3.06	3.10	7.8		4303	8002	5694	1112	87	4298	6406	807	615
15509	"	21:28	21:37	2.66	2.71	7.0		474	853	599	123	8.7	442	674	69	56
15510	"	22:06	22:26	3.67	4.04	9.0		1164	2286	1747	303	27	1051	2167	215	255
15511	"	23:05	0:11	3.80	4.09	9.7		3947	8002	6312	1027	99	3742	7873	949	806
15512	4.12.83	0:11	1:29	3.32	3.62	9.2		4159	8002	5969	1093	99	4021	7687	816	719
15513	"	1:29	2:21	2.68	3.01	7.8		3039	5611	3974	791	61	3079	4213	575	386
15514	"	3:19	04^{27}	3.58	3.49	8.3		4066	8002	6109	1057	88	4374	6239	1417	605
15515	"	04^{27}	05^{52}	3.18	3.09	8.5		2034	3691	2638	529	45	2017	2838	350	262
15516	"	05^{13}	05^{51}	2.91	2.85	6.4		2101	3523	2347	546	35	2116	2458	343	176
15517	"	07^{22}	08^{17}	3.82	3.79	14.9		3247	7733	5873	844	726	3491	7397	1422	8775
15518	"	9:48	11^{00}	3.96	3.47	9.8		4241	8001	6211	1103	108	3510	8968	693	761
15519	"	11.03	11.35	3.40	2.98	8.6		1496	2791	2087	389	33	1381	2577	246	245
15520	"	17:18	18:22	3.97	3.90	13.6		3790	8002	6341	985	134	4261	6912	1649	688
15521	"	18:22	19:35	3.45	3.42	8.0		4370	8002	5731	1136	91	3997	7032	629	651
15522	"	19:35	20:52	3.01	2.99	7.5		4559	8002	5557	1186	89	4268	6537	700	566
15523	"	20.52	22:08	2.61	2.63	7.6		4494	8002	5597	1169	89	4697	5664	1181	439
11524	"	22:08	22:12	2.29	2.33	6.0		194	367	243	51	3	194	225	26	40
11525	"	22:45	23:54	3.74	3.79	10.3		4015	7995	6265	1044	107	3663	8667	822	811
15526	"	23.54	01^{02}	3.25	3.31	9.1		4623	8001	5982	1046	95	3951	7300	679	740
15527	5.12.83	01^{02}	02^{14}	2.85	2.91	7.8		4282	8002	5762	1114	87	4301	6329	851	622
15528	"	02^{25}	03^{44}	2.47	2.53	7.2		4612	8002	5553	1199	87	4656	5816	747	469
15529	MISSING	— HEADER	WITH	ERROR.												
15530	"	03^{54}		2.09	2.16	6.1		683	257	561	78	5	212	383	35	88
15531	"	4^{09}	4^{27}	2.06	2.13	6.3		1088	1832	1195	282	17	1112	1219	199	97
15532	"	6:16	6:41	3.47	3.68	22.6		1435	4178	3610	374	84	2757	2545	1904	268
15533	"	6:45	6:47	3.26	3.49	10.7		185	148	118	19	2	52	140	10	16
15536	6.12.83	9:38	10:15						1752	1388						
15538	"	10:18	10:24						294	294						
15543	"	11^{34}	11^{59}						1220	1220						
15544	"	14^{04}	15^{04}	3.46	3.49	15.3		3595	8002	6403	935	143	3056	11496	520	1181
15545	"	15^{05}	15^{14}	3.09	3.13	10.4		493	1034	784	130	18	459	1137	79	102
15546	"	15.20	16.33	2.68	2.72	7.9		4336	8002	5654	1129	89	4006	6967	583	646
15547	"	16.33	16.51	2.59	2.63	9.1		1052	2088	1533	274	25	973	2023	162	280
15548	ca 1000 events, T1 IBM, Nord 50 were not operating, no ~~com~~ film sequency, no list program															
15549	"	21.58	22.53	2.35	3.25	78.2		3273	8002	~~87~~	836	152	2989	10827	653	2657
15551	"	22.59		2.50	2.91	14.9		1033	3502	6487	269	53	936	2331	173	371
										2997						

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$	$\int L dt$ Bhabha Run	$\int L dt$ Exp.	IBM / TAPE	BP [V]	TOF [V]	T_2 rej FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.
15508	3.12.83	20:15	21:28	on	on	ON	1.68	6.74	29.98	IBM	2	.5	48	64	4	22.460	
15509	"	21:28	21:37	"	"	"	1.37	0.72	30.70	"	2	.5	46	10	0	"	beam lost
15510	"	22:06	22:26	"	"	"	2.20	3.32	34.02	"	2.5	1.6	49	28	0	"	Beams lost
15511	"	23:05	0:11	"	"	"	2.13	7.94 (69.9)	41.96	"	2.5	2.0	51	55	2	"	
15512	"	"	1:29	"	"	"	1.60	7.08	49.04	"	2.3	1.2	53	49	2	"	
15513	"	1:29	2:21	"	"	"	1.26	4.19	53.23	"	2.2	0.9	46	29	1	"	Beams dumped.
15514	"	3:19	04^{27}	"	"	"	1.64	7.36	60.59	"	2.5	1.4	47	51	0	"	
15515	"	04^{27}	05^{52}	"	"	"	1.33	1.88	62.47	"	2.25	0.85	48	13	0	"	CHANGE of ENERGY.
15516	"	05^{13}	05^{51}	"	"	"	0.79	1.59	1.59	"	2.08	0.68	49	11	1	22.475	NEW ENERGY. BEAMS DUMPED
15517	"	07^{22}	08^{17}	"	"	"	1.80	5.64	7.23	"	2.7	2.1	56%	39	2	"	Permanent background optimization running. At End: 10 top beams lost
15518	"	9:48	11^{00}	"	"	"	2,02	8.24	15.47	"	~~2.7~~ 2.7	2.2	54	57	3	"	No run summary from now on.
15519	"	11.03	11.35	"	"	"	1.57	1.88	17.35	"	2.7	2.2	50%	13	0	"	Beams lost
15520	"	17:18	18:22	"	"	"	2.00	8.10	25.45	"	2.5	1.6	52	73	1	"	
15521	"	18:22	19:35	"	"	"	1.61	6.84	32.29	"	2.2	0.95	48	48	2	"	
15522	"	19:35	20:52	"	"	"	1.09	7.52	39.91	"	2.1	0.67	48	61	2	"	
15523	"	20.52	22:08	"	"	"	0.88	4.77	44.68	"	1.9	0.5	48	41	0	"	
11524	"	22:08	22:12	"	"	"	0.71	0.00	44.68	"	1.8	0.35	35	0	0	"	Beams dumped
11525	"	22:45	23:54	"	"	"	1.70	7.66	52.34	"	2.5	1.8	54	53	1	"	
15526	"	23.54	01^{02}	"	"	"	1.41	6.36	58.70	"	2.4	1.4	50	44	0	"	
15527	5.12.83	01^{02}	02^{14}	"	"	"	1.05	4.77	63.47	"	2.23	0.87	47	33	1	"	
15528	"	02^{25}	03^{44}	"	"	"	0.81	2.85	66.36	"	2.0	0.55	48	20	1	"	
15529	MISSING	— HEADER	WITH	ERROR.													
15530	"	03^{54}		"	"	"	.51	.29	66.65	"	1.8	0.35	0	2	0	"	Run stopped, found all not off!
15531	"	4^{09}	4^{27}	"	"	"	.63	0.72	67.37	"	1.7	.3	68	5	0	"	
15532	"	6:16	6:41	"	"	"	1.44	2.90	2.90	"	2.5	1.5	51	20	0	22.490	
15533	"	6:45	6:47	"	"	"	1.17	.14	3.04	"	2.5	1.6	45	1	0	"	
15536																	cosmic runs prohammi time wrong?
15538																	"
15543																	"
15544	"	14^{04}	15^{04}	"	"	"	1.66	4.05	7.09	"	2.8	1.8	61	29	0	"	
15545	"	15^{05}	15^{14}	"	"	"	1.28	0.23	7.38	"	2.4	1.2	55	2	0	"	stripped for Nord experts
15546	"	15.20	16.33	"	"	"	1.13	5.79	13.17	"	2.3	1.0	48	40	2	"	
15547	"	16.33	16.51	"	"	"	1.15	1.74	14.91	"	2.1	0.8	54	12	0	"	Beams dumped
15548				off	2	2											
15549	"	21.58	22.53	on	"	"	1.08	2.46	17.37	"	2.1	1.1	58	17	1	"	Run 15550 does not exist
15551	"	22.59		~~off~~	on	on	1.03	1.16	18.53	"	1.0	2.7	(-1)	8	0	"	Beams dumped.

78 4.12.83

17.35. ID Alarm, Beams lost <DOWN>
"short break"

Following the rules in the operators manuals, the tasks YHDISP and YHCOPY were rebuilt.

~~Thru~~

15⁰⁰ A visit to PKR. They have problems with interfering bunches. (One kicks the other out.)
16⁰⁰ Matsumura & Takeshita
17:20 YSPY ERROR: TRIGGER1 INPUT MISSING: 58 : several Times/Run
17:20 HV of EndCap #22 was decreased to b -1.5KV. to reduce Dead Time. (60→15%)
34 " was set corrected value (-1.6767HV).
19.00 YSPY ERROR: TRIGGER1 INPUT MISSING: 58 : very frequently.
22:50 TAGGING -HV down (MFR-61: counting room side). Reset: Run 15525 in the Main frame.
" Run 15525 is the first Run in this fill, however we have no problem in DEAD TIME by Noisy Endcapcounts

The pseudo regular Crate-controller swap.
The tested controller Jorway 70A, Ser. No 470, II Instit. 3794 inserted into Branch 5, Crate 6. (Rack 71 top)
Removed: Jorway 70A, Ser. No 421, II. Inst. 3805, put onto shelf as "field-proven."

WAW! WHICH THEY ARE NOT EVEN MARRIED!

5.12.83
0⁰⁰ R. Hedgecock + R.J. Heuer
0⁴⁰ Std-histograms ok apart from trigger 1 input #58
02²⁵ DURING RUN 15528 - JDAS ERROR 33 - MISSING LAM BRANCH 2 CRATE 5 : L.G. ADC;
2³⁵ trigger 1 input #58 now suddenly ok
03⁵⁰ ID TRIPPED JUST AS RUN 15528 ENDED.
NEW BEAMS NOT POSSIBLE - POSITRONS MISSING.
4⁰⁰ H. Wills comes, R. Hedgecock goes and Sam tired

Gould plotter back again - at least most of it - by turning power off and on - as specified in section 4.5 of JDAS operator's manual under "NO RUN SUMMARY".
Does nobody read it?? No obviously
6²⁰ Dead time goes up to 50%, probably again due to Endcap ch of #22. So we wait 5 min. (see page 68). It works
6⁴⁵ Stop the Run, run magnet down, switch it off (isolator off)

8:00 Barth + Kobayashi on a no shift
break interlock, let the surveyors in

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NEW Version of Nov4-50 Program
This marks for rejection checks noisy Endcap & Barrel Hi-events
No rejection takes place yet. Previous version in OLD-N50DAR
Starts run 15536 HE IV

16⁰⁰ J. Chrin and H. Riesberg here
There is the indication
RESTART 6.12.83 ca 9.00
Situation after this maintenance day:
- Interlock is closed
- Herr Tesla has repaired the disk drive, not yet connected. Power stage of the arm was burned
- Herr Hase has repaired the Gould plotter (The last centimeter or so on the right border is still missing)
- Our Magnet: Isolator off, breaker light off, MKK1 will think over if we switch off the water pumps or not → pumps stay on

Beate Naroska: Tasso needs the time till tomorrow morning to straighten their magnet (with G4 Bookprinter)
We decide to have regular checks of our experiment in 3-hour intervals. Celebrate eve of Santa Claus!

20⁴⁵ Temperature (near DL8) is 17° O.K. (30 Kn)

6.12.83
0⁰⁰ " " " " " " , Magnet water 58°C, Zetro cooler → shall be off till about
92. Rbg

2³⁰ Temp. near DL8 ~17° v
5³⁰ " "

8⁰⁰ Steffen, Feist restart ca 9⁰⁰ temp. OK

Cosmic run: 15536 conditions normal and take out cable from trigger box (no beam)
switch of triggers: total energy (bit 2)
Septants (bit 14)
Start: F8/77734B/ ~~3000~~ 8/ ~~21000~~/ 0

N50 - Red flags N N Y N Y N N → to no and MIP red off (T2 and 2-vert)

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T_0 RCJ $\times 10^2$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T.E4.2Tr

13^{45} Beams lost at 22.480 GeV

6.12.83

16.00 Krehbiel & Clarke
16.15 DL8 error 128
16.25 DL8 error 126
16.40 " " "
16.50 " " "
19^{00} AX of this DL8 broken, exchanged DL8 → OK RDH (unit #1008 - 1015)

22.00 A lot to write down!
Since 20^{30} the filling is up, but background rates very high. At first had to fight with the collimators. PETRA shift crew (Schiwietz or so) did not know that our collimators ought to be moved in and how much. In spite of our instruction he moved them to 7 mm! Finally they landed at 12 mm. Now our rates are reasonable, but with most of the beam lost!
Problem with N50: No history, ϕ on N50 scales on the colored TV, although N50-program loaded. D. Cards on line: Restart Nord (2x) + CONT of ZDAS1 cured the problem KOH

22.10 Bad conditions in spite of rather low currents (3.75, 2.75). DT around 20%
23.00 What a rotten fill! Deadtime fluctuates between 8% and 40%. Luminosity only 7 E-30.
Call to MARK J. (Rohde). They considered a new fill soon.
All captains agreed to new fill (not or better, to dump the old fill) at 23.15.

7.12.83

00.00 Nozaki & Becker on shift

0^{18} Readout Err. 33 - Missing LAM branch 3 crate 2 : Muon Ch.
0^{24} ISPY : Forward TOF no hits : 25
0^{40} N-50 / TOF / FAMP status : off call to D. Cards : cured the problem
1^{18} ID alarm : HV output, anode
3.53 Readout error 33 Missing LAM br 3 crate 2 : Muon chambers.
4.00 Hinke on shift
8^{00} Hellenbrand & Takeda on shift
9^{10} Magnet → 7500 A

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T_0 RCJ $\times 10^2$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T.E4.2Tr

ON/OFF N50	MUP	TOF	⟨L⟩	$\int L\,dt$ BHABHA Run	$\int L\,dt$ Exp.	IBM → TAPE	BP ⟨V⟩	TOF ⟨V⟩	TURB. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

13^{20} Start run 15560.
Deadtime ~ 80% due to 2-track trigger. { 2TBGT / 2 coll } → ask beam optimization

New N-50 program (just minor change - starts Run 15561) (HK)
16^{00} Nyz & Olsson (Bowdery replaces Nyz at 20.00)
16:15 NORD down (Blocked just out of idling, Level 74). Standard Restart procedure.
16.45 Magnet down to 500 A.
18^{30} Magnet current is 1330 A. Reset (to 0) and raise to 500 A. 19^{00} Magnet up to 7500.

Our IBM connection is broken, efforts to bring it in order:
Krehbiel inspection in R 312 : Only Jack is not in order, a Red LED (TGO) is flickering on top of PADAC unit.
Phoning around : Hoebweiller and Dolfs not at home : phone Frese. His diagnosis, the line is broken somewhere, which would cause a 5Hz flickering of mentioned LED. He asks me to go to 312 and telephon him again for further diagnosis. After this, his telephon is constantly occupied.
We are stalled and give up, will call again later.
From now calls here, his teenage daughter had occupied the telephon. This bus connection is OK and we do a few tests in R 312. Exchanging PADAC units didn't help. Viewing various signals with the scope shows that all is OK on that side. Further checks as for the daylight. Dolfs cannot be told to drive on the roads now, we agree. Wish us hope over night. (if we can get beams, still injection problems) 21.45

Crate-Controller Swap : Repaired and tested controller of Standard-Eng. CC-A7, Ser. No 0274 inserted into Branch 3, Cr. 2. (II Install. 7966) Muon-Camac-Crate.
Removed Controller Version 5a No 428 on the table close to Cr.
Note: Single Muon timeouts had occurred before the swap.
Re-exchange controllers only when Muon timeouts occur with high frequency.

23.09 Preattenuators of the pick-up-boxes changed to 6 dB for e^+-Signal (previously 10dB) and 0 dB for e^--Signal (previously 3dB) (HK) - causes a small shift in TDC spektrum
23^{40} Beams lost, ID alarm
0^{00} Clarke & Diedrichsen
1^{25} After 1 minute Beam lost Runs 15563-64 do not contain any data (not saved on tape)
4.05 Water leak in the synchrotron (according to Mark J) repair time uncertain → requested refill responsible continue data taking with very low luminosity ($L \sim 0.5$)
4.20 Beam lost
6.05 Beam lost due to power supply failure.

RUN	DATE	START	STOP	RUN I+	START I-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	Tφ REJ ×10²	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E>1GEV	T₂ BIT 17 2T.E4.2Tr
15552	7.12.83	00.03	00.45	3.74	3.84	14.6	2858	7631	6472	640	93	2148	5156	374	603
15553	"	00.46	00.58	3.33	3.49	10.3	582	1642	1370	141	14	526	1024	97	116
15554	"	1:01	1:20	3.21	3.38	8.7	1002	2018	1534	261	23	983	1766	48	190
15555	"	3:02	4:9	3.37	3.70	9.3	4007	8002	6015	946	97	3881	7541	712	1016
15556	"	4:09	5:14	2.80	3.17	25	4439	8002	5674	1155	87	4283	6516	706	647
15557	"	5:14	6:34	2.44	2.80	8.0	~~4776~~	8002	3644	1086	88	4267	6643	666	808
15558	"	6:34	6:51	2.16	2.51	7.1	945	1743	1224	246	19	895	1518	129	209
15559	7.12.83	12:08	12:16	1.08	4.21	38.5	320	808	740	83	32	164	3236	33	172
15560	"	13:19	14:22	4.04	4.33	22.7	3833	8002	6625	999	229	2933	14718	555	1559
15561	"	14:22	15:17	3.41	3.77	10.4	3321	6118	5255	864	83	2508	7367	508	823
15562	"	22.33	23.40	3.08	3.07	8.4	3676	7260	5433	943	80	3907	5737	1334	688
15565	8.12.83	02:21	3.37	2.93	2.94	7.8	4585	8001	5543	1192	93	3962	7470	547	428
15566	"	03.41	4.22	2.37	2.32	7.9	2405	4261	2987	625	49	2138	3899	319	513
15567	"	05:48	6.01	3.08	3.39	18.9	727	1649	1365	189	35	524	2689	94	426
15568	"	14:04	14:05												
15569	"	19:37	44:39	2.11	3.55	7.7	32	103	77	8	1	43	49	6	14
15570	"	16:08	16:50	3.89	3.87	18.8	223 / ~~2205~~	3285	580	108	1693	5278	316	673
15571	"														
15572	"	20:26	20.27	3.88	3.99	5	79	193	160						
15573	"	20:29	21:38	3.85	3.44	9	4095	8001	6072	1065	98	3509	8345	572	867
15574	"	21:38	22.48	3.29	3.43	8	3441	7248	5329	1025	83	3318	7066	446	689
15575	"	23 47	23:55	4.06	4.15	15	427	992	824	111	16	326	1455	64	147
15576	9/12/83	1.56	2:44	3.71	3.81	21.8	2460	6719	5595	745	162	2096	11955	377	1675
15577	"	3.27	3.37	3.99	~~3.82~~	47.2			1327						
15578	"	3:42	4:44	3.76	3.86	14.8	3632	8001	6510	945	140	2866	11668	521	1582
15579	"	4:43	5:27	3.19	3.38	16.8	3727		4749						
15580	"	5:32	6:35	2.28	2.65	11.3	~~8007~~	8001	6116	983	111	3238	9408	576	1650
15581	"	6:44	6:49	1.86	2.26	10.8	278	585	454	73	8	239	674	55	128
15582	"	11:03	12:19	3.11	3.45	8.0	~~4544~~	8002	5683	1183	95	3773	7504	536	767
15583	"	12:20	13:38	2.70	3.02	7.5	4669	8002	5570	1215	91	4096	6831	661	665
15584	"	13:38	14:33	2.32	2.62	8.0	3169	5388	3603	825	66	2943	4358	495	408
15585	"	15:49	16:49	4.10	3.97	15.3	3501	7731	6355	911	139	2788	12175	557	1170
15586	"	20.00	~~20~~ 21.03	3.90	3.73	17.7	3740	8002	6614	973	173	2772	15723	574	1261
15587	"	21.03	21.54	3.39	3.27	18.2	2947	6467	5345	767	140	2233	12934	468	1049

N50	MIP	TOF	<L>	∫Ldt Bhabha Run	∫Ldt Exp.	IBM TAPE	BP (V)	TOF (V)	T₂ REJ FRACT.	Σ Bhabha	M.H.	E Beam	Remarks.
~~ON~~	~~ON~~	~~ON~~	1.85	4.20	22.73	IBM	2.5	1.7	0	29	7	22490	problem with MICROS STATUS
ON	ON	ON	1.82	1.16	23.89	"	2.3	1.0	0	8	0	"	
ON	ON	ON	1.51	1.74	25.63	"	1.9	0.6	48	12	2	"	beams lost
"	"	"	1.51	5.36	30.86	"	2.4	1.8	50	32	3	"	
"	"	"	1.04	4.92	35.38	"	2.05	0.85	49	34	1	"	
"	"	"	0.76	3.33	39.21	"	1.9	1.6	49	23	1	"	
"	"	"	0.62	0.58	35.79	"	1.8	.46	50	4	0	"	beam dumped
"	"	"	0.23	0.0	39.79	"	—	—	82	0	0	"	
"	"	"	1.30	4.92	44.71	"	2.7	4.5	68	34	1	"	
"	"	"	1.59	5.21	49.92	"	2.4	1.8	82	36	1	"	beams lost
"	"	"	1.18	~~4.36~~	~~53.54~~	FM216	2.1	0.9	49	25	1	"	beams lost
"	"	"	0.92	4.05	57.59	FM193	2.1	0.8	50	28	0	"	
"	"	"	0.65	1.45	59.04	F22B49	1.75	0.46	51	10	1	"	Beams lost
"	"	"	1.17	0.87	59.91	WALDI3	2.4	1.8	62	6	0	"	Beams lost
							2.2	1.6				"	less than 15 events - ~~JDAS ERROR~~
"	"	"	0.62	0.00	59.91	IBM	2.1	1.5	20	0	0	"	Beams lost.
"	"	"	1.61	3.33	63.24	"	2.4	1.8	56	23	0	"	beams dumped
													JDAS ERROR (after a few events)
							2.5	1.6		2	0	28505	JDAS ERROR
11	"	off	2.24	8.70	8.70	"	2.4	1.6	51	60	5	22.505	
"	"	off	1.72	5.80	14.50	"	2.2	1.4	49	40	0	"	
"	"	off	2.22	0.29	14.79	"	2.6	2.5	60	2	0	"	beams lost
"	"	~~off~~	1.23	4.35	19.14	"	2.8	3.8	65	30	1	"	beams lost
"	"	~~off~~	0.96	0.72	19.86	"	2.9	4.4		2	2	"	NORD hangup, summ. lost
"	"	ON	1.48	7.10	26.96	"	2.4	2.6	60	49	1	"	
"	"	"	0.97	2.51	29.47	"	2.4	2.1		2	2	"	NORD hangup, summ. lost
"	"	"	0.65	1.88	31.35	"	~~2.0~~	~~0.8~~	54	13	1	"	
"	"	"	0.52	0.00	31.35	"	2.0	0.8	54	0	0	"	Beams dumped
"	"	"	1.40	7.10	38.45	"	2.3	1.2	48	49	1	"	
"	"	"	1.15	7.39	45.84	"	2.0	0.8	48	51	0	"	
"	"	"	0.89	4.20	50.04	"	1.8	0.5	48	28	1	"	
"	"	"	2.14	6.23	56.27	"	2.6	2.8	63	43	4	"	Beams dumped. E-saving time
"	"	"	~~6~~ 7.67	6.52	62.79	IBM	2.7	2.6	69	45	0	"	
"	"	"	7.29	3.04	65.83	"	2.3	2.6	69	27	3	"	Beams lost.
ON	ON	ON											

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ RCJ ×10²	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T. E4. 2Tr	ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T. REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

Mark J	63.6
Tasso	48.5
Cello	57.
Jade	59.5

8[45] Nye & Nowosky on shift.

9.45 IBM links problem has been cured by exchanging bundle unit at FS8 intermediate computer. D.C.

12.00 No beam all morning: Synchrotron wake leak and now trying to get beam.

STD Histograms altered- pages 3 & 4 merged into one- saves paper! Hurray! (wow)

13.00 Injektion stopped

14:00 Petra starts Lumin. Run, but we have problems. - JOAS Random error 33 - Missing ~~beam bunch~~ 2 Crate 3 : TOF1 counters

15.47 Petra ramping again.

16.00 Nozaki & Heinzelman on shift

16.08 start Run 15570. Background is high - but dead time is reasonable 18%

16.45 No trigger 3. Error was level 5. Push reset and start buttons then it worked.

16.50 STOP the run due to energy saving time.

20:10 New fill is ready. We started new run and got immediatly JOAS ERROR 33 and 47.
ERROR 33 Missing LAM Br 2 Cr 3. Cable was disconnected.
ERROR 47 MP-16 start pulse missing or T2 crate off line
After consulting Beate we switch off TOF-μproc. and continue data taking

~20:30 Petra reaches 45 GeV

9/12/83

0:00 Meier & Takeshita

2:30 FW-Szint.-Counter # 22 got no hit in ~7000 events. This was recognized by YSPY. We decided that this must be due to limited statistics.

3:30 At the beginning of fill (Run 15571), background is so high, dead time ~ 60%. We phoned PUR. They refused to touch anything because they are happy to have beam at all!

3.37 NORD-hang-up, Protect Ring 2, Level 3

3.42 new run 15578 runs well with TOF μ-proc switched ~~on~~

5:27 another NORD-hang-up, Protect ring 2, Level 8

6.40 Magnet down to 500 A

7:16 → Water Leak from outside into this room near the second door. ←

0800 Matsumura & Murphy

4.06 Magnet up to 7500 A — Yamada & Krebiehl on shift

17.00 Energy saving time.

19.24 Call from Schuh Mark J. Asked for on lumi: We had 56, they only 34. They had camac problems.

19.55 Beams back again after Energy Savin.

20.00 New run, Conditions not bad, TOF Rate 2.5 Deadtime 16%, stable

20.20 I tried to spot a Mu chamber expert to start MUZAK. Finally I got hold of Greenshaw. Poor boy, he will be on night shift. Muzak started from telephone commands on Terminal (37) 4h.it time.

20.30 Hangup Level 5;
JOAS ERROR 33 Missing LAM Br. 2 Cr. 5 Leadglass ADC.

21.54 Beams lost. ID alarm.

23.25 Beam up again. High background.

23.37 Run started. DT at first ca 14%

10-12-83 GREENSHAW ≠ 5. WAGNER

0[00]	70 nb⁻¹	JADE
	44	MJ
	58	C
	49	T
	221 nb⁻¹	

1[10] INCREASE EBEAM TO 22.520

5[25] SOFT TRIP OF JET CHAMBER DUE TO HIGH CURRENT. RESET & CONTINUE TAKING DATA. BACKGROUNDS ARE CURRENTLY "ACCEPTABLE" → BP/TOF = 2.3/1.3

8[00] Ball, Becker

8:54 New fill. Run 15596.

9:59 Transmitter fault, PETRA frequency & beam energy, mirrored to 22.597. Repair predicted to take a few minutes only (simple trip?). Leave run.

Run	Date	Start	Stop	Run start I+	Run start I−	Dead Time (%)	Time (sec)	Records in	Records out	All ×10⁶	Tφ Rej ×10⁶	T1 Acc sum	T2 Acc sum	T1 Bit2 E1>6GeV	T2 Bit 17 2T·E4·2Tr	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp	IBM/Tape	BP [V]	TOF [V]	T2 rej frac.%	Σ Bhabha	M.H.	Ebeam	Remarks
15588	~~23~~ 9.12.83	23.37	00:45	3.89	4.02	9.7	4042	8001	6167	1052	102	3457	8435	608	831	on	on	ein	2.08	7.47	73.80	IBM	2.5	2.5	51	55	1	22.505	
15589	10.12.83	0:45	1:12	3.17	3.30	9.1	1563	3151	2377	407	37	1421	3002	228	307	on	on	on	1.81	3.48	77.28	"	2.35	1.5	~~2355~~ 47	24	0	"	
15590	"	1:14	2:09	3.15	3.28	8.5	~~3263~~ ~~4569~~	6148	4683	849	72	3045	5522	494	642	"	"	"	1.53	5.37	5.37	"	2.3	1.3	49	37	1	22.520	New energy
15591	"	2:16	3:30	2.75	2.91	7.5	4426	8002	5551	1152	87	~~4442~~ 4227	6561	546	643	"	"	"	1.19	5.37	10.74	"	1.95	0.7	48	37	2	"	
15592	"	3:30	3:34	2.40	2.55	6.7	189	354	224	49	3	217	225	22	15	"	"	"	1.07	0.29	11.03	"	1.8	0.5	50	2	0	"	BEAMS DUMPED
15593	"	4:32	5.42	4.18	4.26	10.3	3901	8004	6269	1015	105	3462	8480	579	871	"	"	"	2.31	7.40	18.43	"	2.7	2.8	51	51	4	"	
15594	"	5:43	6:53	3.37	3.64	8.1	4144	8002	5780	1041	88	4123	6592	682	641	"	"	"	1.70	6.53	24.96	"	2.2	1.05	47	45	1	"	
15595	"	6:53	7:40	2.91	3.15	27	2770	5111	3570	721	557	2269	4132	416	419	"	"	"	1.47	7.63	28.59	"	1.95	0.7	44	25	0	"	beams dumped/lost
15596	"	8:55	10:18	3.94	3.94	8.3	4256	8002	5880	1107	92	3911	7186	573	761	"	"	"	1.91	6.87	35.56	"	2.4	1.7	48	48	3	"	
15597	"	10:49	11:34	3.02	3.19	7.2	4518	8002	5566	1175	847	4374	6235	650	583	"	"	"	1.33	6.24	41.80	"	2.0	0.8	47	43	1	"	
15598	"	11:35	12:49	2.58	2.75	7.0	4371	7584	5072	1138	80	4356	5665	561	504	"	"	"	1.00	4.21	46.01	"	1.8	0.5	48	29	3	"	new fill
15599	"	13:22	13:39	3.89	3.91	9.8%	1043	2060	1601	271.4	26.7	885	2107	145	214	"	"	"	1.90	2.03	48.04	"	2.4	1.9	49	14	1	"	beams lost
15600	"	14.46	16:02	3.14	3.77	7.8	4488	8001	5725	1168	90	3955	7131	577	838	"	"	"	1.45	6.10	54.74	"	2.3	1.4	49	42	4	"	
15601	"	16:03	16:24	2.25	3.15	8.3	1225	2184	1576	318	26	1075	2134	161	227	"	"	"	1.18	1.45	55.59	"	1.9	0.7	~~52~~ 54	10	0	"	beams lost
15602	11/12/83	01:02	01:08	3.99	3.79	—	—	—	—	—	—	—	—	—	—	"	"	"	—	—	—	—	2.4	1.4	—	—	—	—	Junk
15603	"	01:14	03:18	3.49	3.69	—	—	—	—	—	—	—	—	—	—	"	"	"	—	—	—	—	2.4	1.4	—	—	—	—	— " —
15604	"	9:00	09:07	3.55	3.92	12.6	317	798	~~670~~ ~~2550~~	83	10	259	825	45	120	"	"	"	2.03	0.29	0.29	"	2.6	2.3	41	2	1	22.535	New energy
15605		9,11	9:53	3.45	3,81	10.1	2479	4740	3640	646	65	2023	4684	332	649	"	"	"	1.83	5,23	5,52	"			47	36	2	"	BEAMS LOST
15606	"	11:09	12:15	3.69	3.32	12.7	3945	8001	! 0 !	1026	131	3315	8820	528	1493	"	"	"	1.48	(7.58)	13.08	"	2,5	2.5	52	52	0	"	*Records out=0 ; no database recon. Next run OK
15607	"	12:16	12:54	3.19	2,83	8.1	2299	4231	3007	597	48	2088	3831	282	514	"	"	"	1.30	3,20	16,28	"			49	22	1	"	BEAM LOST
15608	"	15:15	16:35	3,26	3.13	7.5	4701	8002	5686	1222	91	3891	7283	525	697	"	"	"	1.23	6.25	22.53	"	2,2	1.3	48	43	2	"	
15609	"	16:35	16:44	2.82	2.72	2,2	411	752	546	106	7	361	612	44	79	"	"	"	1,00	0,29	22.82	"	2.05	0,175	43	2	0	"	beams lost
15610	"	20:19	20:51	3,53	2,57	11.6	1420	2311	2255	369	42	987	3673	107	164	"	"	"	0,92	1.74	24.56	"	2,3	1.1	67	12	0	"	
15611				Junk												"	"	"		Junk		"	~~20~~	~~07~~				"	~~beams lost~~
15612	"	20:52	21:51	3.11	2,32	6.5	3210	5015	3326	835	53	2607	4228	263	348	"	"	"	0.74	2.62	27.18	"	2,0	0.7	48	18	0	"	beams lost
15613	"	23:30	0:30	3.35	3.38	8.1	2676	4731	3357	696	56	2219	4333	276	453	"	"	"	0.51	4.94	32.12	"	2.4	1.5	47	34	0	"	stopped due to Muon System Trouble + Hadronic
15614	12/12/83	0:31	1:54	2.90	2.92	6.9	4757	8002	5419	1237	85	4253	6602	536	650	"	"	"	0.95	5.96	38.08	"	2.1	1.0	48	41	1	"	
15615	"	2:00	2:02	2.25	2.43	6.4	250	228	162	30	2	117	147	17	22	"	"	"	0.47	0.15	38.23	"	1.8	0.6	43	1	0		Beam dumped
15616	"	3:~~00~~	4.23	3.50	4.05	8.8	4216	7888	6077	1096	76	3412	7451	536	892	"	"	"	1.70	7.41	45.64	"	2.6	3.0	41	70	2	"	Beam lost
15617	"	6:30	6.48	3.19	3.45	8.8	877	1801	1381	254	22	766	1884	120	230	"	"	"	1.39	1.45	47.09	"	2.4	2.1	50	13	0	"	beams dumped
15618	"	16:25	16:49	3.45	3.39	10.0	1395	2647	1924	363	36	1187	2688	144	368	"	"	"	1.64	1.89	48.98	"	2.3	1.1	51	13	0	"	beams dumped
15619	"	20:32	21:47	3.43	3.44	8.0	4461	8001	5801	1161	92	~~3710~~	7514	446	831	"	"	"	1.43	7.12	56.10	"	2.3	1.2	48	49	2	3	
15620	"	21:51	22:29	3.00	3.01	7.2	4251	3793	2676	585	42	1844	3373	230	368	"	"	"	1.40	3.34	59.44	"	2.1	0.8	~~18~~	28	0	"	Step run due to PCB problem
15621	"	22:30	22:53	2.82	2.83	6.9	1384	2293	1551	360	24	1154	1982	134	224	"	"	"	1.13	1.81	60.75	"	1.9	0.6	48	9	0	"	Step run due to energy change.

RUN	DATE	START	STOP	RUN I⁺	RUN I⁻	START DEAD TIME (%)	T1 B (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T∅ REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>6GEV	T2 BIT 17 2T.E4.2Tr

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09:45 Back at 22520 GeV, continue run 15596.

12[48] New fill

13[20] Start run

13:38 Beams lost after I.D. slow ramp. 'stop run' interlock cable not connected to trig box. A few events at end of Run 15599 may have been taken with I.D. H.V. running down.

16[00] Weber, Bethke on shift

16[23] Beam, last. Mark J: 54 Tasso: 52 JADE: 55, CELLO: ?
→ next fill at the same energy

Sendercrash

17[00] Restart ~18[00] run down magnet to 2000A

19[45] Break, restart ~21[30] (Sender problem)

21[30] Restart 23:00

22[45] "Injection" → magnet to 7500A

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00:00 Ambüs / Finke

01:02 JDAS READOUT ERROR 33 - Missing LAM branch 4 crate 3 : I.D. Ring 2 appeared immediately after starting the run

8:00 MURPHY, KAWAMOTO

9[00] The problem was solved by the combined effort of J. Olsson, R. Heuer, and D.C. Three crate controllers have been exchanged and three people are exhausted! The lefthand DLS in branch 4 crate 2 had to be taken out and rubbed and put in again, in order to spring into life. What a Sunday!

0900 Start run 15604.

Muon crate 3 missing, required local reset.

16:00 Knies & Kobayashi

20:40 JDAS ERROR 33 - Missing LAM branch 2 crate 6 : Lead glass ADC's.
Background in PETRA very high - "short break"

20:51 TV hang up. Reload JDAS.

00:00 Bartel & Mills
Tapping HV went off

ISPY reports Mu digitisers 27-36 missing: Histogram has hole. Camac module Hasbo Crate 3, Resets etc Didn't help. Stop & ~~restart~~ Start new run and all was OK afterwards

RUN	ON/OFF N50	MIP	TOF	⟨L⟩	SLott Enhanced Run	SLott Exp.	IBM — TAPE	BP ⟨V⟩	TOF ⟨V⟩	T1 RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

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0:54 ID soft trips - then PETRA change energy to 22.610 & says short break

1:01 Back with original energy

1:30 "Hadronic event" appears - just a cosmic shower.

2:02 Beams dumped.
YHDISP altered to reduce std histograms by one sheet of paper!
(Fetch Timing maps & currents squashed together).

2:45 Magnet on the march - wanderings up down the scale (±10A)

3:05 New fill ready

3:58 First genuine Hadronic event this shift appears.

4:00 Tagging channel #16 now off → switch to the correct voltage again.

4:20 Beams lost with slow ID trip

6:45 Energy saving

8[00] Shimozawa + Heuer

14[00] Bethke replaces Heuer (mostly for this shift)

14[20] Cooling-water problems at Synchrotron. Short break. Run down magnet to 2000 A

15[44] PETRA injection is started. Magnet 7500 A.

16[24] Nozaki & Haidt on shift

16[25] Start run 15613 Background is low. Deadtime 10 % TOF 0.1 %

16[46] Stop due to energy saving

18:30 Magnet control error. current does not go down below 1700 A.

19.00 CAM K group. Magnet had gone by itself its own decision from 500 to 7300 A and blocked there.
If people unblocked it.

20:27

22:30 DLS NO 42. No response for the half period of run 15620. After new run: the problem disappeared.

22.53 Energy change 22.550 GeV

00'12 Olsson, Takeda R15622 ended, beams dumped.

2:31 ID inlet trip. Petra has cavities unfold. They will try to keep the beams (now 3.0E, 2.0E mA)

2:38 Back to normal again, R15624 continues

4:30 After long time of inactivity, Gould plotter suddenly made hardcopy of screens, first 24, then 35!

5:00 Start new fill after some waiting. Very low. ISPY reports missing T3 signal, and crashed take, missing digi R15625 trips. There is no message of missing crate, and all pr-crates are flashing normal, although there are big holes in the histogs. We call Fred for help, he will come and look, doesn't know offhand (poor guy, why do things always break in the late night?). Crate 7 and 11 are missing, as we gather from timing maps. Fred is now investigating. Fault found to be the HT supply for all chambers in crates 7 & 11. This had been cut into

05.30

P.T.O

RUN	DATE	START	STOP	RUN START I⁺	RUN START I⁻	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	Tφ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T.E₂.2T₁
15622	12.12.83	2:55	0:10	2,41	2,42	7,0	4440	7406	5000	1156	80	3785	6349	1845	636
15623	13.12.83	0:46	2:02	2,90	3,90	8,3	4466	8001	5900	1162	96	3573	8009	592	980
15624	"	2:09	2:48	2,06	2,46	7,7	2246	4029	2854	584	45	1958	3584	266	425
15625	"	4:46	5:59	3,92	3,86	9,0	4292	8002	6234	1116	99	3255	8539	512	1097
15626	"	5:59	6:53	3,43	3,29	8,9	2820	5022	3919	734	65	2244	5198	358	570
15627	"	10:09	12:21	2,73	3,56	12,2	4314	8002	5986	1123	137	3299	8999	451	1917
15628	"	12:27	13:09	2,39	3,14	7,3	2225	3829	2646	579	42	1895	3325	245	424
15629-15630		Dummy													
15631	"	20:50	21:57	4,01	4,02	9,5	4052	8002	6258	1054	100	3361	8269	520	935
15632	"	21:58	23:12	3,50	3,52	8,1	4420	8002	6014	1150	94	3543	7674	523	899
15633	"	23:12	0:30	2,64	2,68	7,5	4634	8002	5741	1206	90,0	3852	7261	536	775
15634	14.12.83	0:30	0:35	2,59	2,64	9,2	244	461	354	64	5,9	189	501	20	51
15635	"	2:10	3:21	4,07	4,27	9,8	4219	8002	6431	1098	108	3079	9150	514	1184
15636	"	3:21	4:34	3,54	3,68	8,1	4374	8002	6037	1139	92	3569	7491	555	897
15637	"	4:35	5:34	3,09	3,21	6,9	3509	5989	4300	913	63	2902	5002	402	537
15638	"	5:40	6:49	2,76	2,82	6,8	4096	6730	4675	1066	72	3466	5580	492	580
15639	"	12:01	13:09	3,87	3,81	10,1	4046	8002	6322	1052	106	3137	8832	495	1281
15640	"	13:09	14:27	3,30	3,26	7,6	4576	8002	5865	1191	90	3721	7174	543	818
15641	"	14:26	14:50	2,78	2,74	6,9	1354	2246	1553	352	24	1122	1937	162	196
15642	"	21:57	23:05	3,67	4,02	10,9	4035	8001	6289	1050	115	3235	9183	517	1127
15643		23:05	00:19	3,20	3,51	8,1	4409	8002	5886	1147	93	3751	7226	633	1734
15644	15.12.83	00:19	1:33	2,79	3,08	7,1	4297	7347	5094	1119	79	3618	6248	439	618
15645	15.12.83	2:05	3:15	3,45	4,13	9,1	4157	8002	6205	1081	99	3421	8035	619	932
15646	"	3:15	3:45	3,00	3,62	8,3	1734	3344	2512	451	38	1624	2931	341	713
15647	"	3:47	5:07	2,81	3,41	6,9	4770	8002	5664	1240	86	4116	6545	577	612
15648	"	5:07	6:33	2,30	2,83	6,2	5134	8002	5319	1335	83	4538	6051	586	438
15649	"	6:33	6:44	1,98	2,46	6,1	584	902	584	152	9	518	671	60	46
15650	"	10:23	10:53	4,20	3,86	12,6	1789	3644	3017	466	59	1289	5405	229	535
15651	"	10:58	11:16	3,91	3,59	10,8	963	1925	1522	250	27	744	2340	104	262
15652	"	12:45	13:41	3,92	3,87	7,2	4793	8002	5751	1157	90	3842	7097	495	692
15653	"	13:43	13:48	2,67	2,74	6,5	320	536	369	83	5	263	442	28	46
15654	15.12.83	16:10	16:57	3,91	3,96	11,1	1462	2950	2410	387	42,1	1089	3656	790	478
15655	"	20:58	22:03	3,38	3,83	12,1	3961	8002	6490	1004	122	2939	10505	471	1239
15656	"	22:03	23:14	2,96	3,38	9,5	4172	8001	6108	1087	103	3401	8487	480	1067
15657	"	23:13	23:19	2,54	2,98	9,2	193	436	331	50	4,6	180	371	33	47

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫Ldt Bhabha Run	∫Ldt Exp.	IBM / TAPE	BP ⟨V⟩	TOF ⟨V⟩	T₁ rej Fract	Σ Bhabha	M.H.	E beam	REMARKS.
	on	on	on	0,99	5,65	5,68	IBM	1,9	0,4	48	39	0	22.550	Beams dumped
	"	"	"	1,01	4,80	10,48	"	2.3	1.4	49	33	3	"	
	"	"	"	0,84	1,60	12,08	"	2,1	1,0	48	11	0	"	Beams dumped
	"	"	"	1,78	8,01	20,09	"	2,6	2,6	49	65	5	"	Cch 7,11 p.ch. mixing fo big fraction of ha
	"	"	"	1,27	4,08	24,17	"	2,3	1,5	51	28	1	"	
	"	"	"	0,99	4,25	28,42	"	3,4	2,6	52	38	1	"	Very low lumi early in run, beams not crossing?
	"	"	"	0,87	2,47	30,89	"	2,0	1,0	47	17	1	"	spot of beams lost → dumped
	"	"	"	2,43	8,30	39,19	"	2,5	2,0	49	57	1	"	
	"	"	"	1,74	7,42	46,61	"	2,2	1,6	47	51	2	"	
	"	"	"	1,24	5,97	52,58	"	2,1	1,3	48	41	2	"	
	"	"	"	0,90	0,15	52,73	"	≤2,0	≤1,0	54	1	–	"	beams dumped
	"	"	"	2,05	7,71	60,44	"	2,7	1,7	51	53	4	"	
	"	"	"	1,46	5,97	66,41	"	2,4	2,3	46	41	0	"	
	"	"	"	1,22	4,08	70,49	"	2,2	1,5	44	28	1	"	
	"	"	"	0,84	3,50	3,50	"	2,0	1,1	47	24	1	22565	New energy, beams dumped
	"	"	"	2,13	7,58	11,08	"	2,6	2,3	50	52	1	"	
	"	"	"	1,61	7,87	18,95	"	2,2	1,4	46	54	1	"	
	"	"	"	1,29	1,31	20,26	"	1,6	0,9	47	9	0	"	Beams dumped
	"	"	"	2,12	10,20	30,46	"	2,5	2,0	53	70	0	"	
	"	"	"	1,61	7,08	37,54	"	2,2	1,4	47	44	0	"	
	"	"	"	1,19	4,08	41,12	"	2,0	0,9	46	28	2	"	beams dumped
	"	"	"	1,86	9,33	50,45	"	2,5	2,5	48	64	1	"	
	"	"	"	1,65	2,86	53,31	"	2,4	1,7	47	21	0	"	
	"	"	"	1,32	5,68	58,99	"	2,1	1,1	46	39	0	"	
	"	"	"	0,98	2,92	61,91	"	1,3	0,6	48	20	1	"	
	"	"	"	0,80	0,44	62,35	"	1,7	0,4	50	3	0	"	
	"	"	"	2,39	3,79	66,14	"	2,6	3,4	60	26	1	"	
	"	"	"	2,17	2,04	2,04	"	2,6	2,9	55	14	0	22.580	New Energy
	"	"	"	1,63	7,01	9,05	"	2,1	1,5	47	45	3	"	
	"	"	"	1,21	0,15	9,20	"	2,0	1,0	45	1	0	"	
	on	on	on	2,36	3,27	12,47	IBM	2,6	3,5	54	22	0	"	Energy saving time
	"	"	"	2,21	8,47	20,88	"	2,5	3,0	56	58	2	"	
	"	"	"	1,66	7,59	28,47	"	2,4	2,2	51	52	1	"	
	"	"	"	1,24	0,0	28,47	"	2,15	1,5	41	0	0	"	beams lost

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Θ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T Φ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T.1E4.2Tr

oscillating trip mode due to high chamber currents being drawn in bad background condition.
Reset by reducing volts and then turning them back up again. New info sheet in μ-chamber folder.

6.20 Scanner ausfall again, ID reset hyp

8.00 ≙ 13.12.83 R. Marshall. K. Meier

9.00 Magnet on

15:55. New version of Nord-50 program installed. This has minor adjustment to "noisy LA event" selection - as yet no rejection here. (HEM)

14.00 Crate-Controller Branch 4 Crate 6 replaced by ~~testing~~ tested Controller Jorway 70A Ser. Nr. 430, II. Instit. 3814. (Rack 70, 2nd from bottom)
Old controller Standard-Engineering had a pushed-back rack
"Careful with the black-and-purple controllers. They have especially weak contact springs

16.00 Petersen & Haidt on shift
16.20 PKR announced "Short break"
17.00 The lead door from our experiment into the direction of the ring to Hardy was not closed. W. Braitel closed it now! It might have influenced the background of the wire chambers.
20.25 Start run 15629 Missing lam crate 6 branch 4 (ID), continuously
Stop run. changed crate-contr. + lam crader crate 6 ↔ crate 7.
After that: Missing lam b>4 cr 7 (1x)
Missing lam b>4 cr 3 (continuously) } repeats after starting new run.

Then change back only lam-grader crate 6 ↔ crate 7 → no errors! S.B.
(Reason quite unklear, may be same fault like 11.12.83 0-800 ?

23.00 TOF #72 has about 10X more hits than the others!
23.55 Mark J say beams will be dumped in 15 minutes.

14.12.83 F. Loebinger + U. Schneekloth on shift
0.30 start run 15634
0:35 beams dumped
2:10 start run 15635
3.20 We have 60 nb⁻¹ at 25.550, but Σ (all expts) still only 210 nb⁻¹ so we continue at this energy.

ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt Chamber Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T. RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

05.10. Energy will be increased at 05.30.

Odd wiggles in part of JETC TIMING MAP R1&2 history — Inner detector people please note.
6.50 beams dumped, magnet down to 500 A
8:00 Nye & Tolleshita
9.00 All NORD Terminals refuse to work - except printer ⇒ restart NORD.
" ON TV "Kuehlungsproblem am Synchrotron Start ca. 10:Uhr" so we down magnet to 2000 A
12.00 After long "short break" we finally start taking data

~~1745~~ ~~2219~~
16.00 Feist, Yamada
21.50 Killing ready
P. Lamikainen asks the night shift to wake him up at 7.15 15.12.83
by phoning Tel. 2719 (Let it ring often) to be on shift at 8.00

15.12.83 0.00 midnight A. Wagner + R. Marshall.
6.45 Magnet → 500A

08.00 P. Lamikainen & F. Loebinger
09.00 Magnet on
10.20 New beam. Run started
10.45 Energy change
11.00 Temp. in hardware room up to 19°C (thermometer near DL8 racks).
Thermostat in compressor room reduced from 17°C to 16°C.
11.10 Large beam bar. T.D. trip beams dumped.
12.20 Transmitter failure PETRA energy on TV = 22.658 GeV Paused run (10 min)
14.20 "Kurze Unterbrechung"

16:00 Baines and Hellenbrand on shift
16:10 New filling ready, started RUN 15654
16:25 sudden change of Energy from 22.580 to 22.6 TO, soft I.D. trip
RUN paused, Transmitter failure as before
16:40 RUN continued
16:50 ENERGY SAVING TIME, magnet to 500 Amps
21:58 Start run 15655. VOLTS ERROR, SUPPLY / MAINFRAME = 15, L6/BP HV CONTR
NO RESPONSE.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (sec)	T₁ Rate (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T0 REJ ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁ > 6 GeV	T₂ BIT 17 2T₁ E4.2 Tr	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp.	IBM / TAPE	BP (V)	TOF (V)	T₂ Rej FRACT.	Σ Energy	M.H	E Beam	REMARKS.
94																													95
15658	16.12	0.07	1.13	3.81	3.80	15.1	7905	8002	6539	1017	154	2904	13232	511	3451	"	"	"	2.03	8.32	36.79	IBM	2.95	4.1	65%	57	2	22.580	
15659	"	1:14	2.27	3.32	3.48	7.9	4372	"	5926	1138	90	3784	7064	566	798	"	"	"	1.97	7.30	44.09	"	2.5	2.0	41	50	1	"	
15660	"	2.28	3.32	2.86	3.01	7.2	3836	6489	4500	998	71	3456	5083	453	507	"	"	"	1.43	6.57	50.66	"	2.0	0.9	46	45	0	"	
15661	"	4:17	5:27	3.86	3.93	8.6	4215	8002	6181	1097	95	3482	7687	554	808	"	"	"	2.59	8.90	59.56	"	2.5	3.0	46	61	3	"	
15662	"	5:27	6:15	3.31	3.37	7.7	2829	5243	3829	736	57	2531	4314	385	490	"	"	"	2.01	5.69	65.25	"	2.2	1.4	64	39	1	"	beam lost
15663	16.12.	12:17	13:03	3.93	4.02	10.0	2635	5706	4026	686	68.6	2056	5926	326	896	ON	ON	ON	2.59	6.72	6.72	IBM	2.6	3.5	53	46	3	22.595	New Energy Beams lost
15664	"	14:16	15:28	3.93	3.98	8.9	4313	8001	6188	1222	100	3359	8318	514	831	"	"	"	2.48	7.89	14.61	"	2.6	1.8	49	54	3	"	
15665	"	15:25	16:45	3.22	3.37	7.3	4485	7790	5554	1167	85	3702	6825	507	621	"	"	"	1.64	6.87	21.48	"	2.05	1.7	61	47	3	"	beam dumped
15666	17/12/83	06:34	06.58	3.41	4.20	11.2	1329	2806	2200	346	38.6	1125	3235	172	321	"	"	"	2.36	3.07	24.55	"	2.55	2.5	53	21	0	"	Transmitter trip Partial beam loss
15667	"	8:30	8:42	4.12	4.16	10.7	4134	8001	6148	1075	114	3339	9605	543	820	"	"	"	2.31	8.48	33.03	"	2.6	2.75	56	59	0	"	
15668	"	9:43	11:02	3.27	3.09	7.2	4780	8002	5719	1243	89	3758	7119	518	543	"	"	"	1.38	8.33	41.36	"	2.4	1.5	45	57	4	"	
15669		11:03	11:35					about 4000												~3?	~44.00		2.1	0.9					Beams dumped. Nord crash Sway lost
15670	"	22:32	23:43	3.66	3.78	9.4	4186	8002	6028	1089	102	3481	8409	539	864	"	"	"	2.08	9.21	53.29	"	2.6	1.9	51	63	0	22.595	
15671	"	23:43	23:51	3.10	3.25	~9.3	~~800~~ 583	1126	846	751	74	493	1127	—	—	"	"	"	2.01	0.73	53.94	"	2.4	1.5	—	—	—	"	Beams lost, Nord on Stop
15672	18/12/83	1.04	1.13	3.92	4.06	11.0	517	1147	869	135	15	484	1262	131	133	"	"	"	2.29	.73	12.67	"			58	5	0	"	Beams lost
15673	"	3.05	4.23	3.67	3.03	7.6	4686	8002	5758	1222	93	3662	7400	455	724	"	"	"	1.58	8.77	63.44	"	2.4	2.0	46	60	0	"	
15674	"	4:23	5:43	3.20	2.63	7.1	4760	8002	5327	1238	88	4122	6591	589	592	"	"	"	1.05	5.26	68.70	"	2.15	1.0	46	36	2	"	
15675	"	5:43	6:08	2.82	2.30	6.7	1436	2384	1553	373	25	1210	1965	147	190	"	"	"	1.01	1.61	70.31	"	1.95	.65	45	11	0	"	Beams dumped
15676	~	7:31	7:36	3.94	2.65	10.6	278	514	423	72	8	181	676	32	85	"	~	"	Ratio 17	.59	.59	"	2.6	2.65	56	4	0	22.610	BEAMS LOST
15677	=	8:23	8:23	3.49	3.55	0	~10	37	35	0	0	0	8	0	0	"	"	"	0	0.15	0.74	"	~2.5	~2.5	0	1	0	"	Beams lost
15678	"	9:02	10:14	3.41	3.37	8.1	4544	8002	5814	1182	961	3580	7826	529	735	"	"	"	1.56	7.32	8.06	"	2.4	1.7	48	50	1	"	
15679	"	10:18	11:35	2.84	2.81	7.5	4565	8002	5373	1188	89	4033	6665	666	558	"	"	"	1.10	4.24	12.30	"	2.2	3.8	46	29	2	"	
15680	"	11:36	12:34	2.36	2.33	6.7	3406	5413	3377	885	59	3004	4071	386	288	"	"	"	0.77	3.51	15.81	"	1.9	2.0	46	24	0	"	Beams dumped
15681	"	14:53	15:15	3.81	4.15	22.7	1239	2203	1761	322	73	805	3031	135	281	"	"	"	2.00	2.63	18.44	"	2.7	3.0	58	18	0	"	Beams lost
15682	"	22⁰⁰	23²⁹	3.15	2.56	6.9	4405	8002	5384	1276	885	3897	7030	482	613	"	"	"	0.73	4.24	22.68	"	2.12	0.87	46	29	0	"	
15683	"	23²⁹	0:02	2.56	2.76	6.4	1966	3076	1975	506	32	1606	2455	160	198	"	"	"	0.58	1.17	23.85	"	1.96	0.6	58	8	0	"	Beam dumped
15684	19.12.83																						2.6	3.8					very short Run, no Evt. Head-Probl.
15685	"																												
15686	"	2:04	2:54	3.43	3.45	33.6%	2326	4124	3516	605	203	1410	~~1693~~ 10812	436	487	"	"	"	—	0.73	64.58	"	2.6	2.8	62	5	16	"	Trigg. HV-Probl., Head-Probl.
15687						does	not	exist																					
15688	"	5.60	6:48	3.63	~~3.66~~	20.9	3941	8002	6664	1024	213			410	921	"	"	"	1.25	2.63	27.21	"	2.7	"	61	18	0	"	ID runs 192–223 missing
15689	"	6:49	6:52	2.9	3.11	9.7	147	266	108	38	3.6			11	21	"	"	"	1.46	0.15	27.36	"	—	"	71	1	0	"	Beams dumped for 1583
15690	23.1.84	17⁰⁰		ID Tpatterns		Pulsersum		PED 4	Hits,	Gain 1,	Gain 2,	Gain 3																	
15691	"					TZERO Links			80 Timestamps																				
15692	"					TZERO Rechts																							

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T1 (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T0 RCJ ×10²	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>6GEV	T2 BIT 17 2T.EL.2Tr

16:12 0⁰⁰ Matsumura + Meinke on shift
for the second time, shortly after start of new run we got the error message "HV READ ERROR"

4:15 HV error mainframe 15
4:46 HV read error
6:50 problems with magnet: only → 1500 amps / by hand → 80 amps

08:00 ~~Bethke~~ and Lauvikainen
9:00 Seuder - problems. Short break
10:10 "injection" magnet back to 7500 A
10:30 Hellenbrand replaces Bethke

11:35 New version of N50DAR installed (starts run 15663). This implements the online rejection of "Noisy" L.C. events, as agreed in yesterday's group meetings.
12:15 New filling ready, NEW ENERGY (22.595 GeV), started RUN 15663
13:05 Again Transmitter problem, beams lost
13:15 Komamiya take over Hellenbrand
14:00 New beams ready. Start expt run. Muon crate missing faulty part 4
14:10 jdas readout error 33 missing LAM branch 3 crate 2 ; muon chambers during
14:16 LG/BP POWER SUPPLY 4, 5, 7, 12, 14, 17 HV wrong
⇒ checked. Main Power supply looks O.K. probably read error.

16⁰⁰ Stephens & Dieckes @ SI.ft
17⁰⁰ Energy-Saving-Tein set Mg-current to 500A.
19 52 Problem with LINAC 2 restart time unknown.
19 40 Advised to lower magnet. # MAGNET AT 500 Amps
22 55 Injection so we raise magnet current

17/12/83 000 Baines and Bowdery on shift

We inherit alot of PETRA injection problems!

6:34 Beams at last. However we notice that the instantaneous online rejection figures on the screen are wrong! (0.0% 100.0% 100.0%)
6:45 Now the rejection figures are correct - maybe it is supposed to wait 10 minutes before showing correct values.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T1 (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T0 RCJ ×10²	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>6GEV	T2 BIT 17 2T.EL.2Tr	ON/OFF N50	MIP	TOF	⟨L⟩	SLdt Bhabha Run	SLdt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TUBES FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

8⁰⁰ Barlow + Schmitt on shift.
8³⁰ HV errors. No response from supply 15, and wrong HV from supply 15.
8⁵⁹ Inner detector slow (silent) alarm. [Run 15677, event 3633]. Reset OK.
9³⁰ More HV messages on ~~host~~ screen — but nothing printed.
10 45 HV errors. No response from supply 15.
11 35 Beams dumped for new fill.
Note crash — on typing "DOWN" the console printed TRANSF!! and the machine stopped
Restart OK but run summary lost.
11 50 TV-screen is black. Failure of a computer (Alice) (PKR)

16:00 H. Krehbiel & A. Wagner
18:30 Injection problems since ≈ 5 hours.
22:30 colliding beams!
23:57 beams lost + simultaneous Nord hang up!
Transmitter failure.

Crate-Controller Swap. Crate Standard-Eng meaning CC-A1 Ser No. 0056, DESY 35-7243 with repaired contacts inserted into Branch 6, Crate 7. Tested with Pulser Run. Removed as field-problem St. Eng. Ser No 0055, II Instit. 4168. If bad + Coote front contact, was thus taken to GAS Five

18.12.1983 0⁰⁰ Kawamoto + Meier
My last shift for JADE!!
1¹⁰ Beams lost, quiet IO-trip
3 45 Std histograms look ok
5 45 ΣL: MARKJ ≈ CELLO ≈ TASSO² ≈ 58, JADE = 68, ← phone call from MARK J.
Beams will be dumped at ≈ 6:00 and ~~the~~ next fill will be with new ~~new~~ energy.
7²⁰ New energy 22.610
7³⁰ Run 15676: Tagging HV on -7 was off
8⁰⁰ That was it!! only for R.D. Heuer

8⁰⁰ Baines & Kobayashi
8²⁰ New fill ready. After ~10 sec of data-taking, the beam was lost.
9 02 Tagging HV (MFR61) ~~dead~~ was off. → Reset.
9 35 Tagging HV wrong. MFR61 channel 0 HV = 1.322 should be 1.258 } → set. (9⁴⁰)
" " 1 HV = 1.351 " 1.287 }
15:58 No trigger, trigger fault at level 5, cured by stop, reset, start button on trigger box. also JDAS readout error 33 - missing LAM branch 2 crate 5 (Leadglass ADC) appears on VDU.
16⁰⁰ ~~HEDECOCK~~ & ~~STAMERJA~~ MINOWA TAKE OVER????
22⁰⁰ PRECISELY. — SWITCH ON HV IS ANNOUNCED AND WE FALL OFF OUR CHAIRS!!
22⁰⁴ ~~Start~~ run 15682

RUN | DATE | START | STOP | RUN I+ | RUN I- | START DEAD TIME (%) | T1 & T2 (SEC) | RECORDS IN | RECORDS OUT | ALL ×10⁶ | TØ RCJ ×10² | T1 Acc SUM | T2 Acc SUM | T1 BIT 2 E1>6GEV | T2 BIT 17 2T.E4.2Tr | ON/OFF N50 | MIP | TOF | ⟨L⟩ | SLdt BEAM Run | SLdt Exp. | IBM TAPE | BP ⟨V⟩ | TOF ⟨V⟩ | TREJ FRACT. | Σ ENERGY | M.H | E BEAM | REMARKS.

98

23 55 Mark J want to dump this fill at 0000 - we agree
19 Dec
0:00 Stephen a Dietrich on Shift
beam. dump

1:25 Temperature in electronics room 26°C !! We call control technician.

1:30 He finds Airconditioning off.

Herr Schull says that it was "Frostalarm" since some body has turned the control from 17°C to 14.5°C ! RBy

1:42 ~~Try~~ ~~to~~ start Run 15684 however we have many problems !!

JDAS error 51 false DL8 interrupt branch 5 crate 3
" " 33 Missing CAM branch 5 crate 3 ID Ring 1
No tagging HV from PSU 61 cannot reset.
Temperature alarm in Hall!!

There is something wrong with the airconditioning Control technician calls an expert.

try to start Run 15685

2 45 Temp still high ~ 21-22°C by the DL8. Experts still trying to find problem with airconditioning.

Phone KH Meier to try and solve Tags HV. problem.

We are running with all doors open and it's freezing here

KHM coming in.

Also it warming up again. Its proving impossible to run like this!

99

The alarm again goes off in the hall.

2 50 still Problem with Temperature (3-Kontrollschrank are working downstairs) called Matsumura because DL8 - gave to hot. He decided to switch off the DL8 and switch it on again if Temperature is <20°C
Control

Tag L.G. problem due to crate tripping off due to wet cooling

4 30 Much trouble in getting DL8 power supplies working again. Have to change Power supply in Br 5 Crate 4

5 30 Try to start Run but self terminates after 2 events!

Then we get spark alarm in I.D. Call Matsumura because we cannot reset.

5 40 FINALLY GET A RUN STARTED !!! Wires 192-223 missing RBy

Beam pipe unstable, call PKR

YSPY shows no response from DL8 25 - continuity in ID wire map.

This DL8 is in the PS that gave maximum difficulty when switching ON !!

If there is only ~ 45 min to run we decide not to risk switching the DL8 power supply off and on again!!

Even the Gould printer has ~~had~~ given up on us!!

Std Histograms show a hole in LG hit map barrel !

Forward counter hit map "most right" seem to have very noisy channel

Temperature seems to be stable now at 17°C by the DL8

MAGNET OFF

RUN | DATE | START | STOP | RUN I⁺ | START I⁻ | DEAD TIME (%) | T₁ G (SEC) | RECORDS IN | RECORDS OUT | ALL ×10⁶ | T₀ RCJ ×10² | T₁ ACC SUM | T₂ ACC SUM | T₁ BIT 2 E₁>6GEV | T₂ BIT 17 2T.E₁.2T₂

It is 1984

23/01/84 new run period starts

16⁰⁰ U. Meier on shift
LG, BP, TOF, Tagg - HT power supplies have been switched on
injection veto switched on again
JADE is coordinating experiment
According to the instructions of B. Naroska our previous
Energy-Point of 22.610 should be remeasured with 60 nb⁻¹

16³⁰ The problems with the air condition have not been fixed yet.
T_{door} = 21 °C , T_{org} = 19 °C (still acceptable)

17⁰⁰ T. Takeshita checked LG power supplies
18⁰⁰ John Nye takes over U+H.M.
20⁰⁰ S. Komamiya takes over J. Nye. (for luminosity measurement; phone 2319 before 22⁰⁰ if there is beam)
22⁰⁰ Bethke on shift

24/1/84 Naroska
Enquired at PKR: the situation looks bad.
Since this morning (after repairs: 1 klystron replaced, work on a quadrupole power supply, removal of an obstacle)
the machine doesn't work any more.
They say that it is not worthwhile waiting. So we go home.

To next shift: Magnet could not be turned on. Please try when it is convenient for the machine and maybe get it to fix it.
Before JD is switched on call expert on call.
S. Bethke locks Kuchrach because he mistrusts "dubious" people encountered in hall.

Bye, bye.

08 00 Chris Bowdery on shift

I arrived to find an inner detector alarm sounding (plus HV box alarm) but everything was switched off. Reset alarms. N50 showed STOP light on. Experts
There was a slight smell of burning but this may be dust in some unit → will investigate
→ Air conditioning too hot

RUN | DATE | START | STOP | RUN I⁺ | START I⁻ | DEAD TIME (%) | T₁ G (SEC) | RECORDS IN | RECORDS OUT | ALL ×10⁶ | T₀ RCJ ×10² | T₁ ACC SUM | T₂ ACC SUM | T₁ BIT 2 E₁>6GEV | T₂ BIT 17 2T.E₁.2T₂ | ON/OFF N50 MIP TOF | ⟨L⟩ | ∫Ldt BHABHA Run | ∫Ldt Exp. | IBM TAPE | BP ⟨V⟩ | TOF ⟨V⟩ | T₁ RES. FRACT. | Σ ENERGY | M.H | E BEAM | REMARKS.

24.1.84

8³⁰ Call people from air conditioning service.
They will lower the temperature in the electronics part

8.50 PETRA calibration until noon. Maybe running for tests at 17.00
We will inspect everything once an hour – magnet will be switched off

9:30 P. Steffen arrived.
welcome now and check every hour. Nothing is expected from PETRA in the near future.

16.00 Hell on shift.

New JDAS manual installed.

20.00 U. Meier on shift
Phoning PKR: nothing will happen this night (at PETRA)
no shift crew and no emergency phone numbers are needed

23⁴⁵ R. Meinke on shift:
PKR shift crew has changed their mind, they want and hope to get lumi during the night. After their former statement earlier this afternoon evening – that nobody has to come in – I complained.

24⁰⁰ magnet switched on

25.1.84

3²⁵ 22.000 GeV with 209 • 66 mA ! LUMI RUN
TOF rate reading on the control room table ~12V, switched HV off.

3.50 currents in Petra ~6.5 • 5.3 mA TOF rate still ≈10V, beam pipe ~3V

4.05 very good conditions TOF rate < 2V we start a run currents ~ 5.5 • 5.5 mA
? everything wrong or missing ?!
le Croy HV crate off, JL8 changed, problem with TOF HIPROC
KAWAMOTO on shift
4:53 Beams lost missing LAM ? contact problem? cleaned the contact
read-out of ID works now, but still
CAMAC problem: error 33, missing LAM branch 3 crate 1: T2/3 trigs, ID ok
" 47 MIP-16 short pulse missing or T2 crate offline
4:3 Crate controler changed, LAM problem no more. Bad contact found in Scr. Crate, Upper Half
PIXEL Test Of Cryostat Enclosure.

RUN	DATE	START	STOP	RUN I⁺	RUN I⁻	START DEAD TIME (%)	T1 & T2 (SEC)	RECORDS IN	RECORDS OUT	All ×10⁶	TØ Rej ×10⁶	T1 Acc SUM	T2 Acc SUM	T1 Bit 2 E1>6GeV	T2 Bit 17 2T.E4.2Tr
15693 ~ 15698	25.1.84	4:07 ~4:57						JUNK							
	26.1.84	20.1													
15699	27.1.84	3:42	4:12	3.44	3.41	?	?	4116	2887	—	—	—	—	405	840
15700	"	4:30		3.21	3.27	8.2	1515	3182	2040	374	32	2046	2185	345	567
15701	27.1.84	6:41							~100						
15702	"	6:47	6:49	3.28	3.52	9.9	48	152	113	12.5	1.2	82	81	17	31
15703	27/1/84	9:58	10:39	4.74	4.79	57.2	2398	7651	6898	624	356	4533	6876	575	1321
15704	"	10:56	11:49	4.32	4.41	12.9	8319.1	8002	5857	830	107	4753	6654	875	1633
15705	"	11:51	11:55	3.96	4.06	8.2	238	569	358	62	51	362	379	63	80
15706	"	15:42	15:47	4.77	5.39	100.0	249	627	627	65	65	332	1062	0	9
13707	"	16:05	16:15	4.48	5.16	38.9	595	1604	1383	155	60	~~428~~	~~1731~~	153	413
15708	"	16:08	16:31	4.17	4.74	18.2	426	1125	850	111	20	541	1085	128	331
15709	"	20:44	21:38	5.46	5.77	52.5	3199	8002	7061	833	437	3108	11638	819	3372
15710	"	21:35	22:19	4.62	5.10	18.3	2361	5870	4573	614	112	2731	6312	547	1394
15711	28/1/84	2:41	3:35	5.50	5.85	54.4	3222	8001	7092	838	456	3072	10796	857	3763
15712	"	3:35	3:40	4.81	5.27	16.9	260	750	584	68	11	328	770	72	186
15713	"	4:48	5:40	3.69	5.22	19.6	3057	8001	6436	796	156	2792	8871	880	2607
15714	"	5:40	6:41	3.28	4.83	10.8	3660	8001	5663	952	103	4343	7381	808	1720
15715	"	6:42	7:43	2.92	4.41	7.6	3632	6683	4288	946	72	3947	5535	699	963
15716	"	11:12	12:09	3.24	2.42	14.3	3177	7418	~~5610~~	827	118	3738	7690	740	2059
15717	"	12:11	13:04	3.23	2.51	6.5	3161	5238	3207	823	54	3156	4143	460	605
15718	"	20:15	21:07	7.22	6.92	47.6	3171	8002	6788	824	392	2965	13605	757	2588
15719	"	21:09	21:59	5.62	5.83	60.3	2764	7799	7258	719	433	2621	8616	777	2831
15720	"	22:00	22:13	4.82	5.15	47.5	623	2364	2145	162	80	624	1629	150	536
15721	29-1-84	23:34	23:57	3.92	4.28	14.2	1175	3094	2324	~~1306~~	435	1592	2799	176	699
15722	29-1-84	00:06	00:58	3.66	4.03	16.3	2951	8002	6220	767	125	3936	8170	876	2236
15723	"	00:58	01:35	3.32	3.69	36.3	2185	6332	5375	362	207	2867	7150	774	2351
15724	"	02:21	03:11	3.13	4.51	45.7	2986	8002	6941	777	355	3494	9546	887	3415
15725	"	03:12	04:05	2.75	4.16	41.8	2389	6879	5408	622	260	2483	7993	829	2692
15726	"	06:56	07:38	3.15	3.65	17.5	1226	2893	2271	319	57	1392	3001	279	791
15727	"	22:15	22:46	4.16	4.73	53.3	1845	4922	4166	480	160	2089	6033	529	1780
15728	"	23:06	23:08	3.7	3.44		81	4	Beate fiddles						
15729	"	23:08	23:10	3.69	3.43		107								
15730	"	23:20	0:01	3.63	3.38	28.0	2415	7992	6263	628	175	2497	5193	532	1308

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp.	IBM/TAPE	BP (V)	TOF (V)	T2 Rej Fract.	Σ Bhabha	M.H	E beam	REMARKS
																	Trouble shooting
				ON	ON	ON	—	1.66	0	IBM	—	—	—	12	0	22.000	Scalers etc were out
				"	"	"	0.56	0.83	0.83	"	2.5	0.2	51	6	1	"	Scalers back in. Beam lost
											0.4						Nord level 1 hangs
				"	"	"	0.89	0.1?	0.83	"	0.4		33	0	0	"	
				"	"	"	0.47?	1.11?	1.94	"		1.0	57	8	0	"	Lumi trigger switched off putting through
				"	"	"	1.17	3.46	4.30	"			53	25	0	"	Lumi & trig thresholds set to 9GeV
				"	"	"	1.07	0.42	4.72	"			51	3	0	"	
				"	"	"	0.00	0.00	~~0~~	"			68	0	0	22.595	
				"	"	"	1.04	0.58	0.58 ~~5.30~~	"			54	4	0	"	
				"	"	"	1.01	0.29	0.87 ~~5.59~~	"			50	2	0	"	
				"	"	"	0.95	3.07	3.84 ~~8.66~~	"	1.3	2.5	60	21	0	"	
				"	"	"	1.41	3.36	7.3 ~~[illegible]~~	"	1.5	5.0	52	23	1	"	beams lost
				"	"	"	0.73	~~2.19~~ 2.35	9.65 5.2	"	1.2	1.3	57	15	1	"	TOF was high 2.0 most of time
				"	"	"	1.46	0.29	9.81	"	1.1	1.1	49	2	0	"	beams lost.
				"	"	"	1.21	3.77	13.52	"	0.9	0.8	55	27	0	"	
				"	"	"	1.08	4.38	17.90	"	0.8	0.5	53	30	1	"	
				"	"	"	0.91	2.78	20.68	"	0.8	0.3	53	19	1	"	Beam loss
				"	"	"	~~0.53~~	1.32	22.00	"	0.8	1.0	55	9	0	"	Run stopped to cure ~~no trigger~~
				"	"	"	0.47	1.32	23.32	"	0.7	0.3	52	9	1	"	Beams lost
				"	"	"	1.97	5.29	29.31	"	1.2	3.3	65	41	1	"	—
				"	"	"	0.99	2.78	32.09	"	1.15	2.5-4	90	17	0	"	↕ Half of 2D Ring 3 (Bunch 7) was OFF.
				"	"	"	1.17	0.44	32.53	"	1.0	2.8	/	3	0	"	
				"	"	"	1.32	1.46	46.99	"	0.7	0.9	49	10	1	"	
				"	"	"	0.99	2.63	49.62	"	0.7	0.9	52	18	0	"	
				"	"	"	0.67	1.75	51.37	"	0.7	1.0	53	12	0	"	Beams lost
				"	"	"	0.61	1.32	52.69	"	0.7	0.7	55	9	0	"	TOF rate sometimes > 2.5
				"	"	"	0.56	0.73	53.42	"	1.8	0.8	53	5	1	"	beams dumped
				"	"	"	0.80	0.73	54.~~[illegible]~~15	"	1.0	4.5	52	10	0	"	beams lost
				"	"	"	0.73	1.61	55.76	"	1.0 0.9	1.5 1.0	55	12	2	"	
				"	"	"	0.51	1.02	56.78	"			51	7	0	"	beams dumped

RUN | DATE | START | STOP | RUN I^+ | START I^- | DEAD TIME (%) | T_1 & (SEC) | RECORDS IN | RECORDS OUT | ALL $\times 10^6$ | $T\phi$ 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. EL. 2Tr

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8^{00} A. Ball, R. Felst
phone with Degela, there is now a break until about 15^{00} during which we are allowed to break the interlock, magnet switched off, breaker on
ask MKH3 (air condition) to lower the temperature in the hall by 2°C.

16^{00} Heinzelmann + Hik
Modifications under way to online event display. Not everything tested but it should not go wrong! (HEM)

Most probably no beam before 23^{00}. Problems with Synchrotron.
23.30 Message: Restart ca 3:00
0^{00} Diedrmann 26.1.84
4^{00} U. Meier
Restart postponed to 6:00
5^{30} Restart after 9:00 → tried to phone PKR, but nobody is there → → go home

8:00 Bartl + Takeda

phone PKR: the rumor says (no firm information available)
Telefunken service group may come in again and work on the transmitters next week late afternoon. Thus we probably need no permanent shift crew in the control room.

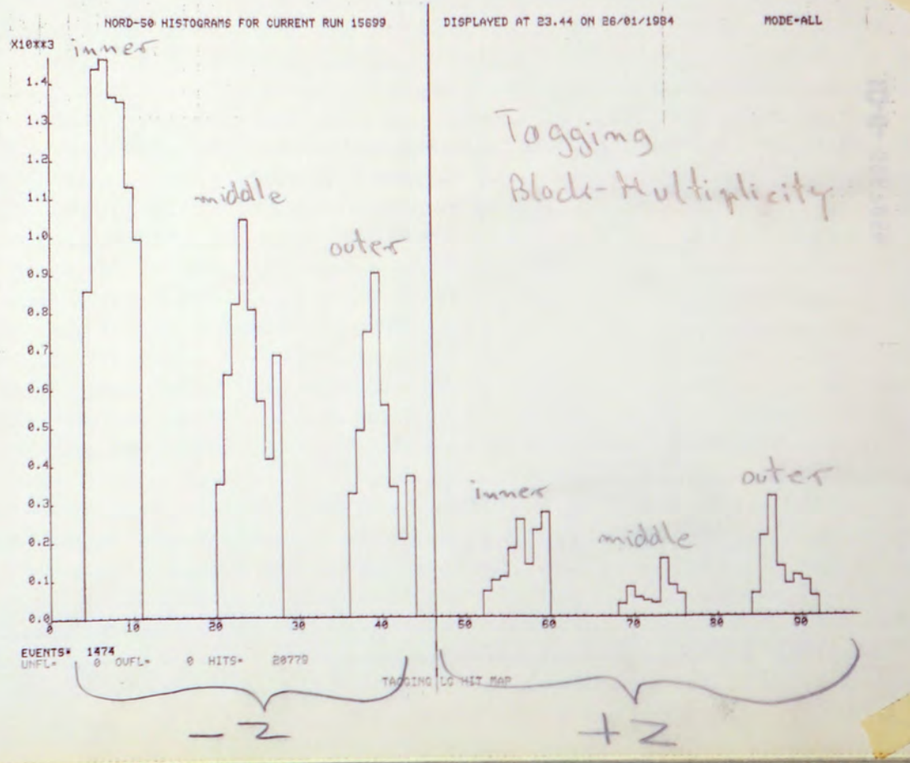
Temperature in electronics part 20°. phone MKH3. Their temperature setting down stairs 14°C ok. When entering the compressor room and switching on the lights, the compressor started working immediately. Could be heard. The compressor needs an extra kick to start.
15:00 Magnet set to 500 Amps
According to PKR a first fill will be tried at 15^{00}. However, it does not look like an early start.
16.00 Nozaki & Krabbel on shift
16.15 phone to PKR. People try to inject again, but nothing happens at moment.
~~We should start at Eb = 12.595 GeV~~
20.00 Beam is ready. No data is taken due to many hardware problems.
Ebeam = 22.000 GeV
- JJAS READ ERROR
- DL8
- Tagging counters
- Trigger FWMUX LT

ON/OFF N50 | MIP | TOF | ⟨L⟩ | $\int L dt$ CHARM Run | $\int L dt$ Exp. | IBM TAPE | BP ⟨V⟩ | TOF ⟨V⟩ | TUBES FRACT. | Σ ENERGY | M.H | EBEAM | REMARKS.

26.1.84

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21.15 Beam lost
23.10 New fill is ready. E_b = 22.00 GeV
Background is very high. BP 9 V. TOF ~ 1 V. No data is taken.
Tagging counters are checked.
TOF - Hitmap gaps: Dangling LEMO ends staring interface at Ron Counters 1, 20, 21.
23.40 Problem with Tagging System was caused by high rate in -z part. Probably the beam was hitting the collimater and producing high energy particles. The present filling looks somewhat better. Nevertheless the -z vs +z Blockmultiplicity looks very asymmetric.



RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ & (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T.EL.2Tr

27.1.84

0⁰⁰ H. Wells and R. Tebt on shift
Beams lost at arrival

Problem with scalers - Nord-50 was flagging scaler events as being illegal length. Herr Krehbiel's checking program finds that the module in slot 16 has missing X
Exchanged scaler module. Power supply in crate goes OVERLOAD when switched on
Changed supply. Scaler still has missing X - then they all do. Problem seems to stay with the slot

3³⁹ After attempt to change crate we give up. Curiously we can plug crate controller, terminator plug, trigger modules plus TOF delay in & it still switches on.
Short test run Ok. So we turn TD on and start a run to the ZBIT (15699). The Scaler modules are out - so are the registers
Fill had been in 2 hours

4³⁰ record of the scaler crate repair attack: 1) exchange scaler → no change but after 5 minute crate goes overload
2) new power supply I - 6V missing overload
3) new power supply II - ~~all negative voltages missing~~ overload
4) ~~take all out~~ old power supply again - all negative voltages missing
5) remove all units and plug in power supply II - OK
also with crate controller in —
plug a few modules in → overload ~~sti~~ remains when we remove ~~all~~ the modules again - exchange meter
alarm remains -6V missing
6) after removing power supply II and turning it back on — no alarm see entry from 3³³

ToF current O.K, beam pipe current very high - but on scope counter both reasonable
decide to read a run to IBM for checkout etc'. Chamber currents are also reasonable

After run 15699, push the scalers back in. Seems Ok so push registers in & start run 15700.

RUN	DATE	START	STOP	ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T₁ RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

27.1.84

Following problems

TOF high voltages - 5 chanels are low

The YSPY finds missing T₁ I/P 116 & O/P 66

T₂ I/P 87, 88, 89 & O/P 177

Suspect the T₂ problem is in the rucksack as this has happened before. Last inspection of the trigger manual provides no clues.

Still a HADRONIC EVENT appears.

4:56 Beams lost

5⁰⁰ The synchrotron radiation hit distribution is broader than the previous ones at 22 GeV. Mean values ~~Averages~~ are about the same for similar currents

our luminosity is about factor 2 smaller than the one of MARK J and TASSO, ∫L = 10 10^{2p} inv

6⁴⁰ After much beam-tuning we start again. Note that the potentiometer on the Beampipe current box was adjusted to bring PhR meter off the upper stops. This affects our meter
Computer hangs on Level 1

Background very sensitive to orbit corrections rather large orbit displacements in N W

8⁰⁰ Barkey & Cartwright on shift

JADE ONLINE EVENT DISPLAY

04:34:47 27/01/1984

EXPT 24 RUN 15700 EV 331

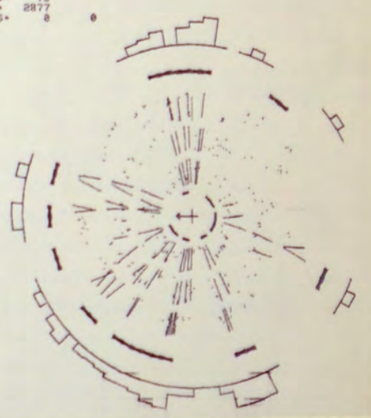
ACT Tlocpt Tlocst T2bits
271B 00400EB 040001B 57B

Field -4843 G Beam 22.000 GeV
Current e+ 3.20 mA e- 3.27 mA

HADRONIC EVENT MULT.=10

Z-VERTEX -4 mm (3)

Length= 4361
IDHITS= 703
ELQTOT= 2877
MUHITS= 78
LGCYL= 2877
LGCAPS= 0 0



RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T∅ REJ ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E, >6GEV	T₂ BIT 17 2T, EL. 2Tr

ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T.REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

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9⁵⁵ "Background Optimization" but TOF low & stable ⇒ start run.
Problem: 90% dead-time! ← from LG triggers: LUMI trigger switched off (Berte)
YSPY error message
TAG −2 445 events TAG +2 14 events !!?

Set BP High Voltage. Linear Mixer of Channel 19 gives no output.
No Spare module around. Phone Nasbendo, he'll look for one. I ~~put~~ 19 – into discriminator to make the hole disappear.

~~BP~~ ~~TOF~~ TOF Voltages were set. There should be no error messages now.

TBG 35 gave no pulse. After shaking cables it was ok.

Missing T2 Channels were due to missing cable in Rucksack.

10:52 High Tagging Trigger rates come from high energy particles probably scattered from the collimator (E ~ 5 ... 10 GeV).
Setting both tagging threshold and lumi threshold to ~~9~~ 9 GeV (prev. 6 GeV) helped but is of course not very nice

11¹⁰ ~~Endcap~~ End-Cap coincidence is too high.
We ducked the end-cap signals and OK.
Threshold monitor seems to be OK.
But we doubt that the latch module is not properly working
We need the help of Mr. Krehbiel.

U.H.
The Problem is traced to a 750 cps potential difference between the Threshold driver and the Latches. Source unclear. Needs more investig.
Takeda K.

11²⁰ ~~Comparing~~ Comparing TASSO's and JADE's online luminosities

L ungated: TASSO: $1.2 \cdot 10^{30}$ JADE: $1.3 \cdot 10^{30}$
specific L: TASSO: $16 \cdot 10^{28}$ JADE: $15 \cdot 10^{28}$ (diff. O.T.)

11:50 Beams lost

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15³⁰ First fill to scan energy.
But TOF meter reads 10 V !! BP meter reading is quite low (2.5)
We switch on jet chamber but get JETCH HIGH CURRENT warning and DEADTIME 100.0 %

15⁴⁴ Jet-chamber trip (not totally unexpected!)

15⁵⁰ All 4 experiments report bad-to-intolerable backgrounds. We complain to PKR & they say they are trying to improve conditions. (It's too late for a new fill before energy ramp time)

16⁰⁰ Takeshita, Becker

16:15 ID slowly down → STOP RUN, Endcap(1) x Endcap(2) Trigg.(9BIT) OFF // : dead Time ~40%
16:16 New Run start: 15708 : dead Time ~25% →
16:21 ID alarm: anode current
16:28 Beam lost (quadrupol): start ~ 18ʰ :

20:00 Attenuators of Pick-up units changed →

due to higher Beam-currents in PETRA the attenuators of the Pick-up units are changed to:
10 dB for e⁺-unit (previously 6 dB)
6 dB for e⁻-unit (previously 0 dB)
HK.

20:50 At the biggining of New fill (I₊ ~ 5.7 mA, I₋ ~ 5.5 A), we have very big background, dead Time ~60% but gradually decreasing. → 30% → oscillating (50 ± 15%)
21:04 YSPY ~~ERROR~~: TR3 M 555536, GP3
21 10 Mark J and Tasso can take data; Machine people are ~~doing~~ optimizing "Luminosity" only ?! not background.
22.12 18.5% deadtime
Talked to PKR: They are optimizing the luminosity. This will take quite some time. The lumi is only ~ $1.3\ 10^{30}$ (4.7/4.2 mA). SL = $13 \cdot 10^{28}$. During these hours we can take data but should not complain too often about background. (this was performed) The lumi optimization they will optimize background.
22.20 Beams lost again by failure of the quadrupole current Q4N (3rd time today) Synchrotron has vacuum leak.

28.1.84
0⁰⁰ Bethke + Yamada
PKR-screen says: "injection", "switch on the wigwags"

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (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 $2T, E_4, 2Tr$

ON/OFF N50	MIP	TOF	⟨L⟩	$\int L dt$ BHABHA Run	$\int L dt$ Exp.	IBM → TAPE	BP ⟨V⟩	TOF ⟨V⟩	T_1 RES. FRAKT.	Σ ENERGIE	M.H	E BEAM	REMARKS.

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2:41 beams ready ! start run 15711. Background looks relatively good : BP 1.2V, Tof 1.3V deadtime ~ 20%. ID-current 3 μA.
Tasso cannot run (too much background), Mark J runs; Cello doesn't know, whether they run (!)
PKR optimizes TASSO. → our conditions are worse now: DT ~ 80%, ID-current 4 μA (dangerous!), AL goes from $1.6 \times 10^{30} \rightarrow 0.8 \times 10^{30}$., Tof 5V

3:10 After optimizing, Tasso still cannot run, we are at our limit. Ask PKR, to reset to the initial conditions (which they already have forgotten).

→ for H. Mills: last. dead time sometimes negative, sometimes '****', often low (few percent), though DT-Meter shows 60-80%! ('Must' be due to scaler H/W!)

3:40 beams lost, Petra magnet fault.
4:48 new beams ready. start run ($I^+ = 3.7$, $I^- = 5.22$). DT = 15%, AL = $1.35 \cdot 10^{30}$, ID-current 2.3 μA. Relatively good conditions, but after a while right yellow disco-light burns (one bunch amplitude too low). Goes off again after ~ 20 min.

6:30 HV-Error TOF ch. 13 (main frame 53); together with YSPY-messages (Tof, T1). Restore Voltage at le Croy-Box (Could someone write onto the HV-supplies, which one is for what??)
There are 4 bins, which are too low, in the TOF TDC I. and also TOF TDC II.
[ch 19, 20, 61, 62] [same channels]

7:35 MARK-J called asking for a new fill.
Their lum = $0.9 \times 10^{30} cm^{-2} sec^{-1}$. our lumi = 0.9×10^{30} TASSO lum ~ 0.5×10^{30}
TASSO says they have to wait 1 hour before starting data taking after a new fill.
7:40 E^+ beam lost. due to "Sender ausfal".

8.00 Kowamoto + Weber
"Injection"
8.20 "Short break". PKR says there is trouble with Synchrotron.
11.10 PKR says synchrotron will not be available for injection before 15.00 hrs., but they manage to accelerate some current that is left circulating. Start run 15716; TOF current was temporarily increasing to 1.5, inst. dead time 40%; PKR readjusts machine → TOF = 0.8, inst. dead time ~ 7%
12.09 Run stopped because "no triggers for 20 sec". Repeated "pause" and "continue" does not work. Stop and start new run: o.k.

28.1.84

13:00 YSPY Trig 1 output missing 51
13:03 ID tripped, beams lost
Due to the trouble with synchrotron (vacuum chamber will be exchanged), no beam is expected in PETRA (at least) before 15 o'clock.
Magnet current → 1000A.
15.15 TV says "Ouverture - Kammer - Defekt DESY". PKR cannot say, when synchrotron will run again; but it must be quite a while yet, since they are still working in the tunnel.
15.30 New Message on TV: "Restart after 18.00"

Jade control-terminal says: YMAGNET CONTROLL PROBLEM ***
COMPOTOR DISABLED FOR MAGNET
Kowamoto noted that magnet current went to 1500A when he typed in 1000A.
Repeat magnet setting to 1000 amps; it seems o.k now.

16:00 T. Kobayashi and H. Riesenberg

17:00 Temperature at the DL8 went up to 19.7°C. Inspection of the air conditioning room: Temperature setting is 16°C. Heating is turned off. I follow V. Berube's observation (page 104) and switch the lights on and off several times. Compressor 3 and the other compressor 2 start working. There was no alarm or "Störung". Temperature slowly falling. 19^{50}: 17.8°C.

18:30 We call PKR: Synchrotron is working again. There is already beam in DORIS. They are just adjusting the PETRA injection lines. PETRA magnets are trained.
18:55 Injection starts
Magnet current → 7500 A on request
19:45 start to accelerate beams of $I^+ = 8.8$ mA, $I^- = 8.0$ mA!
20:09 Reach 22.595 GeV with $I^+ = 7.51$ mA, $I^- = 7.07$ mA !
BP rate 1.5V, TOF 6.5V, Jdamping 3.2 μA
20:15 start Run 15718 Deadtime around 60%
20:40 Mark J cannot run (!), Tasso cannot switch on Inner Detector, Cello and Jade run with high background and high dead time.
PKR (Mr. Piwinski) wants to have the chance to optimize the background under these high current conditions
20:45 Occasionally the TOF rate is as low as 1 Volt and the dead time ~ 15–20% ($I^+ = 5.8$, $I^- = 6.0$)

RUN	DATE	START	STOP	RUN I^+	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, EL. 2Tr

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20:56 YSPY Error Trigger 3 input missing SI 28 Grp 3

TOF counters ; TOF Mean TDC II : Counter 21/63 is low producing a dip in the Trigger 1 input Histogram (channel 20/62)
have nothing to do with each other
unlike this morning (see page 110 at 6:30) the TOF Mean TDC I Histogr. is normal.

22:10 We observe that since about ½ hour the bit 1 is missing in CAMAC branch 7, that serves the first half of the ID Ring 3. Consequence : Hit counter normally zero, only paired wire numbers etc.
With the help of Jan Olsson the error is traced back to the Branch coupler

24:00

29-1-84 Bartel / Greenshaw

00:06 TOF HV channel 13 0.286 kV, should be 2.670 kV
Bartel reset channel manually, now O.K.

01:35 Inner detector tripped due to loss of beams

02:40 Run 15724 the "inst. dead time" on TV sometimes negative!

03:15 PKR were phoned, background high.

06:50 New fill. TOF rate > 5 V. PKR phoned, background slightly improved.

07:15 Beams unstable ID - trip at the occasion of a fractional beam loss

07 27 Beam fluctuations ID tripped PKR say some instability, but exactly what they don't know. Between bad background or/her conditions good. TOF 0.3 V BP 0.6 V

07:32 "

01:35 beams lost

RUN	DATE	START	STOP	RUN I^+	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, EL. 2Tr

ON/OFF N 50	MIP	TOF	⟨L⟩	$\int L dt$ BHABHA Run	$\int L dt$ EXP.	IBM → TAPE	BP ⟨V⟩	TOF ⟨V⟩	TRES. FRAKT.	Σ ENARGY	M.H	E BEAM	REMARKS.

29.1.84

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8²⁰ Matsumura, Spitzer

Lumi. at 22.595 : JADE 54
CELLO 31
MARK J 52
TASSO 46
183

16⁰⁰ Heintzelmann + Knies
Problems with HF no beams.
~18³⁰ HF ok. Injection started
22:15 Start run
23:00 Menke, Spitzer on shift 30.1.84
Look after some TOF problems: the holes in Trigger 1 input channel 20,21 were gone after I had looked at all pulses.
Mean ADC 4 and 9 were not connected.
Mean TDC I channel 4 was ok after looking at it.
Mean TDC II channel 51 has no pulse into discriminator → new cable
no output → beams dumped Next shift will continue.

2²⁵ Luminosity run JOAS Read out error 33 < ~~~ 5 LAM branch 3 crate 2
" " " 2 " 6

The dead time indication on the colour TV jumps between -20 and more than 100
We tried to optimize the background conditions with PKR. There was no apparent correlation between (TOF rate - beam pipe current) and dead time indicator

2⁵⁶ beams lost !

There is a duplicate of our deadtime meter in PKR

Interesting observation:

When I tried to optimize the background conditions with the PKR, there were 3 occasions where the inst. dead time displayed on colour TV showed values around 25. But since the display is not steadily updated the operator = the PKR could never locate this position on his knobs and keep the machine there (average dead time above 80%)

6²⁰ new fill TOF > 10 V / after opt. TOF = 4 V, Beam pipe = 1.2 V dead time ~ 40%

6⁴⁷ we don't understand synced histograms, see page above. In event display 350 to 500 between ID → run stopped!

RUN	DATE	START	STOP	RUN START I^+	RUN START 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 BIT 2 $E_1 > 66$ GeV	T_2 BIT 17 $2T, E_2 > 2T_1$
15731	30.1	2:28	2:59	3.31	4.15	87.4	1761	5709	5597	458	400	747	2350	187	954
15732	"	6:40	6:49	3.66	4.01	80.7	488	1478	1428	127	102	220	837	54	310
15733	31.1	5:43	-	1.36	3.87										
15734	31.1	11.46	12.08	4.98	4.90	34.3	1253	3021	2506	326	112	1195	2912	277	754
15736	"	15.04	16.07	3.97	5.02	9.0	3793	8002	5772	987	89	4148	6712	686	1145
15737	"	16.08	16.49	3.48	4.46	7.5	2423	4660	3180	631	47	2615	3653	427	513
15738	1.2.84	2.36	3.36	4.27	4.23	11.3	3522	8002	6211	917	103	4103	7120	746	1772
15739	"	3.37	4:52	3.87	3.79	7.3	4456	8001	5410	1160	85	4477	6675	672	1034
15740	"	4.52	6:16	3.46	3.38	6.2	4993	8002	4823	1299	81	4927	6090	680	748
15741	"	6.16	6.47	3.01	3.00	6.0	1788	2938	1738	465	28	1836 1796	2074	238	264
15742	"	9.41	10.54	4.03	3.97	7.7	4387	8002	5566	1141	87	4288	6328 6287	627	1093
15743	"	10.55	12.00	3.26	3.22	17.1	3902	8001	5936	1015	173	4547 4547	7772 7576	816	1697
15744	"	12.00	12.53	3.26	3.21	14.7	3257	6363	5493	847	135	3409			
15745	"	13.00	13.36	3.02	2.98	8.0	2136	3405	2030	556	33	2113	2529	294	302
15746	"	14.46	15.56	3.78	4.13	8.2	4142	7638	5130	1078	88	4383	6083	697	861
15747	"	16:42	16:51	5.35	5.51	20.6	430	1127	934	112	23	465	1234	84	277
15748	"	20:21	21:22	5.40	5.40	9.9	3638	8002	6017	947	93	4041	7259	640	1043
15749	"	21:22	22:29	4.51	4.52	8.5	3942	8001	5699	1025	87	4325	6629	692	910
15750	"	22:29	23:41	3.90	3.91	7.2	4271	8002	5251	1111	80	4739	6044	707	731
15751	"	23:41	23:48	3.39	3.42	6.9	356	685	467	93	6	383	498	61	73
15752	2.2.84	0:31	0:53	4.66	4.95	10.0	1257	2766	2122	327	33	1313	2063	219	325
15753	"	3:34		4.80	3.88										
15754	"	5,01	6:09	4.54	4.32	8.1	4037	8001	5776	1050	86	4272	6681	650	907
15755	"	6:09	6:42	3.99	3.79	6.7	1991	2689	1778	395	26	1575	1974	228	232
15756	"	11:46	13:01			6.9	4481	8002	5414	1165	80	4458	6212	644	838
15757	"	13.02	3.78	3.78	3.77	6.7	1481	2576	1673	385	25	1480	2051	267	246
15758	"	15,02	15:39	4.31	4.29	7.4	5108	3775	2568	534	39	2072	3077	274	439
15759	"	16:04	16:40	3.86	3.83	6.8	2090	3696	2358	544	37	2213	2803	346	364
15760	"	16:45	16:52	3.63	3.59	6.6	706	709	419	106	7	454	515	55	64
15761	"	19:36	19:39	4.56	4.57	7.2	136	285	213	35	2.5	130	215	20	30
15762	"	19:39	19:42	4.53	4.53	7.2	133	273	190	34	2.5	151	187	18	33
15763	"	19:43	19:45	4.50	4.49	6.8	71	180	138	18	1.2	92	97	16	23
15764	"	19:47	19:50	4.48	4.46	7.6	153	378	276	40	3.0	198	225	36	34
15765	"	19:53	19:54	finish											

RUN	DATE	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ 10^{30}	$\int L dt$ BHABHA RUN	$\int L dt$ EXP.	IBM/TAPE	BP (V)	TOF (V)	T_1 REJ. FRACT.	Σ BHABHA	M.H.	E_{BEAM}	REMARKS
"	"	"			0.12	0.44	57.22	IBM	0.9	2.5	58%	3	0	22.595	beams lost
"	"	"			0.25	0	57.22	"	1.2	4.0	60%	0	"	"	energy saving time
ON	ON	ON						IBM	1.0	2.5				22.001	← JUNK
"	"	"			1.07	1.32	58.54	IBM	1.0	2.4	49%	9	0	22.595	Beams lost
"	"	"			1.98	2.60	66.14	"	.85	.9	47	52	3	"	
"	"	"			2.40	6.28	72.42	"	0.65	0.2	47	43	3	"	Beams dumped.
"	"	"			1.24	5.99	78.41	"	0.75	0.47	48	41	2	22.595	
"	"	"			1.00	4.47	82.83	"	0.72	0.30	50	35	2	"	
"	"	"			0.72	3.51	86.31	"	0.65	0.25	52	24	0	"	
"	"	"			0.61	1.02	87.33	"	0.18	0.15	50	7	0	"	energy saving time
"	"	"			1.04	4.68	92.05	"	0.60	0.30	49	32	2	22.595	
"	"	"			0.67	3.36	95.41	"	0.7	0.25	51	23	0	22.595	
"	"	"			0.39	1.61	97.05							22.595	Nord level (N) hung up
"	"	"			0.52	0.73	197.78	"	0.65	0.25	50	5	0	22.595	
"	"	"			1.48	6.44	6.44	"	0.75	0.40	49	44	2	22.610	Beams lost !
"	"	"			1.78	0.73	7.17	"	0.90	0.80	50	5	0	—"—	energy saving time
"	"	"			2.68	9.37	16.54	"	0.95	0.65	48	64	1	—"—	
"	"	"			2.01	9.80	26.34	"	0.80	0.40	47	67	2	—"—	
"	"	"			1.56	6.29	32.63	"	0.70	0.25	48	430	0	—"—	
"	"	"			1.23	1.32	33.95 33.78	"	0.65	0.18	44	9	0	—"—	Beams dumped.
"	"	"			2.56	3.37	37.32	"	0.95	1.1	48	23	0	"	beam lost
									0.8	0.3				"	Run level (N) hung up, beams lost
"	"	"			1.87	7.61	44.93	"	0.85	0.5	46	52	0	"	
"	"	"			1.43	2.05	46.98	"	0.75	0.4	47	14	1	"	beam lost
"	"	"			1.58	7.09	54.07	"	0.66	0.35	45	49	2	"	
"	"	"			1.36	2.20	56.27	"	0.62	0.24	45	12	0	"	beam lost.
"	"	"			1.90	3.22	57.49	"	0.72	0.45	47	22	0	"	
"	"	"			1.31	3.66	61.15	"			50	25	0	"	
"	"	"			0.87	0.88	62.03	"			55	6	0	"	beams dumped for energy saving
"	"	"			1.91	0.59	0.59	"	0.75	0.50	37	4	0	22.625	
"	"	"			2.10	0.44	1.03	"	0.72	0.45	44	3	1	"	
"	"	"			1.83	0.15		TAPE	"	"	27	1	0	"	forget it
"	"	"			2.51	0.15	1.18	IBM	0.70	0.40	28	1	1	"	Testruns wegen Colorfilterproblem

RUN | DATE | START | STOP | RUN I^+ | START I^- | DEAD TIME (%) | T1 B (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, >6GeV | T_2 BIT 17 2T, E4, 2Tr

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6.50 Energy saving time / beam changed.

8:16 Mr. P. Söding phoned us asking our $\int Ldt$ at $E_{beam} = 22.595$ GeV and our running conditions.

9.00 : PKR : Problems (Sender Ost)

10:00 Navooka phoned to say that there will be no beams until 3 p.m. due to exchange of ~~the~~ a cavity window.

"Computer problems"

1) The strange SYNRAD histograms mentioned at the bottom of page 113. These histograms are only filled for events with LUMI triggers. No Lumi triggers means nothing in histograms. Run 15732 summary shows 3 Lumi triggers & histograms are filled 3 times. Previous run with 3 times events has 15 times Lumi triggers. ∴ Histograms are filled Ok but is something wrong with trigger?

2) Negative dead times! I believe this is due to scaler hardware

17EA

16.00 Dieckmann & Nye on shift

0.00 31/1/84 McCann and Takeda on shift

0.15 Injection started. Run up magnet to 7500 A.

2.30 Suddenly we got a big alam. It came from an alarm panel just beside the entrance door of the control room. But nothing is written on it. We thought it might be a fire, but no fire could not be found in the JADE area. We noticed that the temperature in the hardware room was 21°C ~~and~~ (too high). We called Mr. Schult at home according to the instruction on the desk but he claimed that we should call to "Kontroll techniker". In the meantime, the alarm stopped and the temperature was 19°C. Kontroll techniker is quite busy with five alarm in PETKA ring and could not send a person for us for a while. We decided to keep the door open. (What a cold shift tonight!)

RUN | DATE | START | STOP | ON/OFF N50 | MIP | TOF | ⟨L⟩ | $\int Ldt$ BHABHA Run | $\int Ldt$ Exp. | IBM TAPE | BP (V) | TOF (V) | TRES. FRAT. | Σ ENERGY | M.M | E_{BEAM} | REMARKS.

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2.40 Beam is ready. $E_b = 22.000$ GeV (cavity window replaced)
There was a problem at Ost area and the vaccum is very bad there
PKR says they want to keep this energy for a few hours.
TOF ~ 10 V
BP ~ 5.5 V] we can't ~~sto~~ switch on ID

3.00 Kontrolltechni~~ker~~ker came and solved the temperature problem.

One DL-8 crate gives an alarm sound (the lowest one on the rack 10)
According to Bethke's suggestion, fan unit was exchanged ~~Sound~~ ⟷ no help
Then power supply was exchanged. → no help
DL-8 modules were pulled out and pulled in. → no help
(3 DL-8 modules could not be pulled out because the screw was too tight)
After all, Bethke will come.

6.00 crate-error was probably due to bad connections between crate / power supply / Fan unit.
Alarm was depending on # of DL8's which were in (no problem with ≤ 3 DL8). Change of cards (P3, Fan) doesn't help. ID Test-runs shows that nevertheless DL8's are working well. After curing a missing fan-error (in another crate, 2.7) all ID-checkers work well, also data-taking. Meanwhile, alarm sound stopped by itself. Maybe, the whole problem started with the temperature-problem at 3.00. I will leave it as it is.

6.13 PKR say vacuum is improving and we should be able to operate the RF at nominal power after energy-saving time this morning i.e. can take up the scan again.

5.44 Beams ready. start run.
But Dead time is ≈100 %. mainly due to T2 bit 6ΦB.
What is that? When I see the events on the graphics, they don't satisfy T2 condition. Something is wrong with trigger business!. (since run 15931 ??)
~~There~~ There should be a checking routine which ~~checks~~ checks ~~the events~~ the trigger bits. ~~cts~~

6.00 Call Krehbiel. He will check the trigger during the energy saving time.

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T₁ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T₁ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T, E₄, 2T₀

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7⁰⁰ Energy saving time. Run down the magnet to 500 A.

Clarke and Schmicll on shift.

Minor modifications made to online event display.

11.46. Start run 15734. High dead time ~ 60%

Erratic instantaneous deadtime display not understood - scaler H/W seems Ok.

15⁰⁰ Start of luminosity run
Run 15735 cancelled. LAM missing

15⁰⁴ Start Run 15736

15⁸¹ Cross-section histograms for end 1983 copied to file XS-83B. The file now just contains 1984 data (after consultations with B.N) (HER

16⁰⁰ Ambrus & Takeshita

16:30 Due to excessively high currents (> μA per chamber), several endwall muon chambers have had to be disconnected. They are all in the outer layer (layer 5):-

521 → 525 (−x, −z) 617 − 621 (−x, +z)
528 → 532 (+x, −z) 624 − 631 (+x, +z)

now also 501, 504, 597, 600 — layer 4 massive beam

The currents are due to hard background (penetrates >4mm lead).

YSPY : disable streets (groups) 24(5), 25(5), 32(5), 33(5) — 1/2/84 also 34(2), 35(2)
" run digitisers 129, 139, 153, 164, 164.

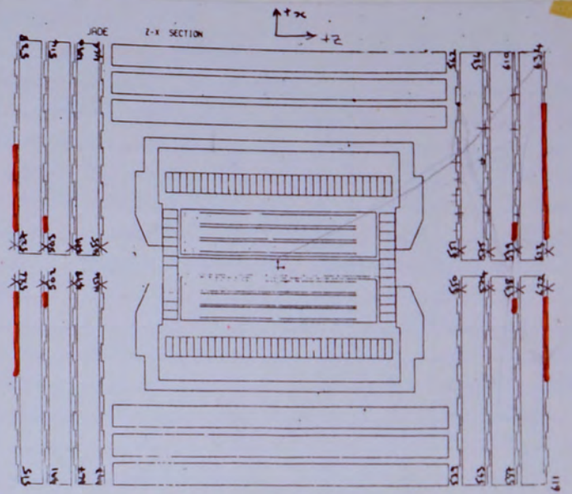
AB/JC

see X, Z view opposite →

19:00 "DO NOT CHANGE ENERGY TONIGHT", said B. Naroska.
because the PLR are optimizing Luminosity and they don't want to change energy.

RUN	ON/OFF N 50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP (V)	TOF (V)	T. REJ. FRAC.	Σ ENERGY	M.H	E BEAM	REMARKS.

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chambers marked in red are OFF, from run 15737

19:00 DLB-problems: DLB #132 and #139 exchanged
5 PLR lost beams several times, this is come from bad orbit especially a magnet.
23:00 Now they are correction orbit, it will take more than one hour.

1.2.1984 0⁰⁰ L Becker & A Wagner.

0²⁰ CELLO calls with information from PKR: No luminosity for several more hours. They do orbit corrections. Magnets should be at their nominal setting.

2³⁶ beams ready

3³⁰ 1) we get regular YSPY errors from trigger level 3:
missing: 35(4), 36(4) Street (group)
present when off: 24(5), 25(5), 32(5), 33(5)
This is most likely due to Austria Ball's action (pg 118). He should check, if he disabled the correct streets (groups). T3-YSPY constants now modified according to error message. AW

The streets (groups) listed on P118 are correct. However, YSPY appears to number the groups in a street in the opposite order to the T3 convention!! ie. # 24(5) is labelled 24(1) by YSPY!

2) instantaneous dead time value occasionally crazy.
observed also MP-16 rejection 100% for several minutes.

3) CAMAC time 5 minutes ahead of PETRA and MEB time

4) beam conditions clean now, but Lumi somewhat lower than yesterday.

RUN | DATE | START | STOP | RUN I^+ | START I^- | DEAD TIME (%) | T₁ Θ (sec) | RECORDS IN | RECORDS OUT | ALL ×10⁶ | T₀ REJ ×10⁶ | T₁ Acc SUM | T₂ Acc SUM | T₁ BIT 2 E₁ > 6 GeV | T₂ BIT 17 2T. E4. 2Tr

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1.2.84

Status of synchrotron radiation background in chamber:

1) Before installation of the new masks, we had
at E_b = 22.595 and $\langle i_b \rangle$ = 4.2 mA → 3.6 μA / cell in Ring 1

2) for the same energy and current, but with the new masks we observe
→ 2.3 μA / cell

⇒ background reduced to 65% of its old value.
correspondingly the number of random hits are reduced by 65%

AW

4⁰⁰ R. Mainke takes over from L. Becker.

4⁴⁵ According to PKR a new filling needs ~ 1h. So we decide to keep the present fill until energy-saving-time.

5²⁵ HV error MFR 53 reset

6⁴⁵ beams dumped

8⁰⁰ – 16⁰⁰ B. Zorn, Yamada on shift

9³⁵ New beams

∫Ldt at 22.595 GeV JADE 87 nb⁻¹, M-J 72 nb⁻¹, TASSO 49 nb⁻¹, CELLO 47 nb⁻¹

11⁴⁵ The background increased. PKR tries to improve the sp. lum., which looks very low. 5×10²⁸.

14³⁰ New fill ready & a new energy. The real cause is unknown! Temporary Trip of "Vordruck Brunnenweg"
We found that the magnet was "off" by alarm during the last injection period.
H. Mills could manage to switch on again.

16:00 McCann / Zünge

16:52 magnet down to 500 A

19:10 run up magnet to 7500 A

20:20 Good beams – 2×5.40 mA, switch on immed.

23:20 Call round other expts. agree to dump beams at 23:45 for new filling.

23:45 New record $\int_{day} L\,dt$ for 1984 : 59.31 nb⁻¹

	23:20	9.00
CELLO	30 nb⁻¹	42
TASSO	20	32
MARK-J	41 nb⁻¹	62
JADE	32	47
	123	183

ON/OFF N50 | MIP | TOF | ⟨L⟩ | ∫Ldt Blasma Run | ∫Ldt Exp. | IBM TAPE | BP (V) | TOF (V) | T. Res. Flat. | Σ Energy | M.H | E Beam | REMARKS.

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7⁴⁰⁰ Mainke - Allemann on shift 2/2/1984

0:30 new fill with 4.9 + 4.6 mA, dead time ~10%, specific lumi: ≈2.1 10²⁹

0:35 call from CELLO: they want to change the energy : ignored! – thought to be misunderstanding

0:50 beams lost : → water cooling for Petra magnets does not work

1:55 linear detector alarm! HV is off since more than 1 hour

3:30 new fill ready

4.15 Nord crashed : – restarted OK, no run summary.
Level 14

6:18 ID alarm, HV down, run paused

6:28 " " , " , " "

6:37 " " " " " / beam lost

8⁰⁰ H. Mills & C. Zorn on shift

9.15 Water leak in Petra. People looking for origin.

11.45 Beams ready. Run 15756 started. The Nord-50 program is a new test version with "improved" Z-vertex package.

14:10 Magnet water leak in Petra – Investigation underway.

15:40 Luminosity Tally

JADE	57
MARK-J	76
TASSO	43
CELLO	56
	222

New Nord-50 program is now the default. Terminal 37 is printing Scaler debug information every 30 seconds.

16⁰⁰ A. Dieckmann & P. Wormin on shift
see my note from 26.11.83 wie das Leben so spielt: 1.) kommt es anders, und 2.) als man denkt
I am happy to be back with the Jade team on top of the physics world hunting for weak and other super effects
(there was no champagne on my last shift in 83, no consequently there is also none today)

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (SEC)	RECORDS IN	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, E4, 2Tr

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2.2.84

16:35 Herr Cords asks for the remaining part of the fill to test a program modification intended to trace the bug with the scale rates.

16:50 energy saving time – we run magnet down to 500 A

19:30 new fill ready → new energy 22.625

19:36 start new run, but color TV is not updated,
try to rebuild YCLRTV, but without effect,
phone Herren Cords in his office, he comes and removes Herrn Krebbiel from terminal??
now color TV works immediately
but scaler problem still under study: Herr Krebbiel replaces one scaler unit
PIOSLOT in Cr. 2 Br 2. Sl. 9 O.K.! Krebbiel

21:20 DL8 #42 failed, looks normal but gives no signals
contacts treated with rubber twice → no effect
DL8 #42 exchanged → OK now

23:31 beams lost

3.2.84 0:00 McCann + Kawamoto

6:50 Energy saving time : Magnet → 500 Amp.

8:00 Ch. Bowdery and H. Rieseberg

9:00 PKR report a "water problem". Estimated repair time ≈ 1 hour.
Probably a water leak like yesterday.

TASSO	33 nb^{-1}
JADE	40.5 nb^{-1}
MARK J	46.5 nb^{-1}
CELLO	38.5 nb^{-1}
	158.5 nb^{-1}

Increased voltage on counters 4+ by 100 V for test. Will give 1 error more?

10:50 Injection starts

RUN	ON/OFF N50	MIP	TOF	⟨L⟩	$\int L dt$ BHABHA Run	$\int L dt$ Exp.	IBM TAPE	BP (V)	TOF (V)	TRES. FRAKT.	Σ ENERGY	M.M	E_{BEAM}	REMARKS.

3.2.84

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11:22 New Filling read BP = 0.9 V, TOF = 1.4 V, I^+, I^- = 5 mA

11:25 Beams lost. Power supply failure

→ cells 9.4, 10.3, 11.4, 12.3

DL8 bit error discovered from DL8 # 131, 132, 139, 140 in the runs 15773 : 15777 (2:07 – 6:48 this morning)
This error is only visible in the bit check histogram. I think, however, that it is not one of the usual histogramming errors but a real DL8 fault. Contacts cleaned, and wait for next runs. Since pulser is broken, no pulser runs is possible

12:09 Beams lost in the moment when SWITCH ON DETECTOR was announced
Then: SHORT BREAK

15:00 Investigation of Scaler-Error: The microscaler in BR2.CR2 Slot 15 had a problem. In the control 2 channels (A=1, 2) the bits 4-7 (camac convention) were not read out, but always 0, but internally counting. After 128 input pulses the readout was properly 128. With a new Scaler the problem disappeared, but the defect could not be reproduced in another crate with the allegedly defective scaler. It worked o.k. in CR1 Slot ~~22~~ 23. Most likely a problem with the Dataway contacts. A very unsatisfactory situation! If the programmers cooperate, we could shift the scalers and call slot 15 a bad (s)lot for all the time! Krebbiel

Call PKR: The power supply of a magnet has a failure. – This was also the reason for the two beam losses at 11:25 and 12:09. Time of repair is unknown. Our magnet is at 2500 A since about 14:00.

15:20 Magnet → 1000 A.

16:00 Cartwright Kawamiya on shift.

Online event display altered: on Z-views a dotted line is drawn at ±300 mm. (THEM)

20:00 Beams are ready. Background looks O.K. BP = 0.8 TOF = 0.9
background optimization: dead time 10 – 40%

20:15 ID hit map has a hole. wire 1056 – 1103 probably DL8 problem.
cleaned the contact → looks O.K.
(wire 1156 – 1163:

21:10 JDAS error missing LAM branch 3 crate 2 μ-chamber.

21:15 Lumi; CELLO ~45, JADE ~54, Mark J ~68, TASSO ~33 [nb^{-1}] total: just 200 nb^{-1}

21:25 just start run 15780
'TRANSF!!' was written by NORD printer several times.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ ∅ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T∅ REJ. ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 6 GEV	T₂ BIT 17 2T.E4.2Tr

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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	T∅ rej. ·10⁶	T₁ acc sum	T₂ acc sum	T₁ Bit 2 E₁ > 6 GeV	T₂ Bit 17 2T.E4.2Tr
15766	2.2.84	19:57	20:14	4.38	4.34	7.1	990	1799	1249	258	18.4	991	1450	133	190
15767	"	20:16	21:32	4.22	4.17	7.0	4519	8002	5234	1175	81.9	4736	6295	697	799
15768	"	21:39	21:41	3.65	3.60	7.0	108	220	141	26	1.8	129	138	23	20
15769	"	21:46	21:47	3.61	3.56	7.6	71	147	93	17	1.3	90	95	14	13
15770	"	21:58	23:17	3.53	3.48	6.4	4682	8001	4928	1217	77.6	5026	5807	741	632
15771	"	23:17	23:31	3.11	3.05	6.4	840	1495	902	218	13.9	950	1024	113	129
15772	3.2.84	01:10	01:19	4.04	4.10	7.7	536	1028	700	134	10.3	579	778	77	92
15773	"	02:07	03:09	4.88	4.90	10.0	3703	8002	5979	957	95	3963	7241	651	1315
15774	"	03:09	04:17	4.33	4.28	8.0	4067	8002	5529	1057	85	4435	6713	814	1031
15775	"	04:18	04:51	3.84	3.77	8.8	1925	3590	2381	495	43	2106	2928	323	500
15776	"	05:23	06:25	5.13	5.10	9.4	3702	8002	5307	957	90	4215	6825	756	1156
15777	"	06:25	06:48	4.45	4.23	8.2	1318	2716	1893	336	28	1521	2116	264	318
15778	"	20⁰⁴	20¹⁸	6.34	6.07	19.9	810	2337	1905	211	42	906	1746	175	298
15779	"	20²⁸	21²⁵	5.92	5.64	11.6	3435	8002	6166	893	103	3990	7262	760	2919
15780	−1578	1	NORD		problem										
15782		21⁴⁷	21⁴⁸												
15783	"	21⁵⁷	22²⁶	4.67	4.41	8.6	1683	3569	2514	438	38	1993	2918	330	433
15784	4-2-84	0⁴⁶	1⁴⁵	5.72	5.85	11.0	3489	8002	6082	907	100	4087	7182	~~788~~ 414	1106
15785	"	1⁴⁵	2⁴⁹	4.79	4.91	8.9	3786	8002	5713	986	88	4378	6661	803	989
15786	"	2⁴⁹	3⁵⁶	4.07	4.18	8.0	3956	8002	5496	1029	82	4590	6169	796	827
15787	"	3⁵⁶	4⁵⁹	3.50	3.61	7.3	3357	6129	3982	874	64	3672	4554	594	585
15788	"	6²⁶	7²⁷	5.39	5.55	9.8	3574	8001	5957	930	91	4203	6830	799	1017
15789	"	7²⁷	7⁵⁶	4.51	4.68	8.3	1657	3509	2452	431	35	2025	2698	391	396
15790	"	7⁵⁶	8¹⁵⁷	4.18	4.34	7.6	3552	7082	4724	924	70	4330	5173	777	~~681~~ 2007
15791	"	9⁰¹	9:56	3.67	3.56	6.7	3217	5772	3705	886	56	3624	4173	648	564
15792	"	16⁰⁸	17²³	4.60	3.91	6.6	4504	8001	5502	1171	77	4750	5762	655	710
15793	"	17²⁴	17³⁴	3.50	3.33	6.4	612	1231	847	159	10	657	755	94	78
15794	"	17⁴¹	18⁰⁷	3.38	3.22	6.2	1518	2590	1599	395	24	1728	1702	259	188
15795	"	19⁰⁷	20²⁰	4.30	4.33	7.1	4318	8002	5350	1123	79	4911	5931	737	789
15796	"	20³⁰	21⁴⁴	3.68	3.71	11.1	4226	8002	4967	1255	139	5221	5517	823	625
15797	"	21⁴¹	22⁵⁷	3.12	3.16	5.8	4615	7592	4461	1201	70	5165	4970	838	515
15798	5-2-84	01²⁷	02³⁵	3.10	3.41	5.6	4187	6437	3922	1089	61	4143	4661	568	473
15799	"	02⁴⁰	03⁹⁹	2.70	3.00	5.5	4020	6308	3645	1046	58	4223	4117	628	405
15800	"	05¹⁵	06²⁸	3.62	3.53	6.3	4287	7586	4969	1115	70	4537	5282	648	578

ON/OFF NSO	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫L dt Bhabha Run	∫L dt Exp.	IBM/Tape	Rates BP (V)	Rates TOF (V)	T2 rej fraction	Σ Bhabha	Σ M.H.	E Beam	Remarks
on	on	on	2.16	2.34	3.52	IBM	0.68	0.40	47	16	0	22.625	
"	"	"	1.66	6.45	9.97	"	0.66	0.35	50	44	0	"	
"	"	"	1.39	0	9.97	"	0.60	0.25	46	0	0	"	
"	"	"	1.27	0.15	10.12	"	0.6	0.25	56	1	0	"	
"	"	"	1.13	4.40	14.52	"	0.6	0.2	51	30	0	"	
"	"	"	0.96	1.17	15.69	"	0.5	0.17	50	8	0	"	Beam lost
"	"	"	1.70	1.32	17.01	"	0.7	0.5	46	9	0	"	Beams lost
"	"	"	1.72	7.03	24.04	"	0.82	0.9	47	48	1	"	
"	"	"	1.19	4.84	28.88	"	0.7	0.5	49	33	1	"	
"	"	"	0.90	1.47	30.35	"	0.65	0.35	52	10	0	"	Beams partially lost.
"	"	"	28.05	8.21	38.56	"	0.86	0.9	47	56	0	"	
"	"	"	1.51	1.90	40.46	"	0.74	0.5	47	13	3	"	Energy saving time.
"	"	"	2.94	2.34	42.80	"	0.8	0.9	21	16	0	"	DL8 problem. run stopped
"	"	"	3.89	12.16	54.96	"	0.85	0.8	47	83	3	"	
													junk
							~0.7	~0.7					very short run [STOPPED TO FIX VUCETS BUGS]
"	"	"	3.50	6.01 ~~5.89~~	60.97	"	—	—	49	41	0	"	Beams lost
"	"	"	4.73	16.43	16.43	"	1.0	1.2	48	112	3	22.640	
"	"	"	3.46	13.79	30.22	"	0.8	0.6	48	94	3	"	
"	"	"	2.53	11.00	41.22	"	0.7	0.4	47	75	4	"	
"	"	"	2.03	7.48	48.70	"	0.7	0.3	48	51	1	"	BEAMS DUMPED
"	"	"	3.92	15.11	63.81	"	0.9	1.1	47	103	1	"	
"	"	"	3.27	6.90	70.71	"	0.75	0.5	48	47	0	"	
"	"	"	2.51	~~8.93~~ 8.93	8.93	"	0.7	0.4	50	65	0	22.655	New energy
"	"	"	1.88	6.04	14.97		0.62	0.27	51	52	3	"	run stopped - no data input
"	"	"	2.48	11.16	26.13	"	0.6	0.3	46	73	1	"	beam dumped
"	"	"	2.06	6.26	27.39	"	0.53	0.15	88	4	0	"	DL8 problem - run stopped.
"	"	"	1.80	2.74	30.13	"	"	"	53	28	1	"	beams lost.
"	"	"	2.49	10.74	40.87	"	0.65	0.4	50	77	7	"	
"	"	"	1.80	8.70	49.57	"	0.55	0.23	52	54	0	"	
"	"	"	1.42	6.54	56.11	"	0.46	0.15	54	50	0	"	BEAMS DUMPED.
"	"	"	1.67	6.32	62.43	"	0.5	0.2	55	44	4	"	
"	"	"	1.25	5.15	5.15	"	0.45	0.15	53	35	1	22.670	NEW ENERGY.
"	"	"	1.97	10.00	15.15	"	0.55	0.25	45	68	1	— " —	RUN STOPPED TO WORK AT DL8 PROT.

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RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T ø REJECTS (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T ø REJ ×10⁶	T, Acc SUM	T₂ Acc SUM	T, BIT 2 E, >6GEV	T₂ BIT 17 2T.E4.2Tr

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'LG/BP system DVM overload' written by NORD printer. but DVM looks O.K. → restart [NORD]

21⁴⁰ LG high voltage reset by means of "RI-HB" rig 1-32 + E.C.

21⁵⁰ " error 50 in 34761 at 110124 user error subarror 1." on printer call Mills in Chinese ~~restaurant~~ restaurant. → restarting ⟲ OK RT program

22⁰⁰ No hole in TOF hit map. (looks OK)

It caused some consternation in the Restaurant & can tell you particularly amongst the staff!!

Lumi

Cello	53
JADE	55
MK-J	80
TASSO	45
	233 nb⁻¹

→ beam energy will be changed at 2B³⁰ without dumping the beams

22³⁰ Unfortunately trying to change energy resulted in losing the beams! Presumably next fill will be at new energy.

22⁶⁰ CELLO phone to ask why no injection — we call PKR — they say they have magnet troubles — SHORT BREAK (~1 hour)

4-2-84 0⁰⁰ KOBAYASHI & S. WAGNER ON SHIFT.

4⁰⁵ TOF MFR=53, CH=13. HV=0.234 → It was raised to 2.670 kV manually. This channel was off from the begining of Run 15787 until ~1400 event.

4⁴⁹

JADE	47 nb⁻¹
TASSO	42
M-J	51.5
CELLO	37
	177.5 nb⁻¹

} ALL FROM ONE FILL, THE BEST ∫Ldt SINCE THE SCAN STARTED.

RELUCTANTLY ASK FOR NEW FILL.

6²⁶ Tagging HV. MFR=63 was OFF → reset.

7³⁵

JADE	64 nb⁻¹
Mark-J	68
TASSO	52
CELLO	a48
	232 nb⁻¹

E_b = 22.640

⇒ We asked PKR for the new energy at 7⁵⁰.

RUN	DATE	START	STOP	ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	T.REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

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7⁴³ Mark-J called that they want to have a short access (~10 min) before the next fill for fixing the vertex chamber.

8.00 G. Zorn & J. Nye on shift. Next time in this case see instruction sheet dangling close to trigger box. Give ~~reason~~ status or reason

9.00 "No triggers for ....." - pausing run doesn't help - stopped run and started new one - everything OK again.

9:30 Error - TOF Main Frame 54 Ch 17 2.8 should 2.8 kV - No action taken; see 3/2/84 note, 9-16 AM

10:00 Mark J - has access - (10 min) also Petra magnet cooling being checked (water problems!).
- Water leak in Petra magnet, plus "trubble" with LinacI

16⁰⁰ Duerdoth & Ambrus on shift. — at once the fill is ready & we start a run.
N.B. TOF HV error again as above — ignored.

17³⁰ Stop due to dud DLS — It was a dead heat between us and YSPY. 17⁴⁰ carry on data taking

18⁰⁷ BEAMS LOST. Pity as apparent luminosity was very good. resume

20⁵⁵ No triggers... (while dumping histos on Gould). — found level 5 on trigger box. — we follow the instructions and it ∧.
also:— DDS Readout error 33 - Missing LAM 4-2 cr 5, Readglas ADCs.

21⁴⁰ Jade 50; Cello 50; Mark J 56 (ready to dump); Tasso 47 (keep this fill) TOTAL 203 nb⁻¹.
PKR say troubles at present in getting high current into PETRA: Finish this energy point with this fill.

22" YSPY Tape & output missing 155 — We can't see anything wrong.

5/3/84 24⁰⁰ HEINZELMAN & HEDGECOCK

01²⁷ RUN 15798 STARTED WHEN BEAMS ARE READY.

02¹⁵ JADE 62.25 ; TASSO 56.8 ; CELLO 62 ; MARK J 67 TOTAL 246.05 nb⁻¹
WE ASK FOR THE BEAM TO BE RAMPED TO NEW ENERGY IN 15 MINS.

06⁰⁵ YSPY ERROR DLS GIVING NO RESPONSE 8,170.

06⁵³ ID TRIBS AS BEAMS ARE LOST.

08⁰⁰ Dietlich & Nozaki on shift
No beam due to transmitter problem at PETRA.

10.00 Beam is back. Nord computer hangs. Level 14. We reinstall NORD. then DLS.

11.40 DLS 166 has no output and according 3 DLS's have also ~~problem~~ some inefficiency.
JETC illegal wire at 1158.
We exchange DLS 166. ok.

15:32 JDAS READ ERROR 33 Missing LAM br 3 cr 2. Mun chambers.
No trigger error occured. pause restart then DLS.

17:00 LG-HV reloaded. (M. Minowa)

16:00 Steffen + Minowa on shift

RUN	DATE	START	STOP	RUN I+	RUN I-	DEAD TIME (%)	T1 (sec)	RECORDS IN	RECORDS OUT	ALL x10^6	TØ REJ x10^6	T1 ACC SUM	T2 ACC SUM	T1 BIT2 E1>6GeV	T2 BIT 17 2T.E4.2Tr	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM TAPE	BP [V]	TOF [V]	T1 RES FRACT.	Σ BHABHA	M.H.	E BEAM	REMARKS.
15801	5-2-84	06[32]	06[54]	3.11	3.04	5.9	1214	2142	1295	316	18.7	1336	1355	206	137	ON	ON	ON	1.53	1.32	16.47	IBM	0.48	0.18	44	9	0	22.670	BEAMS LOST
15802	forgot		no-r	magnet	stabilizz																	IBM	8.55	0.15				"	
15803	5.2.84	20.05	11.37	3.98	4.06	6.6	1856	~~3362~~	2457	683	31.8	2019	2390	284	306	ON	ON	ON	2.49	~~5.30~~	21.77	IBM	0.55	0.15	36	36	0	"	STOP due to DL8 problem.
15804	"	11.14	12.35	3.45	3.49	6.1	~~2799~~	8002	~~2728~~	1249	76	5264	5484	817	593	"	"	"	1.62	~~7.36~~	~~29.19~~	"	0.28	0.11	53	50	2	"	DL8 166 exchanged
15805	"	12.56	13.24	3.87	3.91	5.6	1849	~~8305~~	2556	741	41	3116	2866	459	389	"	"	"	1.10	3.38	32.48	"	0.45	0.09	55	23	2	"	beam dumped
15806	"	14.48	15.46	4.48	4.47	8.4	3399	6241	~~4354~~	884	74	3577	~~4893~~	588	1938	"	"	"	2.04	6.62	39.10	"	0.44	0.08	47	45	1	"	beam lost
15807	5.2.84	17:28	17:54	4.56	4.34	8.7%	1564	3104	2183	407	36	1627	2279	252	816	"	"	"	2.22	4.12	43.22	"	0.65	0.23	51	28	1	"	← Ebeam fluctuate at the end.
15808	"	17:54	19:15	3.79	3.20	6.0	4765	8001	4876	1242	75	4947	5295	717	578	"	"	"	1.24	5.59	48.81	"	0.50	0.12	53	38	4	"	
15809	"	19:15	20:23	3.30	2.76	5.6	4063	6638	3948	1058	59	4240	4206	643	414	"	"	"	1.18	4.12	52.93	"	—	—	53	28	1	"	beams dumped
15810	"	21:05	21:43	4.77	4.76	4.3	2194	4558	3263	1058	45	2295	3287	351	463	"	"	"	2.44	5.00	57.93	"	0.66	0.27	50	34	3	"	
15811	"	21:45	21:54	4.35	4.28	9.2	513	1065	751	134	12	548	701	81	101	"	"	"	1.57	1.47	1,47	"	0.61	0.21	50	10	0	22.685	new energy beams lost
15812	"	22:43	23:24	6.01	6.09	22.0	2470	8002	6730	642	141	2371	4422	494	844	"	"	"	-0*	6.63	8.10	"	0.80	0.55	47	45	1	"	Tag HV wrong *
15813	"	23:25	0:17	5.22	5.29	10.1	3137	8002	5955	816	82	3880	5611	762	981	"	"	"	2.96	10.90	19.00	"	0.65	0.30	51	74	3	"	
15814	6.2.84	0:17	1:16	4.47	4.56	8.5	3482	8001	5710	906	77	4169	5363	721	813	"	"	"	2.65	7.51	26.51	"	0.62	0.25	50	51	1	"	
15815	"	1:16	2:05	3.86	3.95	6.8	2701	5219	3286	703	48	3107	3371	533	410	"	"	"	1.46	5.01	31.52	"	0.55	0.18	53	34	2	"	beams dumped
15816	"	4:42	5:57	4.08	4.04	10.3	4449	8002	5369	1158	119	4435	5376	663	726	"	"	"	1.88	8.69	40.21	"	0.6	0.2	53	59	1	"	
15817	"	5:57	6:49	3.51	3.48	6.3	3054	5472	3374	794	49	3365	3403	515	383	"	"	"	1.76	6.04	46.25	"	0.5	0.12	53	41	1	"	beams dumped
15818	"	12:23	13:12	4.21	4.21	8.4	2916	8001	6258	759	72	2868	3745	398	509	"	"	"	1.40	3.54	49.79	"	0.6	0.17	52	24	0	"	
15819	"	13:13	1355	3.84	3.82	6.7	2526	4639	3054	658	44	2661	~~3088~~	367	394	"	"	"	1.82	5.30	55.09	"	0.5	0.14	54	36	1	"	beam lost
15820	"	14:48	15:49	4.36	4.35	7.7	3642	8002	5767	999	77	4073	5066	581	733	"	"	"	2.33	7.66	62.75	"	0.68	0.21	51	52	0	"	
15821	"	15:50	16:18	3.80	3.79	5.7	1611	3172	2045	520	29	1848	2066	288	270	"	"	"	2.16	4.57	67.32	"	0.51	0.19	~~53~~	31	1	"	
~~15822~~	"	16:22	17:03	3.55	3.54	6.6	2382	4372	2697	619	41	2670	2871	434	364	"	"	"	1.16	2.77	2.77	"	0.5	0.13	53	19	1	22.700	new energy beam dumped
15823	"	19:45	20:42	4.36	4.34	13.1	3117	8002	6171	811	106	2966	3994	436	542	"	"	"	1.30	4.06	6.83	"	0.6	0.2	51	32	—	"	
15824	"	20:43	21:54	3.89	3.85	7.0	4223	8001	5159	1098	77	4620	5394	781	1776	"	"	"	1.64	6.79	13.62	"	0.5	0.15	52	46	—	"	
15825	"	21:55	22:28	3.37	3.35	6.4	1963	3559	2274	511	33	2116	2304	363	289	"	"	"	1.30	2.58	16.18	"	0.45	0.12	54	25	—	"	beams lost
15826	"	23:51	0:46	5.18	5.21	9.6	3273	8002	6005	851	82	3634	5315	623	819	"	"	"	3.06	9.15	25.33	"	0.7	0.33	60	62	2	"	
15827	7.2.84	0:47	1:18	4.50	4.54	9.5	1884	4501	3252	490	46	2216	2973	412	464	"	"	"	2.72	5.61	30.94	"	0.62	0.25	52	38	1	"	beams lost
15828	"	1:54	2:04	6.08	6.06	94.2	531	2746	2722	138	130	39	131	5	31	"	"	"	0.13	0.15	31.09	"	0.85	0.8	54	1	0	"	
15829	"	2:25	3:15	5.10	5.26	10.9	2997	8002	6062	780	85	3570	5487	727	976	"	"	"	2.79	7.23	38.32	"	0.3	0.7	49	49	3	"	
15830	"	3:15	4:12	4.47	4.64	8.8	3401	8001	5609	884	78	4133	5316	793	794	"	"	"	2.30	7.52	45.84	"	0.25	0.6	50	51	4	"	
15831	"	4:13	5:17	3.92	4.08	7.7	3833	8002	5235	998	77	4519	5132	847	662	"	"	"	1.80	5.45	51.29	"	0.19	0.58	53	37	0	"	
15832	"	5:17	6:27	3.43	3.55	6.9	4144	8002	5001	1079	75	4754	4988	792	621	"	"	"	1.43	6.47	57.76	"	0.16	0.52	52	44	3	"	
~~15833~~	"	06:27	06:52	3.02	3.18	6.5	~~1427~~	~~2681~~	~~1591~~	~~392~~	~~24~~	~~1674~~	~~1644~~	~~250~~	~~172~~	—	—	—	1.21	4.03	58.79	"	1	2	53	7	1	"	JUNK : Run # 15834-15835
15836	08/02/84	04:55	06:12	4.26	4.30	7.1	4287	8002	5476	1115	79	4306	5772	649	756	ON	ON	ON	1.67	8.70	67.49	IBM	0.72	0.33	49	59	3	22.700	

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (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.E4.2Tr

5/2/84

17.40 Activated TWWU TRIGGER AGAIN, RATE IS VERY LOW,
17:50 Ebeam gets high on TV display ~22.870, phone pKR to correct it
Stop run 15807
17:54 Ebeam is ok (22.670).
Start run 15808.
PKR says this was due to a transmitter failure, and Ebeam was really high at that moment.
20:15 Ask a new fill at 20:20

$\int L dt$ at Ebeam = 22.670 GeV

MARK-J	56 nb^{-1}
CELLO	57
TASSO	58
JADE	53
total	224 nb^{-1}

20:30

MARK-J	62 nb^{-1}
CELLO	~60
TASSO	~~60~~ 60.7
JADE	~~57~~
	239.7 nb^{-1}

ask energy change (→22.685) at 21:40.

Comment from Krehbiel: If Trigger rate gets too high: switch off the forward pi-trigger by taking out the T2-postpone cable from the trigger box.

Run 15812
23:30 TAG HV MFR 61 error all channels ≈0.
HV reset ok.
TAG HV's MFR 61 were also wrong in Run 15812.

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	$\int L dt$ CHARM Run	$\int L dt$ Exp.	IBM TAPE	BP (V)	TOF (V)	T_1 RES. FRAKT.	Σ ENERGIE	M.H	E BEAM	REMARKS

6.2.84

0:00 Takeda + Kado on shift
1:45 PETRA transmitter problem. Nearly half of the beams were lost. → New filling.

6:10 $\int L dt$ at E = 22.685 GeV : JADE 41 nb^{-1}
CELLO 37 "
MARK J 42 "
TASSO 36 "
Σ = 156 nb^{-1}

6:50 energy saving time. ran down the magnet to 500 A.
8:00 Duerdoth & Hatsumura.
9:00 Magnet to 7500 amps & injection.
10:20 Tagging Energy thresholds lowered to 7 GeV K.H.
12:30 YSPY Trig 2 output missing 189.
1:50 We have an instantaneous Dead Time of ~2.7%. Have live time than real time. — great.
1:52 Beams lost Trouble with Power Supplies.
14:47 Cello 49 MARK J 56 195 nb^{-1}
JADE 55 TASSO 45
15:50 $\int L dt$ JADE 63 MARK J 66 Σ 238 nb^{-1}
Cello 56 TASSO 53
16:00 Bethke & Steffen on shift.
19:00 After energy saving: "Break until ~20:00". Reason: Problems with Linac 2.
PKR hopes to repair it today...??
19:45 beams ready, start run

7-2-84
0:00 Haidt + Kawamiya on shift
1:00 Beam lost
1:55 Trigger 2 output missing
1:56 JDAS READ OUT ERROR 33 Missing LAM branch 2 crate 5 : Leadglass ADC's
occured several times
2:00 dead time ~100 % "background optimization" on screen
we have very high background phone PKR. they say they are
reducing background and it takes 15 minutes for the optimization
2:20 background is now O.K. deadtime 11%
5:05 TRIGGER1 output missing 35 (YSPY detected)
5:30 Luminosity Cello 40
MK-J 45
TASSO 48
JADE 53
} = 186 nb^{-1}

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (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. 2Tr

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6^{47} Energy saving time starts
7^{00} run down magnet current to 100A
8^{00} Schmidt & Takeshita
8^{00} out Maintenance Restart CA 15:00 → magnet switch OFF
9^{10} " REPAIRING AT THE MAGNETCOOLINGSYSTEM RESTART CA 19.00

→ TOF counter 4 changed to trigger only on −z tube, because +z tube looks inefficient. Will again try to increase voltage when there is beam. B. Narovlia

16^{00} R. Middleton u. G. Kuies - waiting for PETRA

19^{00} Interlock on North side was off - no reason known. Reset by A. Wagner u. G. Kuies
A lightening killed the IBM (connection).

19^{30} ID-HV interlock modified such, that ID HV cannot be switched on as long as magnet current is below 5000 A. AW

20^{00} "PETRA wird eingeschaltet", but doesn't work properly.
There are troubles with RF power in the west hall, and also with the horizontal feed back system.
One of Murphy's laws seems to have some problems too, since at the same time with PETRA also the IBM is down.

22^{40} PETRA is troubled by several problems: Feed back, RF, HV-Cable trouble
Not clear yet if feedback can be fixed at all before tomorrow morning.
Also IBM link not yet active. Nord computer in room 318 in building 2B has to be restarted (at least!).

23^{30} IBM link has been hurt by lightning - Hohaeller has been called to fix the hardware problem.
PETRA is still in trouble with the feedback system

ON/OFF N50	MIP	TOF	$\int L\,dt$	$\int L\,dt$ EXP.	IBM TAPE	BP (V)	TOF (V)	T_1 RES. FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

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08/02/84

00:00 Hughes / Finger on shift
new problems: PETRA has trouble with magnet-current and water-cooling-system;
Restart is unknown

01:10	IBM-link works again; fixed and tested by Hohaeller	JADE	70.3
01:15	PETRA tries INJECTION.	CELLO	~~65.~~ 60
02:05	run up magnet to 7500 A.	TASSO	65.
02:40	PETRA reached 22.700 GeV and lost beams immediately.	MARK J	65.
04:50	Beams available now but ID tripped by magnet; 04:55 start run.	Σ	~ 260 at 07:00
05:41	LeadGlass EndCap Powersupply 31 32 tripped on "OverCurrent" Reset		
06:55	run down magnet to 300 A.		

LUMI: 200 nb^{-1} ⇒ increase energy to 22.715 GeV after energy-saving-time

8:00 H. Krehbiel & A. Wagner
9:00 IPS Terminal fixed, IBM (Tso terminal) still down, Technician is informed
10:00 short break
14:35 during acceleration powerfailure in SYNC, DORIS, PETRA
break could last several hours according to PKR.
Magnet → 500A
15:40 And so was of Energy-Saving-Time, Injection, Short-Break ... etc. another shift. (Or whatever the correct quotation might be)

16:00 H. Mills & S. Yamada on shift - all quiet!

YCLRTV task has scaler monitoring to terminal 44 removed. The scaler fault is still there - in hardware.
21:00 Crate-Controller BR 2 CR 2 exchanged. It had a bad signal shape in N15 where the bad slot was. However the scaler problem is not wholly cured. (back)

09-02-84
0:00 Thursday 9/2/84 Gareth Hughes & Fred Loebinger.

Event display updated to include the future RZ chambers in the hardware display - how's that for anticipation? HGH
01:00 Still "Kurze Unterbrechung" — Problems with a cavity.
02:10 New beams at 22.715 GeV.

RUN	DATE	START	STOP	RUN START I⁺	RUN START I⁻	DEAD TIME (%)	T1 Φ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>6GeV	T2 BIT 17 2T.E4.2T
15837	08/02/84	06:12	06:51	3.60	3.67	6.4	2255	3935	2521	587	38	2258	2799	333	359
15838	9/2/84	2.17	2.54	4.65	4.66	11.8	(97021)²	6315	5110	505	60	4112	3051	431	548
15839	"	5.33	6.10	5.0	5.0	11.8	(107612)²	7067	5856	560	66	4471	3427	368	588
15840	"	6.15	6.46	4.19	4.24	37.0	3567³	6401	5724	429	159	1502	2075	199	355
15842	"	15:46	16:36	5.47	4.97	20.2	2992	8002	6654	778	157	2854	6918	512	1062
15843	"	16.39	16:50	4.71	4.30	13.5	623	1720	1402	162	22	619	1275	109	215
15844	"	20:39	20:47	4.53	4.68	12.4	439	1127	922	114	14	399	975	63	152
15845	"	20:54	21:52	4.31	4.47	11.2	3459	8002	6300	900	101	3287	6308	531	908
15847	"	21:57	22:33	3.69	3.88	8.4	2052	4408	3325	534	45	1946	3102	300	376
15848	"	22:34	23:40	3.41	3.61	7.6	3884	7672	5477	1011	76	3693	5397	548	669
15849	10/2/84	0:54	1:51	4.43	4.44	12.3	3366	8001	6438	875	108	2978	6835	493	932
15850	"	1:51	1:52	3.69	3.81	12.9	54	143	123	14	1.8	37	119	8	23
15851	"	2:28	3:22	4.03	4.61	12.1	3229	8002	6459	840	101	2941	6061	505	1002
15852	"	3:22	4:00	3.48	3.98	22.8	2208	8002	6947	574	131	1930	3217	331	519
15853	"	4:00	4:32	3.19	3.65	17.9	1887	8002	7032	491	88	1704	2683	268	350
15854	"	4:32	4:51	2.98	3.43	10.1	1129	3093	2480	293	29	1056	1699	183	267
15855	"	5:35	6:17	4.23	4.36	32.0	3308	8002	7132	600	172	1867	4152	376	894
15856	"	6:17	6:50	3.82	3.88	24.5	1893	7373	6495	492	120	1675	3112	319	639
15857	"	10:24	10:42	4.13	5.18	10.7	1005	2463	1925	261	27	1026	1774	175	273
15858	"	11:25	12:06	5.46	5.44	23.5	2446	6880	5833	636	150	2191	4421	423	712
15859	"	12:09	13:14	4.78	4.86	90	3874	8002	5830	1007	90	4184	6824	728	1124
15860	"	13:31	14:34	3.82	4.02	7.1	3679	6743	4494	957	67	4017	4985	653	622
15861	"	16:13	16:51	5.32	5.65	10.3	2268	5034	4919	590	61	2573	4585	495	764
15862	"	20:02	21:02	5.61	5.96	11.4	~~5378~~ 3601	~~8001~~ 5382	6182	931	105	3958	7378	768	1292
15863	"	21:02	22.09	4.35	4.82	9.0	3993	8001	5848	1040	93	4204	6960	769	1230
15864	"	22.09	22.35	3.08	4.04	7.0	1459	2627	1732	379	26	1559	2036	260	267
15865	"	23:18	0:18	5.99	6.27	11.5	3542	8002	6210	922	105	3880	7331	787	428
15866	11/2/84	0:18	0:40	4.21	4.92	8.3	1257	2636	1845	326	24	1383	2702	274	335
15867	"	1.10	1:32	5.37	5.52	9.9	1302	2948	2279	339	34	1489	2580	299	444
15868	"	1.36	2:36	4.83	5.03	8.3	3553	7320	5262	924	77	4090	6125	784	919
15869/70	"	3:07	3:12	Counter run			161	24	100						
15871	"	3:41	4.42	5.20	5.43	9.6	3651	8002	6011	950	91	4111	7178	791	1015
15872	"	4:43	5:54	3.86	4.25	7.6	4229	8001	5427	1100	83	4675	6485	849	786
15873	"	5:54	6:15	3.12	3.50	6.8	1245	2267	1454	323	22	1401	1669	212	205

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA RUN	∫L dt EXP.	IBM/TAPE	BP [V]	TOF [V]	T2 REJ FRACT.	Σ BHABHA	M.H.	E BEAM	REMARKS
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15837	08/02/84	06:12	06:51	ON	ON	ON	1.32	2.80	70.29	IBM	0.55	0.22	52	19	0	22.700	beams dumped ; energy-saving-time
15838	9/2/84	2.17	2.54	"	"	"	0.12	3.69	3.69	IBM	0.70	0.37	50	25	0	22.715	Beams lost
15839	"	5.33	6.10	"	"	"	0.09	5.47	9.16	IBM	0.7	0.43	49	37	1	"	
15840	"	6.15	6.46	"	"	"	0.05	1.62	10.78	"	0.7	0.36	49	"	1	"	Beam lost
15842	"	15:46	16:36	"	"	"	2.94	6.79	17.57	"	0.96	0.9	50	46	3	"	
15843	"	16.39	16:50	"	"	"	2.84	1.62	19.19	"	0.9	1.2	46	11	0	"	Energy Saving Time
15844	"	20:39	20:47	"	"	"	2.43	1.33	20,52	"	0.9	1.3	52	9	1	"	
15845	"	20:54	21:52	"	"	"	2.14	7.98	28.50	"	0.9	1.0	49	54	1	"	
15847	"	21:57	22:33	"	"	"	1.86	3.40	31.90	"	0.9	0.8	42	23	0	"	← Run # 15846 only ~5 seconds, no RAW SUM
15848	"	22:34	23:40	"	"	"	1.42	4.14	36.04	"	0.8	0.6	46	28	0	"	
15849	10/2/84	0:54	1:51	"	"	"	1,87	5.91	41.95	"	1.0	1.3	51	40	1	"	beams dumped
15850	"	1:51	1:52	"	"	"	0.84	0.15	42.10	"	/	/	55	1	0	"	beams lost
15851	"	2:28	3:22	"	"	"	1.10	3.25	45.35	"	1.0	1.3	50	22	0	"	
15852	"	3:22	4:00	"	"	"	0.70	1.65	47.00	"	0.8	0.9	48	11	0	"	
15853	"	4:00	4:32	"	"	"	0,44	0,89	47.89	"	0.75	0.7	48	6	0	"	
15854	"	4:32	4:51	"	"	"	0,45	0.74	48.63	"	0.7	0.5	50	5	0	"	beams dumped
15855	"	5:35	6:17	"	"	"	0,75	1.92	50.55	"	1,0	1.7	51	13	1	"	
15856	"	6:17	6:50	"	"	"	0,72	1.77	52.32	"	0,9	1.1	47	12	0	"	beams dumped. Energy saving time
15857	"	10:24	10:42	"	"	"	2.65	2.51	54.83	"	1.0	1.4	46	17	1	"	beams lost
15858	"	11:25	12:06	"	"	"	3.16	8.12	62.95	"	1.0	1.6	46	55	1	"	T3 longer (bit 24) pulled out in middle of run!
15859	"	12:09	13:14	"	"	"	2.82	7.39	7.39	"	0.9	0.9	46	50	3	22.730	
15860	"	13:31	14:34	"	"	"	2.04	8.73	16.12	"	0.7	0.6	48	59	2	"	beams dumped
15861	"	16:13	16:51	"	"	"	4.36	9.17	25.29	"	1.0	2.0	49	62	2	"	beams dumped energy saving time
15862	"	20:02	21:02	"	"	"	4.33	12.42	37.71	"	1.0	1.6	48	84	3	"	
15863	"	21:02	22.09	"	"	"	2.75	11.01	48.72	"	0.9	1.3	48	73	3	"	
15864	"	22.09	22.35	"	"	"	1.84	1.63	50.35	"	0,6	0.5	40	11	2	"	beams dumped
15865	"	23:18	0:18	"	"	"	2.97	10.06	60.41	"	1.0	1.8	48	68	3	"	
15866	11/2/84	0:18	0:40	"	"	"	2.63	2.51	62.92	"	/	/	48	17	0	"	beams lost
15867	"	1.10	1:32	"	"	"	4.33	7.10	70.02	"	0.9	1.3	46	48	1	"	
15868	"	1.36	2:36	"	"	"	3.54	12.14	12.14	"	0.8	0.9	50	82	5	22.745	new energy beams lost
15869/70	"	3:07	3:12							"	0.					"	Counter run Up-200 V
15871	"	3:41	4.42	"	"	"	3.72	12.88	25.02	"	0.9	1.4	48	87	1	"	
15872	"	4:43	5:54	"	"	"	2.43	10.66	35.68	"	0.7	0.8	51	72	3	"	
15873	"	5:54	6:15	"	"	"	1.84	1.93	37.61	"	0.7	0.7	51	13	0	"	beams dumped

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T₁ Ø (SEC)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T Ø 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. 2Tr

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2.50 Beam lost.

4.15 Unterbrechung — Transmitter problem "could take ½ hr. or 5 hrs!"
"SENDER WR DEFEKT".

5.30 New beams. No beam current information on screen at start of run so info fed in manually. Eventually correct data appear then whole ~~PKR~~ TV screen (from PKR) goes blank.

6.10 Had a few JDAS READOUT ERROR 33 – MISSING CAM board 2 crate 5 : Leadglass ADC. Dead time, luminosities etc on T.V. all went wild.
Situation corrected itself.

6.40 The Scaler Clock which is normally set at 1 Hz for data taking was found to be in the 50 Hz socket. Hence live times were x50 too big and average luminosities ÷50 Reset in run 15840
Runs 15838, 839, 840 all affected by this.

6.45 Beam lost → Energy saving time. Magnet → 500 A.

8.00 Schroeder & Middleton on shift.

10.25 magnet → 7500 A. . INJECTION
12.00 beams at 22,700 GeV I ≈ 5 mA
12.45 PKR has hardware problem with computer. They cannot ramp up the beams from 22,700 to 22,715 GeV.
13.00 Decided to take data at 22,700 GeV
NO DATA TAKEN + BEAMS DUMPED.
14.30 Crate-Controllers swopped in Branch 5, Crate 7 (Rack 11, 2nd from top.) "Field-proven" or "Field-Test" after Ilverich
15.40 start run 15841 disc/drum transfer error, restart NORD
15.46 " " 15842 LG initialisation error – Crate on serial branch had fan fail ~~powered off~~ – on, then OK.

16:00 D. Haidt and H. Riesberg on shift
16:50 Stop Run 15843, Magnet to $\frac{4500}{1000}$ A, Energy Saving Time

Nord System disc copied. (HER)

19:50 PKR has problems with injection. Readjustement is necessary.

RUN	ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM TAPE	BP (V)	TOF (V)	TRES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

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20.35 New fill is ready E_{beam} = 22.715 I^+ = 4.57, I^- = 4.72, BP = 0.9, TOF = 1.2
Reasonable low background.

Run 15844 started: VOLTS : ERROR in LG-System Initialisation. Skips LG check
INSQ 0 INSX 0 etc

Again – like this afternoon – the crate on the serial branch had tripped. But histograms OK. Switch crate on and start run (with data not written). Same error message. Phone Kawamoto

20.54 Start Run 15845. No error message!
21.55 At start of Run 15846 the above mentioned crate is again off. Stop the very short run (RUNSUM lost) and try to reset the crate : Overload → Fan failure
Change power supply : Same error
Start Run 15847 with the ERROR.

22.30 We manage to get the crate in operation – for the time being –, and start a new run (# 15848). Probably we have to change the Fan unit during the next refill.
23.40 Beams dumped for refill.

10/2/84.

00.00 Kobayashi / Hill on shift
4.30 $\mathcal{L} \sim 0.4 \times 10^{30}$ cm²sec⁻¹. Mark-J : $\mathcal{L} \sim 1 \times 10^{30}$, TASSO : $\mathcal{L} \sim 4 \times 10^{30}$
. We complained to PKR, and asked for a new fill.
6.45 Energy saving time. Magnet down → 500 A.

8.00 Takeda & Yamada on shift
lumi compilation (~5.00)

Mark-J	55
TASSO	96 !
CELLO	42
JADE	48
	241

8.30 TASSO called and said they were not sure about their lumi. They suffer serious backgrounds. We decided to continue E_0 = 22.715 until Σ H-J, CELLO, JADE ≈ 180 nb⁻¹.

9.30 Short break. Power supply problem. It will take half an hour to repair it.
9.40 Injection started
10.08 new beams ready. TOF ~ 4.5 ~~V~~ rather bad. We asked for a optimization

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T1 RECORDS (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 $E_1 > 6$ GeV	T_2 BIT 17 2T.+EL.2Tr

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10:42 Beams lost.

11:25 Beams ready. Start run 15858.
At the beginning of the run, dead time is nearly 100 % ~~due to~~
T3 trigger. (Forward muon)
After 10 minutes, it decreased to 30%, still high.

11:40 T3 trigger was pulled out by B. Naroska.
Deadtime → 7%

12:00 Lumi. for $E_b = 22.715$ GeV

Mark-J	75	185
TASSO	110	
CELLO	50	
JADE	60	
	295	

TASSO's lumi cannot be reliable.

We asked PKR to increase the beam energy to 22,730 GeV (if possible).

12:08 The new energy [22.730] ready.

13:14 H. Krehbiel tried to exchange one of the crate controllers of DL8.
But a new one gives error. → put the old one back.

13:35 A dip was found in the DL8 wire map.
Call Hollenbrand, wire map recovered after 500 events. 4HH

16:00 Barlow B. Zorn on shift.

16:15 Yv. Etc error message for Tagging counter HV supply MFR 61 Channel 7.

16:52 Energy saving Time. Run down magnet to 1000 A

18:40 Fan exchanged in Serial Camac Crate LG, which had tripped into overload yesterday (Freepreggy).
Crate-Controller exchanged in Crate 5 Br. 7. This controller moved into Br 2 Gr 2 (Scalers). Old Controller then kept as ~~suspicious~~ suspicious

RUN	DATE	START	STOP	ON/OFF N 50	MIP	TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM TAPE	BP (V)	TOF (V)	T1 REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

10.2.84 139

19:00 Magnet back to 7500 Amps.
20:00 Start run
20:30 Histograms checked. There is a new spike in LG Hitmap Barrel 2.
In Electron – Nim Unit Histogram displays 2 peaks.
21:15 Electron – Nim Unit display now back to normal.

23:30 Lumi. rates for 22.730 GeV

TASSO	34
JADE	50
CELLO	47
Mark J	54
	185

11.2.84

0:0 Heinzelmann + Naroska

0:55 Luminority (22.730 GeV)

TASSO	43	85 %
CELLO	86	3 "
Mark J	62	
JADE	63	
	254	nb^{-1}

ask for new energy in 20 min.

0:40 beams lost. New fill ready in 20 min!
1:36 new energy 22.745 GeV/beam
2:36 beams lost. Magnet fault. Start counter run with $U_p - 200 = 2208$ V
3:40 HF ready
8:00 Marshall, Heier
8:51 asked for Luminosities:

integrated:

CELLO	56 nb^{-1}
TASSO	41 nb^{-1}
MJ	60 nb^{-1}
JADE	55 nb^{-1}
	212 nb^{-1}

instantaneous:

CELLO	$1.8 \cdot 10^{30}$ $s^{-1} cm^{-1}$
TASSO	$2.0 \cdot 10^{30}$ "
MJ	? "
JADE	$2.0 \cdot 10^{30}$ "

RUN	DATE	START	STOP	RUN START I⁺	RUN START I⁻	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T.E₄.2T₇
140 RUN				AT RUN I⁺	START I⁻	DEAD TIME [%]	TIME [SEC]	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 6 GeV	T₂ BIT 17 2T.E₄.2T₇
~~15874~~	~~11/02/84~~	6.46	7.51	5.23	5.30	8.5	3914	8002	5794	1018	86	4424	6754	857	1138
15875	11/02/84	7.51	9.04	3.9	4.19	7.3	4326	8002	5311	1126	82	4772	6261	890	899
15876	"	9.04	9.37	3.10	3.41	6.3	1928	3236	1985	502	32	1998	2440	374	276
15877	"	11:20	12:14	5.29	5.35	10.5	2950	6276	4740	767	81	3332	5588	654	977
15878	"	~~12:16~~	13:27	4.44	4.56	7.5	4203	7895	5410	1042	82	4657	6199	858	911
15879	"	13:28	14:49	3.67	3.79	6.2	4839	8002	4940	1259	78	5214	5758	895	643
15880	"	14:50	15:15	2.99	3.11	5.8	1497	2784	1389	390	22	1595	1673	259	177
15881	"	15:52	16:57	5.60	5.87	11.0	3576	8001	6056	974	100	4123	7183	846	1277
15882	"	16:57	17:55	4.40	4.68	8.9	3870	8002	5693	993	88	4356	6763	860	1004
15883	"	17:56	19:11	3.62	3.78	6.9	4498	8002	5245	1170	81	4805	6203	897	759
15884	"	19:12	19:41	3.00	3.10	6.0	1694	2739	1694	440	26	1737	2047	289	236
15885	"	20:13	20:54	6.22	5.97	10.0	1845	4341	3292	480	47	2331	3670	467	595
15886	12/02/84	12:45	13:48	4.90	4.84	9.0	3709	7553	5489	964	86	3892	6688	602	1001
15887	"	15:54	16:56	5.86	5.85	10.7	3646	8002	6122	948	101	3979	7409	733	1202
15888	"	16:56	18:04	4.71	4.55	8.9	3980	8002	5946	1036	92	4022	~~7374~~ 7374	688	1071
15889	"	18:04	19:18	3.98	3.85	7.5	4404	8002	5916	1147	86	4334	6850	758	948
15890	"	19:18	20:04	3.31	3.31	6.4	2755	4492	2896	717	46	2710	3558	427	591
15891	"	20:35	21:35	5.81	5.83	10.7	3560	8002	6128	927	99	4050	7358	853	1137
15892	"	21:36	21:58	4.75	4.54	9.1	1243	2671	1926	323	29	1467	2223	306	362
15893	"	21:58	23:07	4.47	4.25	8.7	4038	8002	5718	1051	92	4324	6860	769	924
15894	"	23:07	0:15	3.79	3.59	6.7	4644	7892	5274	1209	81	4667	6361	834	730
15895	13/02/84	0:58	1:19	5.69	5.73	10.8	1232	2788	2177	321	34	1337	2620	273	453
15896	"	1:55	2:34	4.43	4.10	7.4	2311	4283	3045	601	44	2301	3584	374	460
15897	"	3:18	3:30	5.19	5.31	9.7	742	1615	1238	193	19	785	1471	147	231
15898	"	3:58	5:10	4.69	4.79	7.7	4295	8002	5656	1118	86	4357	6884	772	982
15899	"	5:10	5:14	3.97	4.01	7.1	181	367	263	47	3	190	279	43	57
15900	"	5:48	6:46	4.93	4.96	8.4	3455	6892	5084	900	76	3508	6033	652	958
15901	"	9:42	10:44	6.00	6.00	11.3	3713	8001	6306	966	109	3864	8334	799	1112
15902	"	10:45	11:53	4.87	4.48	8.0	4022	7822	5490	1047	84	4205	6489	709	917
15903	"	12:00	12:14	4.07	3.59	6.8	761	1400	976	198	12	804	1076	162	158
15904	"	14:47	15:37	5.65	4.92	8.8	2961	5998	4551	770	68	3016	5288	525	774
15905	"	20:11	21:29	4.86	4.81	6.9	4645	8001	5619	1209	83	4458	6564	704	836
15906	"	21:30	22:00	3.02	3.14	5.9	1782	2722	1745	464	27	1613	2107	225	208
15907	14.2.84	0:49	1:52	5.40	5.50	11.4	3685	8002	6283	959	109.6	3742	7969	703	1109

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM TAPE	BP [V]	TOF [V]	T₂ REJ. FRACT.	Σ BHABHA	M.H.	E_BEAM	REMARKS
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15874	11/02/84	6.46	7.51	on	on	on	2.52	10.07	47.68	ZBM	0.7	0.6	49	68	2	22.745	
15875	11/02/84	7.51	9.04	on	on	on	1.64	7.10	54.78	IBM	0.65	0.5	51	54	2	"	
15876	"	9.04	9.37	"	"	"	1.39	3.26	58.04	"	0.6	0.4	52	22	1	"	
15877	"	11:20	12:14	"	"	"	3.50	8.59	66.63	"	1.0	1.5	50	58	5	"	
15878	"	~~12:16~~	13:27	"	"	"	2.69	11.86	11.86	"	0.7	0.7	50	80	3	22.760	← new Energy
15879	"	13:28	14:49	"	"	"	2.10	10.17	22.03	"	0.5	0.3	54	74	3	"	
15880	"	14:50	15:15	"	"	"	1.41	2.52	24.55	"	0.3	0.2	56	17	2	"	
15881	"	15:52	16:57	"	"	"	3.7	14.38	38.93	"	0.9	1.2	48	97	2	"	
15882	"	16:57	17:55	"	"	"	2.85	9.49	48.42	"	0.7	0.5	6488	64	4	"	
15883	"	17:56	19:11	"	"	"	1.92	7.27	55.69	"	0.7	0.5	51	49	3	"	
15884	"	19:12	19:41	"	"	"	1.88	2.08	57.77	"	0.5	0.3	54	14	1	"	
15885	"	20:13	20:54	"	"	"	5.09	11.12	68.89	"	1.2	1.3	48	75	1	"	Beams lost
15886	12/02/84	12:45	13:48	"	"	"	3.11	9.50	9.50	"	0.8	0.9	47	64	2	22.775	NEW ENERGY Beams lost
15887	"	15:54	16:56	"	"	"	3.97	16.93	26.43	"	0.9	1.0	48	114	8	"	[illegible]
15888	"	16:56	18:04	"	"	"	2.74	10.69	37.12	"	0.8	0.8	48	72	2	"	
15889	"	18:04	19:18	"	"	"	1.75	7.87	44.99	"	0.8	0.7	49	53	1	"	
15890	"	19:18	20:04	"	"	"	1.73	5.20	50.19	"	0.6	0.4	52	35	3	"	BEAMS DUMPED
15891	"	20:35	21:35	"	"	"	4.09	15.00	65.19	"	1.0	2.0	48	101	2	"	
15892	"	21:36	21:58	"	"	"	3.16	3.56	68.75	"	0.8	0.8	49	24	1	"	
15893	"	21:58	23:07	"	"	"	2.57	10.70	10.70 [illegible]	"	0.7	0.7	49	72	4	22.790	NEW ENERGY
15894	"	23:07	0:15	"	"	"	1.68	7.29	17.99	"	0.6	0.5	52	49	2	"	Beams Dumped
15895	13/02/84	0:58	1:19	"	"	"	3.57	4.16	22.15	"	1.0	1.7	48	28	1	"	Beams Lost
15896	"	1:55	2:34	"	"	"	2.45	5.50	27.65	"	0.8	0.9	47	37	0	"	Beams Lost
15897	"	3:18	3:30	"	"	"	3.44	3.57	31.22	"	0.95	1.5	47	24	2	"	Beams Lost
15898	"	3:58	5:10	"	"	"	2.59	9.52	40.74	"	0.8	1.0	49	64	5	"	
15899	"	5:10	5:14	"	"	"	1.88	0.59	41.33	"	0.7	0.7	44	4	0	"	e⁺ lost
15900	"	5:48	6:46	"	"	"	2.68	9.66	50.99	"	0.9	1.3	[illegible]	65	1	"	Beams dumped
15901	"	9:42	10:44	"	"	"	3.71	13.77	64.76	"	2.0	1.5	52	96	4	"	
15902	"	10:45	11:53	"	"	"	2.64	10.61	175.37	"	0.8	0.9	50	62	3	"	
15903	"	12:00	12:14	"	"	"	2.15	238	2.38	"	0.6	0.5	48	16	1	22.805	New Energy
15904	"	14:47	15:37	"	"	"	3.75	12.80	15.18	"	1.0	1.9	46	86	1	"	Beams Lost
15905	"	20:11	21:29	"	"	"	2.99	15.04	30.22	"	0.9	1.0	48	101	3	"	
15906	"	21:30	22:00	"	"	"	1.95	2.98	33.20	"	0.7	0.45	50	20	2	"	Beams dumped
15907	14.2.84	0:49	1:52	"	"	"	4.05	14.14	47.34	"	1.1	1.7	49	95	6	"	

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (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. $E_{4.2}$ Tr

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11:56 $\sum_{\text{PETRA}} \mathcal{L} = 256\ nb^{-1}$ → new Energy 22.760

13:27 The old problem:

'Display active, wait For 20 sec' ocurred again as soon as one tries to display something on the graphic terminal. Reloading JOBs helped. — what does this mean? Reload NORD? Restart ZOAS or rebuild all tasks?

↖ How was this achieved? It never happens to me! HERA

16.00 Haidt/Hill on shift.

20.54 Beams lost.

Lumi for Ebeam = 22.760

Jade	68
Cello	58
Tasso	51
Mark-J	68
	245 nb^{-1}

Ask PKR for new energy 22.775

21.15 "Trouble with power supply"
Restart ~ 22.30

12.2.84

0.00 Diekmann & Schmeichloth on shift

2.50 Restart ca 8.00 Magnet → 0

8.00 NYE & HAIDT on shift

Message from PKR: Defekt in der Magnetstromversorgung - reicht around 9 h

11.40 PETRA starting up again - run magnet to 5500 A

Run with new energy 22.775 GeV - excellent filling

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	$\int L dt$ BHABHA RUN	$\int L dt$ EXP.	IBM TAPE	BP (V)	TOF (V)	TRES. FRACT.	Σ ENERGY	M.H	EBEAM	REMARKS

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12.2.84

13^{45} Petra TV goes blank and beams are lost - several alarms go off!
- HEW Netzumbruch - problem is due to a fault at 'HEW' - supplying PETRA/DESY with electricity.

15^{45} New Beams ready.

16:00 St. Wagner + Minowa

19:32 Eb=22.775 JADE 41 nb^{-1}
TASSO 36
M-J 41.5
CELLO 30
154.5 nb^{-1}

21:47

JADE	67
TASSO	53
M-J	62,5
CELLO	58
	240.5 nb^{-1}

ask PKR for new energy 22.790 GeV.

13.2.84 0:00 Kawamoto & Steffen on shift.

0:59 YVOLTS found the TAGG HV's are off. (MFR 63)
Go to LRS HV and LOCAL → HVON → REMOTE. ⇒ OK
No tagging data for a few minutes at the begining of RUN 15895

6:50 ΣLumi interview

Ebeam = 22.790

CELLO	51
MARK J	46
TASSO	34
JADE	51
	182 nb^{-1}

← TASSO has to wait 5 ~ 10 min. at the begining of fill.

Energy Saving time: Magnet → 500 Amps.

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ & (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T.E4.2Tr

13.2.84

8²⁰ Nozaki & Takeshita
Now CELLO is the coordinator.

9²⁰ Temperature in DL8-room : 19.5° . Called Schultz, they will come (immediately?)

10⁰⁰ Temperature is now 18.4°C — OK.

11³² CELLO 63 TASSO 46 M-J 61 JADE 70 nb⁻¹ → Energy change ~12:00
CELLO called as

11³² Missing LAM branch 3 crate 2 : Muon chamber

12.00 New energy 29.805 GeV

Scaler debugging printout from YCLRTV reinserted to printer VDU#49 (in electronics room)

Old tagging system routines removed from event display
The Rolled-out & Tagging views are not working properly.

15:45 Beams lost — transmitter problem

16:00 Greenshaw & Schneekloth on shift

20:11 At run start get error messages LG/BP powersupply 15 HV = 1.981 should be 1.970

21:30 As beam currents drop below ~3 mA beam pick up lamps go red. On Kado's pick up boxes left hand unit showing "too small", right hand "too large", but still working OK? histograms OK.

22:00 Kado phoned.

nothing to worry about. Positron unit (which gives the timing) looks good. Electron unit "hangs up" at maximum attenuation value. (perhaps funny beam conditions). I tryed to tune it.
attenuators changed to 6 dB for Positron unit (old value 10dB)
and 3 dB for Electron unit (old value 6 dB)
HK.

Please fill in the form which lays in the control-room

14.2.84

0:00 K. Stephens and H. Rieseberg on shift

0:43 New fill ready . start run # 15907

3.30 HV. Error ToF MFR 53 ch. 13 0.284 should be 2.670
Reset OK.

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP (V)	TOF (V)	T₁ RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

14.2.84

4²⁵ Cello — PKR will refill in 15 mins

4 40 Stop for refill

5 10 New fill ready, ½ h! Optimization timings TOF rate from 5V to 2 V.

5 21 Start Run # 15911

Integ. Luminosities :

JADE	67 nb⁻¹	From Tagging	65.76
		From Bhabhas	67.88
Cello	40 "		
Tasso	40 "		
Mark J	41 "		

→ we have 1.7 times the luminosity of the other Experiments !

Our $\frac{\text{number of bhabhas}}{\int L dt}$ ratio has not changed.

6 00 Histograms checked visually all OK.

6 50 Stop : Energy Saving Time

15913 — 15917 Cosmic Runs

gew Spitzer + Schmicker on shift

9:56 Start run 15918 22820 GeV

11:00 We are getting "hitting LAM 6.4 c.3 i.d. Arg2" error messages. It has been 17 in run 15918.

11.30 The error messages occur every 30 secs ID people called. Run 15913 stopped. Experts not working yet.

12:30 another expert (Hubbard) arrived.

13:30 DL8 68 changed → All seems to be ok. Start Run 15920 . No real mistake found.

13:45 Run 15920 stopped. Power crate changed.

14:06 Beams dumped

15:10 Nord hang up , reloaded

16⁰⁰ Kuwamoto + Meinke on shift

16 20 some problem with HV gas LA. , expert is investigating

16 45 Energy saving time 2 magnet SOA

HV of individual counters were checked and they were OK.

Error message from JDAS Prim HV monitor

Problem with HV distributor control.

now fixed 16:55 (hopefully)

RUN	DATE	START	STOP	RUN START I+	RUN START I-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E1>6GeV	T2 BIT 17 2T·E4·2T2	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM TAPE	BP [V]	TOF [V]	T2 REJ FRACT.	Σ BHABHA	MH	EBEAM	REMARKS
15908	14.2.84	1.51	3.03	4.27	4.31	8.0	4234	8002	5736	1102	88.1	4178	7047	775	952	ON	ON	ON	2.67	10.42	57.76	IBM	0.9	1.0	48	70	3	22.805	
15909	"	3.03	4.20	3.54	3.56	6.8	4681	8002	5225	1218	82.9	4674	6627	760	849	"	"	"	1.66	9.23	56.99	"	0.75	0.6	52	62	2	"	
15910	"	4.21	4.41	2.99	3.01	6.5	1081	1751	1110	281	18.1	1018	1530	157	170	"	"	"	1.54	0.89	67.88	"	0.55	0.4	55	6	0	"	Beams Dumped.
15911	"	5.21	G17	5.26	5.35	13.8	3380	8001	6392	879	121	3623	8063	784	1209	"	"	"	4.25	13.40	81.28	"	1.1	2.0	48	90	3	"	
15912	"	6.18	6:54	4.34	4.44	9.9	2077	4448	3307	541	54	2237	4005	485	578	"	"	"	3.28	7.74	89.02	"	1	1.4	47	52	3	"	Energy Saving Time
15913	"	7:33							350													Tape F11246							Cosmic with reduced Up - 300
15914	"	8:14							694													"							"
15915	"	8:28							90													"							"
15916	"	8:43							83													"							" Up - 400
15917	"	8:47							1146													"							" Up - 400
15918	"	8:56	11:03	5.87	5.87	11.6	3709	8001	6067	965	111	4169	6993	793	1016	"	"	"	4.49	18.19	18.19	IBM	1.0	1.5	47	122	2	22.820	NEW ENERGY.
15919	"	11:04	11:36	4.41	4.54	16.4	1483	3704	1951	388	63	1520	2184	282	814	"	"	"	3.43	5.81	24.00	"	0.80	0.5	47	37	2	"	stopped, due to error messages.
15820	"	13:28	13:46	3.02	3.16	8.3	979	2706	2089	255	23	2027	1259	172	138	"	"	"	1.34	1.86	25.86	"	0.60	0.25	51	9	0	"	
15921	"	14:38	5:10			11		3406	2571							"	"	"		5.81	31.67	"	0.90	1.25				"	New hang up level 3
15922	"	15:19	16:30	4.40	4.27	7.4	4221	8001	5481	1098	81	4754	6149	834	881	"	"	"	3.11	12.07	43.64	"	0.72	0.22	50	81	3	"	
15923	"	16:30		3.45	3.85	6.7	1025	1838	1177	267	18	1124	1391	202	184	"	"	"	2.33	3.28	46.92	"	0.57	0.40	52	22	0	"	beams dumped / energy saving time
15925	"	15:42		4.02	4.02	8.4	1989	4041	2986	518	43	2196	3259	373	601	"	"	"	2.34	4.02	50.94	"	0.7	0.7	46	27	2	"	increase of energy
15926	"	20:22		3.38	4.08	7.2	4487	8002	5364	1168	84	4444	6788	761	915	"	"	"	1.96	10.60	10.60	"	0.6	0.6	53	71	1	22.815	NEW ENERGY
15927	"	21.38	2:10	2.86	3.47	7.2	1893	3149	2008	492	35	1883	2645	295	304	"	"	"	1.74	3.28	13.88	"	0.5	0.4	55	22	1	"	beams dumped
15928	"	22:49	23:11	5.32	5.23	12.4	1542	3687	2853	402	50	1832	3425	373	560	"	"	"	3.73	5.97	19.85	"	0.8	1.2	48	40	0	"	run stopped beams of LA17 problem
15929	"	23:22	23:27	4.80	4.69	11.5	117	300	231	31	4	152	218	31	40	"	"	"	3.19	.30	20.15	"	0.7	0.7	40	2	0	"	— " —
15930	4	23:34	0:06	4.63	4.52	8.6	1879	3953	2846	489	42	2197	3372	437	513	"	"	"	3.06	5.67	25.82	"	0.7	0.7	50	38	2	"	1248 is out! (#68)
15931	15.2.84	0.10	0.37	4.16	4.07	8.3	1567	3296	2206	408	34	1820	2614	327	373	"	"	"	2.60	5.22	31.04	"	0.6	0.6	46	35	8	"	
15932	15.2.84	01.17	02.16	5.15	4.83	10.2	3521	8002	6060	916	93.6	3897	7307	731	1128	"	"	"	3.07	11.94	42.98	"	1.0	0.8	46	80	2	"	
15933	"	02.17	03.24	4.32	3.69	8.2	4008	8001	5631	1042	86	4303	6693	794	960	"	"	"	2.43	8.81	51.79	"	0.7	0.7	547	59	0	"	
15934	"	03.25	04.35	3.68	3.19	6.8	4137	7512	4801	1076	73.2	4432	5744	711	720	"	"	"	1.79	4.48	56.27	"	0.5	0.6	49	30			beams dumped.
15935	"	05.05	05.15	5.79	5.79	12.3	600	1305	1008	151	24	644	1106			"	"	"		3.13	59.40	"	1.4	0.9	?	?	?	"	NORD PROBLEM. NO RUN SUMMARY.
15936	"	05.22		5.35	5.26	9.8	1416	3387	2574	369	36	1757	2884	370	440	"	"	"	3.78	6.12	65.52	"	1.03	0.9	47	41	3	"	
15937	Only	100	Events	JUNK	RUN	;	EDAS	was	corrupted	→	rebuilt.												0.7	1.15				22.850	new energy
15938		10.47	11.58	4.65	4.64	7.6	4218	8001	5726	1098	83.6	4295	6677	719	913	on	on	on	2.73	10.76	10.76	IBM	0.7	0.7	47	72	2	"	
15939	"	11.58	13.13	3.27	3.85	6.6	4413	7780	5113	1148	75.9	4534	5914	697	710	"	"	"	1.87	8.52	13.28	"	0.6	0.45	48	57	1	"	beams lost
15940	"	13.54	14:00	4.88	4.87	42.7	296	386	280	77	33	200	302	43	45	"	"	"	1.79	1.05	20.33	"	0.7	0.8	45	7	0	"	
15941	"	13.59	1.508	4.79	4.76	7.9	4057	8001	5639	1055	83	4331	6591	762	935	"	"	"	2.79	8.27	29.60	"	0.7	0.8	47	62	2	"	trip over the 5 occurred
15942	"	15.08	15:31	3.90	3.86	7.9	1287	2442	1658	334.9	24	1356	1895	212	666	"	"	"	2.25	2.24	31.84	"	0.65	0.55	46	15	0	"	DL8 power supply exchanged

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T (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. 2Tr

14.2.84

19.42 YVOLTS PrimHV errormessage for LG PS 15, 16. comes again.
The prim. HV's were checked by a different program and were found to be OK.
~~Problem with the monitor programs at 3DAS ??~~

18^{30}-19^{00} System regenerated after extending /CSCLR/ in 2DASX. Present YPARA and ZREAD taken from the files (OLS) YPARA and (OLS) ZREADT. The changes have been made to test scaler unit N15 in B2C2 and B3C1. T.O.
See printout on unit 49 in electronics room.

20^{01} Celle meets on changing the energy

Vasso	~65 nb^{-1}
Celle	~69 nb^{-1}
Mark J	~65 "
Jade	~50 "
	249 "

22^{55} occasionally we get the error: 3DAS readout error 33 - missing LAM branch 4 crate 3

23^{25} permanent problem with LAM as mentioned above
we pull out the D18 in this crate which has the conversion LED on all the time
now it runs smoothly

15.2.84

0^{00} Ball & Cords on shift

0^{35} beams lost

01:09 New fill. Start run 15932

5^{15} beams lost → short break

8:00 Schmitt, Drokmann on shift.

The cross-section data file was found to be corrupt. Also a run summary in the night looks garbled. There was a "Nord Problem" in the night but no further information! XSECT data file patched up. (HEM)

13:13 beams lost

14:00 Trigger Error Level 5 occurred. New Run was started.

15:30 Power supply Brand 4 Crate 3 replaced by a working one. This should cure the above mentioned missing LAM Errors from this crate. The Voltages were checked with an oscope and found to be ok now.

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\int L dt$	$\int L dt$ BHABHA Runs	$\int L dt$ Exp.	IBM TAPE	BP (V)	TOF (V)	T_1 REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

15.2.84

16.00 Shittaker and Bethke on shift

16.50 Energy saving starts - magnet current run down to 500 A

Event display - The 'new' tagging system is now included in the Online event display in the 'ROLLED-OUT-LG' and 'TAGGING SYSTEM' Views (HEM)

18^{00} DL8 #20 (position 68) exchanged by #17. Reason: It was the origin of many hundreds of "illegal bit-number" and "illegal wire-number" during the last runs. May be it was an by-product of the faulty power-supply box 4 crate 3, this DL8 has been changed several times because of "missing lam". If again something is wrong with it, probably the whole crate should be changed. (Last run will be D 946)

19^{00} Run up magnet again.

20.12 Running again at 22850 MeV - run 15945 started.

21:00 3DAS - error 33, missing Lam box 4 cr 3. Obviously this problem is still there!

21:20 Run 15945 stopped after continuously lam-error box 4 cr 3.
(Few minutes later: beam lost)
Lifetimes of DL8's E in the last position of box 4, Cr 3 seems to be ~3½ hours.
Fill soon be ready; exchange and test of lam-crate lasts at least 1 hour.
I decide to leave it as it is, eventually pull out that DL8 and take these for good data, especially because DL8 behaves normal after rubbering contacts.

22:20 HV-errors, MFR 63 all "0". Remote, HV on → ok
DL8 still works

23:16 Jade: 67 nb^{-1}
Celle: 53
Vasso: 48

23:32 Energy changed 22.865 another world record!
More "Illegal bit number" + "Illegal Wire#" problems — started again in run 15946.

23:45 DL8 #68 (wires 544-551) now produces lots of illegal wire-#, bit-#. It's the same DL8 mentioned above and changed several times. Tomorrow, during energy-saving time, we try to cure it again. No big action during night since Petra runs fantastic.

16-02-84

0^{00} Kuhl. Hellenbrand u. G. Kuiles

6:45 Energy saving, magnet to 500 amps

RUN	DATE	START	STOP	RUN START I⁺	RUN START I⁻	DEAD TIME (%)	T₁ ø (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T ø REJ ×10⁶	T₁ acc SUM	T₂ acc SUM	T₁ BIT 2 E₁>66eV	T₂ BIT 12 2T·E₄·2T₂
150 RUN															
15943	15/2/84	15.33	16.49	3.67	3.64	6.9	4525	8001	5172	1177	82	4694	6080	762 T1: 5 ACCEPTED: 4	715
15944	"	16.49	16.50	3.09	3.09	6.2	35	95	65	9	0.6	49	50		4
15945	"	20.12	21.20	5.52	5.59	8.0	3940	7535	5349	1025	82	4210	6451	679	902
15946	"	22.25	23.26	5.15	5.54	7.9	3672	8002	5975	956	76	3834	5877	644	865
15947	"	23.27	23.32	3.83	3.94	7.1	320	720	478	83	6	376	445	67	48
15948	"	23.35	0.44	3.73	3.83	6.7	4106	8002	5423	1068	71	4278	5212	654	620
15949	16/2/84	0.44	1.58	3.67	3.18	6.0	4357	8002	5223	1134	68	4401	5064	619	514
15950	"	1.59	2.07	2.99	2.72	5.3	443	830	557	115	6	437	468	61	49
15951	"	3.05	~~5.27~~ 2.58	5.20	5.2	16.8	3166	8001	6464	824	138	3182	6728	593	1159
15952	"	3.59	4.53	4.23	4.22	10.4	3242	8002	6061	843	88	3580	6067	688	1032
15953	"	4.54	5.53	3.68	3.70	9.0	3342	8001	5989	869	79	3603	5957	673	1022
15954	"	5.53	6.47	3.25	3.29	8.0	3186	7253	5237	828	66	3437	5235	584	854
15955	"	12.27	13.46	4.86	4.85	7.1	4735	8002	5288	1232	87	4642	6632	632	772
15956	"	13.47	13.52	2.96	2.86	5.8	250	414	260	65	4	238	310	23	39
15957	"	14.49	15.57	5.50	5.03	11.3	4047	8001	5778	1053	119	4081	7218	704	981
15958	"	15.58	16.50	4.04	3.67	7.3	3155	5638	3636	821	60	3292	4578	513	548
15959	"	19.14	20.56	4.85	4.77	~~12.26~~ 7.6	4230	8001	5654	1101	106	4283	7094	687	1110
15960	"	21.03	21.11	3.79	3.67	8.8	352	739	504	91.6	8	446	556	69	80
15961	"	21.13	22.32	3.72	3.60	6.6	4709	8001	4983	1226	81	4955	6125	753	785
15962	"	22.33	23.27	3.11	2.98	6.0	3107	5069	2793	810	49	3234	3704	491	437
15963	17/2/84	06.00		4.96	4.95	7.3	2525	5183	3687	657	33	2744	4680	508	854
15964	"	2.16	3.29	5.18	4.89	8.2	4362	8001	5526	1135	93	4503	6501	666	833
15965	"	3.24	4.49	3.81	3.45	6.6	4745	8002	5034	1235	81	4999	5913	734	641
15966	"	4.50	6.21	3.16	2.87	5.6	5117	8001	4831	1332	75	5313	5376	790	479
15967	"	6.22	6.31	2.59	2.36	5.1	521	781	449	136	7	525	499	77	42
15968	"	11.18	12.33	4.24	4.35	9.2	4472	8001	5457	1164	107	4460	7048	656	1124
15969	"	12.34	13.54	2.73	2.67	6.5	4787	7775	4741	1264	21	4822	6782	651	940
15970	"	14.26	15.33	4.54	4.60	11.5	2981	8002	5808	1036	118	4135	7281	704	1148
15971	"	15.34	16.46	3.17	3.25	7.9	4339	8002	5194	1128	89	4706	6515	744	875
15972	"	16.47	16.56	3.27	3.19	6.9	501	920	579	130	9	557	675	90	89
15973	"	19.55	20.36	4.78	7.88	18.0	2452	5280	3997	638	114	2524	5167	440	977
15974	"	20.54	21.16	2.98	2.98	6.9	326	2074	1302	326	225	304	1777	170	241
15975	"	21.48	22.38	4.85	4.86	30.6	~~4335~~ 2904	~~5071~~ 6335	5071	757	231	2883	6761	573	1310
15976	"	23.13	0.13	4.95	4.96	12.8	3378	8001	6088	879	113	3719	8282	710	1438

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA RUN	∫Ldt EXP.	IBM/TAPE	BP [V]	TOF [V]	T₁ REJ FRACT.	Σ BHABHA	M.H	E BEAM	REMARKS
151														
15943	ON	ON	ON	1.78	8.67	40.51	IBM	0.65	0.5	48	58	1	22.850	
15944	ON	ON	ON	1.75	0.15	40.66	"	?	?	38	1	0	"	Energy saving time - v. short run.
15945	"	"	"	3.31	15.39	56.05	"	0.8	1.1	51	103	4	"	Beams lost
15946	"	"	"	2.81	13.00	69.05	"	0.78	1.1	32	87	2	"	
15947	"	"	"	2.61	0.9	69.95	"	0.62	0.33	28	6	0	"	
15948	"	"	"	1.93	8.23	8.23	"	0.60	0.30	31	55	0	22.865	
15949	"	"	"	1.43	5.09	13.32	"	0.50	0.20	31	34	1	"	
15950	"	"	"	1.05	0.75	14.07	"	0.40	0.15	21	5	0	"	
15951	"	"	"	2.47	7.63	21.70	"	0.80	0.65	31	51	3	"	
15952	"	"	"	1.63	6.29	27.99	"	0.80	0.55	30	42	1	"	
15953	"	"	"	1.02	3.89	31.88	"	0.70	0.40	29	26	2	"	
15954	"	"	"	0.91	3.29	35.17	"			30	22	1	"	
15955	"	"	"	1.78	7.63	42.80	TAPE	0.7	0.65	52	51	3	"	
15956	"	"	"	1.22	0.15	42.95	TAPE	0.5	0.2	50	1	0	"	Beams dumped
15957	"	"	"	2.62	11.37	54.32	IBM	0.85	0.85	48	76	5	"	
15958	"	"	"	1.93	5.24	59.56	IBM	0.35	0.65	57	35	4	"	energy saving time : short run.
15959	"	"	"	2.04	7.03	66.59	"	0.75	0.45	50	47	3	"	
15960	"	"	"	1.77	1.05	67.64	"	0.7	0.4	47	7	1	"	
15961	"	"	"	1.62	7.64	7.64	"	0.6	0.25	53	51	3	22.880	
15962	"	"	"	1.24	3.60	11.24	"	0.5	0.2	54	24	3	"	Beams dumped
15963	"	"	"	1.55	3.45	14.69	"	0.87	0.54	50	23	0	"	beam lost
15964	"	"	"	2.37	19.14	28.83	"	0.74	0.44	49	61	0	"	
15965	"	"	"	1.92	8.99	32.82	"	0.68	0.20	~~52~~ 52	60	2	"	
15966	"	"	"	1.21	6.29	39.11	"	0.54	0.11	53	42	2	"	
15967	"	"	"	0.93	0.75	39.86	"	0.45	0.08	54	5	0	"	Beams lost / Energy saving time
15968	"	"	"	1.21	5.69	45.55	"	0.7	0.4	52	58	1	"	
15969	"	"	"	0.68	3.00	48.55	"	0.4	0.7	55	20	0	"	
15970	"	"	"	2.15	9.14	57.69	"	0.75	0.45	48	61	0	"	
15971	"	"	"	1.76	8.24	65.93	"	—	—	52	55	2	"	
15972	"	"	"	1.48	0.75	66.78	"	—	—	50	5	1	"	energy saving
15973	"	"	"	1.98	4.20	70.98	"	0.85	0.50	49	28	2	"	
15974	"	"	"	1.06	1.05	72.03	"	—	—	53	~~78~~ 78	0	"	Beams dumped
15975	"	"	"	1.48	3.30	3.30	"	0.95	1.0	51	22	1	22.895	Beams lost
15976	"	"	"	1.78	5.55	8.85	"	0.9	0.7	50	37	0	"	

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T1 B (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.E4.2T

152 16.2.84

8:00 Narodka & Nye on shift.
11:45 DL8 #68 replaced → OK in Test run
12:15 Magnet 5°C hotter than normal
15:20 YVOLTS error for MFR 55 #21,24 825 – looks as if Narodka changed them but she didn't say anything. (gone to Jade meeting)
(Narodka changed MFR 54 #17 earlier)

All morning problems with camby regulations (adjustments)

16:00 Stiglow & Weber on Shift

more YVOLTS error for MFR 55 & 54

New version of Nord-50 program installed. This performs online pattern recognition for a restricted category of T2 accept events to be possibly used in event rejection. This has been observed for two fills and caused no observable dead time trouble. Control is via ANALYSIS-FLAGS under the N50-DIALOGUE. (HEM)

16.50 energy saving time: run 15198 stopped.

20:56 run # 15959 end – Cello calls – want to increase energy in about 10 mins

Terminal hang-up – have to call HEM – its the usual spark problem

23:7 Cello say new filling in ~10 mins

23:27 Beams dumped.

17/2/84
00.00 Whittaker and Dietrich on shift

00.22 TDAS READOUT ERROR 33 – missing LAM branch 3 crate 2 : Muon chambers
Paused the run and got:
TDAS READOUT ERROR 45 – MP-16 analysis incplete; YY = 1
Couldn't see anything wrong in the crate – continued the run.

RUN	ON/OFF N50	MIP	TOF	$\int L dt$ (L)	$\int L dt$ CHARM Run	$\int L dt$ EXP.	IBM TAPE	BP (V)	TOF (V)	TRES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

17.2.84

153

01.15 We keep getting a strange noise like a vibrating fan from the NORD 50

THE NORD SNORED

02.10 Luminosity run starts.
04.50 Continuing YVOLTS errors for MFR 54 & 55
5.25 ID high voltage alarm – reset OK.
6.30 Beams lost – energy saving time – magnet run down 7500 → 500 A.

8:00 P. Murphy, R. Fest on shift

called Deep for the morning NORD-50 Run. He will come later this morning

Changed TOF HV values on disk → we were error messages should appear on printer. B Narodka

11:00 Deep exchanged some motor of the Nord 50 fan – but the noise came ~~came~~ back occasionally

16:00 Zorn, Komamiya on shift.
19 45 Beams are ready. Background looks O.K → Start the run.
20 35 ID trip. they lost beams partially
PKR said. they lost power supply of 1GHz → Beam energy has changed to 22.895 (from 22.880) according to the T.V. funny!
Background looks very high → we cannot turn the power of I.D on.
20 45 Beam energy is now back to 22.880 → start the run.
21 55- Toff & beam pipe currents high (~1 M) – Dead time ~50% with large variations
22 15 ID. near max. current. – → Turned off pattern recog. of Nord 50 and ~~filled histograms~~ with 50% of events as a result, currents went down to ~0.6 V. – ~~as~~ suggested by Narodka & implemented by Krehbiel. As a result deadtime ~10%-15%.
22 50 Beams lost I.D. tripped.
23 30 ID trip.

18/2/84 0.00 Mirows and Boudery on shift

3:12 PKR requests "HV OFF". Injection begins. We were never consulted by CELLO!! Still, we would have agreed if they had asked us.

RUN	DATE	START	STOP	RUN START I^+	RUN START I^-	DEAD TIME (%)	T (SEC)	RECORDS IN	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 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.E4.2Tr
154															
RUN	DATE	START	STOP	I^+	I^-	DEAD TIME %	TIME secs	RECORDS IN	RECORDS OUT	TRIGGERS ALL $\times 10^6$	T0 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. 2Tr
15977	18/2/84	0:15	1:16	4.22	4.21	9.9	3626	8001	5704	943.8	93	4077	7293	726	1224
15978	"	1:17	2:24	3.70	3.68	8.4	4004	8002	5428	1042	88	4446	6838	798	1107
15979	"	2:24	3:12	3.27	3.26	7.9	2863	5531	3650	745	58	3164	4575	570	779
15980	"	4:28	5:31	4.73	4.84	12.7	3732	8002	5930	971	123	4045	7626	687	1547
15981	"	3.05	3.17	3.05	3.17	6.3	2063	3340	2054	537	34	2082	2613	340	384
15982	"	6:40	7:55	3.84	3.77	11.4	4111	8002	5647	1070	122	4399	6958	733	1224
15983	"	7:55	8:05	2.52	2.28	5.5	589	905	542	154	84	573	658	72	80
15984	"	8:49	8:56	4.42	4.75	50.3	383	1032	923	100	50	406	1404	75	226
15985	"	9:27	10:25	4.97	5.00	12.8	3465	8001	6086	902	115	3959	7709	~~774~~ 797	1522
15986	"	10:25	11:35	4.23	4.27	9.1	3826	8002	5508	996	91	4410	6908	794	1135
15987	"	11:36	12:36	2.80	2.95	6.0	7542	5549	3261	887	54	3550	4021	543	497
15988	"	14:19	15:22	4.98	5.00	11.2	3579	8002	6012	932	105	3677	8133	675	1289
15989	"	15:23	16:00	4.07	4.22	8.1	5942	4294	2877	572	46	2401	3544	416	573
15990	"	16:37	17:33	5.05	5.10	14.6	3373	8001	6267	877	128	3455	8813	686	1586
15991	"	17:34	18:35	4.40	4.44	11.7	3679	8002	5748	858	112	4053	7323	780	1246
15992	"	18:36	19:25	3.49	3.52	7.6	2919	5587	3655	760	58	3179	4392	524	626
15993	"	20:27	21:30	5.00	5.06	10.4	2713	5947	5807	706	73	2760	5824	505	910
15994	"	21:15	22:06	4.45	4.31	17.4	3066	8002	6274	798	139	3704	8280	633	1206
15995	"	22:07	22:23	3.80	3.79	11.6	959	2308	1712	250	29	1160	2186	228	418
15996	"	23:04	23:13	4.89	4.91	75.7	~~455~~	1369	1304	118	10	714	1556	32	67
15997	"	23:13	00:03	4.74	4.76	27.9	2960	8002	6561	771	215	3936	8257	692	1411
15998	19/2/84	00:03	00:58	4.11	4.19	11.6	3271	8002	5941	852	95	4173	7482	889	1648
15999	"	00:58	01:39	3.67	3.78	10.3	2413	5675 478	4138 332	628	65	3020	5108	678	1064
16000	"	01:40	01:44	RUN CARRIED OUT BUT ENERGY INCORRECT.											
16001	"	01:44	01:52	2.85	3.19	7.1	390	743	495	102	7.2	430	569	71	100
16002	"	02:50	03:42	4.78	4.86	16.6	3064	8001	6344	798	133	3803	8076	837	1868
16003	"	03:42	04:37	4.04	4.22	11.8	3280	8002	5983	854	101	4086	7500	829	1651
16004	"	04:37	5:40	3.58	3.79	9.9	3656	8002	5659	952	94	4404	7031	889	1380
16005	"	5:41	6:45	3.17	3.40	8.4	3848	7814	5252	1001	84	4442	6576	813	1251
16006	"	07:18	07:40	5.06	5.12	35.5	1230	3237	2776	320	114	1554	3472	196	380
16007	"	07:49	08:00	4.60	4.50	79.2	608	2513	2065	158	125	1279	1938	40	52
16008	"	08:01	08:35	4.47	4.36	18.8	1829	4823	3743	476	90	2456	4265	353	537
16009	"	8:45	9:56	3.76	3.91	7.3	4261	8001	5194	1110	81	4831	6033	848	714
16010	"	9:57	10:35	3.17	3.33	6.5	2247	3955	2405	585	38	2497	2872	379	294

	ON/OFF						IBM	BP	TOF	T_2 REJ	Σ BA	Σ MH	E_b	
	N50	MIP	TOF	$\langle L \rangle$	$\int L dt$ BHABHA Run	$\int L dt$ EXP.	TAPE	[V]	[V]	FRACT. %	ENERGY		ENERGY	REMARKS
155														
	N50	ON/OFF MIP	TOF	$\langle L \rangle$	RUN BHABHA $\int L dt$	EXP $\int L dt$	IBM TAPE	BP [V]	TOF [V]	T_2 REJ FRACT. %	ΣBA	ΣMH	E_b	REMARKS
	ON	ON	ON	1.31	4.05	12.90	IBM	0.8?	0.4?	48	27	1	22.895	
	"	"	"	1.01	3.30	16.20	"	0.75	0.3	50	22	3	"	
	"	"	"	0.84	2.40	18.60	"	0.65	0.25	51	16	0	"	Beams dumped
	"	"	"	1.43	4.80	23.40	"	0.9	0.41	50	32	0	"	
	"	"	"	0.72	2.10	25.50	"	0.5	0.15	55	14	0	"	beams dumped
	"	"	"	0.91	2.10	27.60	"	0.45	0.12	50	14	0	"	
	"	"	"	0.02	0.30	27.90	"	0.4	0.1	54	2	0	"	beams dumped.
	"	"	"	0.32	0.00	27.90	"	.95	.95	58	0	0	"	WRONG RF BUCKET. Beams dumped
	"	"	"	1.86	5.10	33.00	"	.9	.8	50	34	0	"	
	"	"	"	1.52	4.95	37.95	"	.7	.3	50	33	3	"	
	"	"	"	0.66	2.55	40.50	"	.55	.45	53	17	0	"	beams dumped
	"	"	"	(1.53?)	6.60	47.10	"	.95	.6	49	44	3	"	
	"	"	"	1.04	2.25	49.35	"	.85	.4	49	15	2	"	beams lost
	"	"	"	1.75	5.10	54.45	"	.95	.7	50	34	0	"	
	"	"	"	1.41	5.40	59.85	"	.85	.5	49	36	0	"	
	"	"	"	1.11	2.70	62.55	"	.75	.3	48	18	1	"	beams lost
	"	"	"	1.78	4.50	67.05	"	.95	.65	48	30	1	"	
	"	"	"	1.82	4.21	4.21	"	~~.80~~	.55	50	28	0	22.910	
	"	"	"	1.35	0.60	4.81	"	.85	.4	50	4	0	"	Beams lost
	"	"	"	0.66	0.45	5.26	"	1.0	.75	61	3	0	"	
	"	"	"	0.98	3.00	8.26	"	1.5/1.08	1.3/1.06	53	20	1	—"—	
	"	"	"	0.93	2.70	10.96	"	0.5/0.8	0.76	51	18	2	—"—	
	"	"	"	0.76	1.95	11.91	"	0.7	0.4	50	13	2	"	EB STOPPED/ENERGY WENT HIGHER DUE TO BEAM DUMP.
	"	"	"	—	—	—	"	0.56	0.75		0	0	22.938	Scaler ran full!
	"	"	"	0.54	0.3	12.27	"	0.5	0.2	41	8	0	22.910	BEAMS LOST.
	"	"	"	1.10	3.91	16.12	"	0.86	0.78	50	26	1	—"—	
	"	"	"	0.89	3.91	20.03	"	0.76	0.50	50	26	0	—"—	
	"	"	"	0,76	3,76	23,79	"	0.68	0.39	51	25	2	—"—	
	"	"	"	0,55	2,40	26,19	"	0.6	0,3	51	16	1	—"—	
	"	"	"	1.85	2.10	28.29	"	0,9	0,6	54	14	1	"	RUN STOPPED IBM ERROR.
	"	"	"	—	0	28.29	F22864	1.1	1.15	57	0	0	—"—	PROBLEM WITH TAGGING?
	"	"	"	1.89	2,55	30.84	"			47	17	0	"	
	"	"	"	1.73	6.61	37.45	F11764	0.7	0.7	50	44	1	"	
	"	"	"	1,29	3.46	40.91	"	0.85	0.15	32	23	2	"	

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T_1 & (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 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 $2T, E4, 2T_T$

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Bereits 08° Duerdoth & Steffen.

8:00 new fill & Run 15984 – but PKR report that launch in in wrong bucket. – have to dump.

Run 15988. Tag rolls HFR 61 off for ~1400 events at beginning of this run. (Had tripped off).

16:00 Heinzelmann und Warming on shift

→ director general V Sörgel visiting the JADE-Experiment
unfortunate enough we can't present him a new resonance,
not even a peculiar event like the 2-μ-2 jet-event from Cello ( in our plane)

19:25 beams lost

21:15 New energy 22.910 GeV — field at 22.895 GeV: CELLO 5.5 kG^{-1}; TASSO 5.7; Mark J ~6.6; JADE 6.7

22:23 beams lost

23:05 new fill ready
after run start >95% deadtime BP ~1.5 V TOF under ~1.5 V → we complain to PKR
improvement of running conditions after a few minutes, back to normal after some while

19 Feb 1984

00:00 OLSSEN & HEDGECOCK.

01:40 During run 15999 SOUVERAUSFALL Beam energy slowly up to 22.933 GeV R16000 with this energy.
Several histograms (esp. FWHV) show strong background on -z side

6:30 Cello asks for beam dump, we agree.

07:40 IBM ERROR. Deadtime is down and no estimate of when it will be back a lie.
Write to tape. Run 16007.
Tagging counters running wild, deadtime 100%. Petra Hall info also down

8:00 Ambrus, Kawamoto

8:35 ID-trip (HV-output + Anode-current - alarm)

11:00 BREAK; set magnet to 500 A, restart ca. 12:00

13:34 set magnet to 7500 A

16° Duerdoth & Narodska.

17:00 New energy 22.925 GeV

18:25 beams dumped, Short Break, Injection

19:12 Lumin. Run
Nearly 100% deadtime → Enquire at PKR, they are optimizing Tasso

19:26 Switch to "Background Optimization", then Lumi run again.

RUN	ON/OFF N50	MIP	TOF	⟨L⟩	$\int L dt$ BHABHA Runs	$\int L dt$ Exp.	IBM – TAPE	BP ⟨V⟩	TOF ⟨V⟩	T_1 REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

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We observe that periodically the deadtime goes to ~100% again, in between to ~10%. PKR has stopped all adjustements.
They go back to initial file (before Tasso optimization).
Then "some thing has happened. All backgrounds are good now".
Beams lost.

20:50 beams back again.

Monday 20 Feb. 1984.

0001 T. Greenshaw & P. Murphy.

0142 Beams dumped.

0150 ID alarm: "anode current" – but the HV was off!

04:51 JDAS Readout error 71. Missing LAM. branch 2 crate 5. Lead glass ADC.s Run 16025

0600 NORD stops. Restart NORD 10.
Run summary 16026 lost

06:45 Nord restarted again, a mistake. Problem was only that terminal was off-line
Run summary 16027 lost
Magnet current 4 500 A

8.00 H. Hillis & A. Petersen on Shift

12:30 Found short circuit/overload in a NIM crate rack 6-2.
Crate exchanged, ok. (M. Minowa)

Scaler Octal printout on terminal 49 removed from YCLRTV — people keep loggers on there! HEW

13:00 power supply of one quadrumod of PETRA has to be renamed

15:20 All recent runs show very high rates of high Energy (> 7 GeV) particles scattered into the +z-tagging system.
→ all luminosity triggers are essentially tagging triggers since the +z-side shows always high energy. This can be seen from the accidental rate of ~70% (normally < 5%). Since the accidental rate is subtracted from the total rate the online luminosity measurement should not be affected so much.
K. M.

16:00 Hedgcock & Dietrich.

17:30 ID alarm with no apparent reason – HT trip alarm but all are on. Reset by H. Riesberg

19:50 START RUN 16028 – ID tripped after 3/4 mins. Reset
ID again tripped.

RUN	DATE	START	STOP	I+	I−	Dead time (%)	TIME (sec)	Records in	Records out	All ×10⁶	Tφ rej ×10⁶	T1 acc sum	T2 acc sum	T1 bit 2 E1>6	T2 bit 17 2T.2E4.2Tr
16011	19.2.84	10 42	10 45	2.91	3.05	7.1	168	374	227	44	3	220	250	35	43
16012	19.2.84	11 24	15 29	4.80	4.98	8,6	3905	8001	5724	1015	87	4246	6924	654	962
16013	〃	15 30	15 45	3.91	4.09	8.1	898	1820	1227	233	19	997	1455	143	201
16014	〃	15.49	16.55	3.71	3.91	7.4	3942	7471	4851	1025	76	4308	5821	697	708
16015	〃	16 56	18 14	3.21	3.40	6.5	4635	8001	4837	1206	79	4988	5904	757	655
16016	〃	18 14	18 25	2.73	2.91	6.1	652	1163	633	170	10.4	703	766	102	69
16017	〃	19 22	19 46	4.97	5.00	41.6	1262	4448	4020	328	136	3120	2384	659	251
16018	〃	20.55	21 54	4.99	5.04	11.1	3496	8001	6019	908	101	3842	7480	685	1169
16019	〃	21.54	22.58	4.06	4.17	8.7	3790	8002	5520	985	85	4353	6550	766	868
16020	〃	22 58	00 13	3.47	3.60	7.1	4460	8002	5111	1159	82.2	4798	6211	811	734
16021	20-2-84	0013	0139	2.89	3.03	5.9	4980	8002	4485	1295	77	5230	5575	730	541
16022	〃	0139	0142	2.40	2.52	5.9	152	275	150	39	2.3	184	166	24	〃
16023	〃	02.52	0342	4.69	4.75	27.5	3022	8001	6600	786	216	3350	9461	623	1486
16024	〃	03.43	06.37	4.13	4.24	19.5	3054	8002	6328	>94	155	3483	8857	660	1427
16025	〃	0437	0525	3.69	3.82	32	2858	8082	6645	743	238	3838	8567	1159	954
16026	〃	0526	0600												
16027	〃	~06:15	06.45					4057	2541						
16028	〃	19 50	20:24	4.63	5.07	20.6	1251	2575	2000	325	66	1076	3119	0	357
16029	〃	20:25	20 37	3.98	4.43	15.2	615	1316	981	160	24	561	1449	0	178
16030	〃	22 06	22 42	3.47	4.18	39.5	1608	3910	3287	419	165	2501	3116	1752	305
16031	〃	22.42	23 24	3.26	3.97	8.5	3048	8082	6144	793	67	5967	4470	4090	405
16032	〃	23 24	0:11	3.00	3.67	7.9	2174	5289	3962	565	45	4053	2931	2739	286
16033	21.2.84	1 54	7 06	4.68	5.06	14.2	657	2361	2015	171	24	1738	1366	1311	188
16034	〃	5 26	6 04	4.07	4.73	48,3	2239	5297	4457	582	281	3322	4239	2414	447
16035	〃	20 59	21 08	4.31	4.35	47.5	540	1143	898	140	66	452	3030	64	290
16036	22.2.84	0:17	1:24	4.17	4.22	10.7	3942	8002	5344	1025	110	4366	6973	640	785
16037	〃	1:25	2 40	3.11	3.27	9.1	4396	8002	6000	1143	104	4498	6481	539	681
16038	〃	2:41	3:34	2.65	2.82	8.5	3298	5755	3532	859	71	3393	4935	470	493
16039	〃	4:52	6:10	4.23	4.27	13.	3911	8002	5645	1017	132	3986	7660	600	955
16040	〃	6:10	6:42	3.13	2.90	11.6	1870	3562	2331	486	56	1927	2990	259	359
16041	〃	13.17	14.18	4.44	4.70	21.5	3683	8001	6090	959	206	3685	9036	605	1132
16042	〃	14.19	14.47	3.64	3.93	12.0	1631	3358	2405	425	57	1618	3388	242	398
16043	〃	1455	1615	2.74	3.33	7.4	4752	9002	4994	1237	92	4688	6244	609	666
16044	〃	16.15	1651	2.33	2.87	6.2	2072	3442	1970	539	33	2145	2423	263	251
16045	〃	20.46	21.02	4.21	4.64	48.2	967	1931	1604	252	12	710	2724	142	393

N50	MIP	TOF	⟨L⟩	∫Ldt Blabla RUN	∫L dt EXP	IBM/TAPE	BP [V]	TOF [V]	T2 Rej frakt.	Σ Blabla	MH	E Beam	Remarks.
ON	ON	ON	1.13	0.30	41.21	F11130	0.5	0.4	46	2	0	22.910	Beams lost
ON	ON	ON	3.05	11,90	63.11	IBM	0.8	0,35	48	67	1	〃	
〃	〃	〃	2,36	1.50	64.61	〃	0,75	0,24	47	10	1	〃	
〃	〃	〃	1.87	8.41	73.02	〃	0,68	0,20	48	56	0	〃	
〃	〃	〃	1.36	5.42	5.42	〃	0.59	0.15	51	36	0	22.925	NEW ENERGY
〃	〃	〃	1.09	0.90	6.32	〃	.5	.1	52	6	0	〃	beams dumped
〃	〃	〃	1.83	2.56	8.88	〃	1.2	1.8	48	17	1	〃	beams lost
〃	〃	〃	2.96	7.97	16 85	〃	1.1	0 6	47	53	3	〃	
〃	〃	〃	2 28	9.48	26.33	〃	0.8	0.3	47	63	1	〃	
〃	〃	〃	1 57	2.67	3 5.0 0	〃	0.7	0,25	51	51	0	〃	
〃	〃	〃	1:11	5:57	39.57	〃	0.65	0.15	53	37	0	〃	
〃	〃	〃	0.84	0.00	39.57	〃	0.45	0.15	56	0	0	〃	beams dumped
〃	〃	〃	1.37	3.31	42.88	〃	0.94	0.85	53	22	0	〃	
〃	〃	〃	1.13	2.86	45.74	〃	1.0	0.9	51	19	0	〃	
〃	〃	〃	0.90	2.56	48.30	〃	1.0	0.8	53	17	0	〃	
〃	〃	〃		~1.7	~50.0	〃						〃	run summary lost
〃	〃	〃	0.59	0.6	~50.6	〃						〃	run summary lost
〃	〃	〃	3.17	3.46	54.06	〃	1.05	0.5	54	23	1	〃	
〃	〃	〃	2.79	2.71	2.71	〃	1.05	0.48	50	18	0	23.340	NEW ENERGY BEAMS LOST.
〃	〃	〃	1.12	2.20	2.2	〃	0.86	1.58	57	19	0	20.100	NOTE! ENERGY.
〃	〃	〃	1.43	5.09	7.29	〃	0.21	0.23	58	44	0	〃	
〃	〃	〃	1.36	3.82	11.11	〃	0.17	0.19	58	33	1	〃	BEAMS DUMPED
〃	〃	〃	2.00	0.93	0.93	〃			58	8	1	20.116	BEAMS DUMPED
〃	〃	〃	1,28	2,86	5,57	〃	1,1	1,5	56	19	1	22.940	NEW ENERGY, Beams lost
〃	〃	〃	1.85	0.45	6.02	〃	1.3	0.3	79	3	1	〃	beams lost
〃	〃	〃	2,23	9.04	15.06	〃	1.0	.2	50	60	0	〃	
〃	〃	〃	1.25	5.72	20,78	〃	0.8	0.12	48	38	0	〃	
〃	〃	〃	0.56	4.37	25.15	〃	0,7	0.1	49	29	0	〃	beam dumped
〃	〃	〃	2.05	5.42	30.72	〃	1.1	0.5	50	17	1	〃	
〃	〃	〃	1.53	2.56	33.28	〃	.8	0.16	48	17	0	〃	beam lost
ON	ON	ON	2.70	9.34	42.62	IBM	1.05	0.45	54	62	4	〃	
〃	〃	〃	2.35	4.67	47.29	〃	1.05	0.26	51	31	2	〃	
〃	〃	〃	1.30	5.57	52.86	〃	0.75	0.20	49	37	2	〃	
〃	〃	〃	1.12	2.11	54.97	〃	0.6	0.15	49	14	0	〃	beams dumped
〃	〃	〃	1.87	1.51	56.48	〃	1.0	1.0	57	10	0	〃	read-out problems

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ & (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T₀ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T.E4.2T<

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20⁵⁰ T_1 BIT 2 zero on both of last two runs. Call M. MINOWA – He is coming in.

During Energy-Saving Time:

1) Crate Controller Branch 4 Crate 1 (Rack 11, L'nd from bottom) exchanged with the "Field-proving" program

2) T1-Trigger powersupply above the latches suddenly emitted a shrill fan-noise. To exchange it we had to apply brute force (wooden hammer) which caused the L_G total-energy patch cable to fall off. Sorry. Ilwel

21.55 We have a "Sender" problem and PKR1 say it will take some time to repair. In the meantime, we run at 20.100 Geo/c while PKR technicians affect a repair.

21.2.84

0⁰⁰ AMBRUS & J. WAGNER

BREAK UNTIL ~3 TO FIX TRANSMITTER.

1 40 NEW FILL, STILL A LOW ENERGY, BUT NOT QUITE THE SAME LOW ENERGY AS BEFORE (20.116 INSTEAD OF 20.100)

1 59 TURN OFF HIGH VOLTAGE. WHY? T1 BIT 2 HAS BEEN VERY HIGH DURING ~~BEAM~~ DATA TAKING AT THESE LOW ENERGIES → SOMETHING TO DO WITH ABOVE REPAIRS?

Yes, it was. The E1 Trigger had been plugged into E2. (because the visual scaler ~~bot~~ was still labeled E2 from old times) Ilwel

E 10 set magnet to 500 A

16:00 Hellenbrand & Nyg on shift.

Bowdery arrives to do muon filter checklist. Finds N50 cannot be started. Howard Miller suggests a Nord 10 restart. Instructions in Operator's Manual carried out. All is now well.

Obs: The Micro-Control / MIP/AMP ON/OFF subcontext says the FAMP is ON when it isn't!

20:50 New fill ready. Start run 16035 Dead time ~ 40–80% varying. (Nord50 occasionally busy)

HEN → Note: Why has the printer terminal stopped printing header for start of a new run? ~~[illegible]~~ Error messages are still printed.

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt ENERGY RUN	∫Ldt EXP.	IBM-TAPE	BP ⟨V⟩	TOF ⟨V⟩	T.RES. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

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22/2/84

0⁰⁰ Spitzer & Kobayashi

1²⁴ Run 16036 ended normally, but the run summary was not printed. Printer Switch OFF/ON. → It started printing.

5⁵⁵ Beam unstable. ID tripped. Only TOF rate is fluctuating while the Beam Pipe Current is stable.

6⁴² Beam lost. Energy Saving Time. Magnet current to 500 A.

8.00 Ball + Kado on shift

9.12 Petra has water problems. Several big hoses have to be repaired. They think they can start injection in ~ ½ hour.

11.05 PKR will start injektion in about 10 minutes; so magnet powered up to 7500 A.

12:00 "Short break" approaching 3 hours!

12.30 INJECTION !

13:16 Run 16041 started. I.D. spurious 'magnet trip' had to be reset. Deadtime fluctuating wildly 10% → 60% TOF + BP stable.

14.43 Suddenly high background, TOF Rate-meter at maximum. ID Tripped TV says "Energieänderung" without any warning! → Run 16042 stopped + HV down some minuts later again: "Luminosity Run". Energy still 22.940 GeV, but they lost part of the Positron-beam.

16:00 Takeda, Heier on shift

18.00 Within the Crate-Controller-Swap & Test Program 4 Controllers were exchanged. Br 4 Cr. 1 & 2 and Br. 6 Cr. 4 & 5. I did my best to bring everything in the working status and checked thoroughly with PIOSLOT and LAMTEST. Nonetheless watch the histo's!

New rule: Not more than 2 black Standard-Eng. Crate-Controllers per branch. They have a wicked way of coupling the data signals to the BTB signals, even when passive. Ilwel

20:50 Missing LAM Branch 6, Crate 5 we phoned Ilwel, he suggested to change the crate controller – this helped

21.20 Readout error 44 – DMA timeout branch 2 crate 1 (Latches)

21.25 Again Missing LAM Br 6 Cr. 5!

It was possibly a bad contact in the LAM Grader. Inspection showed that P1 had gone up without triggering the LAM FF. Exchanging of LAM Grade → seemed to have helped.

RUN	DATE	START	STOP	RUN START I^+	RUN START I^-	DEAD TIME (%)	T1 B (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\phi$ REJ $\times 10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T_1 E_4 2T_2$
16046	22/2/84	21:12	21:52	3.93	4.29	20.9	2349	4792	3610	611	128	2091	6052	309	669
16047	"	21:55	23:01	3.28	3.79	17.0	3914	8001	5824	1019	173	3696	8836	573	955
16048	"	23:01	0:14	2.82	3.29	12.3	4305	8002	5380	1121	138	4122	7231	629	723
16049	23/2/84	0:14	0:25	2.44	2.88	10.7	632	1156	736	164	18	638	964	99	94
16050	"	1:23	2:31	4.67	4.66	22.9	3854	8002	6013	1003	229	3875	10045	690	1196
16051	"	2:30	3:16	3.84	3.87	8.2	2640 5635	5035	3218	687	56	3024	3972	483	558
16052	"	4:13	5:13	4.64	4.64	14.3	3401	7548	5530	885	126	3850	7192	685	1215
16053	"	5:16	6:26	3.70	3.80	8.2	4138	8002	5241	1077	89	4596	6517	798	846
16054	"	6:26	6:48	3.13	3.23	7.0	1241	2266	1417	323	23	1396	1665	198	210
16055	"	9:58	10:41	4.61	4.72	33.7	2305	4717	3732	600	202	2019	6370	377	871
16056	"	10:41	10:44	3.78	4.04	28.0	154	364	288	40	11	147	376	31	110
16057	"	13:22	14:30	4.70	4.94	17.6	3787	8002	6016	986	174	3807	8196	639	1073
16058	"	14:31	15:06	3.56	3.96	10.1	2035	4139	2843	530	54	2139	3518	341	422
16059	"	15:10	16:20	3.21	3.60	9.2	4150	8001	5434	1080	100	4119	7189	639	805
16060	"	16:20	16:51	2.74	3.11	9.2	1754	3547	2228	458	42	2130	2431	238	265
16061	"	20:19	21:31	4.12	4.59	12.6	3847	8002	5806	999	125	4009	7403	674	885
16062	"	21:30	22:31	3.17	3.61	8.3	3548	6772	4516	922	77	3612	5566	540	655
16063	24/2/84	2:18	3:33	4.23	4.28	7.3	4511	8002	5232	1173	86	4670	6420	624	858
16064	"	3:32	4:36	3.36	3.46	6.9	3700	6291	3859	962	67	4009	4474	507	462
16065	"	5:03	6:11	4.63	4.64	9.0	4000	8002	5533	1040	94	4430	6696	704	911
16066	"	6:10	6:52	3.71	3.78	7.8	2445	4441	2985	636	47	2653	3452	414	441
16067	"	11:45	12:51	4.33	4.64	18.1	3883	8002	6091	1010	182	3571	10252	598	1027
16068	"	12:52	13:37	3.44	3.81	15.2	2442	4872	3558	635	96	2234	5792	334	543
16069	"	15:08	15:57	3.08	4.15	12.1	2806	6192	4099	730	88	3613	4762	395	711
70	"		JUNK												
71	"		JUNK												
16072	"	22:06	22:41	4.36	4.55	7.2	2074	3674	2481	540	39	2049	2942	296	343
73	"	22:44	0:02	3.71	3.93	7.2	4658	8002	5154	1212	87	5034	5517	601	603
16074	25/2/84	0:02	00 49	2.85	3.27	5.6	2744	4114	2846	714	39.7	2634	2859	336	267
16075	"	01:51	3:10	4.52	4.49	7.5	4530	8002	5317	1178	88	4904	5740	652	661
16076	"	03:10	04:31	3.41	3.03	7.5	4667	8001	4972	1214	90.8	5496	4943	619	447
16077	"	04:31	04:37	2.75	2.39	5.6	282	508	306	73.1	4.1	299	321	43	29
16078	"	5:49	5:55	3.91	4.19	13.4	641	1287	870	167	22	562	1293	96	147
16079	"	5:55	6:14	3.77	4.05	13.1	930	1711	1138	241	31	803	1574	129	185

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$	$\int L\,dt$ Bhabha Run	$\int L\,dt$ Exp.	IBM / TAPE	BP [V]	TOF [V]	T2 xtj Fract.	Σ Bhabha	M.H.	E_{BEAM}	REMARKS.
ON	ON	ON	2.45	4.07	60.55	IBM	1.0	0.6	57	27	4	22.940		
"	"	"	1.82	7.54	7.54	"	1.2	0.6	58	50	4	22.955	New energy	
"	"	"	1.35	4.68	12.22	"	1.0	0.35	48	31	5	"		
"	"	"	0.96	0.75	12.97	"	0.8	0.15	46	5	Ø	"		
"	"	"	2.33	8.90	21.87	"	1.3	1.4	61	59	Ø	"		
"	"	"	2.13	5.28	27.15	"	0.7	0.3	52	35	1	"	Beams lost	
"	"	"	2.54	9.50	36.65	"	0.8	0.6	51	63	3	"		
"	"	"	1.86	8.45	45.10	"	0.6	0.45	50	56	1	"		
"	"	"	1.55	2.41	47.51	"	0.6	0.15	51	16	Ø	"	Beams lost	
"	"	"	2.31	5.43	52.94	"	1.15	0.85	59	36	1	"		
"	"	"	1.90	0.60	53.54	"	?	?	47	4	0	"	Beams lost.	
"	"	"	3.03	10.71	64.25	"	1.1	1.05	51	71	4	"		
"	"	"	2.33	5.43	69.68	"	0.89	0.28	46	36	0	"		
"	"	"	1.62	6.34	6.34	"	0.89	0.26	48	42	1	22.970	New energy	
"	"	"	1.36	3.17	9.51	"	0.89	0.24	45	21	1	"	ENERGY-SAVING TIME.	
"	"	"	7.58	9.82	19.33	"	0.8	1.0 ~~1.6~~	48	65	1	"		
"	"	"	1.78	5.59	24.92	"	0.8	0.6	46	37	0	"	Beams lost.	
"	"	"	2.35	9.21	34.13	"	0.75	0.25	50	61	1	"		
"	"	"	1.72	7.10	41.23	"	0.6	0.2	52	43	3	"	Beams dumped	
"	"	"	2.43	9.06	50.29	"	0.9	0.5	49	60	3	"		
"	"	"	1.87	3.47	53.76	"	0.65	0.2	51	23	0	"	Save-Energy-Time	
"	"	"	2.66	8.16	61.92	"	0.8	0.6	58	54	2	"		
"	"	"	1.97	4.08	66.00	"	1.1	0.4	56	27	0	"	← lost beams	
"	"	"	1.55	4.23	4.23	"	0.8	0.3	48	28	0	22.985	New Energy	
								0.65	0.15					
"	"	"	2.30	6.65	10.88	"	0.8	0.25	48	44	1	"		
"	"	"	1.95	8.92	19.80	"	0.7	0.18	49	59	1	"		
"	"	"	1.30	2.12	21.92	"	0.6	0.10	51	14	1	"	Beams dumped	
"	"	"	2.27	9.83	31.75	"	0.8	0.9	52	65	3	"		
"	"	"	1.37	6.35	38.10	"	0.5	0.2	52	42	0	"		
"	"	"	0.88	0.15	38.25	"	0.4	0.1	41	1	0	"	Beam dumped	
"	"	"		2.57	40.82	"	0.9	1.1	47	17	0			
"	"	"		1.16	42.18	"	0.8	0.25	45	9	0			

RUN | DATE | START | STOP | RUN I⁺ | START I⁻ | DEAD TIME (%) | T₁ ⊥ (SEC) | RECORDS IN | RECORDS OUT | ALL ×10⁶ | TØ REJ ×10⁶ | T₁ ACC SUM | T₂ ACC SUM | T₁ BIT 2 E>16GEV | T₂ BIT 17 2T>EL 2T>

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23/2/84

0⁰⁰ Krehbiel & Takeshita

1.20 new filling ready. At first high background. TOF Rate 1.5 V. Deadtime >50 %.
At PETRA Bendelift was on shift. Shift pressure induced in into "Bezelen fahren" (Driving bumps?). It reduced the ToF rate to 0.7 V, but deadtime still high.
1.50 Twisting + decreasing currents helped. Deadtime below 10 % Currents 2× 4.22 mA
3.16 Beams lost, ID soft trip.
4.10 New Beams. Background conditions o.k. soon after ramping up ToF 0.6 V, Deadtime 15 %
5.09 ID trip – start new RUN (16053)
6:50 CELLO asked Lumi; JADE 47 nb⁻¹, CELLO 50 nb⁻¹: one more fill.

8.00 Schneekloth & Mashimo

9:17 Magnet on
9 58 start run 16055
10⁰⁰ soft ID trip. Dead time rather high and not stable.
10 41 start run 16056.
10 44 beams lost. Down HV. Run 16056 stopped.
~11 30 "short break"
11 53 injection started
12 15 beams lost. Injection again.
13²² start run 16057. The status of deadtime is now better than before.
14²⁵ ID trip. Reset alarm. continue run.
14 58 CELLO asked us about Integrated luminosity and proposed the energy change.
CELLO 72 nb-1
TASSO 59
JADE 68.7
MARKJ ?
15⁰² Energy change. Stop run 16058. ID trip (anode current)
15 10 Start run 16059 with new energy. (22.970 GeV)
16⁰⁰ Becker & McLaren on shift.
17⁰⁰ - 19⁰⁰

Since everything went smoothly during the day I exchanged 3 more gate controllers within the "Field-trial & Equidistribution of black Controllers" the controllers Br 7 Cr. 7 d 3 Rack 75 Center & Bottom
Br. 5 Cr. 3 Rack 72 Center
The first two went as "field-proven" into the spares shelf, the latter went for repair of the front LED's. Krehbiel

RUN | DATE | START | STOP | ON/OFF N50 | MIP | TOF | ⟨L⟩ | ∫Ldt BHABHA RUN | ∫Ldt EXP. | IBM TAPE | BP ⟨V⟩ | TOF ⟨V⟩ | TURES FRACT. | Σ ENERGY | M.H | E BEAM | REMARKS.

23.2.84

Everything was tested with PIOSIOT and LAMTEST.

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20:10 Beams back at last !!! Background OK.
21:00 Spontaneous ID alarm – reset OK.

24/2/1984

0.00 Hatsumura, Meier on shift
2:15 very good beam conditions: $L = 2.6 \cdot 10^{30}\ cm^{-2} s^{-1}$
DT = 7 % (stable)
currents: 4.2 mA
Tagging Rates ±2 symmetric
TOF-meter: 0.25 V
BP-meter: 0.7 V
3:30 Message on Lineprinter:
'illegal monitor call' appears at each run-start
Why did you not read JDAS Operators manual Section 4.5 on Errors on system console?
8⁰⁰ G. Zorn & H. Takeda on shift
11:05 'illegal monitor call' is clearly described in section 4.5 and proves to be ZSEND probably being corrupted. Rebuilt as described in Appendix A6. (HEM)
11:45 Beams are filled. Start run 16067.
12:00 All Phone service out! – Dead time high. – Asymmetric tagger counts
12:15 Phone service returned – Dead time now OK, but still variable. PKR notified (229)
13:10 ID tripped. Anode current.

The indications are that some thing may be corrupt within the system which only seems to affect ZSEND. Have stopped ZSEND. Will rebuild system at some opportunity.

16⁰⁰ Becker & Takeshita
16⁴⁷ Magnet → 300 amps
17³⁰ Rebuilt system. If ZSEND problem reappears, call MILLS/OLSSON (in that order!) J.O.
21¹⁰ YPARA MIPROC NO RESPONCE: JUST AFTER STARTING RUN, THIS RUN ENDED. beams lost. RUN 16070. 71. became JUNK. Miproc reloaded beams back 22⁰⁰, Run 16072 started OK.
22³⁵ Feldkamler alarm, run stopped (high current)

25/2/84

00:00 Ball, Dietrich

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ & T₂ (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T₀ REJ. ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T.>E4.2T.	ON/OFF N50	MIP	TOF	⟨L⟩	SLdt BHABHA RUN	SLdt EXP.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TI REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

166 25.2.84

00:49 Beams dumped

01:51 New fill 4.5 mA/beam. V low background. D.T. 7%. Run 16075.

02:00 I.D. trip Reset OK.

03:50 I.D. trip. Reset OK.

04:36 Beams dumped.

05:28 New fill background ridiculous: 3.0 & 12.0 cf. 0.8 & 0.9 in previous fill.

05:38 — suddenly a dramatic improvement occurs, start run 16078.
Logging MFR 61 off. Won't reset. Even resetting indiv. channels by hand not accepted.
'9999' remains. Call K.H. Meier.

7:00 Logging Power Supply MFR 61 exchanged K.H.

8.00 Kellenbrand, Weber on shift

9.34 PETRA runs at 2×23 GeV. Three cheers for the PETRA-crew! We bring them a bottle of Champagne!

11.25 Beams lost because of "Seuderamfall". Run 16084 stopped.

12.50 Run 16085 starts well, but strong B-deadtime fluctuations make it necessary to complain to PKR: They promise to watch it.

13.07 I.D. trip: pause run and reset

13.27 B-deadtime = 100%; PKR is optimizing, succeeds in reducing B-deadtime to 10%.

14.22 I.D. trip; pause run 16086 and reset; restart 14:23;

15:50 " " " 16087 " " " 15:53;

16:00 Mills, Gibbs

21 00 Two miserable Kills so far lost after short time. One gets the impression the current shift can't whereas the previous shift could.

Event display updated so that if pattern recognition is done AND tracks are requested in the view options then the tracks are also drawn on the FAST-3-VIEW

Test version of Nord-50 program installed. This performs pattern recognition for all T_2 events where the number of hits in Rings 1 & 2 of the inner detector does not exceed 400. Reject candidates are marked as type 10 but as yet are not actually rejected.
Observation has shown no visable effect on dead time. If it is suspected to cause problems, turn OFF/ON via ANALYSIS-FLAGS under N50-DIALOGUE BUT once things improve turn it back on.

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25.2.84

If the Nord is reloaded specify (DIT)N50DAR when it asks for Nord-50 program (no disaster if you get the default tho). I will permanently install this version tomorrow. HEM — started run 16092 — with final "system" version!

23:50 Terminal 37 (with MUTAT running) had spatted & gone dumb. Usual method of power off, power on, check BLOCK is OFF & LINE ON worked yet again. HEM

So 26.2.84

0:00 McCann & Warming on shift

1:04 Magnet trip: "Vollaufdruck Primär <" + "Rücklauf <35°C"
According to the instructions, we can run it up again, but there is no temperature recording device. Anyway, we run it up slowly, stopping at 5000 A for about 5 minutes. No further problems, so went up to 7500 A. ⇒ Continue run.
We have found it, but we don't know how to get it to output the temperatures.
A little piece of paper on how to operate it would be helpful!!

03:15 MISSING LAM BR 2 CR 5 : LG ADC's.

05:00 "Short Break"

05:50 Magnet → 500 A.

08:00 Hedgcock & Wanamaker.
Ring CELLO as to current PETRA position. Break will continue for undefined time. Shortly after, RESTART 09:00 hrs appears.

12:50 Start Injection.

12:20 Run 16095 started - with new energy 23.015 GeV, Background is low, dead time ≤10%

14:00 SHORT BREAK. Run Magnet down to 500 A.

15:50 Checked with CELLO — Transmitter fault. Repair time unknown. Some?? hours predicted

RUN	DATE	START	STOP	RUN START I+	RUN START I-	DEAD TIME (%)	T1 Ø (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT2 E1>6GeV	T2 BIT 17 2T.E4.2Tr.
16080	25/2/84	06:14	07:16	3.56	3.89	11.9		3692	8002	5075	961	114	4695	5798	551	665
16081	"	07:17	08:32	3.04	3.29	7.3		4505	8001	7848	1171	86	4801	5943	693	611
16082	"	08:32	9:05	2.58	2.81	6.2		7934	3238	1978	503	31.2	1943	2302	263	230
16083	"	09:40	10:47	4.24	4.76	11.8		4004	8002	5586	1024	123	4277	7275	718	857
16084	"	10:48	11:25	3.43	3.48	11%		2205	4901	3208	574	63	3226	2986	383	366
16085	"	12:40	14:07	4.76	4.66	11.1%		4030	8002	5676	1049	116	4377	6522	651	812
16086	"	14:08	15:21	3.53	3.49	8.1		4265	8002	5243	1111	90	5159	5309	733	620
16087	"	15:22	16:39	2.92	2.89	7.7		4432	8001	4881	1154	88	5542	4718	683	426
16088	"	16:40	17:59	2.45	2.45	6.8		4722	8002	4753	1229	84	5626	4712	669	411
16089	"	17:59	18:02	2.09	2.09	6.		107	239	136	278	1	128	115	17	11
16090	"	19:21	19:50	2.97	3.78	6.5		1686	2761	1772	438	28	1670	2047	230	228
16091	"	20:50	20:58	3.99	2.85	6.2		480	720	510	124	7	450	584	63	61
16092	"	23:31	00:48	3.89	3.76	7.6		4582	8002	5210	1193	91	5068	5653	612	593
16093	26/2/84	00:48	02:13	2.87	2.99	5.5		3280	4984	2828	853	47	3299	3304	418	290
16094	"	03:09	03:49	4.42	4.54	12.4		2325	5181	3775	605	75	3373	3108	363	387
16095	"	12 20	12 40	4.13	4.60	7.7		1156	2291	1535	301	23	1317	1749	179	229
16097	"	18 08	19:20	4.84	4.67	9.4		4170	8002	5664	1095	102	4826	5979	580	712
16098	"	19 21	19 54	3.38	3.23	6.1		2220	3518	2142	577	35	2180	2694	289	308
16100	"	23 24	0:22	4.35	4.43	10.8		3374	7061	5127	877	94	4639	4768	550	745
16101	27.2.84	1 02	2:13	4.41	4.51	8.2		4154	8002	5557	1080	89	4789	6126	693	1050
16102	"	2 12	3:05	3.23	3.59	7.3		3106	5829	3836	808	59	3628	4205	545	800
16103	"	3:36	4:33	4.57	4.45	13.1		3404	8002	5921	885	115	5458	4717	602	733
16104	"	4:33	5:29	3.65	3.70	12.9		3327	8002	5887	866	111	5803	4138	566	713
16105	"	5:31	6:51	3.11	3.19	6.3		4654	8002	4874	1211	77	5236	5468	747	867
16106	"	14:43	14:56	3.70	3.29	7.0		737	1300	823	192	13	763	961	111	118
16107	"	16:09	16:42	4.44	4.66	9.1		1947	3863	2722	506	46	2046	3149	288	355
16108																
16109	"	19:46	19:56	4.28	4.29	13		549	1045	751	143	18.6	520	748	66	96
16110	"	20:03	21 17	3.96	3.99	8		4403	8002	5373	1146	91	5046	5521	578	1941
16111	"	21:17	22 16	3.16	3.21	6		3482	5474	3227	906	53	3528	3876	450	432
16112	"	22:58	23:08	4.71	4.71	8.4		221	506	371	57	5	263	360	46	57
16113	28/2/84	0 22	1 18	4.84	4.69	7.5		2680	4845	3217	697	52	2930	3537	357	473
16114	"	3 13	4 32	4.70	4.72	6.8		4726	8001	5269	1230	83.3	4667	6259	660	789
16115	"	4 32	4 59	3.40	3.28	6.1		1571	2520	1576	409	25	1525	1886	202	234

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt BHABHA RUN	EXP ∫Ldt BHABHA	IBM / TAPE ?	BP (V)	TOF (V)	T2 REJ. EV FRACT.	⟨BHABHA⟩	M.H.	E_BEAM	REMARKS
"	"	"	"	0.16	7.11	49.29	IBM	0.7	0.2	46	47	3	22.985	-2 TAGGING OFF H.V. FAULT.
"	"	"	"	1.49	8.47	57.96	"	0.6	0.13	49	56	1	"	
on	on	on	on	1.21	2.57	60.53	"	0.6	0.11	47	17	1	"	beams dumped
on	on	on	on	2.63	18.63	8.63	IBM	0.85	0.3	57	57	1	23.000	New Energy
"	"	"	"	2.00	4.54	13.17	"	"	"	47	30	2	"	beams lost
"	"	"	"	2.84	10.60	23.77	"	0.9	0.45	47	70	4	"	next fill, interrupted by I.D trip.
"	"	"	"	1.77	8.48	32.25	"	0.65	0.18	49	56	0	"	
"	"	"	"	1.28	4.39	36.64	"	0.55	0.12	51	29	2	"	
"	"	"	"	0.89	4.24	30.88	"	0.47	2.02	53	28	1	"	
"	"	"	"	0.92	0.00	40.88	"	40	.06	43	0	0	"	beams dumped
"	"	"	"	1.61	2.77	43.15	"	.69	.17	50	15	0	"	beam lost
"	"	"	"	1.79	.76	43.91	"	.70	.20	43	5	1	"	beam lost
"	"	"	"	1.69	9.54	53.45	"			51	63	1	"	
"	"	"	"	1.26	3.79	57.24	"	0.50	0.09	52	25	1	"	Beams lost.
"	"	"	"	2.34	6.21	63.45	"	0.72	0.30	45	41	0	"	Beams lost.
"	"	"	"	3.24	3.94	3.94	"	0.68	0.22	47	26	2	23.015	BEAMS LOST
"	"	"	"	2.04	8.34	12.28	"	0.8	0.3	49	55	1	"	
"	"	"	"	1.38	3.94	16.22	"	0.6	0.15	53	26	0	"	Beams lost
"	"	"	"	2.55	9.28	9.28	"	0.75	0.3	52	67	3	22.000	Beams lost N.B. Beam Energy
"	"	"	"	2.39	10.67	19.95	"	0.6	0.25	50	77	3	"	
"	"	"	"	1.71	5.68	25.63	"	0.5	0.2	48	41	1	"	Beams dumped
"	"	"	"	2.23	8.04	33.67	"	0.65	0.2	49	58	1	"	
"	"	"	"	1.71	5.26	38.93	"	0.52	0.12	50	38	1	"	
"	"	"	"	1.23	5.13	44.06	"	0.48	0.15	52	37	0	"	Beams dumped
"	"	"	"	2.67	3.03	19.25	IBM	0.72	0.18	48	20	0	23.015	Beams lost
"	"	"	"	2.77	7.13	26.38	"	0.9	0.37	45	47	2	23.016	← attention / Beams lost
													23.015	no data / missing LAM problem
"	"	"	"	2.77	1.52	27.90	"	0.7	0.25	34	8	0	"	stopped due to missing LAM
"	"	"	"	1.89	9.25	37.15	"	0.65	0.2	49	61	3	"	
"	"	"	"	1.31	5.16	42.31	"	0.56	0.12	53	34	1	"	stopped for new fill
"	"	"	"	2.74	0.61	42.92	"	0.76	0.34	38	4	0	"	Beam lost, ID tripped 2 times
"	"	"	"	1.61	3.49	46.41	"	0.76	0.32	49	22	2	"	ID trip 5 times, but true beam lost
"	"	"	"	1.19	6.07	52.48	"	0.72	0.24	49	40	1	"	
"	"	"	"	0.74	0.91	53.39	"	0.60	0.15	50	6	0	"	Stopped for trigger hangup

RUN | DATE | START | STOP | RUN I^+ | START I^- | DEAD TIME (%) | T↓ (sec) | RECORDS IN | RECORDS OUT | ALL ×10⁶ | TØ REJ ×10⁶ | T_1 ACC SUM | T_2 ACC SUM | T_1 BIT 2 $E_1 > 6$ GEV | T_2 BIT 17 2T. 2E. 2Tr

26.2.84 16⁰⁰ R. Felst & H. Mills on shift

We inherit no beam

Funny with YMAIL. Although PETRA energy etc are updated the IBM disc is / was N/A. IBM link said to be up. IBM-ATTENTION produced PRIV-INST on console. Rebut YMAIL - no effect. Did a HENT & rebuilt everything - same thing. Most odd. Tried a dummy run to IBM (run 16096 is junk) and it cured itself. Don't understand! — consulted with D. Cords - probable that IBM-ATTENTION not tried since last change a few weeks ago.

18⁰⁰ Beam lost at 23.015 GeV, good conditions

20⁰⁰ Beam lost, one transmitter broken repair not possible before monday, continue running at 21.800 GeV

21⁴⁵ Beam lost 10 min after reaching 21.800 GeV

For dayshift: — One of the two dimmer lamps is broken. Perhaps Herr Masbender or Herr Krehbiel can fix it!

N50DAR created yesterday now installed as default since is has worked with no problems. HEM.

DELLO decided to go to 22.000 GeV

23⁴⁵ Beams at 22.000 GeV ready. Runs 16096 & 16099 not existing (just pedestal)

27.2.84 !

0:00 T. Kobayashi and H. Rieseberg on shift
0:20 Beams lost. 1:00 New fill 22.000 GeV.
1:02 Run 16101 started : Month is 0 on teletype, colour TV and Histograms
Month is correct on event display
(CAMAC clock is correct, 7 min ahead of normal clock)
3:00 Stop Run 16102 for refill
3:30 Reload Nord to get back month. New fill ready (22.000 GeV)
3:35 Run 16103 started. In the beginning high background in trigger bit 13 : SEPT 1 x < 1 TOF (J.O.-Trigger)
6:50 stop for energy saving, Magnet to 1000 A

ON/OFF N50 | MUP | TOF | ⟨L⟩ | ∫Ldt BHABHA Run | ∫Ldt Exp. | IBM TAPE | BP ⟨V⟩ | TOF ⟨V⟩ | TURB FRACT. | Σ ENERGY | M.H | E BEAM | REMARKS.

08:00 McCann / Fünje on shift
13:30 run up Magnet to 7500 A ; Inspection
13:35 short break

13:46 CAMAC clock reset to GMT +1 hour ! Nord reloaded to get this internally as well. HEM

16:00 NOZAKI, KAWAMOTO (coordinator)
New fill ready. Eb = 23.016 ! we asked TASSO, and TASSO asked PKR.
on TV. → Energy can't be changed.
Eb for RUN 16107 = 23.016.

16:45 Beams lost. Energy saving time started : Magnet → 500 A.
During energy saving time Crate-Controller swapping program continued.
1.) in Branch 5 Crate 4 (Rack 12 second from top) a Jaeger Controller was exchanged.
2.) in " 6 " 3 " 13 bottom 3 tried to exchange a Standard-Eng. Controller, but the new one gave trouble, so I replaced the old one. Everything tested with PIOSLOT and LAMTEST. Still, we have now five spare Field-proven Crate-Controllers on the shelf. Krehbiel
19:0 ~~Magnet → Stand~~ Magnet → nominal value
19:36 JDAS ERROR Missing LAM Br 4, cr 3. ID Ring 2 appear for every event when we start a new run R 16108. Maybe I not cleared at beginning of run. Krehbiel checked the problem.
19:45 Run 16109 starts normally.
19:50 The same error [missing LAM Br 4, cr 3] occurs after ≈ ~~15~~ minutes.
A dip was found in the JETC hitmap at Ring 3
19:56 Run 16109 stopped.
After wiggling the branch highway connector, ~~the trouble~~ it works, ≈ 1260 - 1320
(checked by ~~Klee~~ Krehbiel's test program). Set the monitor. don't touch.
20:03 RUN 16110 start
20.15 F Foster here, replaces T Nozaki
21 17 Run 16110 ended Run 16111 begins [EXCITEMENT - A FIRE IN THE BOAT PARK !]
22 16 Run 16111 stopped for new fill - hope it is as trouble free as the last one !
23:00 I.D tripped (Anode current) Beams partially lost Run 16112. alarm Pause Reset Continue
23 10 Beam lost + I.D Trip (Anode current) Run 16112 Terminated.
24⁰⁰ Cartwright, Olsen Beams back at 00²⁴ Start R 16113 ID trip 033, 049 (Same column) 101, 112
3:12 Beams back Start R 16114 118 ID trip, beams lost

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (12)	T↓ (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T↓ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GEV	T₂ BIT 17 2T.E4.2T

3⁵³ Message for Howard Fisk. By F11, F6, F5 in fairly quick succession, we came in the famous "too quick - display busy" endless loop, with no Tektronix access possible. There was no other screen activity or indeed any terminal activity since run began. Does this help you to catch the bug? J.O.
After a while, it was possible again to do histograms! I tried this and it worked!! HEM

5⁰¹ Hang up in trigger box, pause/cont no help, start new run OK.

6⁰⁰ Beams very low, Kados pickup had to be reset to 3 dB (< Ø). Just after, beams are lost.

6³⁰ PKR say no beam before energy saving → Magnet to 500A
Kados Pickup back to 6+3 dB again

8⁰⁰ Weber & Kobayashi

10³⁵ We have little background during run 16117, but PKR-Screen shows "background optimisation".
our B-dead time is ≈ (5-10)%

11⁴⁰ Magnet goes off. See Pause run 16118; attempt to reset magnet without success. Call MKK1.
" Controll panel in trigger room indicates "fault"

12⁰² Magnet on again. Continue run.
Cause of magnet trouble: Somebody of K had been working at the cooling pond, cleaning filter or something of that kind: he claimes to have touched a cable by accident, which resulted in turning off the cooling water for our magnets. Sounds strange though!

12¹³ I.D.-Trip. Pause run 16118, reset in Trackback, continue.

12:30 Meier replacing Weber on shift

12:35 'no Triggers', Kretschel description level 5, reset → o.k.

13:56 " "

14.28 PETRA-Energy 23.030 GeV

16⁰⁰ T. Mashimo & Gizorn on shift

16³⁵ ID trip (Anode current), Pause run 16121 reset, HV on again, but "short break". stop run.

17⁰⁰ Magnet current → 500A

18⁴⁵ Magnet current drifted to ~1400A. - Could not be controlled either by computer or manually. MKK1 was called and "reset-run down" was switched. Magnet controls then operated OK.

19⁵⁷ Beams ready. "Background optimization" but we started run 16122.

21¹⁰ I.D. tripped Pause on run no 16123 - Reset + run continued.

22¹⁵ Beams lost. (We have little background. But PKR has been trying "background optimization" for CELLO (≈ 30% deadtime).)

99⁴³ Beams ready. Start run 16124.

23⁵⁰ FFoster here. & Gr. Kniese

On/OFF N50	MUP	TOF	⟨L⟩	∫Ldt Background Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TI REJ FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

{On this day spinsters may propose to eligible batchelors! watch out Howard.....} Some hope

"leap" year day →

29/2/84 other are all the historic events? only 2 so far after SL = 44!

03 30 I10 trip reset. Start new run.

03 50 Mum crate warning - fourth part: 4 Reset.

06 22 " " " " Reset again.

06 35 " " " " "

06 40 I10 trip / reset.

06 42 Beams off for energy saving.

06 50 Run down magnet.

08:00 Warning & Greenshaw on shift

09:00 "Short Break"

10:00 "Injection" Magnet up to 7500A

11:47 beams lost due to transmitter failure

Question to HEM: when E-beam from PETRA is updated to ZERO at the end of a fill (beams lost), why is then some information on the run-summary (E, σ_E, L, ∫L, ...) right too, while the information is still available from the color TV? see run 16122

12:10 "Short break" and 0 for seconds later "Injection".

18:15 new energy 23.045 GeV

↖ Tell me EXACTLY what you did 11617
It's never happened now.

Nord-50 program updated with Lorenz angle = -18.9 etc.
Version active starting run 16137 HEM

16:00 Bohl & Barth on shift

16:45 Magnet → 500A after dumping beams

19:00 Magnet → 7500A.

19:20 "Lunge Untersuchung"

20:10 New fill. Run 16137.

22 44 Std. histograms of run 16138 all look ok

23:00 Run 16139 started with simultaneously to IBM and tape FA1107 to satisfy H. Mills (w200)

23:15 First ~1000 evts of run 16139 DL81 for runs 1264-1272 was dead. After some tests at resumed operation. The end conversion-indicator lamps was flickering also # at the time when no hits arrived at the Nord.

23:20 ID-trip

23:41 Stop run 16139. There is something wrong with the on line

RUN	DATE	START	STOP	RUN START I⁺	RUN START I⁻	DEAD TIME (%)	T live (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T∅ REJ ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ Bit 2 E₁>6 GeV	T₂ Bit 17 2T.E 4.2 T
16116	28/2/84	5⁰⁰	6⁰⁹	3.20	3.08	5.8	3716	5745	3471	967	56	3654	4047	448	408
16117	"	10:03	11:21	4.50	4.57	7.1	4643	8002	5286	1208	86	4702	6249	638	816
16118	"	11:22	12:46	3.40	3.55	13.6	3195	4733	2895	832	113	3156	3781	370	406
16119	"	13:14	14:15	4.61	4.62	9.1	3590	6800	4734	934	84	3925	5367	651	994
16120	"	14:28	15:46	3.42	3.41	6.4	4661	8002	4966	1213	78	5136	5659	755	849
16121	"	15:47	16:36	2.85	2.87	5.6	2935	4629	2620	763	43	3090	3073	417	28 ~~999~~
16122	"	19:57	21:12	4.18	4.35	7.1	4473	8002	5354	1164	82	4785	6182	692	~~999~~ 999
16123	"	21:12	22:14	3.18	3.43	6.0	3359	5427	3290	874	52	3497	3843	524	499
16124	"	22:43	23:55	4.69	4.71	7.7	4307	8002	5302	1121	86	4562	6437	737	851
16125	"	23:56	01:42	3.46	3.54	6.8	4537	8001	5076	1180	80	4801	6009	695	768
16126	29/2/84	01:12	02:21	2.88	2.96	7.7	4080	8002	5344	1062	82	5095	5782	849	1432
16127	"	02:21	02:30	2.54	2.62	7.7	496	1056	709	129	10	665	760	111	159
16128	"	03:16	03:31	4.46	4.51	8.3	800	1626	1158	208	17	818	1193	113	167
16129	"	03:40	4:58	3.92	4.02	6.7	4627	8001	5153	1204	80	4848	5834	754	741
16130	"	04:59	06:21	3.13	3.28	6	4891	8002	~~4697~~ 5203	1273	77	5138	5501	739	596
16131	"	06:21	06:43	2.60	2.77	6	1[illegible]9	1824	1058	291	18	1184	1213	150	127
16132	"	10:37	11:47	4.35	4.38	6.8	4473	7110	4654	1087	74	4234	5599	535	770
16133	"	12:35	13:15	4.58	4.54	8.3	2110	4063	2756	549	45	2395	3161	322	559
16134	"	13:17	13:38	3.56	3.53	6.7	1192	2155	1348	310	21	1326	1573	199	224
16135	"	15:26	16:44	4.02	4.24	7.3	4623	8002	5324	1204	88	4651	6271	623	810
16136	"	16:44	16:47	3.21	3.29	6.4	165	257	162	27	1.7	151	122	27	22
16137	"	20:10	21:31	4.14	3.60	6.8	4767	8002	5344	1241	85	4442	6168	562	726
16138	"	21:31	22:58	3.20	2.69	5.8	5115	8002	4865	1347	78	4887	5728	625	589
16139	"	22:58	23:41	2.69	2.21	5.3	2304	3572	2108	600	31	2170	2308	252	219
16140	1/3/84	0:13	0:35	4.55	4.40	8.4	1210	2342	1676	314	26	1205	1944	200	263
16141	"	1:04	2:18	4.69	4.51	7.7	4401	8002	5385	1145	87	4420	6316	646	818
16142	"	2:18	3:38	3.39	2.99	6.3	4760	8002	5001	1239	78	4923	5622	712	602
16143	"	3:38	4:16	2.83	2.47	5.9	2209	3619	2119	574	33	2310	2414	316	240
16144	"	4:44	5:54	4.68	4.83	8.5	4163	8001	5587	1083	92	4457	6487	766	1033
16145	"	5:54	7:09	3.42	3.17	6.8	4478	8002	5064	1165	79	4900	5718	740	743
16146				very very short run.					82						
16147	"	08:43	9.20	4.30	4.11	7.5	1991	3645	2518	518	39	1984	2937	265	410
16148	"	10:33	11:47	4.67	4.60	7.3	4447	8002	5273	1158	84	4706	6128	627	829
16149	"	11:48	13:08	3.50	3.34	6.2	4794	8002	4784	1247	77	5142	5557	727	713

ON/OFF NSO	ON/OFF MIB	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	∫Ldt Exp.	IBM/TAPE	BP (V)	TOF (V)	T1 Rej. Fract.	Σ Events	M.H.	E beam	Remarks
ON	ON	ON	0.62	2.12	(53.29) 55.51	IBM	0.87	0.14	51	14	0	28.015	Beams lost
"	"	"	1.90	8.64	64.15	"	0.90	0.46	50	57	2	"	new fill
"	"	"	0.71	3.64	67.79	"	0.56	0.15	53	24	1	"	beam dumped / dead time high due to trigger problems
"	"	"	1.61	6.07	73.86	"	0.8	0.4	49	40	0	"	
"	"	"	1.26	6.53	6.53	"	0.65	0.2	52	43	0	23.030	new Energy
"	"	"	0.88	4.10	10.63	"	0.45	0.1	53	27	0	"	Beams lost
"	"	"	1.83	9.57	20.20	"	0.68	0.3	50	63	0	"	
"	"	"	1.12	4.40	24.60	"	0.51	0.14	52	29	1	"	Beams lost.
"	"	"	1.75	9.87	34.47	"	0.71	0.3	49	65	0	"	
"	"	"	1.18	6.53	41.00	"	0.65	0.19	49	43	1	"	
"	"	"	0.80	2.73	43.73	"	0.65	0.15	52	18	0	"	
"	"	"	0.78	0.30	44.03	"	0.43	0.12	48	2	0	"	Beam dumped - new fill
"	"	"	2.46	2.28	46.31	"	0.72	0.31	36	15	0	"	To tr
"	"	"	1.71	8.05	54.36	"	0.70	0.27	51	53	3	"	
"	"	"	1.11	6.22	60.58	"	0.60	0.13	51	41	1	"	
"	"	"	0.89	0.46	61.04	"	0.60	0.10	51	3	0	"	beams dumped
"	"	"	1.44	6.07	67.11	"	0.75	0.25	51	40	0	"	beams lost
"	"	"	1.52	2.88	69.99	"	0.70	0.55	50	13	1	"	
"	"	"	1.25	1.38	1.38	"	0.58	0.18	51	13	0	23.045	beams lost
"	"	"	1.57	8.21	10.19	"	0.75	0.3	47	54	0	"	
"	"	"	1.48	0.30	10.49	"	0.70	0.3	28	2	0	"	beams dumped.
"	"	"	1.43	7.75	18.24	"	0.75	0.3	45	68	2	"	
"	"	"	0.87	5.32	23.56	"	0.60	0.15	48	43	0	"	
"	"	"	0.67	0.30	~~23.86~~ 24.16	IBM + FIX167	0.55	0.1	42	4	2	"	beams dumped.
"	"	"	~~1.98~~ 2.00	1.98	26.14	IBM	0.92	0.46	44	13	0	"	beams lost.
"	"	"	1.63	6.23	32.37	"	0.85	0.5	46	41	1	"	
"	"	"	0.93	6.23	39.20	"	0.65	0.2	48	41	0	"	
"	"	"	0.75	1.22	40.42	"	0.58	0.13	49	8	0	"	beams dumped
"	"	"	1.65	7.45	47.87	"	0.82	0.48	48	44	1	"	
"	"	"	1.03	5.32	53.19	"	—	—	48	35	1	"	
													beams dumped
"	"	"	1.73	3.65	56.84	IBM	0.73	0.33	46	24	1	"	beams lost
"	"	"	1.71	8.36	65.20	"	0.78	0.45	49	55	0	"	
"	"	"	1.35	5.47	70.67	"	0.58	0.16	51	36	1	"	

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (1 2)	T_1 & T_2 (1 2)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 2T. $E_{4.2}$ T.

Bhabha's. There is a factor of 5! between Lumi and Bhabha.
Bhabha energy histogram is empty also true for previous run, which is ok.
We suspect a software error. May be it has to do with the fact that we
simultaneously wrote to tape and to IBM.
All relevant histograms for this run look ok. cannot be I hope

1.3.84 0^{00} - 8^{00} Takeda + Petersen

5^{15} Standard histograms look all o.k.
6^{45} The pick up signal is down we ask for a new fill

08:00 Foster/Fringe on shift
08:50 ID-trip
09:20 — " — and short break for ~ 30 min because of faulty magnet control
Before each of the last two ID trips Austin Ball heard a "click" from the mini β quad controller
- there could be a cause of many of recent trips ?
09 56 Another short-break announced.
10 28 Lumi run.
10 30 Turn on I1D. Start run 16148
10 50 JOAS Error 33 Minim LAM branch 2 crate 5
13:19 magnet trip difficult to reset - call K group.
14:06 Magnet O.k. now. I1D trip
14:18 Now running with new energy 23.060 - energy changed during fill.
Checking the I1D histogram reveals a problem in JETC MEAN A^+ & A^- ~ - anomalous high hit / wire in region 132 → 133 1312 Run 16149 →
Spellbrook.
15:10 run 16157 stopped for exchange of DL8's
15-25 TASSO want NEW FILL 5 MIN.
15 30 Just got a YSPY error 4 DL84 missing : 188 does not show this Now Matsumura again.
Wire 1264 = ϕ
16:00 MATSUMURA / Hill. on shift
DL8 wire 1264 replaced
17.02 Beams lost.
17.55 Nord Crashed. → Restarted.

ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM - TAPE	BP ⟨V⟩	TOF ⟨V⟩	TI REJ. FRACT.	Σ ENERGY	M.H	E_{BEAM}	REMARKS.

18.20 Magnet trip. - cannot reset - call K group.
Beam lost during the time K was taking to fix the magnet.
Diode broken

20.05. Magnet fixed now. 1 diode and "several" circuit breakers were broken.

2.3.84
0.^{00} Petersen & Takeshita
5.^{00} TASSO telephoned to us that DESY is down now. So we keep this beam for a while.
7.^{00} ID trip during Run 16164.

8:00 Yamada, Sitar
8:27 Beams were lost partly. No beam pick up anymore. Asked for information on the synchrotron.
8:41 - Short break -
8:45 In ~10 min PKR will know if the short break ~~is~~ takes longer than ½ hour.
Informed A. Ball about a possible access.
10:30 Mini-β quads, +Z end, covered with 1mm lead. Test chamber installed above beam pipe, +Z. (its number 551). HTS. AB BK
(Unfortunately, due to a misunderstanding, we also tripped our magnet again !!)
Magnet current dropped due to my interlock break for the access.
They were reset by the K-people.

12:05 Injection start
16^{00} Dresden Weber.
Branch 4 Crate 2 (DL8) is burning, but seems to work, when starting run 16167
But trouble comes 2 min later. Stop run. Call (or Matsumura).
Dickmann and Roseberg arrive at 16.30. They have to change a power-supply.
16.49 Crate 2 fixed; but now - Wiring LAM branch 4 gate 3; diagnostics: CAMAC-trouble.
17.16 Rechberg arrives; ~~crate controller 2 branch 4~~ plug
17.50 Crate controller on Board 4 Crate 2 : wackelkontakt Board/Kabelstecker (exchanged)

3.3.83 0^{00} Hill, test on shift
4^{35} Energiedurchmesser TASSO 60, CELLO 62, MARK J 73, JADE 54 nb^{-1}

RUN	DATE	START	STOP	RUN Start I⁺	RUN Start I⁻	DEAD TIME (%)	T. RUN (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T. ACC SUM	T₂ ACC SUM	T. BIT 2 E₁>6GEV	T. BIT 17 2T.E4.2T₁
16150	1/3/84	13.08	13.19	2.92	2.80	5.6%	614	982	578	160	8	645	627	91	80
16151	1/3/84	14:18	15:10	2.55	2.45	5,3	2706	4182	2286	704	37	2893	2514	378	224
16152	1/3/84	15:15	15:30	2.23	2.16	5.1	1660	1437	863	222	11	893	784	129	80
16153	"	16:13	17.02	4.14	4.13	7.2	2870	5173	3458	746	54	3042	3883	454	529
16154	"	17:33	17.55					2683	1487						
16155	"	17.56	18.16	3.88	3.87	6.9	~~1141~~	~~2083~~	1356	296	20	1275	1481	181	176
16156	"	20.16	2024	3.55	3.59	6.4	424	766	506	110	7	443	531	53	77
16157	"	20:27	21:50	3.44	3.48	6.2	4958	8002	4969	1290	80	5008	5755	654	668
16158	"	21:50	23 14	2.81	2.85	5.7	5041	8001	4611	1304	74	5270	5219	761	544
16159	"	23.15	23 30	2.36	2.41	5.2	904	1371	744	235	12	934	828	133	89
16160	2/3/84	0:58	2:14	4.22	4.35	6.8	4549	8002	5231	1183	80	4828	5896	739	763
16161	"	2:14	3:34	3.26	3.42	6.0	4775	8001	4826	1241	75	5200	5313	681	593
16162	"	3:34	4:57	2.69	2.85	5.6	4968	8002	4589	1291	72	5269	5041	732	480
16163	"	4:58	6:27	2.28	2.43	5.2	5328	8002	4314	1384	72	5558	4980	747	423
16164	"	6:27	8:03	1.94	2.09	4.8	5475	8002	4129	1524	68	5654	4788	723	328
16165	"	8:04	8:28	1.63	1.76	4.7	1450	2120	1113	347	17	1514	1177	215	80
16166	"	1:40	14:55	4.06	4.07	7.1	4515	8001	5370	1175	83	4771	5947	699	755
16167	"	16:28	16:26	3.93	3.74	7.0	109	255	172	29	2	155	151	28	28
16169	"	17.51	19:12	3.26	3.08	6.2	~~4816~~	~~8003~~	~~4935~~	1254	78	5171	5551	711	620
16170	"	19.13	19:16	2.77	2.63	7.7	154	286	172	40	3	178	167	22	19
16171	"	19.53	20:56	4.10	3.65	6.9	3670	6585	4254	955	66	4148	4573	617	579
16172	"	2227	23.42	4.23	4.16	7.0	4494	8002	5255	1170	82	4785	6008	678	785
16173	"	23.42	1^{02}	3.46	3.41	6.3	4758	8002	4902	1238	77	5078	5661	747	678
16174	3/3/84	01.02	1^{36}	2.95	2.73	6.0	1951	3239	1875	507	30	2112	2176	299	214
16175	"	2^{45}	4^{03}	3.64	3.61	6.6	4637	8001	5311	1206	79	4848	5876	750	821
16176	"	4^{03}	4^{34}	3.07	3.10	6.3	1783	3069	1860	464	29	1943	2082	299	256
16177	"	4^{36}	5^{37}	2.88	2.91	6.0	3278	5573	3206	852	51	3641	3619	505	426
16178	"	6.02	6^{40}	4.21	4.17	7.4	2123	3901	2629	552	41	2234	3032	351	443
16179	"	8.18	9:31	4.05	4.11	7.3	4348	8002	5461	1132	82	4702	6001	728	885
16180	"	9.31	10:48	3.35	3.37	6.5	4576	8002	4954	1191	77	5023	5384	792	653
16181	"	10:48	11:46	2.83	2.84	6.1	3402	5663	3300	885	54	3732	3763	530	445
16182	"	12:16	13:30	4.14	4.13	7.4	4349	8002	5322	1131	83	4633	6035	748	841
16183	"	13:30	14:47	3.39	3.31	6.6	4598	8002	4926	1197	79	5019	5543	754	647
16184	"	14:47	15:53	2.85	2.77	6.3	3882	6389	3799	1010	64	4131	4177	648	423

RUN	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩	∫Ldt Bhabha Run	E_TP ∫Ldt	IBM/TAPE	BP (V)	TOF (V)	T. REJ FRACT.	Σ Bhabha	M.H	E_BEAM	REMARKS
ON	ON	ON	1.05	0.30	70.97	IBM	0.45	.08	51	2	0	23.045		~~TO~~ Magnet trip.
"	"	"	0.77	2.59	2.59	"	0.44	.08	52	17	0	23.060		Charg energy on the same full.
"	"	"	0.69	1.22	3.81	"	0.4	.08	35	8	0	"		Beam dumped for new full
"	"	"	2.33	8.22	12.13	IBM	0.69	0.26	48	54	1	"		Beams lost.
"	"	"		3.65	15.78	IBM	0.59	0.26				"		Nord Crashed. No run summary.
"	"	"	2.24	1.98	17.76	"	0.6	0.2	49	13	1	"		Magnet trip.
"	"	"	1.97	0.61	18.37	"	0.56	0.18	44	4	0	"		ID trip.
"	"	"	1.60	7.61	25.98	"	0.55	0.18	51	50	4	"		
"	"	"	1.12	6.09	32.07	"	0.51	0.10	50	40	0	"		
"	"	"	0.88	0.61	32.68	"	0.45	0.07	52	4	0	"		Beams dumped for new full
"	"	"	2.24	11.72	44.40	"	0.65	0.25	49	77	0	"		
"	"	"		8.68	53.08	"	0.55	0.15	50	57	2	"		
"	"	"	1.10	5.63	58.71	"	0.50	0.10	49	37	1	"		
"	"	"	0.75	4.41	63.12	"	0.41	0.06	54	29	1	"		
"	"	"	0.57	5.02	68.14	"	0.37	0.05	53	38	1	"		
"	"	"	0.43	0.76	68.90	"	.32	0.04	53	5	1	"		No timing signal due to low current
"	"	"	2.33	10.21	10.21	"	0.65	0.20	48	67	2	23.075		after finished — beams lost
"	"	"	3.05	0.30	10.51	"	0.63	0.21	44	2	0	"		DL2 trouble, see p. 177
"	"	"	1.26	5.79	16.30	"	0.55	0.15	~~36~~ 50	38	1	"		
"	"	"	1.11	0.30	16.60	"	"	"	47	2	1	"		beams dumped
"	"	"	1.86	8.38	24.98	IBM+TAPE	0.66	0.22	49	55	0	"		beams lost
"	"	"	1.95	10.36	35.34	IBM	0.7	0.28	49	68	2	"		
"	"	"	1.40	6.25	41.59	"	0.58	0.17	51	44	0	"		
"	"	"	1.14	1.68	43.27	"	0.50	0.12	53	11	0	"		beams lost
"	"	"	1.54	8.54	51.81	"	0.68	0.23	49	56	1	"		
"	"	"	1.16	2.13	53.94	"	0.55	0.15	51	14	0	"		
"	"	"	1.07	2.59	2.59	"	0.50	0.13	51	17	0	23.090		beams dumped
"	"	"	2.00	4.24	6.83	"	0.7	0.3	48	25	2	"		beams lost
"	"	"	2.11	10.38	17.21	"	0.75	0.33	47	63	2	"		
"	"	"	1.61	7.48	24.69	"	0.63	0.17	47	49	2	"		
"	"	"	1.05	4.43	29.12	"	0.55	0.10	52	29	2	"		
"	"	"	2.01	8.55	37.67	"	0.73	0.20	47	56	1	"		
"	"	"	1.44	7.17	44.84	"	0.67	0.15	49	47	1	"		
"	"	"	1.13	3.05	47.89	"	0.60	0.12	49	20	1	"		

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T. B. (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T∅ REJ ×10⁶	T₁ Acc SUM	T₂ Acc SUM	T₁ BIT 2 E₁ > 6 GeV	T₂ BIT 17 2T. E4. 2Tr

3.3.84 8⁰⁰ H. Krehbiel & A. Wagner (9³⁰)
3.3.84 16⁰⁰ W. Bartel & A. Drikmann
18³⁶ Trigger Error Level 2 occurred. We started a new Run.
4.3.84 0⁰⁰ Duerdoth & Kobayashi
2⁵⁵ TASSO wants to have a new fill at 3⁰⁰, but there seems to be a problem with LINAC. (It may take 20–30 min. to repair it.)
4³⁰ Magnet tripped. FAULT lamp is ON. → We called MKK1. 4⁵⁰ We just turned it on again.
~7⁰⁰ Beam lost. (second time this shift)

8:00 S. Wagner & Sato.
9:40 I.D. TRIP → NO OBVIOUS BEAM LOSS. RESET ≠ CONT. RUN
9:50 $\int \mathcal{L} dt$ → JADE = 57, TASSO = 53, MARK J = 59, CELLO = 43, Σ = 212 nb⁻¹
10:21 Beam lost.
1:35 New Energy 23.120

16:00 Cords, Kawamoto
17 17 new filling
19 44 ID tripped
21 48 For run 16207 the events went via the FAMP processor to the IBM!

5.3.84 0:00 Greenshaw and Bowdery on shift

0:12 New fill ready. Perfect! $L = 1.99 \times 10^{30}$ cm⁻² s⁻¹ at start
FAMP is off (for JDAS, actually it is still switched on electrically)

2:33 We would like a new fill, so would TASSO, the coordinator, but the synchrotron is down so we continue running with what we have.
3:30 Run stops for new fill. Beams dumped.

05:15 Missing LAM board 2 crate 5: Leadglass ADCs

6:30

CELLO	TASSO	MARK J	JADE
40 nb⁻¹	50 nb⁻¹	63 nb⁻¹	64 nb⁻¹

8:00 ~~M. Minowa~~ T. Mashimo and H. Rieseberg on shift. After a very good week-end we get now the virgin SHORT BREAK

ON/OFF N50	MWP	TOF	⟨L⟩	∫Ldt BHABHA Runs	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TI REJ FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

5.3.84

10³⁰ New filling ready start run 16216.
10⁴⁵ Call from Tasso: We have to keep this fill for a long time. A big water leak at the synchrotron has to be repaired. This may take 4 to 5 hours.

Mr. Esko Pietarinen worked at FAMP for about 1 hour.

11⁵⁴ Run 16217 started. In Run 16216 are 258 JETC illegal hit counter. This error is not visible in the histograms – and not with test programs.

13⁰¹ Stop for beam dumps. PKR wants to adjust (or so) HF. Need about 1 hour; then also the repair of the synchrotron will be completed. RESTART 2 PM.

13⁰⁵ Inner detector constants updated for event display & N-50 program.
Effective starting run 16217 (HBM)

13:40 Short access to change absorber in front of jet chamber. Magnet run down, interlock is broken.

14:00 Magnet on → 7500 A

14¹⁰ Tokyo people fixed the YPARA error 8. (Pedestal > 500).
3 ADC chips changed. LG-test run → OK.
14⁷⁰ Within the "A1 Controller Field test & swap operation" Controller in Branch 4 Crate 3 (Rack 10 Bottom) Tests o.k.
15²⁰ IBM link program modified, in order to cope with events ~~stopped~~ scrapped by FAMP D.C.

E_{beam} = 23.120 JADE 79 nb⁻¹ Cello 57 nb⁻¹ Tasso 62 nb⁻¹ Mark J 80 nb⁻¹

15³⁵ New fill ready
Run 16218 short (ca 2 min) with old energy. Then Nord crash. Reload
15⁵⁰ Nord crash – Run seem lost.
" " " " "
15⁵² " " " " "
15⁵⁸ ID trip pause / continue
16⁰³ ID trip. ~~cont.~~
Problems about Trigger. Stop run 16221. Runs 16218 – 16221
Track trigger cable was fallen off when we fiddled with JETC Pulser cable

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T_1 6 (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\phi$ 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.E4.2Tr

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Run	Date	Start	Stop	Run Start I^+	Run Start I^-	dead time %	Time (sec)	Rec in	Rec out	All $\times 10^6$	TO 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.E4.2Tr
16185	33.84	17:02	18:13	3.97	4.37	7.8	4254	8001	5469	1107	86.5	4540	6167	710	887
16186	"	18:13	18:35	3.26	3.62	6.8	1245	2279	1447	324	22.2	1420	1581	191	212
16187	"	18:37	18:49	3.08	3.43	6.6	622	1107	710	162	10.7	665	784	104	112
16188	"	18:59	20:19	2.93	3.28	6.2	4763	8002	4876	1259	77	5035	5490	814	651
16189	"	20:19	20:21	2.47	2.79	5.9	32	127	88	8	0.5	70	38	4	6
16190	"	20:52	22:02	4.33	4.36	8.1	4144	8002	5679	1078	87	4530	5922	754	839
16191	"	22:02	23:08	3.46	3.47	6.8	3914	7141	4512	1019	70	4357	4989	734	681
16192	"	23:41	23:58	4.17	4.18	9.7	944	1881	1384	246	24	968	1548	162	275
16193	4/3/84	0:26	1:33	4.19	4.28	12.0	3956	8001	5772	1029	123	4386	6337	765	1269
16194	"	1:33	2:47	3.26	3.32	7.1	4395	8002	5149	1143	81	4889	5680	764	855
16195	"	2:47	3:42	2.63	2.69	6.5	3268	5813	3590	850	55	3692	3895	557	605
16196	"	4:10	5:10	4.22	4.26	13.9	2450	5254	3915	637	88	2819	4167	497	866
16197	"	5:41	6:52	4.12	4.11	8.0	4225	8001	5557	1029	88	4434	6182	731	888
16198	"	6:52	6:58	3.36	3.37	8.2	283	637	430	74	6	378	386	56	70
16199	"	9:29	10:21	3.84	3.74	6.1	2581	4184	2653	672	40	2561	3050	320	361
16200	"	10:51	11:33	4.03	4.04	6.5	2443	4130	2727	636	41	2465	3125	376	391
16201	"	11:35	12:24	3.51	3.47	7.3	2963	5063	3178	771	56	3164	3639	506	520
16202	"	14:13	15:35	4.04	4.06	6.8	4603	8002	5346	1198	81	4821	6028	728	913
16203	"	15:36	16:29	2.82	2.78	6.0	~~3165~~	~~3168~~ 5165	3108	820	49	3305	3646	460	460
16204	"	17:18	18:37	3.74	4.02	6.5	4719	8001	5109	1228	80	4841	6000	695	807
16205	"	18:37	19:53	2.92	3.20	7.3	4110	6459	3789	1070	78	4258	4414	604	452
16206	"	20:29	21:45	3.98	3.70	8.9	4288	7647	5031	1116	77	4726	5682	753	927
16207	"	21:49	22:01	3.19	2.94	6.8	658	1273	804	172	12	836	813	158	138
16208	"	22:02	23:16	3.10	2.85	6.7	4446	8001	5047	1157	78	5209	5565	899	1024
16209	"	23:22	23:42	2.64	2.43	6.5	1202	2135	1303	313	20	1440	1420	245	289
16210	5/3/84	00:13	01:33	3.76	3.55	6.2	4797	8002	5029	1248	77.8	6466	5802	754	~~734~~ ~~214~~
16211	"	01:34	02:58	2.90	2.72	5.6	5056	8002	6454	1316	73.1	5465	5118	295	~~525~~ ~~126~~
16212	"	02:59	03:31	2.38	2.23	5.2	1875	2865	1536	487.9	25.2	2033	1704	278	181
16213	"	04:26	05:44	4.17	4.22	6.8	4546	8002	5186	1183	81	4901	5882	768	~~513~~ ~~133~~
16214	"	05:45	07:13	3.12	3.18	5.6	5038	8001	4651	1311	73	5366	5219	844	618
16215	"	07:14	07:18	2.48	2.53	4.9	180	313	179	47	22	207	165	28	23
16216	"	10:31	11:54	4.18	4.28	6.8	4705	8002	5215	1224	83	4817	6203	662	930
16217	"	11:53	13:02	3.19	3.30	6.7	4038	7085	4506	1051	70	4396	5100	620	700
16218	"	15:40	15:42	4.14											

RUN	DATE	START	STOP	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$	$\int Ldt$ BH Rate	$\int Ldt$ Exp	IBM/TAPE	BP $\langle V \rangle$	TOF $\langle V \rangle$	T_2 Rej Frac.	Σ BH	MH	E_{Beam}	REMARKS

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Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$	$\int Ldt$ BH Rate	$\int Ldt$ Exp	IBM/Tape	BP [V]	TOF [V]	T_2 Rej Frac.	Σ_{BH}	MH	E_{Beam}	Remarks
				on	on	on	2.06	6.10	53.99	IBM	0,75	0,35	46%	40	3	23.090	
				"	"	"	1.55	1.83	55.82	"	0,7	0,2	49%	12	0	"	stopped because of Trigger Error Level 2
				"	"	"	1.41	0.46	56.28	"	0,65	0,2	47%	3	0	"	
				"	"	"	1.11	5.96	5.96	"	0,6	0,15	492	57	2	23.105	
				"	"	"	0.65	0.	5.96	"	0.6	a.r.	—	0	0	"	beams dumped
				"	"	"	2.11	8.71	14.67	"	0.8	0.35	44%	78	1	"	
				"	"	"	1.47	7.34	22.01	"	0.7	0.2	47	74	0	"	beams lost
				"	"	"	2.16	2.90	24.91	"	0.8	0.4	44	19	0	"	beams lost
				"	"	"	1.68	7.18	32.09	"	0.8	0.45	45	47	0	"	
				"	"	"	1.20	6.42	38.51	"	0.7	0.2	47	42	1	"	
				"	"	"	0.85	2.60	41.11	"	0.6	0.13	48	17	1	"	beams dumped
				"	"	"	1.52	3.51	44.62	"	0.85	0.45	44	23	0	"	beams lost
				"	"	"	1.83	9.47	54.09	"	.85	.4	45	62	2	"	
				"	"	"	1.55	0.61	54.70	"	0.7	0.2	39	4	0	"	beams lost
				"	"	"	1.91	4.89	59.59	"	0.8	0.4	49	32	4	"	beam lost
				"	"	"	2.06	4.89	64.48	"	0.25	0.49	49	32	1	"	
				"	"	"	1.56	3.98	3.98	"	?	?	51	26	1	23.28	= NEW ENERGY BEAMS LOST
				"	"	"	1.43	9.33	13.31	"	0.8	0.4	50	61	2	"	
				"	"	"	1,17	3.06	16,37	"			52	20	1	"	Beams dumped
				"	"	"	1,58	6,43	22,80	"	0,65	0,25	50	42	1	"	
				"	"	"	1.06	4,38	27.18	"	0,50	0,10	53	31	1	"	beams dumped
				"	"	"	1,47	7.04	34.22	"	0,65	0,25	51	46	1	"	
				"	"	"	1.24	1.22	35,44	"			58	8	0	"	events go via FAMP!
				"	"	"	0,89	3.98	34.42	"	0,5	0,15	53	26	2	"	
				"	"	"	0,79	1.22	40.64	"	0.45	0.1	55	8	1	"	
				"	"	"	1.32	7.65	48.29	"	0.5	0.15	50	50	1	"	
				"	"	"	0.89	5.80	53.19	"	0.48	0.1	53	72	0	"	
				"	"	"	0.68	0.92	54.11	"	0.4	0.07	55	6	0	"	Beams dumped now synchrotron fixed
				"	"	"	1.75	8.11	62.22	"	07	0.7	50	57	1	"	
				"	"	"	1.03	4.44	66.66	"	0.53	0.13	52	29	0	"	
				"	"	"	0.64	0.15	66.81	"			47	1	0	"	Beams dumped
				"	"	"	1.78	8.26	75.07	"	0.71	0.27	51	54	2	"	
				"	"	"	0.95	4.59	79.66	"	0.53	0.15	50	30	1	"	Beams dumped.
											0.68	0.26				*	Nord hang up - Run semi lost Too trigger errors

RUN	DATE	START	STOP	RUN START I^+	RUN START I^-	DEAD TIME [%]	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 BIT 2 $E_1 > 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot 2T_{TR}$
~~16219~~ ~~16216~~	5.3.84	15:43	-15:48	4.05	4.07										
16220	"	15:50	-15:52	3.96	3.98										
16221	"	15:55	16:05	3.89	3.90	5.9	189	362	231	49	2.9	221	194	28	30
16222	"	16:06	16:14	2.87	3.37	6.7	484	838	540	126	8	518	558	56	62
16223	"	16:17	16:38	2.79	3.28	5.8	1179	1889	1157	307	17.9	1180	1331	139	145
16224	"	16:38	16:39	2.65	3.12					0	0				
16226	"	17 39	18:09	3.98	3.99	7.7	1643	2959	2003	427	33	1815	2115	273	273
16227	"	18 52	19 46	4.01	4.06	8.1	3213	5802	3936	836	67	3418	4191	480	591
16228	"	23 33	00:15	3.57	3.72	7.6	2070	3381	2174	539	41	2059	2479	278	353
16229	06103184	03:16	04 48	3.98	4.07	6.5	483	8002	5152	1257	82.2	5032	5733	694	662
16230	"	~~04 48~~	06 15	2.61	2.75	5.5	5270	8001	4543	1371	76	5485	5034	696	448
16231	"	06:19	06:41	2.09	2.20	4.9	1317	1890	1004	342.6	16.7	1307	1178	170	91
16232	"	08:00	9:21	4.19	4.25	6.7	3591	6167	3963	935	63	3803	4493	575	640
16233	"	9:23	10:43	2.35	2.67	5.3	4746	7025	3853	1235	64	4879	4306	582	397
16234	"	11:13	11:48	4.34	4.31	7.8	1800	3351	2256	469	36	1994	2547	321	432
16235	"	12:28	13:44	4.21	4.18	6.7	4125	7157	4584	1073	72	4840	5223	693	752
16236	"	14:27	15:15	4.25	4.24	7.5	7043	5290	3535	736	55	3090	3979	450	613
16237	"	15:17	15:55	3.47	3.40	6.5	2086	3641	2250	524	35	2313	2441	331	326
16238	"	20:40	22:03	3.99	3.98	6.8	4761	8001	5222	1238	84	4948	5901	666	731
16239	"	22:06	23:28	2.99	3.03	6.3	4873	8001	4907	1268	80	5237	5511	740	733
16240	"	23:31	23:41	2.43	2.50	5.3	527	850	471	137	7.3	578	483	88	52
16241	7/3/84	0.15	0.26	4.17	4.20	8.0	595	1138	803	155	12.4	642	889	102	174
16242	"	1.42	2.57	4.26	4.28	6.9	4498	8002	5287	1170	81	4803	5964	739	797
16243	"	2.58	4.23	3.33	3.35	6.4	4814	8002	4818	1252	80	5285	5344	749	652
16244	"	4.24	5.13	2.57	2.59	5.4	2674	4158	2284	696	37	2858	2591	396	303
16245	"	5.44	6.55	4.39	4.47	7.9	4249	8002	5338	1106	88	4740	6159	805	942
16246	"	6.56	7.12	3.36	3.42	6.8	958	1843	1142	249	17	1146	1192	175	166
16247	"	9.58	10:17	Cosmic run			1101	3756	3010						
16248	"	10:20	10:35	-"-	Up=300V		922	3002	2321						
16249	"	10:37	10:56	-"-	Up=400V		1113	3702	2895						
16250	"	11:00	11:27	-"-	Up=500V		1598	5002	3846						
16251	"	14:37	16 04	~~4.47~~ 4.39	~~4.54~~ 4.49	6.3	4909	8002	4915	1278	81	5090	5381	643	630
16252	"	16 05	16 10	2.21	2.59	5.4	293	507	285	76	4	331	302	37	25
16253	"	17 38	18 55	4.19	4.24	7.0	4577	8002	7842	1190	83	4770	6028	714	813

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$	$\int L dt$ BHABHA RUN	$\int L dt$ EXP.	IBM/TAPE	BP [V]	TOF [V]	T_2 REJ. FRACT.	Σ BHABHA	MH	E_{BEAM}	REMARKS
ON	ON	ON				IBM	~~0.65~~ 0.97	~~0.28~~ 0.29				23.135	Nord crash again. Trak trigger missing
"	"	"				"	0.66	0.25				"	" " "
"	"	"	2.13	0.46	0.46	"	0.58	0.20	40	3	0	"	Trak triggers missing
"	"	"	1.27	1.07	1.53	"	0.49	0.13	48	7	0	"	
"	"	"	1.33	1.84	3.37	"	0.50	0.13	50	12	0	"	Beam lost/16225 junk
"	"	"	2.18	3.22	6.59	"	0.82	0.3	49	21	1	"	Beams lost
"	"	"	2.02	6.48	13.08	"	0.60	0.28	46	37	1	"	Beams lost
"	"	"	1.79	4.60	17.68	"	0.55	0.19	50	30	1	"	Beams lost
"	"	"	1.76	9.65	27.33	"	0.61	0.25	51	63	1	"	
"	"	"	0.89	4.29	31.62	"	0.4	0.1	53	28	1	"	
"	"	"	0.68	0.61	32.23	"	0.35	0.05	54	4	0	"	Beams lost
"	"	"	1.81	5.06	37.29	"	0.6	0.25	50	33	3	"	
"	"	"	0.79	5.06	42.35	"	0.4	<0.1	53	33	0	"	
"	"	"	2.05	4.60	46.95	"	0.65	0.31	50	30	1	"	Beams lost
"	"	"	1.73	7.66	54.61	"	0.68	0.3	49	50	2	"	Beams lost
"	"	"	2.12	4.75	59.36	"			47	31	1	"	
"	"	"	1.24	3.07	3.07	"	.60	.19	49	20	0	23.150	Beams lost
"	"	"	1.82	8.59	11.66	F11210	.70	.25	51	56	3	"	
"	"	"	1.11	5.68	17.34	F11370	.50	.12	52	37	1	"	
"	"	"	0.82	0.31	17.65	F11214	.43	.09	50	5	0	"	Beams Lost
"	"	"	2.05	1.23	18.88	-"-	.64	.20	48	8	0	"	Beams lost.
"	"	"	1.93	9.20	28.08	IBM	.66	.31	49	60	5	"	
"	"	"	1.18	3.99	32.07	"	.54	.17	52	26	2	"	
"	"	"	0.82	2.61	34.68	"	.43	.09	53	17	0	"	Beams dumped.
"	"	"	1.80	9.20	43.88	"	.71	38	49	60	2	"	
"	"	"	1.64	1.69	45.57	"	.57	.17	45	11	0	"	Beams lost
						TAPE F22562						COSMIC RUNS	
						"							
						"							
						"							
"	"	"	1.36	9.05	54.62	IBM	0.6	0.18	49	59	1	23.150	
"	"	"	0.74	0.46	55.08	"	0.45	0.08	49	8	0	"	Beams dumped
"	"	"	2.21	10.59	65.67	"	0.68	0.27	49	69	3	"	

RUN | DATE | START | STOP | RUN I⁺ | START I⁻ | DEAD TIME (%) | T₁ & T₂ (SEC) | RECORDS IN | RECORDS OUT | ALL ×10⁶ | TØ REJ ×10⁶ | T₁ Acc SUM | T₂ Acc SUM | T₁ BIT 2 E₁ > 6 GEV | T₂ BIT 17 2T. E4. 2T.

186 5.3.84

Muon crate 11 missing several times for ~~one etc~~ single events.

16 13 Stop to modify program

16:00 +30' Felst & Sato

18:52 Run 16227 started. +6V Power of Muon Crate is down.

Sato looked at histograms, OK except for μ-trigger etc.

~19:30 fixed.

19 45 Beams lost ID-trip

23 40 new filling ready after many unsuccessful attempts

wrote a 30A fuse replaced.

06/03/84

00:00 Ball/Zünge on shift

00:15 ID-trip; beams lost

00:50 New fill lost before run could be started: I.D. trip. Zunge Unterbrechung. PKR observing magnet instabilities.

03:21 Start run 16229.

03:50 & 04:01 I.D. trips — some loss of beam.

& 04:10. & 04:40.

05:30 yet another I.D. trip.

06:41 Beams lost, I.D. trip, Runge Unterbrechung.

6/3/84, 8⁰⁰ Heinzelmann, Kuies

8 25 I.D. trip,

8 45 ID trip

8 50 ID trip

call PKR, to investigate about unstable beams. They have also noticed this and think that one magnet current shows short fluctuations. They try at the moment to localise the problem. AW

15 15 Energy changed to 23.150 GeV

15 55 beams lost

16 00 W. Bartel & A. Wagner

16 15 short break

20 40 new fill ready, IBM down

20 52 ID trip due to unstable beams

187

0.00 Wednesday 7/3/84. Joseph Spitzer & Fred Lobkowicz.

0.15 New fill ready run 16241 started.

although IBM comes up after run start we continue writing to tape.

0.25 Beams lost.

3.30 I.D. Trip.

3.45 I.D. Trip.

4.30 I.D. Trip.

5.05 " "

7.10 Beams lost

7.30 Problems with a PETRA power supply — will take at least 1 hour to fix.

KADO. ORITO.

7⁵⁰ Petra quadrupole power supply fails

9:58 — 11:27 COSMIC Runs 16247 - 16250 with reduced gas amplification (Helm + RB8)

11:40 5 min access to install more absorber around jet tank chamber. Interlock L Broken. AB.

Magnet to 5000 A.

14.00 Injection

14.30 Start RUN 16251 → problem with Tagging-HV-System, mainframe 61 fails, it works after resting

14.31 ID trip, alarm unit says "magnet trip" but we have no indication for this.

16⁰⁰ Cartwright Finch

17.30 New fill — run 16253 started

19 30 Pronounced spike in forward muon counters chamber hit-map. Bartel, Olsson & R Hedgecock (on phone) offer advice & fiddle & the thing fixes itself.

20 40 YSPY says "T2 output missing : 96"

22 10 Find pulse spike reappears (run 16257) Hist #11 (fwd ch hit map) checked after ~2400 triggers to check disappearance of spike after relevant chamber switched off.

Lost spike by turning off volts on Le Croy channel 8 MFR 56 — was investigating effect of turning

RUN	DATE	START	STOP	RUN I^+	START I^-	DEAD TIME (%)	T₁ (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T₀ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁>6GeV	T₂ BIT 17 2T, E₄ 2Tr

back on when beams were lost. Will lower voltage at 2400 for now (was 2550).

8|3|84

0:00 Takeda, Schmidt on shift. 8.3.

0:10 Beams ready. But Forward μ-counter cannot be switched on.
HV control problem? We decided to "disregard" the FWMU HV.
We started run 16258 without FWMU.

1:05 ID tripped (Anode Current)

1:20 ID tripped again (Anode current)

2:15 JDAS ERROR 33 - Missing LAM branch 3 crate 2 : Muon chambers
No triggers. PAUSE/CONTINUE cured it.
JDAS ERROR 46 - MP-16 out of sequence : YY=1 , run continues.

3:10 Start 16260. HV for FWMU was switched on manually. Control cable was pulled out.

4:30 "MUON CRATE MISSING" frequently appears. (Faulty part 4)

7:52 "Short break" after many times failures of injection.

8:00 Fuhrmann, Feldt take over

8.30 Magnet → 3000 A.

10:00 Muon absorber installed around vertex chamber. Magnet off, interlock is broken. HS.

12:05 FWMU HV drained & turned down to 2400 V. At RUN-START an error message will appear. Please ignore, for the time being anyway. CRH

12.50. Magnet tripped : "Vorlaufdruck Primär <" Reset O.K.

13:00 Run terminated for Herr Riesberg to do a DL8 test. DL8 #68 no response in Run # 16265 (Wires # 544-551). Contacts cleaned → ok

Two ID trips by Magnet Alarms

13.10 IBM BUSY. — ok after ~ 5 mins.

16:00 Greenshaw & Warming on shift

17:10 Short break, to repair cavity.

18.30 Magnet Trip. Cause Interlock Kühlkreis Solenoid Vorlaufdruck primär <

18.50 Lumi zu klein. Verdacht: eine Teilchensorte in fehlerhaft Bucket. Histogram "Electron (Nim units)" (actually : Timing of e⁻ - bunch to e⁺ - bunch) no entries - mostly overflow. PKR confirmed suspicion. Ikel. Beams dumped.

ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt BHABHA Run	∫Ldt Exp.	IBM TAPE	BP ⟨V⟩	TOF ⟨V⟩	TL REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

8.3.84

20:15 transmitter failure

9.3.86

0:00 Hill & Takeshita

0:04 PETRA changes energy from 23.165 → 23.180 GeV

08.15- "Short Break"

08.40 Injection continued.

04.00 Tagging system mainframe 63 HV fail ⇒ Reset locally.

4.30 one of LG HV power supply's was not correct by +10V in Run 16276.

6:30 At Run 16277, ID Wire # 117 was missing. We cleaned DL-8 CAMAC edge-board.

6:58 But it did not help. DL8 error, no cure for the time being R

8:00 Susan Cartwright and H. Riesberg on shift

Everything is running smoothly $L = 1.3 \cdot 10^{30}$

9.57 Beam loss. Stop run # 16280

10:10 SHORT BREAK

10:35 Magnet → ~~2000~~ 0 , Access for Austin Ball . No. PKR is too fast

11:30 "Trouble with Linac 2"

11:50 New filling ready , start Run 16281 , $L = 1.8 \times 10^{30}$

12:00 Mr. Esko Pietarinen leaves after about two hours of work : "No influence on data taking".

12:38 Run 16282 — YSPY says TRIGGER 2 O/P MISSING: 101
No hole in histogram ⇒ ignore at present. (Went away at next YSPY activation)

14:25 YVOLTS reports LG Power Supply 22 HV = 1.870 (should be 1.996)
LG experts informed.

14:34 Please call Cordo (2433) when a new fill is anticipated!

14:35 Austin arrives to investigate a spike in muon trigger rate. Crate 7 — digital failure, chamber 355 AB
So does LG expert, to look at HV problem. LG Power Supply 22 12½ V too low Kawamoto checks the voltages → ok : It was a read error

15:05 Beams dumped for refill. Cordo informed

16:00 Fuhrmann, Feldt on shift

Petra does orbit corrections via Collo magnet not on
JDAS Readout Error 33 - Missing Lam Branch 3 Crate 2 : Muon Chambers

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	T₁ Ø (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	T Ø REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E₁ > 66 eV	T₂ BIT 17 2T. E₄.2T₀
190															
16254	7/3/84	18⁵⁵	19²²	3.29	3.34	6.1	1572	2562	1575	409	25	1618	1752	230	193
16255	"	19²²	19³⁶	3.07	3.12	6.1	787	1316	779	205	13	865	884	118	116
16256	"	19⁴⁴	21⁰²	2.91	2.96	5.6	4625	7077	3949	1203	68	4812	4682	700	517
16257	"	22:36	22:58	4.28	4.33	7.0	1310	2323	1563	343	24	1373	1795	215	257
16258	8/3/84	0:18	1:46	3.26	3.66	6.4	4859	8002	4981	1264	81	4888	6084	641	920
16259	"	1:46	2 28	2.26	2.60	7.6	2419	3612	2085	629	47	2391	2456	328	327
16260	"	3:03	4:22	4.04	3.87	6.7	4708	8002	5100	1225	82	4910	5893	757	796
16261	"	4:22	5:46	3.18	3.09	5.8	4992	8002	4644	1298	95	5329	5293	808	620
16262	"	5:46	5:53	2.63	2.57	5.6	389	650	367	101	6	440	372	63	41
16263	"	10⁵³	11⁰⁴	4.65	4.70	4.5	409	574	330	106	4.7	359	391	19	28
16264	"	11²⁹	11⁵⁷	4.25	4.41	7.8	1592	2899	1864	414	32	1743	2231	225	332
16265	"	12.25	12.53	4.34	4.45	7.8	1653	3040	2092	430	34	1741	2420	262	375
16266	"	13:10	14:42	3.50	3.63	7.0	5067	8002	4864	1319	93	5118	5619	682	645
16267	"	14:42	15.57	2.65	2.80	5.5	4464	6743	3783	1162	63	4587	4342	635	474
16268	"	16:33	17:07	3.92	4.14	6.6	2038	3442	2234	530	348	2033	2624	287	360
16269	"	18:16	18:45	4.45	4.37	12.7	804	1227	782	209	27	710	1003	110	140
16 270	"	18:45	19:52	3.88	3.81	6.3	414	666	448	108	7	369	536	58	74
16 271	"	19:21	20:16	4:40	4.37	7.3	3241	5767	3785	844	62	3457	4407	577	647
16 272	"	22:11	23:10	4.30	4.39	6.4	3537	6015	3938	921	593	3608	4367	532	549
16273	"	23:37	0:04	4.06	4.06	6.7	1517	2567	1679	385	265	1512	2004	224	282
16274	9.3.84	0:06	1:29	3.63	3.60	6.1	4873	8002	4842	1268	78	5073	5598	753	679
16275	"	1.29	2.04	2.86	2.84	5.9	2700	3344	1946	546	32	2187	2252	303	257
16276	"	3:54	4:59	3.87	3.94	6.3	3809	6336	4191	992	63	3696	4779	488	632
16277	"	5:06	6:23	3.03	3:12	5.9	4576	7274	4290	1192	70	4664	4903	617	862
16278	"	6⁵³	8"	4.08	4.12	6.7	4648	8002	5050	1211	81	4927	5888	773	770
16279	"	8"	8"	3.10	5.8	5050	8002	4554	1315	77	5230	5347	744	537	
16280	"	9:36	9:57	2.42	2.43	6.6	1241	1876	1081	323	21	1201	1301	173	122
16281	"	11:54	13:17	3.82	4.04	6.2	4928	8002	4908	1282	80	4845	5894	645	708
16282	"	13¹⁸	14⁴³	2.75	2.91	5.8	5093	8002	4588	1326	77	5339	5054	787	1662
16283	"	16⁴⁴	16⁰³	2.27	2.36	5.1	1125	1661	934	293	15	1122	1057	168	341
11284	"	17¹⁹	18:41	3.79	4.12	6.5	4826	8002	5004	1256	81	4910	5939	709	805
16285	"	18:40	20:03	2.93	3.26	6.1	4853	8002	4612	1264	77	5239	5506	766	715
16286	"	20.02	21:01	2.44	2.75	5.5	3456	5407	3027	899	49	3649	3444	546	422
16287	"	21:32	22⁴⁶	4.46	4.39	7.1	4388	8002	5170	1142	81	4855	5883	802	857

NSO	MIP	TOF	⟨L⟩	∫Ldt Charm Run	∫Ldt exp 6567	IBM/ TAPE	BP (V)	TOF (V)	T₂ REJ FRACT.	Σ ENERGY	MH	E_beam	REMARKS.
ON	ON	ON	1.69	2.15	67.82	IBM	0.55	0.17	49	14	2	23.180	
"	"	"	1.39	0.46	68.28	"	0.48	0.10	53	8	1	"	Stayed to investigate unusual pinch spikes
"	"	"	1.08	5-22	73.50	"	0.45	0.10	54	34	2	"	Beams dumped
"	"	"	2.51	4.45	4.45	"	0.67	0.26	50	29	1	23.165	Beams lost
"	"	"	0.87	4.32	9.37	"	0.56	0.18	51	32	1	"	No FWHM
"	"	"	0.55	1.38	10.75	"	0.45	0.09	53	9	0	"	beams dumped
"	"	"	1.82	10.14	20.89	"	0.65	0.24	50	66	0	"	
"	"	"	1.28	6.61	27.50	"	0.55	0.13	52	43	3	"	
"	"	"	1.09	0.31	27.81	"	0.45	0.09	50	2	0	"	beams dumped
"	"	"	0.38	0.31	28.12	"	0.10	0.29	51	2	0	"	Beams lost
"	"	"	2.28	2.15	30.27	"	0.82	0.24	51	14	0	"	Beams lost
"	"	"	2.27	3.84	34.11	"	0.65	0.2	49	25	1	"	
"	"	"	1.41	7.37	41.48	"	.5	.15	51	48	7	"	
"	"	"	0.87	3.90	45.38	"	.47	.10	53	37	0	"	Beams dumped
"	"	"	1.84	4.61	49.99	"	.65	.25	64	30	1	"	Beams dumped
"	"	"	0.27	0.15	~~50.14~~ 49.99	"	.70	.30	52	1	0	"	junk (unlikely in wrong bucket!)
"	"	"	0.39	0.15	49.99	"	.68	.25	49	1	0	"	
"	"	"	1.98	7.53	57.52	"	0.65	0.25	50	49	1	"	Beams lost
"	"	"	2.27	7.72	64.89	"	0.66	0.28	48	48	3	"	Beams lost
"	"	"	2.05	4.45	69.34	"	0.72	0.30	50	29	1	"	
"	"	"	1.47	8.46	8.46	"	0.58	0.18	50	55	2	23.180	No energy
"	"	"	1.07	1.54	10.00	"	0.50	0.10	51	10	1	"	Beams lost.
"	"	"	1.49	6.61	16.61	"	0.68	0.21	47	43	1	"	
"	"	"	1.06	5.38	21.99	"	0.60	0.16	49	35	0	"	Beams dumped
"	"	"	1.46	6.81	28.30	"	"		50	41	1	"	
"	"	"	1.00	5.84	34.14	"	0.56	0.14	51	38	1	"	
"	"	"	0.75	1.54	35.68	"	0.48	0.08	52	10	0	"	Beam loss
"	"	"	1.45	6.15	41.83	"	0.69	0.24	49	40	1	23.180	
"	"	"	0.92	5.69	47.52	"	0.56	0.12	50	37	2	"	
"	"	"	0.64	0.46	47.98	"	0.46	0.08	53	8	1	"	beams dumped
"	"	"	1.60	3.46	56.44	"	0.62	0.21	51	55	1	"	
"	"	"	0.95	3.54	59.98	"	0.5	0.1	52	23	3	"	
"	"	"	0.67	1.85	1.85	"	0.4	0.1	52	12	0	23.195	
"	"	"	1.73	17.03	12.88	"	0.70	0.30	49	72	1	"	

RUN	DATE	START	STOP	RUN I⁺	START I⁻	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	Tϕ REJ ×10⁶	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_1 > 6$ GEV	T_2 BIT 17 $2T \cdot E4 \cdot 2T_F$

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ON/OFF N50	MIP	TOF	⟨L⟩	∫Ldt CHARM RUN	∫Ldt EXP.	IBM TAPE	BP	TOF ⟨V⟩	T_1 REJ. FRACT.	Σ ENERGY	M.H	E BEAM	REMARKS.

you find the new log-book on top of the old one.

R. F.