

V. Jezic

MINUTES OF THE JADE MEETING  
12/7/85

- Agenda
- 1) Current run
  - 2)  $B^0\bar{B}^0$  mixing
  - 3) Flavour changing neutral current
  - 4) Unusual events with muons

1) Current run.

The repair of the TASSO magnet was completed more quickly than anticipated, and data taking is due to start this evening (Friday). As far as JADE is concerned, the Nord tape unit has been repaired, so we are no longer crippled if the IBM dies, and a soft trip has been installed for the z-chamber. The latter was required because the z-chamber had up to now no explicit anode current trip (only power supply over-current) and relied instead on going off when there was an inner detector hard trip. This does not work if the inner detector soft trips, and on such occasions the z-chamber has been observed to keep running with  $>10\mu\text{A}$  anode current. This is undesirable, so a threshold of about  $6\mu\text{A}$  has been installed. For shift people, a soft trip is indicated if the z-chamber has gone off ("z-ch HV fail" message on JDAS console) but there is no red ALM light lit on the z-chamber control box in the hardware room. In this case, there is no need to go to the rucksack — just press HT ON and in 15–20 seconds it should be back up.

Richard Hedgecock reported that 16 tapes had come back from RAL with REDUC1 output. This means that AUTORED is at long last functioning on MVS and we should be getting our 1985 data back soon to do physics. Sighs of relief all round (not least from Barrie Whittaker who will now be able to go back to ALEPH Monte Carlos ...).

2)  $B^0\bar{B}^0$  mixing.

Tim Greenshaw reported a re-analysis of the  $B\bar{B}$  mixing limit as derived from the  $b$  asymmetry. The idea was that the lowering of the effective c.m. energy due to initial state radiation should mean that the expected asymmetry is lower than that quoted by Robin in our paper. This then agrees better with our experimental value, thus giving a tighter limit on the mixing parameter. However Beate Naroska pointed out that this effect is partially compensated by the one-loop corrections, and therefore it is probably best to stick with our original calculation.

3) Flavour-changing neutral currents.

Chris Bowdery reported an update on the analysis of inclusive dimuon events and the resulting limit on FCNC ( $b \rightarrow \mu^+\mu^-X$ ). Depending on the level of muon selection used, the limit obtained is 0.15% (two level A muons), 0.89% (two level C's) or 0.30% (one A and one C). As a compromise between purity and efficiency he prefers the last value.

Some questions were raised here about the formula used to calculate the upper limits. Chris said that there is general agreement in Manchester that the expression is formally correct, and expressed willingness to show it (and its derivation) to anybody interested. It was felt that the formula, and the number of events input to it, should be shown (time permitting) if the result is presented at Bari, so that people with other prejudices about statistics can work out their own personal limit.

#### 4) Unusual events with muons.

Michael Kuhlen presented some strange events that have been discovered during the lepto-quark analysis. The first came out of a search for "CELLO events" and consists of two isolated muons ( $\mu^+\mu^-$ , with momenta about 6 GeV) and a hadronic jet. The invariant mass of the muon pair is quite low (3.8 GeV) and higher order QED is a possible explanation. A worrying feature is that one muon ceased to be identified as such when the event was TP'ed, although the hits appear to be clean. Chris is looking into this (especially in view of its implications for the FCNC limit!)

The other two events both consisted of an isolated muon recoiling against a hadronic jet. One event is from the high energy scan data, the other from the 35 GeV running. A possible source is  $D \rightarrow K_L^0 \mu \nu$ . No such events are found in the Monte Carlo sample with 8 times the statistics, but a check on the four-vector level revealed that there were 4 events of the right type, which did indeed come from the above  $D$  decay. These were lost in tracking because the  $K_L^0$  suffered a nuclear interaction (2) or decayed in the inner detector (1), or because a backward decay  $\mu$  from the jet meant that the original muon was no longer isolated (1). Four MC events corresponds to 0.25 expected in the data, but the Lund branching ratios for heavy mesons are only guesses anyway. A search for candidates with a  $K_S^0$  produced two events. However in both cases the muon is accompanied by some lead-glass activity, which is not the case for the  $K_L^0$  candidates.

Next JADE-meeting 18/7/85

S. Cartwright 12/7/85

## MINUTES OF THE JADE MEETING: 27/6/85

- Agenda      1) Current run  
              2) Miscellaneous

### 1) Current run.

The TASSO shutdown started as planned on July 1. We decided to open one arch about two metres in order to fix a few TOF counters and tagging phototubes. So far (Monday 11.00) one TOF counter has had its base and tube replaced, one was found to be uncabled and has been cabled up, and Herr Masbender is dealing with the last one! It is therefore expected that we will be able to close up again before the date of Thursday 4th suggested at the meeting.

Rainer Ramcke said that there were problems with Quadrant 1 of the vertex chamber — to avoid an immediate soft trip when switching on, it is necessary to slow down the voltage runup after  $\sim 1300$  V. This has to be done from the rucksack. (Remember to switch the speed back to normal after the chamber is up, or any subsequent trip will be a very long-drawn-out affair!)

Jan Olsson said it should "now" (i.e. in three weeks' time) be possible to start a run with the vertex chamber off.

### 2) Miscellaneous.

The pretalks for Bari (Saturday July 13) include Wulf Bartel (fragmentation) and Ian Duerdoth (electroweak). Greg Berenco of TASSO Wisconsin is talking about lifetimes, a Mark J man is doing inclusive muons, a CELList searches for SUSY and a DORIS representative is considering heavy quarks, but this is likely to concentrate on ARGUS results. There will be 20 minutes per person (that's two hours, not allowing for questions and over-runs).

Beate Naroska said that the computer centre complained that JADE had 98 D low jobs in the queue the previous weekend, whereas there is apparently a "gentleman's agreement" limiting us to 80. It was not clear how users were expected to find out how many D lows on our account are waiting at any given time, so it is difficult to see what can be done about this, apart from asking you all to restrain your enthusiasm for a while.

Bob Glasser explained the rules for use of contingent employed by the PLUTO (R.I.P.) collaboration. The CLIST has been modified to use the JADE account number and is available for public use (compliance with the rules is not required). Bob has also distributed a copy of his transparency giving details. If a set of rules suitable for JADE can be devised, we may make compliance with them obligatory at some future time, but there will no doubt be much more discussion first!

Uwe Schneekloth gave a brief account of a search for scalar particles decaying into  $r\bar{r}$  or  $r\nu_r$ . He looked for acoplanar  $r$  pairs. One was seen; 0.8 is expected from conventional sources.

Jan Chrin announced that some more Monte Carlo events have arrived from RAL. They are mainly single-flavour ( $c$  and  $b$ ), suitable for fragmentation studies and so on. Jan also said that he had repeated a search for "Mark J" low-thrust inclusive muons using all our high energy data (this was previously done by Hugh and Chris using scan data only). One event lies inside the cuts and a further one just outside. This is in line with expectations from the standard 5-quark model.

*W. J. ...*

**MINUTES OF THE JADE MEETING  
HELD 20/6/85**

**PLUS NEWS FROM THE UK**

- AGENDA**
- 1) Present run and Physics results
  - 2) Miscellaneous

**1) Present run and Physics results.**

The Tasso story..... Episode 46.

Petra will shutdown for a period of three weeks (or until Tasso is resuscitated back to life - whichever is sooner) starting from Monday July 1st at 8:00 hrs. Jade will take advantage of the shutdown by repairing a few TOF counters and possibly a couple of tagging system photomultipliers.

Kiyotomo Kawagoe reported on further searches for the elusive excited electron.

**2) Miscellaneous.**

We are asked to keep at least 15 minutes of computer time available for the evening to allow shift personnel and other late workers the possibility of submitting short tape jobs. Please cooperate!

New Jade members appear to be flooding in this month! Ludek Smolik from Heidelberg is the latest addition to our crew. He was received, as usual, with welcoming applause.

**NEWS FROM THE UK**

Chris Bowdery informs us that the following TP data sets have been (or are about to be) replaced by new versions which have the muon analysis bug sorted out. (Chris stresses that the difference is in fact very small). The names are

F22ELS.TAPE.TPMA835G

F22ELS.REDUMERG.TPGEN8.Y1982.PART1

Our old friend Hugh McCann informs us that the muon detector papers have been published. The references are

"The JADE Muon Detector" Nucl. Instr. Meth. A238 (1985) 220

"Muon Identification in JADE" Nucl. Instr. Meth. A238 (1985) 230

Next JADE-meeting 27/6/85

J. Chrin 24/6/85

*Chris*

**MINUTES OF THE JADE MEETING  
HELD 13/6/85**

- AGENDA**    1) Present Run  
              2) FCNC - New Jade upper limit

**1) Present Run.**

The Tasso story continues.....

As reported in previous minutes, Tasso has been running at 40% of its normal field and with a reduced water leakage. However these conditions are still regarded as unacceptable because the resulting high temperatures are a danger to the coil, and in addition, it is felt that the amount of physics lost does not make the expense of running worthwhile. Tasso will therefore attempt to repair the leak after a final assessment is given by BBC experts who will be visiting Tasso on Tuesday (18/6/85). At least 2 weeks notice of the foreseeable shutdown will be given.

*Addendum (14/6/85): Tasso has a new leak although by comparison it is only a drop in the ocean (a mere 15 litres per hour!) Tasso has thus decided to "throw its towel in" and will remain "off" until repairs are made.*

Meanwhile over in the Jade hall the vertex chamber preamplifiers are being kept at a temperature of 30°C by a continual flow of cool air. At this temperature the vertex chamber is able to run under standard settings without drawing any high currents.

**2) FCNC - New Jade upper limit.**

Fred Loebinger on behalf of Chris Bowdery presented a new upper limit for FCNC processes with the intention of presenting the result at Bari. Our published limit in 1983 gave a BR  $\leq$  0.7% at the 95% cl. With twice the statistics the new figure is  $\leq$  0.2% at the 95% cl and now enters the Guinness Book of Records!

Next JADE-meeting 20/6/85

J. Chrin 16/6/85

*Olson*

**MINUTES OF THE JADE MEETING  
HELD 30/5/85**

- AGENDA** 1) Present Run  
2) Miscellaneous

**1) Present Run.**

Tasso have opted to bypass the offending cooling circuit (leaving a part of their coil without direct cooling) and to run at a reduced magnetic field. Access for Monday morning (3/6/85) was required.

Meanwhile Cello hope to be back in business next week (6/6/85).

**2) Miscellaneous.**

Steve Wagner bid us all farewell and provided light and and not-so-light refreshment. (Funny how attendance at today's meeting was unusually high!) Steve is off to the States to start work with the Mark II collaboration. We wish him well!

**MINUTES OF THE JADE MEETING  
HELD 6/6/85**

- AGENDA** 1) Present Run  
2) Miscellaneous

**1) Present Run.**

Tasso's proposed scheme of cutting off the bad circuit and reducing their field to 2.5 kG did not work as hoped. Sensors close in to the magnet were registering very high temperatures. Hence Tasso are thinking again. A 3 week shutdown may be forseen to enable repairs to be made with Tasso still in situ. Should this be the case a notice of at least 2 weeks will be given. Meanwhile Cello began taking data again this morning (6/6/85).

Joerg Hagemann presented results on various tests made on the vertex chamber. A surprising conclusion was that the anode currents are fairly linearly dependent on temperature. What effect actually causes the high currents is still unclear, although a leaky capacitor could be an explanation.

**2) Miscellaneous.**

Yet another new member was welcomed with thunderous applause. Jane McCorkindale is working for Manchester but collaborators will soon discover that Jane hails from elsewhere. (Her Scottish accent is even more pronounced than our old friend Hugh McCann!) Bob Glasser from Maryland was also welcomed back.

Howard tells us that the JDAS Operator's Manual has been updated. The vital bits are marked in red!

Next JADE-meeting 13/6/85

J. Chrin 7/6/85

*Olson*

MINUTES OF THE JADE MEETING  
HELD 20/5/85

- AGENDA 1) Bari Conference  
2) It's a hard life being a B Meson!

1) Bari Conference.

Brief talks were given on the semi-muonic branching ratio of B hadrons, tau pair production and muon pair asymmetry, with the view of presenting these results at Bari.

2) Run vertex estimation.

Dieter Haidt discussed the merits of estimating the run vertex for each independent run (or fill) by using high quality multihadrons arising from that run or fill. The implications this has to the analysis of the B lifetime was also discussed.

MINUTES OF THE JADE MEETING  
HELD 23/5/85

- AGENDA 1) Present run  
2) Bhabha Scattering and other QED processes  
3) Miscellaneous

1) Present Run.

The status of the present run is overshadowed by the misfortune of the Tasso experiment which is reckoned to be quite seriously damaged. They have an enormous water leak (400 litres per hour) and no definite plans as to how to deal with it. One possibility is to run with a reduced leakage of 200 litres per hour or alternatively to try and locate the exact source of the leak (which is somewhere deep within the experiment) and to undertake the necessary repairs.

Cello at present is also not taking data because of a compressor motor failure. A replacement arrived yesterday, but contrary to the company's guarantee, it was not quite the same as the old one. Consequently Cello will now have to wait a further week or so until their old compressor is repaired!

Despite all this PETRA will continue to run over Pfingsten (with just Mark J and ourselves collecting data) although a shutdown of one week is foreseen in the near future to enable Tasso to undergo their major repairs.

Meanwhile JADE itself hasn't been entirely free from troubles. On Sunday night (19/5/85) several computer cards within the Nord were destroyed. These have now been replaced. In addition disc transfer errors have occurred. This makes reloading the Nord difficult (unless the disc drive is run down and then up again). CDC disc experts suspect that the cause might be due to timing mis-alignments occurring within the disc-Nord interface. It is not clear if the problem can be tracked down. Meanwhile those of us making major program developments on the Nord are strongly advised to create back up copies on floppy disc.

And back in the UK... There is a backlog of about 100 raw data tapes mounting up at RAL awaiting reduction. This is a direct consequence of the change in operating system from MVT to MVS at RAL. No further progress can be made until certain direct access routines used under MVT become available in MVS (as promised by the computer systems people!). Hence those desperate for REDUC1 events should consider running the reduction program elsewhere.

## 2) Bhabha Scattering and other QED processes.

Kiyotomo Kawagoe presented results on a detailed analysis of the following processes

$$e^+e^- \rightarrow e^+e^-, \gamma\gamma, e^+e^-\gamma$$

The total and differential cross sections for these processes agree nicely with QED expectations. From his analysis a number of various cut-off parameters were extracted. The process

$$e^+e^- \rightarrow e^+e^-\gamma\gamma$$

was also studied although no Monte Carlo simulation exists to compare the results with QED predictions.

## 3) Miscellaneous.

Soeding informs us that DESY has no money for printing theses (hard lines Gerhard!).

Pre-talks for the Bari Conference will be given on Saturday July 13th.

Chris Bowdery informs us from Lancaster that generation 8 is now complete (See TPSTATUS).

JADE has a new member. Michael Schmitz (Hamburg) was welcomed with the usual rapturous applause!

Next JADE-meeting 30/5/85

J. Chrin 28/5/85



J. Olsson

MINUTES OF THE JADE MEETING  
HELD 9/5/85

- AGENDA 1) Present run  
2) Bari conference

1) Present Run.

Wulfrin Bartel announced that there will be no data taking for the period 13:00 to 19:00 hrs on Tuesday 15 May when tests on the superconducting cavity will be made.

The latest news regarding the vertex chamber is that tests with alcohol and water added to the gas mixture have so far proved promising and the chamber has been able to run at its normal voltage. It is hoped that it will soon be possible to re-incorporate the chamber into the readout.

2) Bari Conference.

The deadline for submission of abstracts for the Bari Conference is 15 May (although two weeks grace is probably allowed) while for papers the date is 15 June. The following is a list of physics topics which were considered for presentation.

\*\*\* indicates the paper has been approved for presentation.

\*\* indicates the topic/paper is still under consideration.

\* indicates the topic will probably not be presented.

- \*\*\* 1) Total hadronic cross section etc.
- \*\*\* 2) Gamma paper.
- \*\*\* 3) 2 muons and 2 gammas final state paper.
- \*\*\* 4) Fragmentation and comparisons with cascade models.
- \*\*\* 5) Eta width paper.
- \*\* 6) D\* analysis (S. Wagner)
- \*\* 7) B to muon branching ratio (F. Loebinger, J. Baines)
- \*\* 8) B lifetime (P. Steffen, R. Barlow, J. Spitzer)
- \*\* 9) FCNC (C. Bowdery)
- \*\*10) Alpha s limits (P. Hill, A. Dieckmann)
- \*\*11) Tau asymmetry (U. Schneekloth, B. Naroska)
- \*\*12) Muon asymmetry (B. Naroska)
- \*\*13) B asymmetry - muons (R. Marshall)
- \*14) B asymmetry - electrons (K-H Hellenbrand and T. Greenshaw, analysis not yet finalised)
- \*15) B longitudinal polarisation (R. Marshall, further analysis underway)

The final decisions regarding those topics still under consideration will be made at the next JADE meeting, so those involved are asked to prepare their case. Since next Thursday is a public holiday the next meeting will take place on a Monday.

Next JADE-meeting Monday 20/5/85

J. Chrin 9/5/85

*J. Olsson*

**MINUTES OF THE JADE MEETING  
HELD 2/5/85**

- AGENDA**
- 1) PETRA schedule meeting
  - 2) Present run
  - 3) Online latest

**1) PETRA schedule meeting.**

Herr Felst reported on the PETRA schedule meeting. During acceleration a large amount of heat, from as yet an unknown source, is being dissipated into the superconducting cavity in a very short space of time. This has limited the amount of current possible in the machine.

Luminosity figures from all experiments were announced and JADE at present is last in the race (Grrrrh!).

**2) Present run.**

Henning Kado informed us that last Sunday (28/4/85) the beampipe (vertex) chamber began drawing an unacceptable amount of current which continually caused the chamber to trip. Consequently the anode voltage has been drastically reduced and thus so too has the chamber detection efficiency. Nonetheless, the vertex data (if any!) is still being read out to the Nord. Reasons for the high currents were speculated upon, but basically the cause is unknown. Henning added that the high currents are only evident when PETRA has beam.

**3) Further online developments.**

Howard Mills informed us that the trigger bit histogram has now been replaced by 4 new histograms which "reveal all"! The new histograms display the following:

The 1st in the set displays all T1 Accepts. (This is simply a repeat of the first part of the old histogram i.e. bits 1-16)

In the event of a T2 or T3 Accept, the 2nd histogram displays all T1 Postpone bits which had been generated. (This is equivalent to the second part of the old histogram i.e. bits 17-32)

The 3rd histogram is a new feature. It is as the 2nd with the exception that it only displays those T1 Postpone bits which actually caused the T2 or T3 Accepts.

The 4th histogram is really the star addition. It is filled only by those T1 postpone bits which cause a solo (or unique) T2 or T3 Accept, thus putting the spotlight on any offending triggers!

Finally, Howard reminded us that when the beampipe (vertex) chamber is present in the readout, it MUST be ON at the RUN START. Otherwise we get the wrong readout pattern!

Next JADE-meeting 9/5/85

J. Chrin 8/5/85

J. Olsson

MINUTES OF THE JADE MEETING  
25/4/85

- Agenda
- 1) Current run
  - 2) Status of online system
  - 3) The further adventures of the B lifetime

1) Current run.

There was no news on the current run (largely because there was no current run!).

2) Status of the online system.

Howard Mills reported on some recent and proposed changes to the online system. First, the new Jan Olsson trigger (successfully tested last week, as reported by Jan Olsson) has been installed together with the appropriate Nord-50 rejection algorithms, and seems to be working well.

The second point concerned the vertex chamber, whose frequent trips because of bad beam conditions are causing very high effective dead-time (because of the long run-down chamber/run downstairs/run-up chamber/run upstairs time). There have been many requests to "do something" about this. The ideal solution is clearly to have beam conditions such that the chamber does not trip. Until this can be achieved, Howard suggested that when the vertex chamber trips, data-taking should continue, but the vertex-chamber would be masked out of the readout pattern (thus anyone doing analysis with the chamber could test on the readout pattern to see whether it was operating for a given event). After the chamber was reset, it would be automatically re-inserted into the readout when the high voltage was back to its nominal value.

There was considerable discussion about this. It was agreed that care must be taken to ensure that a tripped vertex chamber was not ignored by the shift crew, i.e. an acoustic alarm should be provided. The alternative strategy of having the vertex chamber run only part-way down (to below counting threshold) was considered, but would involve non-trivial hardware changes. Persuading PKR to optimise on the vertex chamber anode current has worked in the past, but any subsequent optimisation for another experiment tends to restore the status quo. It was finally agreed that Jan and Howard should study the implementation of their solution, and if the vertex chamber down time is still high when the software is ready then it should be installed.

Finally, Howard announced that Jan Olsson is "on holiday" during May and will therefore be available from 10.00 to 17.00 ONLY. Any midnight Nord problems should be referred to Howard.

3) The B lifetime.

Joseph Spitzer reported on his careful study of the systematic errors and possible sources of bias in Peter Steffen's B lifetime analysis. Details can be found in Joseph's recent JADE note.

Next JADE-meeting 2/5/85

S. Cartwright 26/4/85

MINUTES OF THE JADE MEETING  
18/4/85

- Agenda      1) Announcements  
              2) Status of online system

1) Announcements.

It was announced that we would not after all open the arches while PETRA is down today (23/4). The feeling was that the risk of doing more damage because of shortness of time available exceeded the chance of fixing the TOFs.

2) Status of the online system.

Jan Olsson summarised assorted recent news from the online system. The most welcome piece of information was that the vertex chamber LAM problem had finally been solved — branch 1 crate 1 and the system crate watchdog flag should have been banished from the console.

There was a major breakdown in the Nord last week and there is evidence that it is not completely cured — programs occasionally do things that should be impossible. The tape unit, which is suspected of being responsible for the problem, has now broken down completely, so if the IBM goes down we cannot take data. The second Nord is also broken, because parts of it were cannibalised to mend the data acquisition Nord: it will be fixed soon by demolishing the TASSO Nord! (DESY can't afford new parts.)

The occasional NO TRIGGERS hangups are missing LAMs from the trigger box, and can't be solved until Krehbiel is available.

Finally, Jan reported a test on his new two-photon resonance trigger (barrel septant trigger with weaker TOF veto + soft track requirement). A testrun with some of the online rejection switched off increased the deadtime by only about 1%. The vast majority of the events gained were cosmic (one genuine  $e^+e^-$  event was collected) but it is likely that many of these can be rejected by activating the Plessey  $z$ -vertex and MCTANA cosmic rejection routine in the Nord for events triggered exclusively by the new condition. Cosmic tests suggest that this will work. Accordingly there were no objections to Jan's proposal that this trigger be enabled in production running.

Next JADE-meeting 25/4/85

S. Cartwright 23/4/85

*Olsson*

MINUTES OF THE JADE MEETING  
4/4/85

- Agenda 1) AOB  
2) Party for Prof. Yamada

1) AOB.

Jörg Hagemann showed event pictures from the new run, demonstrating that (apart from the odd missing LAM) the vertex chamber is working well. The operating voltage has been increased again and we are now running very close to the design values.

Lutz Becker announced that there are now 20 tapes with REDUC1 data from the new run. The tapenames are JADEPR.RED1HH.ST195 - .ST214. He does not intend to run any more REDUC1 jobs at DESY.

Jan Olsson pointed out that, in contrast to previous suspicions, the vertex chamber missing LAM errors do not show any preference for long events. Fears that all our multihadrons were being thrown away are thus unjustified!

2) Party for Prof. Yamada.

A good time was had by all — need we say more?

MINUTES OF THE JADE MEETING  
11/4/85

- Agenda 1) Announcements  
2) AOB

1) Announcements.

Rolf Feist announced that on Monday 15<sup>th</sup> (possibly extending into Tuesday) the magnet transformer will be upgraded. The new balancing chokes have already arrived, and the engineer is coming. We will then be able to go back to our normal magnetic field.

The following Monday or Tuesday (April 22/23) the machine will be off for one day to do some cable work at DESY. We intend to use this access time to move one arch in order to try to fix the dead TOF counters. This is a major undertaking—expect a call for lead wall demolition experts at the next meeting!

Jan Olsson reported that the missing LAM problem was not yet solved but was still under study. It appeared that the LAM was there but was not recognised—or to quote Jan, "The missing LAMs are not missing but they are still missing."

Howard Mills said that he has looked at the "5%" events offline. There is no cause for concern.

Beate Naroska announced her intention of reducing the TOF thresholds in the immediate future. This affects the soft trip levels for the jet chamber and it was agreed that a Heidelberger must be informed when the reduction took place.

Rolf Feist said that the directorate have announced that places will be available for PhD students in the machine group. Students would write their theses on aspects of accelerator physics and would be supervised by Herr Voss. People are asked to bring this opportunity to the attention of any likely candidates.

## 2) AOB.

Richard Hedgecock asked people to remember to log z-chamber alarms, as this information is required to assess the performance of the chamber with its new HT settings. There were some complaints about the number of alarm logbooks which the shift crews are asked to complete and it was agreed that the relevant people would try to devise an all-purpose log sheet so that only one book would be needed.

Richard also pointed out that the Rutherford computer is scheduled to change its operating system from MVT to MVS on April 22. This is a major change and the REDUC1 program at RAL has had to be modified and recompiled to allow for it. As the full AUTORED system cannot be tested in its new version until MVS is up and running, some initial problems may be anticipated. This is likely to delay REDUC1. Therefore people should not expect the new data to be available instantly!

Next JADE-meeting 18/4/85

S. Cartwright 12/4/85

*Olsson*

MINUTES OF THE JADE MEETING  
28/3/85

- Agenda
- 1) Various announcements
  - 2) Experimental test of the non-conservation of scissors
  - 3) Vertex chamber readout problems

1) Announcements.

Herr Felst announced that

- (1) Herr Schwickert of the Hallendienst is retiring. The JADE collaboration is presenting him with a picture of JADE signed by as many of the collaboration as possible — there may still be time to add yours.
- (2) On Wednesday April 3 at 16.00 the directors are holding a general information meeting. Please go along and ask any questions you may have.
- (3) On the afternoon of Wednesday May 8 (i.e. in five weeks' time) there will be a workshop on bus systems (including FASTBUS).
- (4) The DESY IBM is due to gain a solid state disc to increase available memory. It is hoped that this will improve TSO response. DESY has also ordered a computer-aided design setup.

2) Experimental test of the non-conservation of scissors.

Howard Mills reported that the notorious JADE counting room scissors, which spontaneously reappeared last week, have vanished again. It is believed that this cannot be accounted for by quantum fluctuations, and this finding therefore comprises the first evidence for the existence of a JADE scissors snatcher. (PRELIMINARY.)

3) Vertex chamber readout problems.

Jan Olsson reported that there are still frequent "missing LAM" messages from the first crate of the vertex chamber. The system crate watchdog flag errors also come from the vertex chamber—the system crate manufacturers suggested increasing the time constant but it was found to be already set at maximum. Henning Kado reported that when the vertex chamber was accidentally run at the wrong HT for some hours, greatly reducing the hit rate, the missing LAMs went away. It seems unlikely that the problem can be fixed before Claus Kleinwort returns from holiday. It was suggested that the readout be modified so that events in which this error occurs are kept, albeit without vertex chamber, instead of being completely lost as at present. As the error occurs primarily in long events (e.g. multihadrons!) this seems a good idea, and Howard and Jan agreed that it was probably feasible.

Next JADE-meeting 4/4/85

S. Cartwright 1/4/85



Minutes of the JADE Meeting  
held on 21/3/85

*Olsson*

- Agenda
- 1) Present Run
  - 2) A new two-photon trigger
  - 3) Improved limit on FCNCs (and other muon matters)
  - 4) Miscellaneous

1) The status of the present run is ... no run yet, but we're hopeful for luminosity very soon. The main problem, other than unwanted synchrotron oscillations, being that the orbit is completely disadjusted whenever the CELLO magnet is switched on! Incidentally, the super-conducting cavity tests of last week proved very successful, and the program for their use in HERA will go ahead.

2) Jan Olsson put forward his proposal for a new trigger designed specially for the rare two-photon process



The pions are of such low momenta (~50 MeV) that they do not satisfy the normal track trigger conditions. To 'catch' these events, the proposed trigger is:

T1 postpone      2 or 3 septants (approximately coplanar)  
plus  $\geq 1$ T0F      < some maximum no of T0Fs.

T2 accept       $\geq 1$  track (where the track criteria is very  
loose i.e. all track types)

The new trigger is to replace the T1 accept of 2 or 3 septants (approx. coplanar) plus no T0Fs.

Monte Carlo studies show that with this new trigger enabled, a factor of 5 or 6 more of these  $e^+e^- \pi\pi\pi\gamma$  final state events will be accepted. This is about 100 - 200 events per year

depending on the luminosity. The expected trigger rate is 0.25 to 0.5 Hz, but the actual rate is to be tested and will be the crucial factor as to whether or not Jan's proposal will be feasible. Place your bets!

3) Chris Bowdery gave an update of his dimuon analysis. With increased Monte Carlo statistics. Chris tells us that if the b quark has an FCNC decay mode to  $\mu^+\mu^-$ , then JADE data sets an upper limit of 0.5% with a confidence level of 95%. Chris hopes to improve this limit with the generation of more Monte Carlo events (and reach 5 times more MC statistics than data).

Chris then informed us that whilst performing his analysis, he uncovered an unwelcomed bug! Apparently in the 1982 data, the wrong date (a 1981 date!) is written in the HEAD bank. Consequently the muon analysis which uses this date from the HEAD bank to determine which muon chamber status it should use, acquires the wrong list of dead chambers (which as it happens, leads to a slight loss in muon detection efficiency).

Although KALIBR is aware of this error in the HEAD bank and proceeds to amend it, it is only called once per run and hence only the first event in each run has the correct date in the HEAD bank.

The solution at present appears to be that KALIBR will be called for each event either in the SUPERVISOR or TP program. Once this is done the 1982 muon sample will be reselected.

4) Money is available for new equipment for JADE. Suggestions as to how the money should be spent are welcome.

We are asked to keep drafts of JADE papers locked up in our cupboards since copies have been reaching the hands of the enemy!

And finally, the continuing saga of that big pair of scissors. Howard, from his sick bed, says thank you for their discrete return!

Next JADE Meeting 28/4/85

Jan Chrin 22/3/85