ILC - TRC

WG6

11/30/94
T. T.

1. What is it ?

2. Present status

3. Future

International Linear Collider
Technical Review Committee

19 Aug 1994 14:34:29 -0700 (PDT)
Date: Fri, 19 Aug 1994 14:20:17 +0000
From: Eleanor Mitchell
<Eleanor_Mitchell.TECHDIV#u#ADMIN@QMAIL.SLAC.STANFORD.EDU>
Subject: Working Technical Review Co
To: Toshiaki Tauchi <TTAT@jpnkektr.BITNET>
Mail*Link(r) SMTP Working Technical Review Committee

Dear Toshiaki,

As you may know, there now exists an International Collaboration for R&D Toward TeV-Scale Electron-Positron Linear Colliders. The Chair of the Council of this Interlaboratory Collaboration is David Burke from SLAC, and the member institutions of the Collaboration and their representatives, as of June 1994, are shown in Attachment 1.

The Council met at EPAC 94 in London several weeks ago and decided to appoint a Technical Review Committee with the charge shown in Attachment 2. They asked me to act as Chair of this committee and Thomas Weiland as "Secretariat." While I was not present in London, they also made up a list of six working groups and a Reading Committee (See Attachment 3). As you can see, they nominated you to be in the Experimentation Group. You may or may not already know this but just in case, I am hereby informing you and asking you to confirm that you are indeed willing to serve in this working group.

We are presently still working on some of the nominations for Deputy Chairs and one of the Chairs, our agendas and the goals we wish to achieve before, during and after LC95. We will keep you informed of further developments in a very short time. In the meantime, please let me know of your decision.

With best regards,

G.A. Loew
GALOEW@slac.stanford.edu
FAX: 415/ 926-3654

ATTACHMENT 1

INTERLABORATORY COLLABORATION FOR R&D TOWARD
TeV-SCALE ELECTRON-POSITRON LINEAR COLLIDERS

Chair : D. Burke (SLAC)

Member Institutions and their Representatives as of June 1994

Asia

IHEP	S. Wang	WANGSH@BEPC2.IHEP.AC.CN
KEK	K. Takata	TAKATA@JPNKEKVX
POSTECH	W. Namkung	NAMKUNG@VISION.POSTECH.AC.KR

FSU

BINP	V. Balakin	BALAKIN@VLEPP.SERPUKHOV.SU
DUBNA	V.Sarantsev	SARANCEV@SSD.JINR.DUBNA.SU

Europe

Aachen	K. Lubelsmeyer	
Berlin	H. Henke	HENKE@TU-BERLIN.DE
CEA	J. Haissinski	
CERN	K. Hubner	HUBNER@CERNVM.CERN.CH
Darmstadt	T. Weiland	DD2E@TEMF00.TEMF.E-TECHNIK.TH-DAMSTADT.DE
DESY	B. Wiik	F35BLU@DHHDESY3
Frankfurt	H. Klein	UF14@DDAGS13
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Fermilab	S. Holmes	HOLMES@FNAL
LBL	W. Barletta	BARLETTA@LBL.GOV
Maryland	A. Dragt	DRAGT@QUARK.UMD.EDU
SLAC	D. Burke	DAVEB@SLAC.STANFORD.EDU
UCLA	C. Pellegrini	PELLEGRINI@UCLAHEP

ATTACHMENT 2

CHARGE TO THE 1994/1995 TECHNICAL REVIEW COMMITTEE

The Technical Review Committee is to consider the goal to design, build, and operate a TeV-scale linear electron-positron collider capable of satisfying the need to explore the particle physics of this energy range. Specifically the Committee is to examine accelerator designs and technologies suitable for a collider that will initially have center of mass energy of 500 GeV and luminosity in excess of 10**+33cm**-2s**-1, and be built so that it can be expanded in energy and luminosity to reach 1 TeV center of mass energy with luminosity of 10**+34cm**-2s**-1. The Committee is also asked to comment on the potential of technologies to reach higher energies and luminosities, and to provide alternative physics capabilities, for example gamma-gamma collisions.

The Technical Review Committee is to identify the accelerator physics issues and technological requirements for each approach to provide particle physics opportunities at the energy and luminosity goals stated above. The report of the Committee should contain a brief summary of the status of and expected progress toward understanding and achieving the most important of these requirements. The Committee should attempt to identify areas of possible further collaboration in the world-wide linear collider R&D program.

A draft of the Committee report should be submitted to the Collaboration Council shortly after the LC95 meeting scheduled for March 1995 in Japan.

Dear Member of the Technical Review Committee,

Except for one or two people, we have completed our membership recruitment and we should now be able to start the work for our International Linear Collider Technical Review Committee (ILC-TRC). During LINAC'94 in Tsukuba I was fortunate to meet and have discussions with a number of you and upon my return to SLAC, I relayed the content of these discussions to Thomas Weiland who is here for a few more weeks. At this point, let me tell you about our first thoughts on the report which we are supposed to produce together and complete shortly after LC95.

The report should have an introduction of a few pages outlining our general goals. This introduction should be followed by a first chapter describing the essence of each linear collider approach for the 500 GeV center-of-mass case. We might include updated tables of specifications, working from the tables I put together at the end of LC93 and which appeared in the red Proceedings, and a table summarizing the goals of the test facilities which are being constructed in each lab. We should also include one-page schematics of the various machines so that a reader can at a glance get a clear idea of the major systems that make up each collider. We will send you a recently drawn example (not necessarily completely up-to-date) of the NLC. This first chapter, which could be updated as we progress, would be mostly descriptive and would not contain any profound discussions or comparisons. You would all contribute to the updating of the specifications but the chairpersons, working together, would make sure that the tables are constructed with equivalent assumptions and definitions so that luminosities, energies, currents, emittances, efficiencies, etc. are defined in the same way, or when this is not possible, an explanation or clarification is given. If columns in the tables must be added or deleted because another design approach has surfaced or a past approach has been abandoned, this should be done. We expect that this first chapter will be about 20 pages long, including figures.

WG 1 ~ 6.

The second chapter would have six sections, each of which would be written by one of the working groups. These sections would each be 8 pages long except for the linac technology section which would be 12 pages long. Each section would describe the major accelerator physics issues and technological requirements, addressing four points:

a) What do we need to satisfy each 500 GeV c. of m. approach, i.e. what kinds of sources, damping rings, compressors, rf, beam delivery, etc. are ultimately required?

b) Where do we stand today, i.e. what can we build and achieve at our present state of knowledge?

c) What must we achieve to get from (b) to (a) above, say in the next three years, to be able to put together a credible conceptual design report? (If you don't agree with the three-year span of time, spell this out).

d) What are the experiments, equipment, people and money needed to achieve these goals?

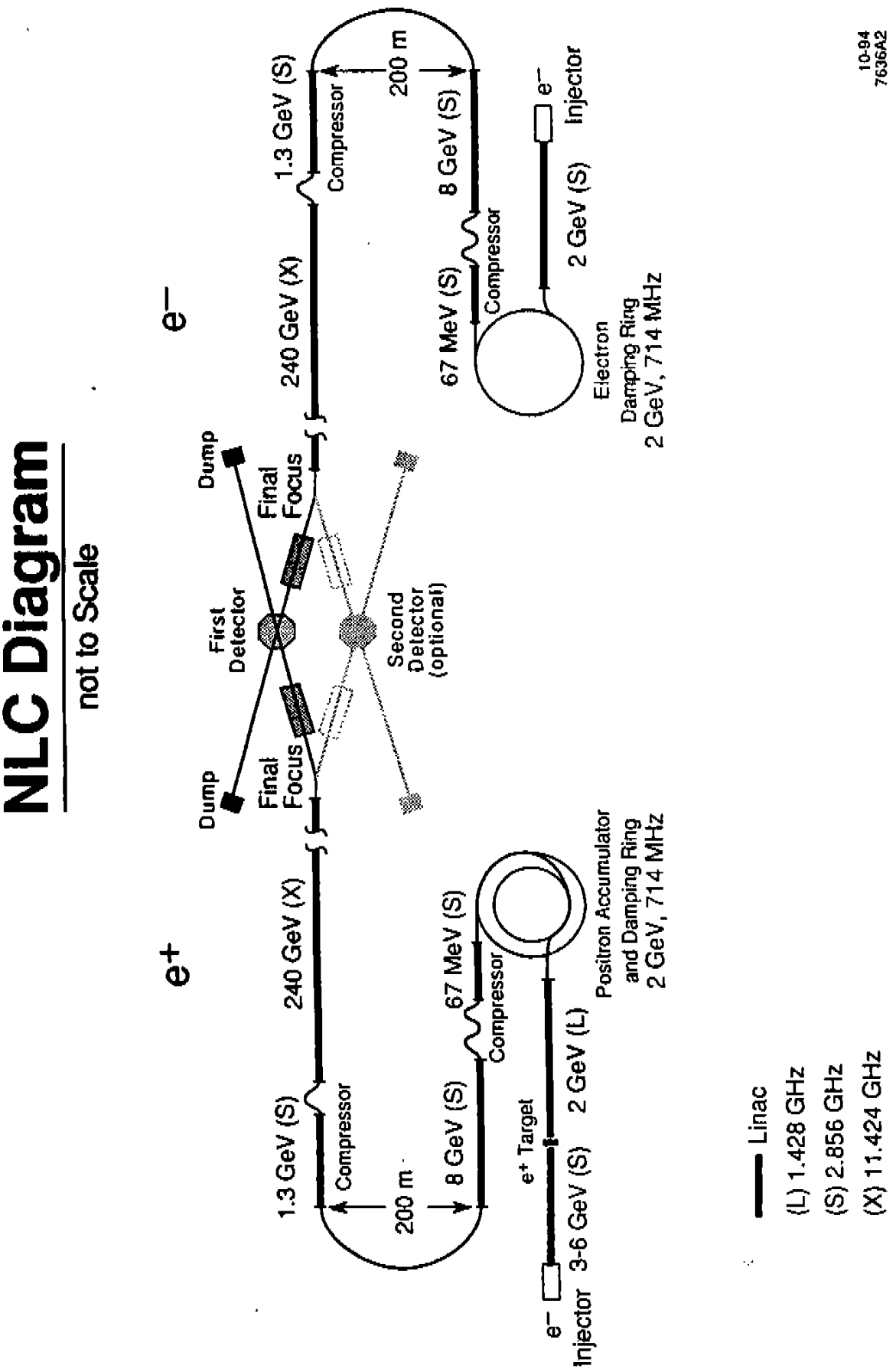
Each of the chairpersons should make sure that the various machines are compared in terms of all the issues raised above, i.e. what are the difficulties, obstacles, relative risks and unknowns. Again, as in Chapter 1, the chairpersons should enforce the rule that everybody uses the same definitions so that, for example, when tolerances are calculated, the same emittance dilutions, beam losses, energy spreads, etc. are assumed. Indeed, if this is not done, comparisons between various approaches will not really be valid. Chapter 2 would be 52 pages long.

Chapter 3 should clearly address the expandability potential of each machine, i.e. how it could be expanded to 1 TeV c. of m. and 10**34cm**-2s**-1 luminosity and what technological resources would be needed for such a step. It should also be indicated how the design could go beyond 1 TeV and what the major obstacles to overcome might be. A second section of this chapter should address the relative capabilities of each machine regarding e**-e**-, gamma-gamma, etc. collisions. This chapter might be 15 pages long.

Finally, Chapter 4 would contain the conclusions of the Committee. It would be no longer than 8 pages. Hence the entire report would be under 100 pages long.
Thomas Weiland is currently working on a proposed format of the whole document so that we all use the same word processing programs, drafting, etc. This
material will be sent to you shortly.

>From the timetable point of view, I think we all realize that we do not want to prejudice any developments and new ideas that might be presented or discovered at LC95. On the other hand, we also realize that if we do not work hard before LC95, it will be impossible in two or three days after LC95 to finish our work.
Hence, I think that we should have drafts of Chapters 1, 2 and 3 by February 1, 1995. Chapters 1 and 3 could be put together by Thomas Weiland and myself with material sent to us by the working group chairpersons consulting each other. Each section of Chapter 2 would be the responsibility of the respective chairperson. Reconciliation and updating would be done partially before, during and after LC95. Chapter 4 would be written at the end of the process. I know that such a goal is hard to meet, given the fact that everybody is so busy, but we should give it a try.

by G.A. Loew
galoew@slac.stanford.edu


NLC Diagram
not to Scale
e−
e+
1.3 GeV (S)
Compressor
200 m
8 GeV (S)
240 GeV (X)
67 MeV (S)
Compressor
2 GeV (S)
e− Injector
Electron Damping Ring
2 GeV, 714 MHz
Dump
Final Focus
First Detector
Second Detector (optional)
Positron Accumulator and Damping Ring
2 GeV, 714 MHz
2 GeV (L)
e+ Target
3-6 GeV (S)
e− Injector
Linac
(L) 1.428 GHz
(S) 2.856 GHz
(X) 11.424 GHz
10-94
7636A2

STRUCTURE AND MEMBERS OF THE TECHNICAL REVIEW COMMITTEE

September 6, 1994

Steering Group:

G. Loew Chair

T. Weiland Secretariat

Reading Committee:

B. Aune, V. Balakin, H. Edwards, K. Hubner, E. Paterson, A. Sessler, K. Takata, G. Vignola, G. Voss, B. Wiik

+

6 working groups.

Working Groups:

1) Injection Systems

M. Yoshioka Chair yoshioka@jpnkekvx
A. Mikhailichenko Deputy Chair
J.P. Delahaye, K. Flottmann, R. Miller, C. Pagani,
J. Rosenzweig, C. Travier

2) Damping and Compression Systems

J. Rossbach Chair h02rob@dhhdesy3
J. Urakawa Deputy Chair
S. Chattopadyhay, J.P. Potier, T. Raubenheimer

3) Linac Technology

P. Wilson Chair pwilson@slac.stanford.edu
D. Proch Deputy Chair
N. Holtkamp Deputy Chair
G. Caryotakis, T. Higo, H. Mizuno, W. Namkung,
H. Padamsee, R. Palmer, N. Solyak, G. Westenskow, I. Wilson

4) Beam Dynamics

K. Yokoya Chair yokoya@jpnkekvx
A. Mosnier Deputy Chair
A. Dragt, G. Guignard, R. Ruth, R. Wanzenberg

5) Beam Delivery

R. Brinkmann Chair mpybri@dsyibm.desy.de
V. Telnov Deputy Chair
J. Irwin, O. Napoly, K. Oide, B. Zotter

6) Experimentation

R. Settles Chair ron@dmumpiwh
T. Markiewicz Deputy Chair
S. Bertolucci, S. Kawabata, D. Miller, R. Orava,
F. Richard, T. Tauchi, A. Wagner

Draft for WG6-report.

OUTLINE

Draft #0, 19 September 1994
Draft #1, 28 October 1994

0.1 Experimentation

R. Settles[1] (Chairman), T. Markiewicz[2] (Deputy Chairman), S. Bertolucci,[3] S. Kawabata,[4] D. Miller,[5] R. Orava,[6] F. Richard,[7] T. Tauchi,[8] and A. Wagner[9]

0.1.1 Overview

Here define what we will and will not talk about.

The suggestion from KEK, as communicated by Toshiaki Tauchi (and slightly modified by me), is as follows:

The principal purposes of this subgroup are:

(1) to summarize important particle physics experiments,

(2) to specify ranges of relevant machine parameters in order to be able to perform these experiments,

(3) to identify IR issues for which exeriment and machine closely interact, and

(4) to outline generic detector possibilities.

Thus this working group should concentrate on the machine parameters necessary to realize the experiments, compare the various machine designs with regard to these parameters, and establish which areas of technology around IR and detector need further R&D.

Workshop Overview: (I am leaving these references here for the time being since we'll probably be needing most of them when it comes time to write up our chapter.) SLAC [1], La Thuile [2], Snowmass [3], KEK [4], Europe [5,6], Finland [7], USA [8] Hawaii [9], LC92 [10], and LC93 [11].

0.1.2 Physics Issues

A summary of physics and requirements on machine and detector is given in Table 1. The main conclusions to be drawn from Table 1 are:

(1)...(2)...(3)...

[1]Max-Planck-Institut für Physik, Föhringer Ring 6, D-80805 München
[2]Stanford Linear Accelerator Center SLAC, PO Box 4349, Sanford, CA 94309, USA
[3]INFN, Laboratori Nazionali di Frascati LNF, CP 13, I-00044 Frascati
[4]Physics Department, KEK, 1-1 Oho, Tsukuba-Shi, Ibaraki-Ken 305, Japan
[5]Physics and Astronomy, University College London, Gower Street, GB-London, W.C.1E 6BT
[6]Univ. Helsinki, Research Inst. for Hi.En.Phys. SEFT, Siltavuorenpenger 20C, SF-00170 Helsinki
[7]Université de Paris-Sud, Inst. Nat. de Phys. Nucléaire, LAL, F-91405 Orsay Cedex
[8]Physics Department, KEK, 1-1 Oho, Tsukuba-Shi, Ibaraki-Ken 305, Japan
[9]DESY, Deutsches Elektronen-Synchrotron, Notkestraße 85, D-22603 Hamburg

Table 1: Main physics issues and the corresponding performance needed for machine and detector aspects. Key: from "-" not important, to "***" very important.

PHYSICS	MACHINE				DETECTOR						
	$\int \mathcal{L}dt$ fb^{-1}/y	$\sqrt{s}$ TeV	Narrow $\mathcal{L}(\sqrt{s})^a$	Pol. beams	Hermeticity	Tracking	Calorimetry	3-Dim. Granul.	Lepton I.D.	Vertex Tag	pi/K I.D.
HIGGS											
Bj-prod.	1-10	.2									
Boson fusion	10	to	*[b]	-	***	**	**	**	**	***	*
SM/Susy B.R..	100	1									
TOP											
Thr. scan	10	~.35	***	**	***	**	**	**	**	***	*
Rare decays	10	.4									
g-2,hel.	50	to		**	***	**	**	**	**	***	**
Yukawa	100	~.6									
WW											
WWV-coupl.	10	~.5									
WWV-hel.	50	to	***	**	***	**	**	**	**	-	-
WWVV-coupl.	100	1									
Str.-int.Higgs	200	~1.5			***	***	**	***	**	-	-
SUSY											
Slepton	10	.2									
Chargino	10	to									
Neutralino	10	.5	-	*[c]	***	**	**	*	**	-	-
Susy param.	100	to									
Squark,gluino	100	1									
QCD											
Hadronization	1	For									
Heavy flavors	10	all	-	-	**	**	**	*	*	**	*
$\alpha_s(s)$	10	$\sqrt{s}$									
$\gamma\gamma$											
$F_2^\gamma(x,Q^2)$	10		**	-	***	**	**	**	**	*	*
Flavors	10										
NEW PHEN.	200	?			***	***	**	***	**	**	
OVERALL			***	**[c]	***	***	**	***	**	***	**
$\mathcal{L}(\sqrt{s})$ Detector					**	***	**	**	**	-	-

[a] Here the *'s indicate how important it is to have a narrow and well-measured c.m.s. energy spread arising from machine and beamstrahlung effects. The detector for mapping the luminosity as a function of $\sqrt{s}$ to high precision is treated in the last row of the table.

[b] If M_{Higgs} <600 GeV is discovered, this should be upgraded to ** or more.

[c] If supersymmetry is discovered, this should be upgraded to ***.

Table 2: Table of machine parameters of interest for IR and detector design.

	TESLA	SBLC	JLC(S)	JLC(C)	JLC(X)	NLC	VLEPP	CLIC
Upper Number for 500 GeV Lower Number for 1000 GeV								
$\mathcal{L}$ ($10^{33}cm^{-2}s^{-1}$)	6.5	3.6	4.4	6.5	6.3	8.2	15	2.2-8.9
δ_B (avg. en. loss in %)	2.7	3.2	10.	8.1	4.5	3.0	13.	36.
$\sqrt{s}$-spread (σ in %)								
#Bunches/train	800	125	55	72	90	90	1	1-4
#Trains/sec	10	50	50	100	150	180	300	1700
Interbunch spacing	1000ns	16.0ns	5.6ns	2.8ns	1.4ns	1.4ns	3.3ms	.33ns
pb^{-1}/bunch $\times 10^7$	8.1	5.8	16.0	9.0	4.7	5.1	500	12.9
#Minijets/bunch $\times 10^2$ (p_T^{min}=3.2 GeV/c)	.16	.27	1.7	.90	.22	.10	56	5.8
(#Minijets/pb^{-1}) $\times 10^{-3}$	2.0	4.6	10.6	10.0	4.7	2.0	11.2	45
pb^{-1}rate (mHz)	6.4	3.6	4.4	6.5	6.4	8.3	14.9	2.2-8.8
Minijet rate (Hz)	12.8	16.9	47.6	66.7	29.4	16.1	166	100-400
x-spot size (nm)	1000	670	300	260	260	300	2000	90
y-spot size (nm)	64	28	3	3	3	3	4	8
z-spot size (μm)	1000	500	80	80	67	100	750	170
Crossing angle (mrad)	0	3	7.3	8	7.2	3	-	1
Detector dead cone (mrad)								
FF quad mass in support tube								
vibration stability required								

0.1.3 Experimental issues

Experimentation phases	500 GeV: 1fb^{-1},10fb^{-1},100fb^{-1}- e^+e^-running, . then $\gamma\gamma$ running, then 1 TeV running, e.g.
$\gamma\gamma$ collider implications:	Is there any real physics argument for a $\gamma\gamma$ collider? ..that is, something that can't be done at an e^+e^- collider?
Z pole running:	Is the physics argument strong enough to make it worth complicating the machine?
Two Detectors	This is an issue for us, to assess experimentation, costs, implications for the machine.
Two IP's	This is an issue for beam delivery WG5, to assess costs, implications for the machine.
Backgrounds	e^+e^-pair creation in field of colliding bunches. Hadrons produced by photons from beam-beam effect. Synchrotron radiation. Muon backgrounds.
$\mathcal{L}(\sqrt{s})$	Distortion of the c.m.s. energy spectrum due to machine energy spread, beamstrahlung, and i.s.r.
Crossing angle	Dead region in detector
Vibration	Stability requirements. Support tube.
Beam spot diagnostics near IP	Wires. Interferometer. e^+e^- pair monitor.
Extracted beam diagnostics	Energy spectrometer. Compton polarimeter. Beam spot monitors.

0.1.4 Implications of IR issues on experimental apparatus

Detector performance:	Hermetic Coverage
	Tracking
	Calorimetry (including enery flow)
	3-D Granularity
	Charged Lepton Identification (and sign)
	Vertex Tagging
	π/K Separation
	$\mathcal{L}(\sqrt{s})$ Meas.: $\delta\theta \leq$0.1mrad, radhard det.
Hardware implications:	Polarized source
	Masking
	Timing
	Trigger
	DAQ
	Data volume/data reconstruction
Calibration:	Z pole running
	Varying no. of bunches/train

Table 3: Examples of detector performances used in physics studies up to now.

	ee500 1991	ee500 Typical	LEP/SLC-Style	1000GeV Detector	JLC Detector	
Tracking $\frac{\delta p_t}{p_t^2} = C$ $C =$	5-100	10	8	2	1	$\times 10^{-4}\mathrm{GeV}^{-1}$
E-M Calorimeter $\frac{\delta E}{\sqrt{E}} =$	0.02-0.15	0.1	0.2	0.1	0.15	$\sqrt{\mathrm{GeV}}$
Hadronic Calorimeter $\frac{\delta E}{\sqrt{E}} =$	0.3-1.0	0.8	0.9	0.65	0.40	$\sqrt{\mathrm{GeV}}$
Energy Flow $\frac{\delta E}{\sqrt{E}} =$	0.3-0.8	0.5	0.65	0.4	0.3	$\sqrt{\mathrm{GeV}}$
Vertexing $\delta(IP) = A \oplus \frac{B}{p}$						
$A =$	5-20	10	25	10	11	μm
$B =$	50-100	50	100	50	28	μmGeV
Hermetic coverage $\lvert\cos\theta\rvert <$	0.70-0.99	0.95	0.96	0.98	0.98	

0.1.5 What's been done

Backgrounds:	SLAC	ABEL runs into LEP/SLC-like detector using EGS (G.Punkar).
		SLAC QSR program vectors — IP — detector using EGS (G.Punkar).
		Feldman MarkII muon transport code run on NLC beam line
		— "big bend" and collimators to reduce flux (L.Keller).
		Interface ABEL to GEANT with SLD detector (M.Ronan).
	KEK	Detailed ABEL runs into JLC detector.
		QSR studies for JLC using MQRAD (T.Tauchi).
		Muon background studies (Y.Namito).
		Effect of minijets on Higgs signal (A.Miyamoto, J.Kanzaki).
	DESY	ABEL runs into LEP/SLC-style detector using EGS (D.Schulte).
		SLAC QSR program vectors — IP — detector using EGS.
		Feldman MarkII muon transport code run on TESLA beam line
		→ "big bend" and collimators to reduce flux (M.Sachwitz, J.Schreiber).
		Interface ABEL to GEANT with LEP/SLC-like detector (D.Schulte).
Programs:	SLAC	Development of ABEL, Muon, Hadrons, QSR
		(P.Chen, T.Tauchi, K.Yokoya, L.Keller,...)
	KEK	Devel. using GRACE/BASES/Spring, HELAS,TBS
		(T.Kaneko, S.Kawabata, K.Hagiwara, A.Miyamoto, et al.)
	DESY	Devel. of MACPAR(rev.),TRACKIT,GEANT interfaces
		(D.Schulte, P.Pierini, J.Schreiber, M.Sachwitz, ...)
	CERN	Development of RBEAM (L.Wood)
	???	Development of MACPAR (S.Ritter)
		Minijets (Drees, Grassi, ...)
Vibrations:	SLAC	Ground measurements in CEH.
		Air piston and permanent quad R&D effort begun.
	KEK	Ground measurements at mountain site.
		Support tube design and calculations.
	DESY	Ground measurements in HERA.
		Support-tube design begun.
Timing:	DESY	Sub-ns timing in ZEUS detector.
Beamspot:	KEK	JLC nm-spot monitor during collision (T.Tauchi)

a. list of MC-generators

0.1.6 What's left to do to make a comparison of ILC designs

Backgrounds	Define generic base detector (GDET): - radii, materials, solid angle, B field, - without specifying technology. Define simulation packages GEANT3.17, EGS4.2, etc. Define standard inputs to background programs, - to be used by each machine: - 4 vectors at the IP, - TRANSPORT decks of optical elements, etc.
Define background generators	ABEL Muon Hadrons QSR ...
Define figures of merit	No. interactions/mm^2/train at given radii. Energy loss/mm^2/train at given radii. Data volume. Trigger rate. ...
Generators for physics	Pythia Jetset Herwig etc... (see under "What's been done") ..... with same format as for backgrounds ..... so that physics and backgrounds ..... can be overlaid.
Run benchmarks, all machines	...e.g., quote JLCv3.1 with ABEL4.2/GDET1.0/GEANT3.17 yields the following results...

0.1.7 Other things left to do

Vibrations/support tube	Demonstrate 1nm level stability - experimentally with combination of - inertial suppression and beam-based feedback. Give overview of possible solutions - for support tube and its innerds - as a function of machine design - and for the $\gamma\gamma$ collider, - etc.
Beam quality	Measurements incl. luminosity for fast feedback (T.Tauchi)

0.1.8 What do we need to get to CDR? (time,people,money,...)

0.1.9 Summary and recommendations

Define standards with which to compare different machine designs. Appoint a *Standards Committee* to define and maintain current versions of programs, detectors, and machine designs. Probably needs three subcommittees, to meet at LC9n, LCWS9n, and as needed. Here a comparison, preferably in form of a table, will point out what the various + and - points are with each machine.

References

[1] C. Ahn et al., Opportunities and Requirements for Experimentation at a Very High Energy e^+e^- Collider, SLAC-Report-329 (1988).

[2] J.H. Mulvey (ed.), Proceedings of the Workshop on Physics at Future Accelerators (La Thuile 1987), CERN 87-07.

[3] S. Jensen (ed.), Proceedings of the Summer Study on High Energy Physics in the 1990s (Snowmass, 1988), World Scientific. Singapore, 1989.

[4] Three Workshops on the Japan Linear Collider, 1989, 1990, 1992, resulting in: JLC Group, JLC-I, KEK Report 92-16.

[5] P.M.Zerwas (ed.), e^+e^--Collisions at 500 GeV: The Physics Potential (Workshops at Munich, Annecy, Hamburg, 1991), DESY 92-123A&B, Parts A and B.

[6] P.M.Zerwas (ed.), e^+e^--Collisions at 500 GeV: The Physics Potential (Workshops at Munich, Annecy, Hamburg, 1992-1993), DESY 93-123C, Part C.

[7] R. Orava, P. Eerola and M. Nordberg (eds.), Physics and Experiments with Linear Colliders, Vols. I and II, World Scientific, Singapore, 1992.

[8] J. Rogers (ed.), Proceedings of the 1992 Wrokshops on High-Energy Physics with Collidingh Beams (Trilogy of Workshops at Yale, Wisconsin, Santa Cruz, 1992), SLAC-428.

[9] F.A. Harris, S.L. Olsen, S. Pakvasa and X. Tata (eds.), Workshop on Physics and Experiments with Linear e^+e^-Colliders (Waikoloa, Hawaii, 1993), Vols. I and II, World Scientific, Singapore, 1993.

[10] R. Settles (ed.),Proceedings of LC92, the ECFA Workshop on e^+e^- Linear Colliders, Vols. I and II, MPI-PhE/93-14, ECFA 93-154.

[11] Proceedings of the Fifth International Workshop on Next-Generation Linear Colliders (LC93, SLAC, October 13-21, 1993), SLAC-436.

Schedule for WG6

For the European members of the WG6, experimentation working group, of the ILC-TRC, it seems not possible to get everyone together at the same time for this early meeting. So we need two meetings:

* Wednesday Nov. 30 in DESY, 15:00, Bldg/room 1d/292. I shall invite the members of the the other TRC working groups who are at DESY to this meeting, since we could well be needing advice from the machine experts.
* Thursday Dec. 8 in CERN, around 12:00 noon at my office, Bldg/room 2/1-018 (near the Aleph secreteriat), and we go for lunch to discuss when to meet during the next couple of days (we'll be in the Coop cantine if you are a bit late).

As for the USA, we had

* ~~Either the week of Jan.2-6 or of Jan.30-Feb.~~3 in SLAC Feb.13-17

It looks like Jan.30-Feb.3 might be the most useful, since we are supposed to submit a first draft of our chapter that week to Greg Loew. If some members from Europe or Japan could make it that week, it would be nice (Sergio Bertolucci could).

Then of course the culmination:

* The week of Mar.27-Mar.31 in KEK (LC95). ⇐ last meeting.

Best regards to all,

Ron

Mail from R. Settles on 11/30/94

Dear Sergio, Setsuya, Tom, David, Risto, Francois,
Toshiaki, and Albrecht,

Trying to organize meetings on a global scale is turning out to be tough. It turns out that the week of Jan.30-Feb.3 for meeting in SLAC is not longer possible for me and I guess for the other Europeans. The reason is that the General Lep200 Physics Meeting has been changed to that week. In principle I could skip that meeting, but the problem is that we want to couple our first ee500 meeting, which will start off another round of 3 workshops in preparation for the Japan LCWS in September, to the Lep200 general meeting. That first ee500 meeting will be in Annecy on the day after the Lep200 one in CERN, the idea being that since many people will be in Geneva for Lep200, they can stay one more day and come to the ee500 meeting in Annecy, which is nearby.

3 workshop for LCWS.

Feb. 4 ~ 11.

So the next opportunity for me to make it to SLAC would be the week of Feb.13-17. Would this week be possible for some of you? To Greg Loew, would this week be soon enough to receive the first draft of our WG6 chapter? Any other suggestions?

Best regards to all,
Ron