FRICTION MATERIALS STANDARDS INSTITUTE, INC.
588 MONROE TURNPIKE, MONROE, CT 06468

MINUTES OF MEETING

OF THE

BOARD OF DIRECTORS

Saturday, June 6, 1998

La Quinta Resort and Club

La Quinta, California

DIRECTORS PRESENT	
Joseph Nir	Cooper Industries/Moog Automotive
Robert Scott	Friction Material Company
Paul Myers	Haldex Brake Products
Pat Healey	Superior Friction, Inc.
Martin Chevalier	U.S. Automotive Manufacturing
Richard Cross	Vaapco, Inc.
Rob Burgess	Wheeling Brake Block

DIRECTORS MISSING	
William Aymond	Cooper Industries/Moog Automotive
William Wood	Motion Control

OTHERS PRESENT	
Walt Britland, Vice President	Cooper Industries/Moog Automotive
Gilbert N. Laycock	Friction Materials Standards Institute, Inc.
Thomas P. Weldy, Counsel	Morehouse Harlow & Weldy Attorneys at Law

Mr. Britland, Vice President, called the meeting to order at 8:28 A.M.

MINUTES OF PREVIOUS MEETING

The Secretary advised that minutes of the Board of Directors Meeting of June 7, 1997 had been distributed. The Vice President suggested that a reading of the minutes be dispensed with, as no corrections had been suggested. Upon motion duly made, seconded and unanimously approved, it was:

RESOLVED: To accept the minutes of the meeting of the Board of Directors of June 7, 1997 as written.

VICE-PRESIDENT'S REPORT

Mr. Britland presented his report. Please refer to EXHIBIT 1 in the report booklet.

Mr. Britland welcomed all to the 1998 Annual Meeting and reviewed some of the changes that have transpired in the industry in the past several years. He acknowledged past President, Ms. Doreen Tomao, for her contributions to the Institute and the industry and wished her well in her future endeavors. Mr. Britland reviewed and gave a brief overview of the Committee Reports that would be presented over the course of the meeting. He thanked the various committee members for their participation and encouraged those who are inclined to participate to do so.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Vice-President's Report as written.

There was no discussion on this report.

MEMBERSHIP COMMITTEE

This report, prepared by Bill Wood, Chairman of the Committee, was presented by Gil Laycock. Please refer to EXHIBIT 2 in the report booklet.

The report noted that Membership had declined by one from last year. There were five Active Members lost and two gained for a net loss of three Active Members. There was one Regional Member lost and there were three gained for a net gain of two Regional Members. The Licensee category did not change. The breakdown by membership type was: Active 44, Regional 35 and Licensee 11.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Membership Committee Report as written.

There was no discussion on this report.

Report on Delinquent Fees - Oral - G. Laycock

Mr. Laycock reported that the total of open invoices for fee billings as of June 1, 1998, was $19,700.00. The amounts owed by quarters are:

4th Quarter 1996-97 FY	$	575.00	One Regional
1st Quarter 1997-98 FY		1,025.00	Two Regional
2nd Quarter 1997-98 FY		1,025.00	Two Regional
3rd Quarter 1997-98 FY		11,625.00	Seven Active & Five Regional
4th Quarter 1997-98 FY		5,450.00	One Active & Ten Regional
		$19,700.00	

FMSI 00757

Open invoices for Accounts Receivable total $14,792.13, of which most are recent catalog billings. The report recommended that the Board vote to terminate the Membership of Allied Nippon of New Delhi, India, immediately and recommended that the Board vote to terminate ICER, Materiales de Friccion SAE of Pamplona, Spain, if invoices are not paid by September 30, 1998.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Delinquent Fees Report as presented.

There were questions concerning the Institute's dunning policy when invoices are delinquent. The policy is to start dunning when an invoice is six months old, again at nine months and twelve months. At twelve months all mailings are stopped. At fifteen months the name is given to the Board of Directors for termination. Some members thought this policy was too lax. The Secretary noted that a number of Mexican and South American members do not consider paying a quarterly invoice until the quarter is up. There was also some discussion concerning the use of FMSI numbers after a member has been terminated. It was noted by Mr. Weldy that, based on the opinion of a copyright attorney consulted by FMSI several years ago, it might be difficult to prevent the use of FMSI numbers by a nonmember.

Upon motions duly made, seconded and unanimously passed, it was:

RESOLVED: To terminate the Membership of Allied Nippon of New Delhi, India, and write-off open invoices.

RESOLVED: To terminate the Membership of ICER, Materiales de Friccion SAE of Pamplona, Spain and write-off open invoices, if the dues are not paid by September 30, 1998.

TREASURER'S REPORT

Mr. William Wood, Treasurer, prepared this report. Please refer to EXHIBIT 3 in the report booklet.

The Treasurer's Report projected an excess of total income over expense, or profit, of $20,035. The Institute's operating income was projected to be $204,073, with expenses projected at $200,946, giving an operating income of $3,127. When Investment Income of $16,908 is added, the projected total profit of $20,035 is derived. The report analyzed any variances from budget of more than $200. Eight were favorable variances and four were unfavorable variances. The report included a Balance Sheet Projected to June 30, 1998, a Statement of Income and Expenses Projected for the 1997-98 Fiscal Year, and a Seven-Year Financial Summary.

TREASURER'S REPORT (cont'd)

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Treasurer's Report as written.

A Board Member questioned "unsubmitted expenses" noted in the explanation of a favorable variance for general travel. The Secretary explained that expenses for his APRA Convention trip were not submitted for reimbursement based on his letter of June 1997. The "Transition Provision" Expense was also questioned. The Secretary explained that there is a "Reserve for Transition" funded by an annual expense item "Transition Provision" set by the Board of Directors at $5,000. The reserve is to be used to smooth the extraordinary expenses which will be incurred in the year when the Secretary retires and the Institute hires a replacement Secretary.

The Secretary noted as a suggestion for consideration that since the projections for the fiscal year estimate a profit of $20,035, the Board of Directors could authorize that an amount such as 50% of the profit be set aside into the Reserve for Transition, prior to closing the books for the year, in effect setting aside dollars when the Institute has income in excess of expenses. The annual $5,000 contribution would remain unchanged. A Board Member suggested that this be further discussed under the Budget or New Business. A Board Member suggested that the "Unsubmitted Expenses" be submitted by the Secretary as those expenses were incurred on behalf of the Institute.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: That expenses incurred by the Secretary during the APRA Convention trip be submitted for reimbursement.

INVESTMENT ADVISORY COMMITTEE REPORT

Mr. Bob Scott, Chairman, presented the Investment Advisory Committee Report. Please refer to EXHIBIT 4 in the report booklet.

Mr. Scott advised that the total investment assets projected to June 30, 1998 were $276,586 versus $255,345 on June 30, 1997. Current yields on U.S. Treasury Notes average 5.6%, down from 6.1% last year and Money Market yields have dropped to 4.67% down from 4.86% last year. The projected Investment Income for 1997-98 is $16,908 up from $13,571 during the previous year. Estimated income for 1998-99 is down slightly to $15,754. The report also included a summary of the Institute's holdings in U.S. Treasury Notes.

INVESTMENT ADVISORY COMMITTEE REPORT (cont'd)

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Investment Advisory Committee Report as written.

The Secretary suggested that the laddered U.S. Treasury Notes, currently at $35,000 per block, spaced 6 months apart over 3 years, be indexed upward by $5,000 at each successive maturity and rollover to $40,000 per block. The Secretary noted that the lowest dollar amount in the Money Market Fund over the last year was about $40,000 and gradually moving money into the higher yielding U.S. Treasury Notes would result in a higher investment income.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To index the U.S. Treasury Notes in the Institute Reserve from $35,000 to $40,000 at each successive maturity and roll-over.

Mr. Chevalier asked if there were any guidelines for golf prizes. The Secretary noted that in the past we have asked that the Golf Chairman keep the golf prize expense under $500, exclusive of what is spent for trophies. Mr. Britland asked how the golf prizes are expensed. The Secretary noted that they go into the Meeting General Expense Category. Mr. Chevalier asked for a specific dollar amount. Mr. Britland suggested that the golf prizes not exceed $300.

Mr. Healey asked at what rate of reserve growth does the Institute lose its not-for-profit status. The answer was we do not know, but, at the suggestion of the Institute auditors, the guidelines for fee adjustment were established targeting 3% growth not to exceed 6% growth (where fees would be lowered) or go below break even (where fees may be raised) based on a three year average of profit or loss.

BUDGET COMMITTEE

Mr. Martin Chevalier, Chairman, read the report. Please refer to EXHIBIT 5 in the report booklet.

Mr. Chevalier reported that the Committee proposed an Expense Budget of $213,535 for the 1998-99 fiscal year. His report noted that the salary amount was indexed for budget purposes but any salary increments are determined by the Board of Directors. Line items that were increased were: FICA Taxes, State Unemployment Insurance, Legal Expense, Audit Expense, Insurance Expense, Pension Expense and Meeting General Expense. A new expense category was added for transition provision which funds the

BUDGET COMMITTEE (cont'd)

Reserve for Transition. Line items that were decreased are: Telephone, Postage, Dues and Subscriptions, Service and Repairs and Depreciation. Line items that were unchanged were: Rent, Stationery & Supplies, Bank Fees, Federal Unemployment Insurance, State Property Tax, Miscellaneous, Meeting Travel, Catalog Travel and General Travel.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Budget Committee Report as written.

Mr. Scott asked what sort of travel the Secretary planned for the coming year. The Secretary noted in past years he had traveled to APRA Big "R" Convention, SAE Convention in Detroit in February (also visiting Rockwell, AlliedSignal, the printer and ITT when they were members) and AlliedSignal in Rumford, Rhode Island for catalog travel. He had also gone to the SAE Brake Colloquium and APRA Brake & Clutch Clinic but not on a regular basis. Mr. Scott asked if there were any other meetings that the Secretary should be attending to recruit new members. It was suggested that a data sheet about the Institute be made up to hand out with a membership application and perhaps a catalog to prospective members. The general consensus was that the Secretary should attend the APRA Big "R", the Big "I" Industry Week and SAE Convention in February. There was a question concerning whether the budget for the coming year should be adjusted upward to cover the additional travel. It was decided not to change the budget and adjust next year's budget based on the variances encountered. There was a question about upgrading the Institute's computers. The Secretary noted that the Institute has an Apple Power Macintosh and an eight year old IBM PS2 which is a 286 machine with a 30 megabyte hard drive and he had anticipated replacing the IBM with a new PC this year. A Board Member asked where this purchase is in the budget. The Secretary noted that the impact of purchasing a new computer would show up in the Depreciation Expense at an amount equal to one fifth of the cost of the computer for five years.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To recommend approval of the Expense Budget of $213,535 to the Membership.

FEE FORMULA COMMITTEE REPORT

Mr. Walter Britland, Chairman, delivered the report of the Fee Formula Committee. Please refer to EXHIBIT 6 in the report booklet.

The report detailed the income generated from Membership Dues for the various types of Membership and projected fee income of

FEE FORMULA COMMITTEE REPORT (cont'd)

$191,550 using the existing fee structure. Using the fee income and proposed expense budget of $213,535, projected investment income of $15,754 and estimated income of $12,000 from sales of catalogs, assignment prints and bulletins, the Committee projects an estimated excess of total revenues over expenses of $5,769 for fiscal 1998-99. The Treasurer's Report projected total income over expenses for 1997-98 of $20,035. Combining the projections and estimates with audited results, the report calculated 3-year averages for the 1995-98 and 1996-99 time frame and compared them to the guidelines established in 1991 for fee structure adjustments. The Committee recommended that the fee structure remain the same for the next fiscal year.

A Board Member questioned the guidelines for fee adjustment. The Secretary explained that the guidelines were established because of a recommendation from the Institute's auditors. In order to maintain our 501(c)(6) Not-for-Profit status, the auditors recommended that the Institute reserve grow at a rate that approximates the rate of inflation, which has been around 3%. Therefore, our range of allowable growth is from 0% to 6% or 3% plus or minus 3%. Rather than using a single year, the auditors also recommended that it be done based on a three-year average of profit and loss.

A Board Member asked about membership for someone such as a raw material supplier. The Secretary noted that the Institute does not have a category for a raw material supplier because the raw material supplier does not have a need for FMSI information. The only information that a raw material supplier would want from FMSI would be a member list of friction material manufacturers and those are given out on request.

The Membership categories were reviewed: Active and Regional members being either friction material manufacturers from basic raw materials in commercial quantities or brake shoe and disc brake backing plate manufacturers. Licensee members are the hardware and insulator manufacturer, the hydraulic manufacturers and manufacturers of equipment to process friction materials. It was noted that a major part of the brake aftermarket, which in all probability use FMSI information, is not included in a membership category, specifically the assembler/rebuilder. The assembler/rebuilder buys component parts from all varieties of FMSI members but cannot be an FMSI member. The Secretary suggested that assembler/rebuilders be considered as an addition to the Licensee category. The Secretary also suggested that, in light of the consolidation of memberships taking place where four or five former members are now under a single membership paying one dues payment, the fee structure be indexed by a factor for multiple facility manufacturer in addition to the existing category charges. No action was taken on either suggestion.

FEE FORMULA COMMITTEE REPORT (cont'd)

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Fee Formula Committee Report as written.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To recommend to the Membership that the fee structure be unchanged for the 1998-99 Fiscal Year.

DATA BOOK AND TECHNICAL COMMITTEE REPORT

Mr. Don Delvy, Chairman, presented this report. Please refer to EXHIBIT 7 in the report booklet.

Mr. Delvy listed the Committee Roster and reviewed the new part assignments which were down considerably from the numbers assigned in the previous year. The report detailed the number of assignments by category. He reviewed the 1998 Automotive Data Book and noted that an updated version of the Brake Block Identification Catalog was produced and distributed in November 1997. Mr. Delvy thanked the contributors of information for new assignments and carry-over information.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Data Book and Technical Committee Report as written.

BRAKE PERFORMANCE STUDY COMMITTEE REPORT

The Brake Performance Study Committee Report is in two parts. The Heavy Duty portion was prepared by Paul Myers and the Automotive portion was prepared by Bill Aymond. Please refer to EXHIBIT 8 in the report booklet.

Heavy Duty

Mr. Myers reviewed items of interest concerning SAE J1801/1802 and work being done by the University of Michigan Transportation Research Institute concerning test variability. The NHTSA Research Center at the Ohio Transportation Research Center is also doing a study using a modified SAE J1802 procedure. The Maintenance Council (TMC) of the ATA Recommended Practice 628 which has been in use for several years and has started increasing in scope to include 23,000 pound axles as well as 20,000 pound axles. The SAE Brake Lining Review Committee, at the request of TMC, undertook audit testing of listed materials which were purchased over the counter. There were several failures.

BRAKE PERFORMANCE STUDY COMMITTEE REPORT (cont'd)

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Heavy Duty Report of the Brake Performance Study Committee as written.

Heavy Duty

A Board Member asked "what happens if a material fails the audit testing". Mr. Myers noted that SAE will notify TMC and TMC will remove the material from the approved list.

Automotive

Mr. Walt Britland presented the report prepared by Mr. Aymond which reviewed the progression of testing procedures for passenger cars brake effectiveness from SAE J1652 to SAE J1653 to the combined SAE J2430. The SAE J2430 is designed to be a "generic" test procedure applicable to passenger car or light truck front or rear brake, disc or drum, using several exemplar vehicles. The intent is to be able to do the testing on a single ended dynomometer. One of major hurdles is the variability of test results from dyno's in different laboratories.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Passenger Car Report of the Brake Performance Study Committee as written.

There was a question concerning European testing standards. Mr. Britland noted that the FMVSS 135 is a step toward harmonization with Europe. A Board Member asked if the SAE J2430 was a dual ended dynamometer. Mr. Britland noted that it is for a single ended dynamometer because of the shortage of dual ended dynamometers in the industry.

HEALTH AND ENVIRONMENTAL AFFAIRS COMMITTEE

Mr. Britland asked for a volunteer to read this report in place of Bill Aymond. Mr. Pat Healey volunteered to read the report for the Membership Meeting but suggested that the Technical Committee Reports would be more for the Membership. A Board Member suggested that the Board should be concerned more with the financial report aspects of the Institute and that all discussions on technical reports would best be held with the full membership.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To dispense with the reading of the Health & Environmental Affairs Committee Report.

HEALTH AND ENVIRONMENTAL AFFAIRS COMMITTEE (cont'd)

The report was prepared by Mr. William Aymond. Please refer to Exhibit 9 in your report booklet. The report is summarized below for the sake of continuity of minutes.

The report noted that there is nothing new to report on asbestos. Concerning heavy metals in storm water the Brake Manufacturers Council is creating a new sub-committee called the "Product Environmental Committee". The first item they will deal with is copper in storm water. This issue started in California several years ago, specifically in San Francisco Bay where copper from brake lining wear debris was alleged to be a major contributor to dissolved copper in the water. The city of Palo Alto, California is said to be in violation of the Clean Water Act and is being monitored by the E.P.A. A group called "Common Ground for the Environment" is attempting to develop a voluntary means to resolve the problem working with the friction material industry. They will be making a presentation at the SAE Brake Colloquium in September in San Francisco. The Environmental Protection Agency (EPA) is looking to formulate a Maximum Available Control (MAC) standard for "Smoke Stack" Emissions from friction material manufacturers. A questionnaire was sent to friction material manufacturers in December 1997 by an EPA sub-contractor.

INSTITUTE PENSION PLANS

This report was presented by Gil Laycock, Secretary. Please refer to EXHIBIT 10 in the report booklet.

Mr. Laycock noted that the Institute Pension Plan which was initiated in 1981 contributes at a rate of 15% of eligible employee wages. The contributions for 1997-98 were projected to be $18,088. The employees direct the investment of contributions. Deferred contributions are allowed with all employees participating in this option.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the report on Institute Pension Plans as written.

The term "eligible employee wages" was questioned. The Secretary noted that the requirements for eligibility are: one year of employment and over 21 years of age.

ANNUAL MEETING COMMITTEE REPORT

This report was prepared by Mr. William Aymond, Chairman and read by Mr. Rob Burgess. Please refer to EXHIBIT 11 in the report booklet.

ANNUAL MEETING COMMITTEE REPORT (cont'd)

Two possible sites for the 1999 Annual Meeting were proposed. They were:

Ocean Reef Club - Key Largo, Florida - A very exclusive, private 4,000 acre resort on the northern tip of Key Largo, Florida with room rates of $130 - single and $140 - double plus 11.5% room sales tax.

The Resort at Longboat Key Club - Longboat Key, Florida - A resort at which the Institute had held meetings in 1993, 95 and 97, with room rates starting at $115 (twin) and $125 (king) plus 10% room sales tax. Larger rooms are available up to a two bedroom suite at $300/night.

Upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To accept the Annual Meeting Committee Report as written.

A Board Member asked if anyone had visited the Ocean Reef Club in Key Largo. Mr. Martin Chevalier stated that he had been there last year and it is a first class resort but expensive. Mr. Britland asked if the meeting facilities are complimentary. (Secretaries Note: it was later determined that the meeting facilities were complimentary.) It was noted that at Longboat Key the meeting space is complimentary and the Hospitality Suite ($300/night plus tax) is complimentary for four nights. There was a question concerning the room rate for the Hospitality Suite at La Quinta. Mr. Laycock noted that he had negotiated the same room rate for the Hospitality Suite as the regular sleep room $115 per night. The summer rate for the suite is $400 per night.

NEW BUSINESS

Library Catalog

Mr. Britland noted that he and Gil Laycock had discussed a library edition of the catalog. The Secretary recommended, for the library edition, targeted for the year 2000, a thirty year window of application information from 1971 to 2000 and that all drum shoes and all disc shoes be included. To accomplish making a library catalog in addition to the 1999 and 2001 catalog, it will be necessary to build two catalogs concurrently for three years. There was no vote taken on the proposal but general agreement that work should be started on the Library Edition using the guidelines noted by the Secretary.

One Board Member asked if any thought had been put into a CD-ROM version of the catalog. Gil Laycock noted that Macomb Printing has an allied company in house that has done CD-ROM cataloging and he had talked to them about a CD-ROM version of the catalog. No Board Member had any direct experience with the production of a

NEW BUSINESS (cont'd)

Library Catalog
CD-ROM catalog. It was agreed that further discussions concerning the CD-ROM version of the catalog could be held next year.

Catalog Re-Print
The Secretary noted that the 1998 Automotive Data Book is sold out. He has less than 50 copies left. He has an order for 500 copies (without covers) but it would require a reprint of the catalog to fill the 500 copy order and generate an over-run which would last until the printing of the next catalog. The Directors generally agreed to not reprint the catalog.

* *

There being no other business brought to the attention of the Board of Directors at this time, upon motion duly made, seconded and unanimously passed, it was:

RESOLVED: To adjourn

Adjourned at 12:20 P.M.

G. N. Laycock
Secretary