

DELPHI CHASSIS

How soon will you ship?

Regards,

Steve Bryan

>From: FMSIINC@aol.com

>To: sarmstrong\_delphi@hotmail.com

>Subject: Re: FMSI Gold Copy 2000

>Date: Thu, 16 Nov 2000 14:33:40 EST

>

>Steve Bryan:

>I assume Delphi is affiliated with Delphi Automotive, Dayton, Ohio,  
member

>of

>FMSI. Is this correct?

>

>We can ship to Mexico. If you use a transfer agent at the border, please  
>give

>complete address(es) and instructions. Catalogs will be shipped from  
>Michigan. 300 catalogs will be over 750 pounds, 17 cartons.

>

>Catalog year is 2000. It is a library edition, 30 years of application  
>coverage and illustrations of every drum shoe and disc plate ever  
assigned.

>

>2001 catalog will be available in June 2001, but, will be a 14 year  
>catalog

>with only illustrations of parts which are active in that 14 year window.

>

>We will invoice for catalog and shipping. Payment can be made by check  
or

>wire transfer. If wire transfer please advice and we will send bank  
>information. Thank you, G. N. Laycock.

Subj: Re: FMSI Gold Copy 2000  
Date: Thursday, November 16, 2000 4:14:45 PM  
From: sarmstrong\_delphi@hotmail.com  
To: FMSIINC@aol.com

Gil, thanks for your prompt reply.

Yes we are affiliated to the Delphi Automotive group. We are the aftermarket group in Mexico.

We will require 300 catalogs and payment will be made by wire transfer. Please send us your bank details together with an invoice so that we can make the payment. Invoice should be sent to my attention at fax (011 52) 56755644

Invoice should be made out to:-  
Delphi Diesel Systems Service Mexico S.A. de C.V.  
Periferico Sur 6369  
Col. Tepepan  
C.P. 14610  
Mexico  
D.F.  
RFC. DDS850801L44

Please ship ground freight to our freight forwarder in Laredo, Txs

C/O  
Transcarga International  
618 Enterprise Whse.2  
Interamerica Dist. Center  
Laredo  
Texas  
78045  
USA  
Tel. (956) 725-5655

Subj: FMSI Gold Copy 2000  
Date: Wednesday, November 15, 2000 3:49:39 PM  
From: sarmstrong\_delphi@hotmail.com  
To: fmsiinc@aol.com

Mr. Gil Laycock

Subject: FMSI Gold Copy 2000

Gil, Delphi Mexico is interested in purchasing 500 copies of the FMSI year 2000 edition. I understand that the cost for members is USD7 per copy.

Please confirm how we should place the order, payment and shipping conditions and also how soon would you be able to send the copies.

thanks and .....

best regards

Steve  
Tel. 011 52 56769855

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----- Headers -----  
Return-Path: <sarmstrong\_delphi@hotmail.com>  
Received: from rly-za03.mx.aol.com (rly-za03.mail.aol.com [172.31.36.99]) by air-za05.mail.aol.com

Subj: Re: FMSI Gold Copy 2000  
Date: Friday, November 24, 2000 9:54:19 AM  
From: sarmstrong\_delphi@hotmail.com  
To: FMSIINC@aol.com

Please confirm ship date,

Thanks

Steve

>From: FMSIINC@aol.com  
>To: sarmstrong\_delphi@hotmail.com  
>Subject: Re: FMSI Gold Copy 2000  
>Date: Fri, 17 Nov 2000 16:35:05 EST  
>  
>WE WILL MAKE ARRANGEMENTS TO HAVE CATALOGS SHIPPED NEXT WEEK.  
>WE WILL INCLUDE BANK INFORMATION WITH INVOICE FOR WIRE TRANSFER.  
>  
>REGARDS.  
>  
>  
>G N LAYCOCK

---

Get more from the Web. FREE MSN Explorer download :  
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----- Headers -----  
Return-Path: <sarmstrong\_delphi@hotmail.com>  
Received: from rly-yd01.mx.aol.com (rly-yd01.mail.aol.com [172.18.150.1]) by air-yd01.mail.aol.com (v77.14) with ESMTP; Fri, 24 Nov 2000 09:54:19 -0500  
Received: from hotmail.com (f225.law9.hotmail.com [64.4.9.225]) by rly-yd01.mx.aol.com (v76\_r1.19) with ESMTP; Fri, 24 Nov 2000 09:54:13 -0500  
Received: from mail pickup service by hotmail.com with Microsoft SMTPSVC;

TELEPHONE (203) 452-1877  
FAX (203) 452-7951

**FRICTION MATERIALS STANDARDS INSTITUTE, INC.**

588 MONROE TURNPIKE

MONROE, CT 06468

July 5, 2000

Mr. Rick Johnston  
Delphi Chassis Systems  
P. O. Box 1245  
Dayton, OH 45401-1245

Dear Sir:

Enclosed is a copy of invoice number 8887. Please note that this invoice is six months old. Perhaps it has been overlooked.

Your attention to this invoice is appreciated. Thank you for your assistance.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE



G. N. Laycock  
Executive Director

GNL:ld  
Enclosure

FMSI 13371

**FRICTION MATERIALS STANDARDS INSTITUTE, INC.**

588 MONROE TURNPIKE

MONROE, CT 06468

September 22, 1998

Mr. Rick Johnston  
Delphi Chassis Div.  
P. O. Box 1245  
Dayton, OH 45401-1245

Dear Mr. Johnston:

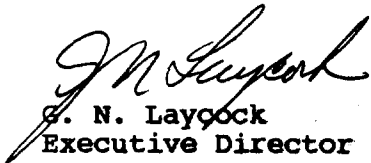
Enclosed is a copy of invoice number 8296. Please note that this invoice is eight months old and this is a second reminder.

Also enclosed is invoice 8459 which is almost three months old.

Your attention to these invoices is appreciated. Thank you for your assistance.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

  
G. N. Laycock  
Executive Director

GNL:ld  
Enclosure

# DELPHI

Automotive Systems

Date: 6-15-98

To: G. N. Laycock

From: Rick Johnston

Fax: (203) 452-7951

Phone: " " -1877

Fax: (937) 455-7686

Phone: " " 9213

Subject: See Attached

C:

Number of pages including cover sheet: 2

Problems with the receipt of this transmission, contact:

☐ Urgent

☒ For Review

☐ Please Reply

TELEPHONE (203) 452-1877  
FAX (203) 452-7951

**FRICTION MATERIALS STANDARDS INSTITUTE, INC.**

588 MONROE TURNPIKE

MONROE, CT 06468

June 2, 1998

Mr. Rick Johnston  
Delphi Chassis Systems  
P. O. Box 1245  
Dayton, OH 45401-1245

Dear Mr. Johnston:

Thank you for returning the proxy and advising us of Mr. Pantano's retirement. We had as Delegate and Alternate, Mr. Pantano and Brent Koogler. We tried calling Mr. Koogler's number and got someone else's voice mail. Has Mr. Koogler retired also?

Would you, at your convenience, send or fax us your phone and fax numbers, our fax number is above.

We also have an open invoice for Membership Dues for half a year dated January 5, 1998. We would appreciate if you could check on this invoice.

Thank you for your assistance.

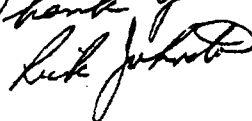
Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

  
G. N. Laycock  
Executive Director

GNL:ld  
Enclosure

6-15-98  
Brent Koogler retired and his replacement is  
Herman Ziegler (937) 455-5703.

Thank you.  


FMSI 13374

MR JOSEPH PANTANO  
DELCO CHASSIS DIVISION  
GENERAL MOTORS CORP.  
PO BOX 1042  
DAYTON OHIO 45401-1042

TITLE SR ADMINISTRATOR SERVICE PRODUCTS  
DON EMERICKS BOSS  
DON RETIRED  
5/20/92

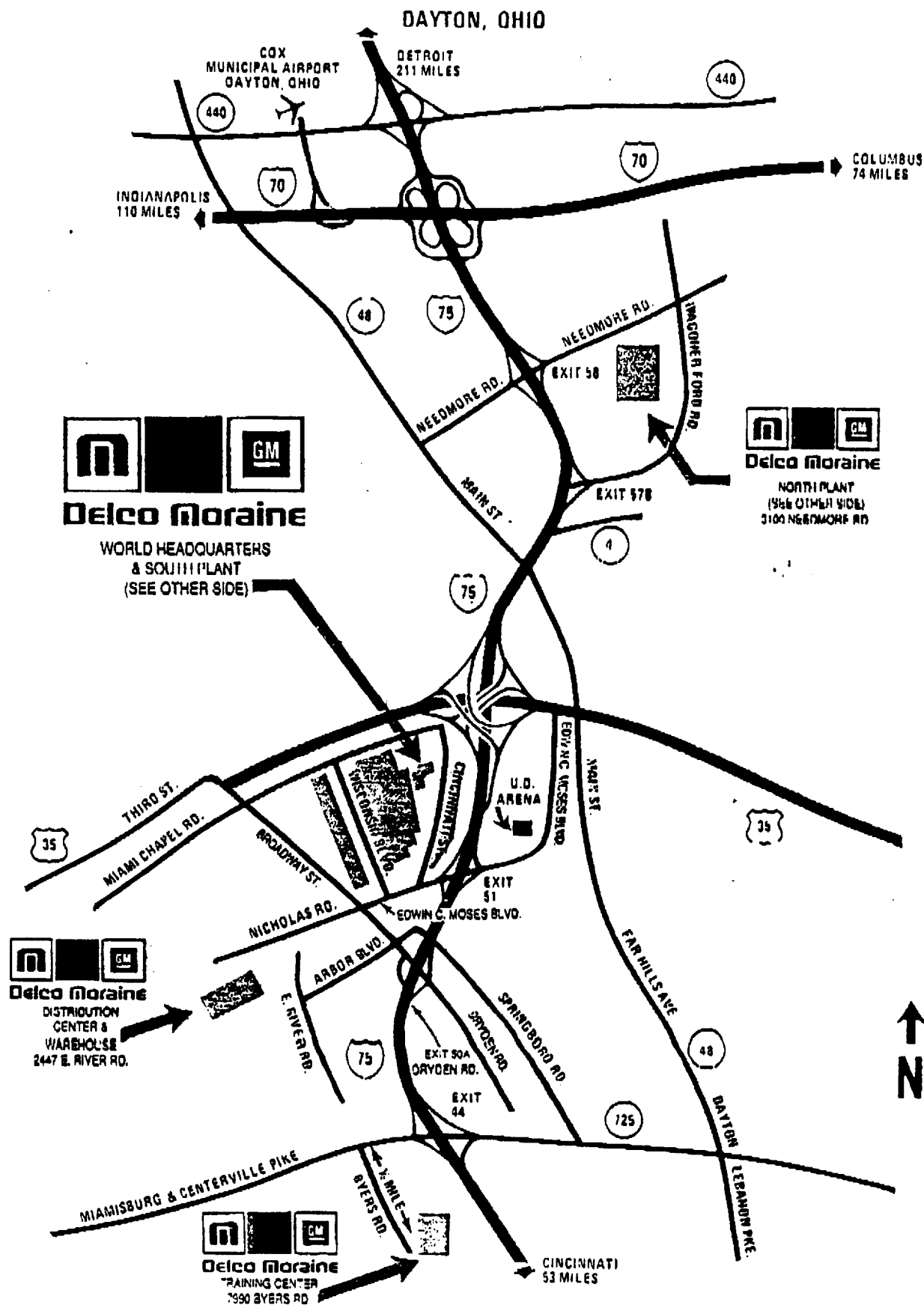
MR JOSEPH PANTANO - PHONE 513-455-7715  
2 SEND DUES BILLING BUT MAY DROP OUT 6/29/92

DISC INFORMATION TIM WITKE <sup>WINKE (80)?</sup> 513 455-6033

DRUM INFORMATION MIKE FUNELE 513 455-6668

TECH SPECS FOR SERVICE RICH ROBBE 513 455-7730

# DELCO MORaine FACILITIES LOCATIONS



# MERGER UPDATE

August 1, 1991

## Two staff announcements

### **Johnston: "Our new name is Delco Chassis Division!"**

Division General Manager George Johnston announces that the merged divisions of Delco Moraine NDH and Delco Products have a new name: Delco Chassis Division. "I am very pleased to be announcing the new name today as well as other significant events," said Johnston.

"The Mark McCabe Study Team, which is looking at what a Strategic Business Unit should look like, is wrapping up their study," said Johnston. "The part that we are all most interested in -- the merger of our two divisions -- is coming along very well and I am also announcing today the Director of Human Resources and Comptroller for Delco Chassis Division."

"The rest of the functional positions will be named," said Johnston, "as soon as we properly define how we go to market. From a divisional engineering standpoint, we are fairly well along in defining the Chassis Systems Center and we will be building on that as we look at not only North American, but Asian and European chassis development."

"In my opinion," said Johnston, "the merger is moving along quickly and smoothly."

### **John Joyce and Ross Wingler named to head new Finance and Personnel staffs**

George G. Johnston, general manager, announced two executive staff appointments for the newly merged division. John Joyce is named divisional comptroller and Ross Wingler is named general director of Human Resources. Both appointments are effective immediately.

#### **John Joyce named Divisional Comptroller**

Joyce joined the General Motors Communications Section in New York City in 1957. In 1961, he was promoted to senior clerk on the Financial Staff where he served in a number of assignments until being named supervisor in 1970.

He served as staff assistant in the New York Office of the Chairman from 1972 until 1975

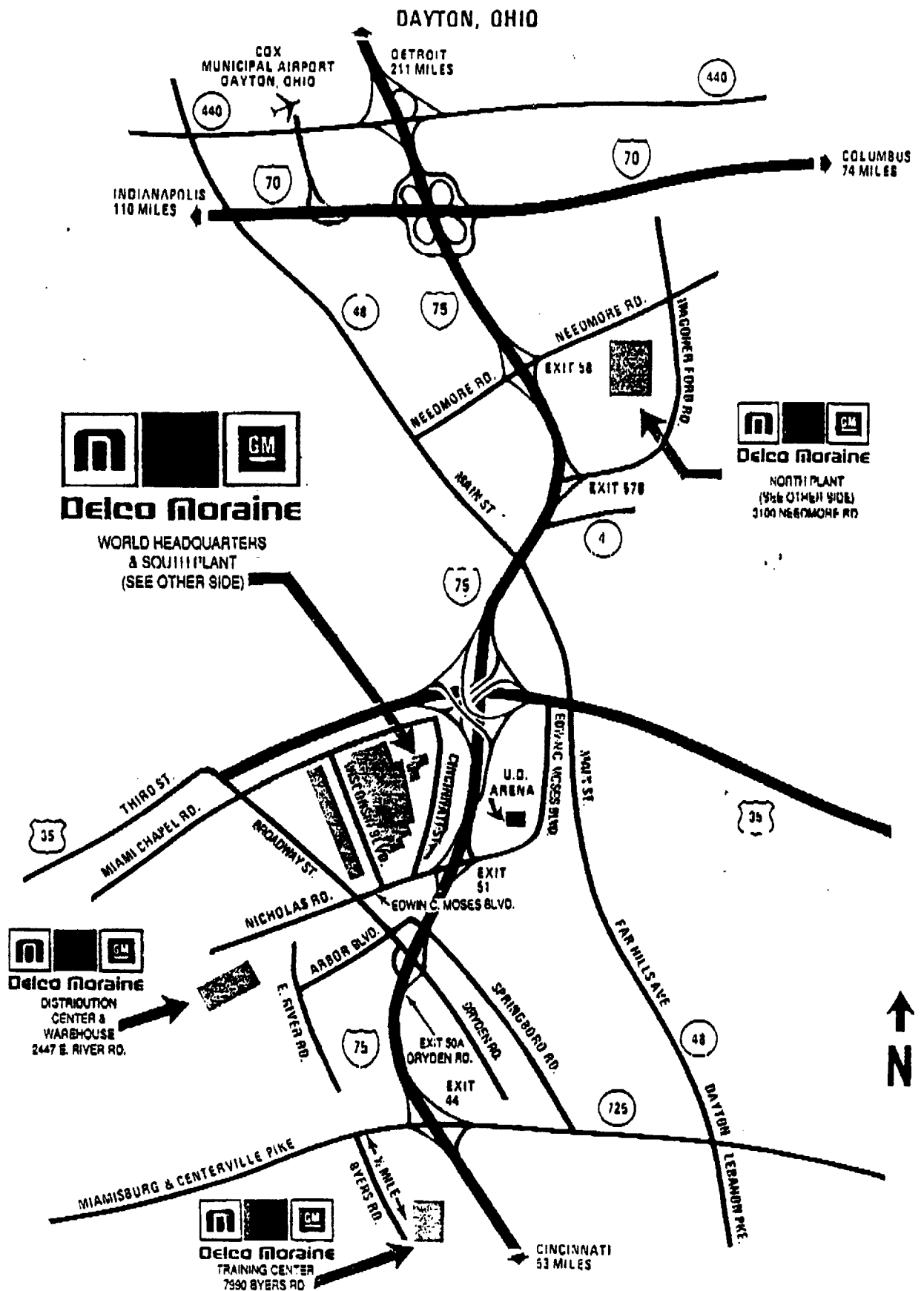
when he was named senior staff assistant for General Motors Overseas Operations in Brazil. Later that same year, he was named manager, Cash Control, and in 1976, was promoted to manager, Financial Operations in Brazil.

In 1977, Joyce was named assistant treasurer, Adam Opel in Germany, and served in that position until returning to the U.S. in 1980 as assistant Divisional Comptroller, Inland Division. In 1985 he was named director, Strategic Planning for Fisher Guide Division, and divisional comptroller in 1986.

In 1987 he returned to Inland Division as Divisional Comptroller, and in 1989, was named Divisional Comptroller of Delco Products Division, the post he held when named to his present position.

(Continued on Page 4)

# DELCO MORaine FACILITIES LOCATIONS



John A. Di Matteo  
R. G. Hendricks, Inc.  
Manufacturer Representatives  
P.O. Box 292436  
Dayton, OH 45429

NOV 14 1988

Ross Kettering  
1345 Stoney Spring Road  
Vandalia, OH 45377

Mr. Fred Yost  
8329 N. Kimmell Road  
Clayton, OH 45315

# INVOICE

## FRICTION MATERIALS STANDARDS INSTITUTE

EAST 210 ROUTE 4 • PARAMUS, NEW JERSEY 07652 • PHONE (201) 845-0440

### SOLD TO

GM Service Parts Operations  
(Attn.: Mark Turchi)  
5260 Williams Lake Road  
Drayton Plains, MI 48020

### SHIPPED TO

Same

*Phone 313-857-3252*

| DATE     | DATE SHIPPED                                                           | SHIPPED VIA | YOUR ORDER NO.    | F.O.B. | TERMS     | INVOICE NO. |        |
|----------|------------------------------------------------------------------------|-------------|-------------------|--------|-----------|-------------|--------|
| 09-20-88 | 09-20-88                                                               | 1st Class   | Mark Turchi phone | -      | No Charge | 0001236     |        |
| QUANTITY | DESCRIPTION                                                            |             |                   |        |           | PRICE       | AMOUNT |
| 9 Prints | FMSI 1245A, 1245C, 1280, 1280B, 1345, 1345A, 4596, 4597, 1255          |             |                   |        |           | No Charge   |        |
| 1        | 1988 Automotive Data Book (sent under separate mailing)<br>Third Class |             |                   |        |           | No Charge   |        |

ITEM #NVR73 • WHEELER GROUP INC.

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FMSI 13380

**FRICITION MATERIALS STANDARDS INSTITUTE, INC.**

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

May 28, 1987

Mr. Fred Yost  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Fred:

I have been talking with Don Emrick lately, and with John DiMatteo. I had understood that you would be retiring, but I didn't know until the other day that you had gone. I was talking with John last Friday, and he said that was your last day.

I just wanted to wish you well. I have found that all the engineers and sales people I've dealt with at Delco-Moraine were first class people, and you are one of them. I feel terrible with all these good people leaving the brake field, but I understand they make offers that are difficult to refuse.

Many thanks for all your kindnesses and help during the last several years, and my best to you on your retirement.

Ed Drislane  
Friction Materials Standards Institute

7539 Greenlake Way  
Apt E, 7 of Hollow  
Lantana, FL 33462



Mr and Mrs Ed. Biscane  
761 Hillmild Ct.  
Paramus, N.J.  
07652

Gen Bays, 12/36

# **FRICION MATERIALS STANDARDS INSTITUTE, INC.**

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

November 26, 1986

Mr. Don Emrick  
Delco-Moraine Division  
General Motors Corp.  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Don:

Enclosed is a brief summary of the drill/counterbore dimensions on selected linings for domestic cars/trucks. The dimensions shown are the means for the dimensions shown on the drawings.

Where the brakes were duo servo, the primary and secondary drill/counterbore dimensions were alike, even if the primary was 3/16 and the secondary was 1/4". I have called the thickness of material under the counterbore the "Land."

Where there is a 150° countersink angle, the measurement is usually at the thinnest point - the bottom of the angle. In some cases, it is measured at a gage point, somewhere between the bottom of the angle and the start of the counterbore.

From the drawings, it appears to depend on how dimensioned. In the earlier days, things were dimensioned in fractions. Thus 3/32 (+0, -1/64) would become .086" taking the mean of the tolerances. Similary, if the dimension were started in metrics, such as 1.51/1.25, it becomes in my tabulation .054". I hope this is of some help to you.

Sincerely,

FRICION MATERIALS STANDARDS INSTITUTE

E. W. Drislane  
Executive Director

|                                                 | <u>Counterbore</u> | <u>Drill</u> | <u>Land</u> | <u>Ctb. Angle</u> |
|-------------------------------------------------|--------------------|--------------|-------------|-------------------|
| <u>3/16" and 1/4" Passenger Car/Light Truck</u> |                    |              |             |                   |
| FMSI No. 1350                                   | .275               | .131         | .054        | 150°              |
| 1365                                            | .275               | .131         | .054        | 150°              |
| 1394                                            | .327               | .156         | .055        |                   |
| 1395                                            | .330               | .166         | .048        | 150°              |
| 2042                                            | .390               | .196         | .075        | Flat              |
| 2073T                                           | .406               | .156         | .075        | Flat              |
| 2089AT                                          | .330               | .156         | .055        | Flat              |
| 2117ATT                                         | .328               | .156         | .060        | Flat              |
| 2134ATT                                         | .328               | .156         | .060        | Flat              |
| 2161TT                                          | .330               | .156         | .048        | 150°              |
| <u>5/16" and 3/8" Medium, Heavy Trucks</u>      |                    |              |             |                   |
| FMSI NO. 1245A                                  | .406               | .203         | .099        | Flat              |
| 1280                                            | .406               | .203         | .099        | Flat              |
| 1345                                            | .536               | .200         | .080        | 150°              |
| <u>7/16" and 1/2" Medium, Heavy Trucks</u>      |                    |              |             |                   |
| FMSI NO. 1252                                   | .531               | .200         | .086        | 150°              |
| 1308                                            | .500               | .265         | .090        | 150°              |
| 4597                                            | .531               | .200         | .086        | 150°              |

|                          |       | <u>Counterbore</u> | <u>Drill</u> | <u>Land</u> | <u>Ctb. Angle</u> |
|--------------------------|-------|--------------------|--------------|-------------|-------------------|
| <u>3/4" Brake Blocks</u> |       |                    |              |             |                   |
| FMSI NO.                 | 4311J | .492               | .273         | .163        | 150°              |
|                          | 4317G | .492               | .273         | .163        | 150°              |
|                          | 4515G | .503               | .264         | .190        | 150°              |
|                          | 4524B | .500               | .265         | .187        | 150°              |

MAY 12 1986

Delco-Moraine Division

Per Don Emrick, his boss is Joe Pantano.  
Met him at the Delco luncheon in February.

John DiMatteo    Direct phone 513-455-6027  
                    Also                    513-455-6090 (Fred Yost)

FMSI 13386

DIRECTIONS TO GENE BAYNES HOUSE

OCT 17 1985

633 Enid  
Kettering, OH 45429

513-434-3055

From Route 75

Take Route 48 South off Interstate 75

Route 48 South will become Far Hills Avenue

Stay on Far Hills

Past Intersection of Dorothy.

Past Intersection of Stroop

Then past David Road

Turn Left (East) into Enid

About 3 Blocks

House is on corner, ranch, brick (It is a dead end at James Hill Road)  
(House is intersection of Enid and James Hill)

OCT 15 1985

DIRECTIONS TO GENE BAYNES HOUSE

633 Enid  
Kettering, OH 45429

513-434-3055

From Route 75

Take Route 48 South off Interstate 75

Route 48 South will become Far Hills Avenue  
Stay on Far Hills

Past Intersection of Dorothy.

Past Intersection of Stroop

Then past David Road

Turn Left (East) into Enid

About 3 Blocks

House is on corner, ranch, brick

*James Hill Rd*

*Warren Amtron*



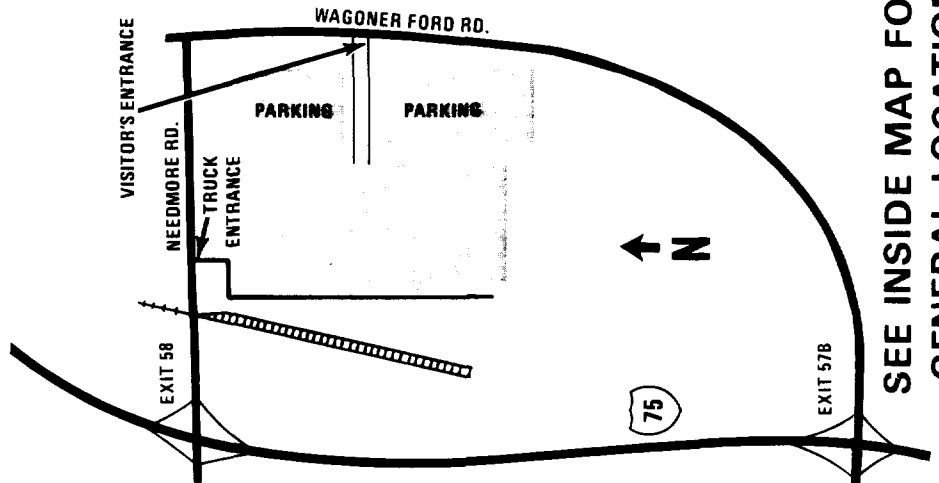
**NORTH  
PLANT**



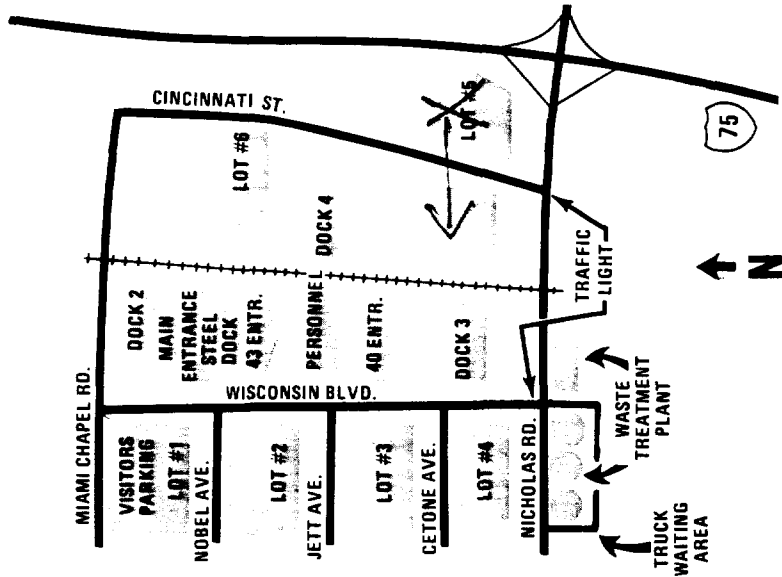
**MAIN  
OFFICES  
& SOUTH  
PLANT**



**Delco Moraine**  
Division of General Motors Corporation



**SEE INSIDE MAP FOR  
GENERAL LOCATION**



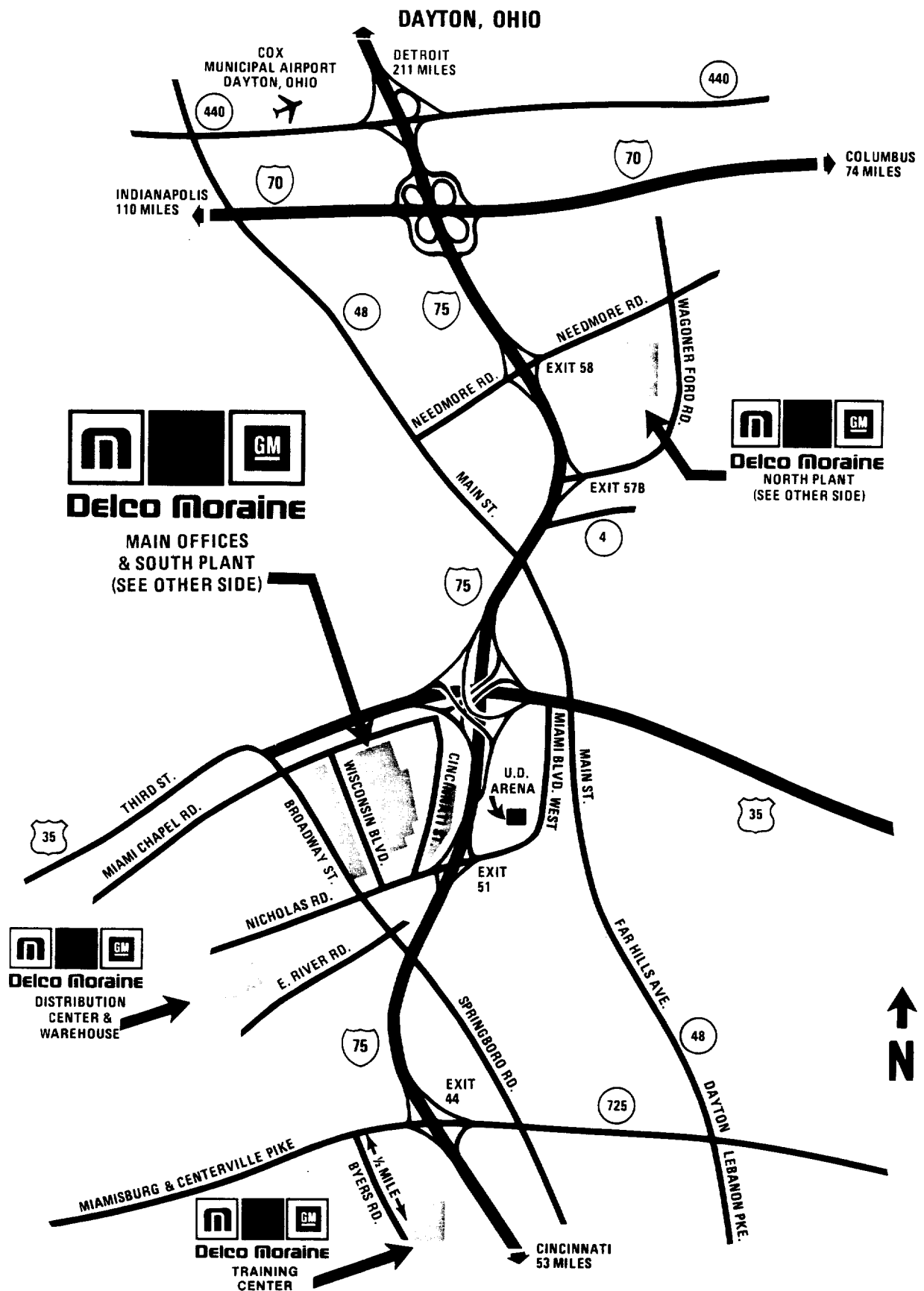
**SEE INSIDE MAP FOR  
GENERAL LOCATION**

# FACILITIES LOCATIONS

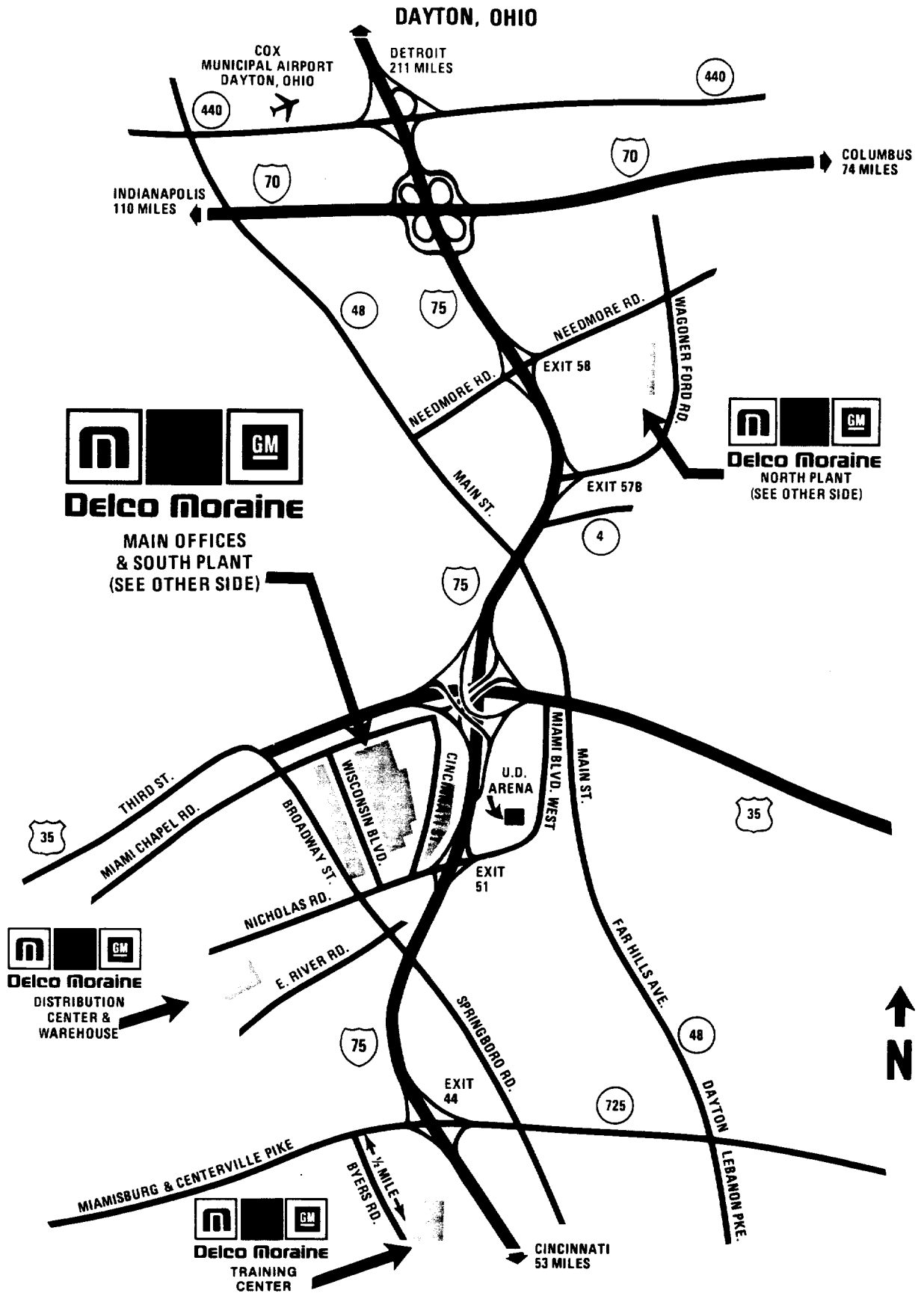
**BRAKE SYSTEMS  
ENGINE BEARINGS  
FRICTION MATERIALS**

Delco Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
P.O. Box 1245  
Dayton, Ohio 45401  
(513) 227-5000

# DELCO MORaine FACILITIES LOCATIONS



# DELCO MORaine FACILITIES LOCATIONS





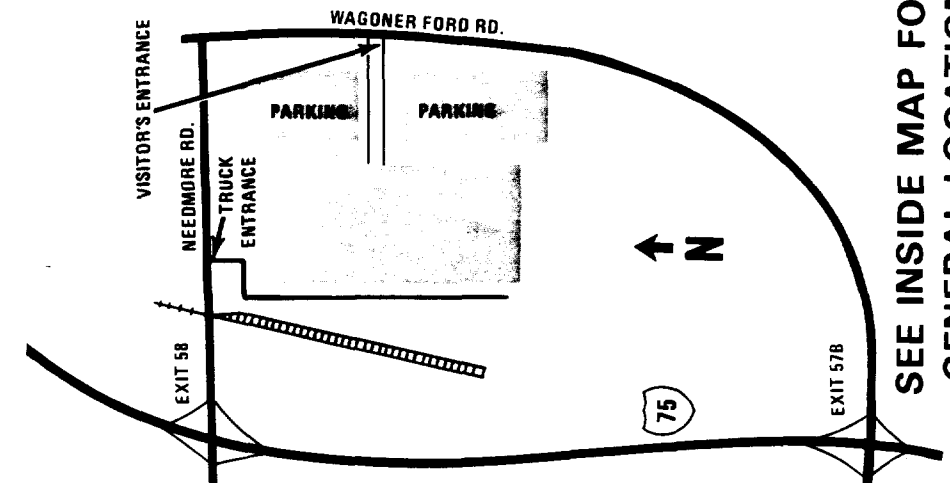
**NORTH  
PLANT**



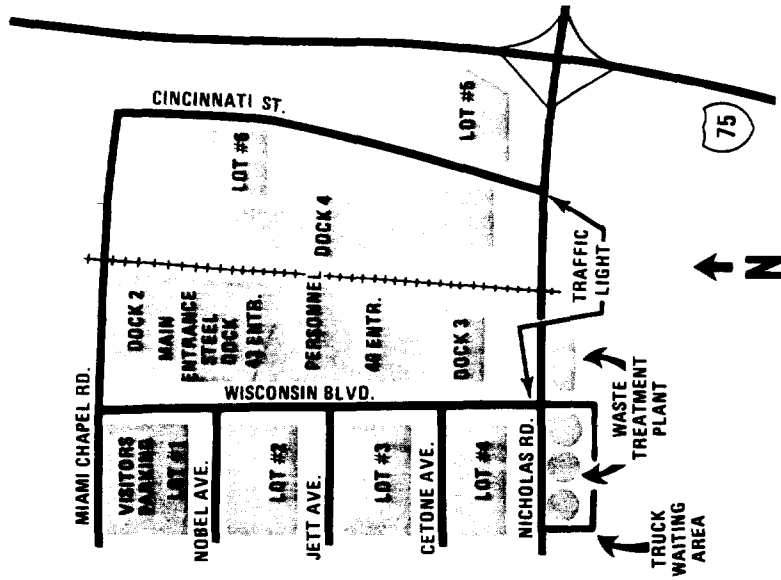
**MAIN  
OFFICES  
& SOUTH  
PLANT**



**Delco Moraine**  
Division of General Motors Corporation



**SEE INSIDE MAP FOR  
GENERAL LOCATION**



**SEE INSIDE MAP FOR  
GENERAL LOCATION**

# FACILITIES LOCATIONS

**BRAKE SYSTEMS  
ENGINE BEARINGS  
FRICTION MATERIALS**

**Delco Moraine Division**  
General Motors Corporation  
1420 Wisconsin Blvd.  
P.O. Box 1245  
Dayton, Ohio 45401  
(513) 227-5000

INTERNAL COMMUNICATION

Delco Moraine



INTERNAL COMMUNICATION

# NEWS FLASH

## Delco Moraine

Robert D. Wight, General Manager, Delco Moraine Division, announced today the following personnel changes effective July 1, 1985:

- GENE P. BAYNES, director of engineering, is being placed on special assignment and will continue to report to the general manager until September 1, 1985, at which time he will be retiring following 31 years of service. Baynes has held numerous engineering assignments while at General Motors. He spent the early part of his career with Oldsmobile and subsequently joined Delco Moraine as chief engineer brake and brake mechanisms in 1962. In 1970 he was promoted to director of engineering for the Delco Moraine Division. Baynes is a mechanical engineering graduate of Purdue University.
- Succeeding Baynes as director of engineering is THOMAS V. CHAMBERS. Chambers, who began his association with GM in 1962, will be returning to Delco Moraine domestic operations following an international assignment as managing director-GM France in Gennevilliers. In 1979, after holding various assignments in manufacturing, industrial and manufacturing engineering, he was awarded a Sloan Fellowship at Massachusetts Institute of Technology where he obtained a master's degree in management. Upon his return to Delco Moraine in 1980, he was named plant manager of the Fredericksburg, Virginia facility, a position he held until he was appointed to his most recent position in France in July, 1982. In his new assignment, Chambers will report to the General Manager.
- DANIEL P. SALLEE, who has been on special assignment at Delco Moraine since March of this year, receiving a comprehensive orientation to products and manufacturing operations at Delco Moraine Paris Operations and Delco Moraine Dayton, is promoted to managing director-GM France replacing Chambers. He will report to the general manufacturing manager, Delco Moraine Division. Sallee started his GM career at Delco Remy Division in 1971 where he held positions in manufacturing, personnel and quality control at their various plant locations. In 1979 he was appointed superintendent quality control at Delco Remy's Sarreguemines, France, operation and was subsequently promoted to plant manager-Sarreguemines before transferring to Delco Moraine Paris Operations earlier this year. Sallee holds a bachelor's degree in business administration from Central Missouri State College.
- RONALD L. STUMP, general manufacturing manager, will assume increased responsibilities as part of our continuing effort to strengthen the Delco Moraine organization. The managing director-GM France will now report directly to Stump. The position heretofore reported directly to the General Manager. With this change, Stump will be responsible for all direct manufacturing operations on a worldwide basis. Stump recently completed the Massachusetts Institute of Technology Program for Senior Executives.

...continued

- PETER MUSHOVIC will retire as director of materials management after serving in a multitude of positions since his career began at the former Moraine Products Division in 1944. He held early assignments in engineering, manufacturing and quality control before being appointed director of reliability and quality control in 1966. In 1979 he was named works manager at Delco Moraine Paris Operations, Gennevilliers, as part of an international assignment leading to the position of managing director-GM France. He returned to Delco Moraine's domestic operations in 1982 at which time he was appointed director of materials management.
- Effective September 1, 1985, JEAN CAZADE is appointed general manufacturing manager, Delco Moraine Paris Operations, replacing David L. Drury who is being repatriated to the United States following his recent international assignment. Cazade will report to the managing director-GM France. From 1967 to 1980, Cazade served in various manufacturing engineering positions with General Motors Overseas Operations in France. In 1980, he was appointed manager, production engineering, Delco Moraine Paris Operations and subsequently named manufacturing engineering manager. Cazade was transferred to Delco Moraine Dayton and served as plant manager-south plant from September, 1983 through March of this year at which time he was placed on special assignment. Cazade is a graduate of Ecole Nationale D'Ingenieurs de Belford with a degree in Engineering. He also attended General Motors Institute.

Wight also announced the transfer of JACQUES M. PASQUIER to the Central Office Personnel Administration and Development Staff's International Compensation Activity as a salaried employee-in-training effective July 1, 1985. He formerly was manager, QWL and organization development for Delco Moraine Paris Operations, Gennevilliers. Pasquier began his GM career in 1979 with Chevrolet. In 1980 he moved to the Industrial Relations Staff's Organization Research and Development Activity. He was appointed to his most recent position at GM France in 1982.

MARSHALL GRANGER & COMPANY  
CERTIFIED PUBLIC ACCOUNTANTS

7600 HARRISON AVENUE  
MAMARONECK, NEW YORK 10543  
914/381-2550 212/863-8365  
FAX: 914/381-4762

*Yul FYI*

*Mary F.*

*Sorry for delay.  
Never got your last letter because  
of name & address change.*

*June 18, 1992*

*April 5, 1991*

Mr. Robert Werner (3525) 3-09A  
~~Delco-Moraine~~ Delco Chassis  
Div. Gen. Motors Corp.  
~~1420 Wisconsin Blvd.~~  
Dayton, OH 45401 - 1042

*Bob Werner*

Dear Mr. Werner:

AUG 02 1985

DIRECTIONS TO DELCO-MORaine TRAINING CENTER

From I-75 South, take Exit 44 Intersection of Route 725,  
West towards Miamisburg

Immediately off ramp, bear left; take Left turn (south) off  
Route 725 onto Byers Road

There is a Bob Evans Store on left, Hotel on right, Hoffman Mfg.;  
Go about 1/2 mile on Byers; There will be a gate (wire fence  
around property); Take left off Byers into gate. That is  
the Delco-Moraine Training Center

If when going down Byers you come to a Stop Sign (4 way stop),  
you've gone too far.

FMSI 13397

DIRECTIONS TO GENE BAYNES HOUSE

633 Enid  
Kettering, OH 45429

OCT 09 1985

513-434-3055

From Route 75

Take Route 48 South off Interstate 75

Route 48 South will become Far Hills Avenue

Stay on Far Hills

Past Intersection of Dorothy.

Past Intersection of Stroop

Then past David Road

Turn Left (East) into Enid

About 3 Blocks

House is on corner, ranch, brick

# RETIREMENT PARTY

AUG 02 1985

FOR

## GENE BAYNES



**FRIDAY - AUGUST 2, 1985**  
**DELCO MORaine TRAINING CENTER**

**TIME: 5:30 SOCIAL**  
**6:30 DINNER**  
**7:30 PROGRAM.**

**\$13.00 SINGLE \$20.00 COUPLE**  
**RESERVATIONS NEEDED BY JULY 26, 1985**

**FOR TICKETS CONTACT:**

**KATHY MARAZZI PERSONNEL**  
**GRACE SCHEU QUALITY CONTROL**  
**BARB MURPHY SALES**

**BETTY FISCHER MATERIALS**  
**HARRY RUDY ENGINEERING**  
**ED ANKENY TEST LAB**  
**RON BENNET VEHICLE TEST**

DIRECTIONS TO DELCO-MORaine TRAINING CENTER

From I-75 South, take Exit 44 Intersection of Route 725,  
West towards Miamisburg

Immediately off ramp, bear left; take Left turn (south) off  
Route 725 onto Byers Road

There is a Bob Evans Store on left, Hotel on right, Hoffman Mfg.;  
Go about 1/2 mile on Byers; There will be a gate (wire fence  
around property); Take left off Byers into gate. That is  
the Delco-Moraine Training Center

If when going down Byers you come to a Stop Sign (4 way stop),  
you've gone too far.

# RETIREMENT PARTY

AUG 02 1985

FOR

## GENE BAYNES



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**DON BENNET VEHICLE TEST**

FMSI 13403

OCT 23 1984



## Major Product Lines

Welcome  
to

Delco Moraine

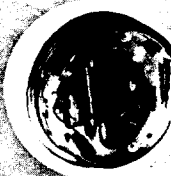


THE BRAKE SYSTEMS PEOPLE

Disc brake calipers



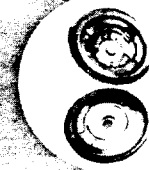
Drum brake assemblies



Engine bearings



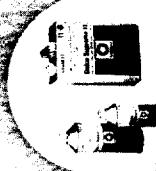
Friction materials  
automatic transmissions



Clutch  
torque  
converter



Disc  
brake  
pads



Brake  
master  
cylinders



Shown here are some of our best known and most widely used products. Delco Moraine is a supplier of components to the worldwide automotive industry for use on cars, trucks, and off-the-road equipment. We design and develop about half of the brake systems for all U.S. made cars and light trucks. In the automotive aftermarket, we offer a complete line of quality replacement parts.

Because of the critical importance of our products and their contribution to reliability and safety, we must maintain an extremely high degree of quality. That means accepting only the highest quality products from our suppliers.

### Visiting Hours

9 AM to 4 PM Daily  
Monday thru Friday

The People To See



# Buyer's Guide Directory

## Director of Purchasing

- ☐ Edward G. Case Telephone Number (Area Code 513)\* 227-6216
- ☐ Gerald L. Fowler, Administrator Supplier Quality 227-6592

## Productive Materials

- ☐ Kenneth H. Dunlop, Purchasing Agent 227-6373
- ☐ Robert W. Terrel, Senior Buyer - Brake Fluid, Labels, Outside Processing, Powder Metal Parts, Packaging, Service Parts, Pumps, Accumulators & Switches 227-6088
- ☐ Fred B. Revis, Senior Buyer - Steel, Aluminum, Bar Stock, Wire & Friction Materials 227-6205
- ☐ Robert R. Howell, Purchasing Agent 227-6077
- ☐ Rebecca M. Daulton, Senior Buyer - Springs, Wire Forms, Linings & Master Cylinder Pistons 227-9005
- ☐ G. Michael Lipscomb, Senior Buyer - Screw Machine & Headed Parts, Push Rods & Fasteners 227-6530
- ☐ Edwin R. Kincer, Senior Buyer - Castings, Forgings, & Outside Machining 227-6204
- ☐ Rex A. Stine, Purchasing Agent 227-6076
- ☐ Carol G. Holley, Senior Buyer - Stampings, Brake Shoes, & Tube Assemblies 227-6502
- ☐ Michael Howard, Senior Buyer - Plastic Parts & Sub-Assemblies 227-6503
- ☐ James L. Todd, Senior Buyer - Rubber Parts 227-6504

## Non-Productive Materials & Facilities

- ☐ Richard W. Ballou, Purchasing Agent 227-6411
- (Also Buys Major Equipment, Construction & Robotics)

## Non-Productive Materials

- ☐ Roy A. Porter, Senior Buyer - Clothing, Laundry, Dunnage & Misc. Rentals 227-6410
- ☐ Willie L. Clancy, Jr. Buyer - Standard & Special Tooling, Springs, Office Equipment/Rentals 227-6326
- ☐ Frances L. Judson, Buyer - Stationery/Office Supplies, Medical, Fuel, Bearings, Hardware & Electrical 227-9144
- ☐ Michael L. Jones, Senior Buyer - Standard & Special Cutting Tools, Header & Bearingizer Tools 237-1389
- ☐ Dee T. Sheridan, Buyer - Maintenance Supplies, Hand Tools, Standard/Special Tooling 237-1333
- ☐ Walter C. Baker, Senior Buyer - Processing Materials, Chemicals & Oils 227-6293
- ☐ Charlene T. Nelson, Assistant Buyer - Janitorial Supplies & Laboratory Supplies 227-6135

## Facilities

- ☐ Keith L. Reynolds, Senior Buyer - Special Machines, Tools, Dies, Gages, Capital Equipment & Plant Engineering Materials 227-6329
- ☐ James F. Chester, Buyer - Special Equipment, Electrical Control Panels, Tooling, Gages & Plant Engineering Materials 227-6220
- ☐ Robert L. Barton, Senior Buyer - Engineering Materials, Manufacturing Facilities, & Equipment Rentals 227-6426
- ☐ Ervin L. Anderson, Buyer - Maintenance/Toolroom Supplies, Steels, Test Laboratory Supplies & Model Shop 227-6223

## Material & Production Control - Fredericksburg, Virginia Operations

- ☐ Joseph P. Pantano, Manager 703-899-5050
- ☐ Richard A. Moorman, Senior Buyer - Non-Product Materials 703-899-5053

\*You can dial these numbers direct using the area code and the number shown, or directory assistance from outside the plant dial the area code and 227-5000.

## Purchasing Policy

Purchasing is the only organization authorized to negotiate and contract for production materials, non-productive materials, supplies, services, capital equipment, facilities, and real estate.

It is recognized that liaison is often necessary between suppliers and engineering, supplier reliability or other departments both before and after purchasing commitments have been made. Such liaison, however, does not in any way constitute authority for purchase of goods or services. Purchasing is the only department with the authority to commit for the expenditure of monies to purchase goods or services.

HAZARDOUS MATERIAL samples may not be delivered or carried into the plant for testing or demonstration without a properly approved Purchase Order."

## Executive Staff

- Thomas P. Stokes General Manager
- Gene P. Baynes Director - Engineering
- Thomas G. Manoff Divisional Comptroller
- William C. Brooks General Director - Personnel & Public Relations
- James J. Hovorka General Sales Manager
- D. Dale Lewis Director - Manufacturing Engineering
- Peter Mushovic Director - Materials Management
- Gerald R. Russell Director - Reliability & Quality Control
- Ronald L. Stump General Manufacturing Manager
- Richard R. Wolf Director - Business Information Management

## We're Glad You Called

We appreciate the effort you are taking to acquaint us with products or services which might prove helpful to our products or operations.

Our division is constantly on the lookout for new ideas, better materials, and cost reduction items. Only through your cooperation can we maintain our reputation of quality and reliability.



Delco Moraine Division  
General Motors Corporation  
1420 Wisconsin Boulevard  
P.O. Box 1245  
Dayton, Ohio 45401



**Delco Moraine**

27 July 1984

Mr. E. W. Drislane  
Executive Director  
Friction Materials Standards Institute, Inc.  
Bergen Mall Office Center  
East 210 Route 4  
Paramus, New Jersey 07652

Dear Ed:

Thanks for the new engraved plate for the FMSI golf trophy.  
It's amazing what happens when numbers get adjusted and  
handicap techniques influence scores.

I enjoyed the golf and will proudly display this prestigious  
trophy.

The meeting was interesting, and I'm sure there are many  
challenging "opportunities" ahead of us in the aftermarket  
service business.

Regards,

  
G. P. Baynes  
Director of Engineering

/hld



\*\*\*\*\* A N N O U C E M E N T \*\*\*\*\*

WE HAVE A PROCEDURE CHANGE

!!!! PLEASE READ ME !!!!

JULY 1984

ATTENTION: BILLING, ACCOUNTS RECEIVABLE, CREDIT MANAGER, AND/OR SALES DEPARTMENT

DEAR VALUED SUPPLIER:

EFFECTIVE 9/1/84 WE ARE CONVERTING TO A FULLY AUTOMATED ACCOUNTS PAYABLE SYSTEM. IN ORDER FOR US TO CONTINUE PROMPT PAYMENT FOR YOUR GOODS, THERE ARE CHANGES WE BOTH NEED TO MAKE.

IT WILL BE A REQUIREMENT OF OUR NEW SYSTEM FOR YOU TO PROVIDE US WITH A UNIQUE SERIAL NUMBER IDENTIFYING YOUR SHIPPING DOCUMENT (PACKING SLIP). THIS NUMBER IS UNIQUE IN THAT A DIFFERENT NUMBER IS REQUIRED FOR EACH SHIPMENT; THEREFORE, YOU NEED TO ESTABLISH A SEQUENTIAL NUMBERING SYSTEM. THAT NUMBER (IDENTIFIED AS A PACKING SLIP NUMBER) MUST APPEAR ON THE FACE OF YOUR INVOICE. OUR SYSTEM WILL AUTOMATICALLY "MATCH" THAT NUMBER ON YOUR PACKING SLIP TO YOUR INVOICE AND SET UP FOR PAYMENT BASED IN THE AGREED TERMS ON OUR PURCHASE ORDER. WITHOUT THIS IDENTIFYING NUMBER, OUR NEW SYSTEM WILL NOT PROCESS YOUR INVOICE AUTOMATICALLY AND PAYMENT DELAY WILL OCCUR. WITH YOUR HELP, PROMPT PAYMENT WILL RESULT.

WE AT DELCO MORaine ARE PROUD OF OUR PAYMENT PERFORMANCE, BUT LIKE EVERYTHING ELSE, THERE IS ALWAYS ROOM FOR IMPROVEMENT AND WITH YOUR HELP, WE WILL!

LET ME TAKE THIS OPPORTUNITY TO REMIND YOU OF OUR CORRECT ADDRESS FOR MAILING YOUR INVOICES AND RELATED CORRESPONDENCE:

DELCO MORaine DIVISION, GMC  
P.O. BOX 184  
DAYTON, OHIO 45401

IF YOU HAVE ANY QUESTIONS, PLEASE DON'T HESITATE TO CALL. YOUR HELP IS NEEDED AND WE WILL DO EVERYTHING WE CAN TO ASSIST YOU.

ALAN B. WILLIS  
GENERAL SUPERVISOR OF  
ACCOUNTS PAYABLE  
PHONE: 513 227 6099 OR 6538

E.G. CASE  
DIRECTOR OF PURCHASING

Delco Moraine Division General Motors Corporation 1420 Wisconsin Boulevard P.O. Box 1245 Dayton, Ohio 45401 (513) 227-5000

Brake Systems • Engine Bearings • Transmission Components • Friction Materials

FMSI 13407

**FRICTION MATERIALS STANDARDS INSTITUTE, INC.**

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

July 2, 1984

Mr. G. P. Baynes  
Delco-Moraine Division  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Gene:

Enclosed is our check in payment of your air travel to the June Meeting. I hope you and Sally had a good vacation after you left LaCosta. We enjoyed our trip up the coast.

Thank you for your presentation.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

E. W. Drislane  
Executive Director

EWD/e



# GM ORIGINAL EQUIPMENT BRAKE LINING USAGE PASSENGER CAR AND LIGHT TRUCK

|                                        | 1978  |      | 1979  |      | 1980  |      | 1981  |      | 1982  |      | 1983  |      |
|----------------------------------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|                                        | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR |
| "J" Body Chevette                      |       |      |       |      |       |      |       |      |       |      |       |      |
| "H" Body                               |       |      |       |      |       |      |       |      |       |      |       |      |
| Monza, Sunbird, Starfire, Skyhawk      |       |      |       |      |       |      |       |      |       |      |       |      |
| "J" Body (See Legend)                  |       |      |       |      |       |      |       |      |       |      |       |      |
| "X" Body (See Legend) Manual           |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                  |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                             |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body 1982 - 1983 (See Legend)      |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body Thru 1981 &                   |       |      |       |      |       |      |       |      |       |      |       |      |
| "G" Body (See Legend)                  |       |      |       |      |       |      |       |      |       |      |       |      |
| Manual                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                  |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                          |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty (Police/Taxi)               |       |      |       |      |       |      |       |      |       |      |       |      |
| "F" Body Camaro, Firebird              |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Drum                         |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Disc                         |       |      |       |      |       |      |       |      |       |      |       |      |
| "B" Body (See Legend)                  |       |      |       |      |       |      |       |      |       |      |       |      |
| Light                                  |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy                                  |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                          |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                             |       |      |       |      |       |      |       |      |       |      |       |      |
| "C" Body (See Legend)                  |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds                             |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds (Diesel)                    |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Drum                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Disc                   |       |      |       |      |       |      |       |      |       |      |       |      |
| "D" Body Fleetwood Limousine           |       |      |       |      |       |      |       |      |       |      |       |      |
| "Z" Body Cadillac-Commercial           |       |      |       |      |       |      |       |      |       |      |       |      |
| "E" Body                               |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Drum                    |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Disc                    |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Drum                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Disc                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Eldorado All                           |       |      |       |      |       |      |       |      |       |      |       |      |
| "K" Body Seville                       |       |      |       |      |       |      |       |      |       |      |       |      |
| "Y" Body Corvette                      |       |      |       |      |       |      |       |      |       |      |       |      |
| "S" 1982-83 & "T" 1983 Truck           |       |      |       |      |       |      |       |      |       |      |       |      |
| Light Truck                            |       |      |       |      |       |      |       |      |       |      |       |      |
| 11 1/2 x 1 1/2 Ft. Rotor               |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/2 Ft. Rotor               |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/2 or 12 x 1 1/2 Ft. Rotor |       |      |       |      |       |      |       |      |       |      |       |      |
| 14 1/2 x 1 1/2 Ft. Rotor w/Rear Disc   |       |      |       |      |       |      |       |      |       |      |       |      |

"A" Body: 1977-81 Malibu, Monte Carlo, Lemans, Grand Am, Grand Prix, Cutlass, Century, Regal  
 "A" Body: 1982-3 Celebrity, 6000, Ciera, Century  
 "G" Body: Malibu, Monte Carlo, Bonneville, Grand Prix, Cutlass, Regal  
 "J" Body: Cavalier, J2000, Firenza, Skyhawk, Camaro  
 "B" Body: 1982-83 Impala, Caprice, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
 "B" Body: 1978-81 Impala, Caprice, Catalina, Grand Salari, Bonneville, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
 "C" Body: Ninety-Eight, Electra, Deville, Fleetwood  
 "X" Body: Nova, Citation, Omega, Skylark

Semi-metallic  
 \*Combination semi-metallic/asbestos disc lining  
 \*\*\*B" Light With Overdrive Automatic Transmission



# GM ORIGINAL EQUIPMENT BRAKE LINING USAGE PASSENGER CAR AND LIGHT TRUCK

|                                            | 1978  |      | 1979  |      | 1980  |      | 1981  |      | 1982  |      | 1983  |      |
|--------------------------------------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|                                            | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR |
| "I" Body Chevelle                          |       |      |       |      |       |      |       |      |       |      |       |      |
| "H" Body                                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Monza, Sunbird, Starfire, Skyhawk          |       |      |       |      |       |      |       |      |       |      |       |      |
| "J" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| "X" Body (See Legend) Manual               |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body 1982 - 1983 (See Legend)          |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body Thru 1981 &                       |       |      |       |      |       |      |       |      |       |      |       |      |
| "G" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Manual                                     |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                              |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty (Police/Taxi)                   |       |      |       |      |       |      |       |      |       |      |       |      |
| "F" Body Camaro, Firebird                  |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Drum                             |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Disc                             |       |      |       |      |       |      |       |      |       |      |       |      |
| "B" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Light                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                              |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| "C" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds (Diesel)                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Drum                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Disc                       |       |      |       |      |       |      |       |      |       |      |       |      |
| "D" Body Fleetwood Limousine               |       |      |       |      |       |      |       |      |       |      |       |      |
| "Z" Body Cadillac-Commercial               |       |      |       |      |       |      |       |      |       |      |       |      |
| "E" Body                                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Drum                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Disc                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Drum                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Disc                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Eldorado All                               |       |      |       |      |       |      |       |      |       |      |       |      |
| "K" Body Seville                           |       |      |       |      |       |      |       |      |       |      |       |      |
| "Y" Body Corvette                          |       |      |       |      |       |      |       |      |       |      |       |      |
| "S" 1982-83 & "T" 1983 Truck               |       |      |       |      |       |      |       |      |       |      |       |      |
| Light Truck                                |       |      |       |      |       |      |       |      |       |      |       |      |
| 11 1/2 x 1 or 11 1/2 x 1 1/4 Ft. Rotor     |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/4 Ft. Rotor                   |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/2 or 12 1/2 x 1 1/4 Ft. Rotor |       |      |       |      |       |      |       |      |       |      |       |      |
| 14 1/4 x 1 1/2 Ft. Rotor w/Rear Disc       |       |      |       |      |       |      |       |      |       |      |       |      |

"A" Body: 1977-81 Malibu, Monte Carlo, Lemans, Grand Am, Grand Prix, Cutlass, Century, Regal  
"A" Body: 1982-3 Celebrity, 6000, Ciera, Century  
"G" Body: Malibu, Monte Carlo, Bonneville, Grand Prix, Cutlass, Regal  
"J" Body: Cavalier, J2000, Firenza, Skyhawk, Cimarron  
"B" Body: 1982-83 Impala, Caprice, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
"B" Body: 1978-81 Impala, Caprice, Catalina, Grand Safari, Bonneville, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
"C" Body: Ninety-Eight, Electra, Deville, Fleetwood  
"X" Body: Nova, Citation, Omega, Skyark

Semi-metallic  
Combination semi-metallic/asbestos disc lining  
"B" Light With Overdrive Automatic Transmission



# GM ORIGINAL EQUIPMENT BRAKE LINING USAGE PASSENGER CAR AND LIGHT TRUCK

|                                            | 1978  |      | 1979  |      | 1980  |      | 1981  |      | 1982  |      | 1983  |      |
|--------------------------------------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|                                            | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR |
| "I" Body Chevette                          |       |      |       |      |       |      |       |      |       |      |       |      |
| "H" Body Monza, Sunbird, Starfire, Skyhawk |       |      |       |      |       |      |       |      |       |      |       |      |
| "J" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| "X" Body (See Legend) Manual               |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body 1982 - 1983 (See Legend)          |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body Thru 1981 &                       |       |      |       |      |       |      |       |      |       |      |       |      |
| "G" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Manual                                     |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                              |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty (Police/Taxi)                   |       |      |       |      |       |      |       |      |       |      |       |      |
| "F" Body Camaro, Firebird                  |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Drum                             |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Disc                             |       |      |       |      |       |      |       |      |       |      |       |      |
| "B" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Light                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                              |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| "C" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds (Diesel)                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Drum                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Disc                       |       |      |       |      |       |      |       |      |       |      |       |      |
| "D" Body Fleetwood Limousine               |       |      |       |      |       |      |       |      |       |      |       |      |
| "Z" Body Cadillac-Commercial               |       |      |       |      |       |      |       |      |       |      |       |      |
| "E" Body                                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Drum                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Disc                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Drum                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Disc                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Eldorado All                               |       |      |       |      |       |      |       |      |       |      |       |      |
| "K" Body Seville                           |       |      |       |      |       |      |       |      |       |      |       |      |
| "Y" Body Corvette                          |       |      |       |      |       |      |       |      |       |      |       |      |
| "S" 1982-83 & "T" 1983 Truck               |       |      |       |      |       |      |       |      |       |      |       |      |
| Light Truck                                |       |      |       |      |       |      |       |      |       |      |       |      |
| 11 1/2 x 1 or 11 1/2 x 1 1/4 Ft. Rotor     |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/4 Ft. Rotor                   |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/2 or 12 1/2 x 1 1/2 Ft. Rotor |       |      |       |      |       |      |       |      |       |      |       |      |
| 14 1/4 x 1 1/2 Ft. Rotor w/Rear Disc       |       |      |       |      |       |      |       |      |       |      |       |      |

"A" Body: 1977-81 Malibu, Monte Carlo, Lemans, Grand Am, Grand Prix, Cutlass, Century, Regal  
"A" Body: 1982-3 Celebrity, 6000, Ciera, Century  
"G" Body: Malibu, Monte Carlo, Bonneville, Grand Prix, Cutlass, Regal  
"J" Body: Cavalier, J2000, Frenza, Skyhawk, Cimarron  
"B" Body: 1982-83 Impala, Caprice, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
"B" Body: 1978-81 Impala, Caprice, Catalina, Grand Safari, Bonneville, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
"C" Body: Ninety-Eight, Electra, Deville, Fleetwood  
"X" Body: Nova, Citation, Omega, Skylark

Semi-metallic  
Combination semi-metallic/asbestos disc lining  
"B" Light With Overdrive Automatic Transmission



# GM ORIGINAL EQUIPMENT BRAKE LINING USAGE PASSENGER CAR AND LIGHT TRUCK

|                                            | 1978  |      | 1979  |      | 1980  |      | 1981  |      | 1982  |      | 1983  |      |
|--------------------------------------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|                                            | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR | FRONT | REAR |
| "T" Body Chevette                          |       |      |       |      |       |      |       |      |       |      |       |      |
| "H" Body                                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Monza, Sunbird, Starfire, Skyhawk          |       |      |       |      |       |      |       |      |       |      |       |      |
| "J" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| "X" Body (See Legend) Manual               |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body 1982 - 1983 (See Legend)          |       |      |       |      |       |      |       |      |       |      |       |      |
| "A" Body Thru 1981 &                       |       |      |       |      |       |      |       |      |       |      |       |      |
| "G" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Manual                                     |       |      |       |      |       |      |       |      |       |      |       |      |
| Power                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                              |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty (Police/Taxi)                   |       |      |       |      |       |      |       |      |       |      |       |      |
| "F" Body Camaro, Firebird                  |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Drum                             |       |      |       |      |       |      |       |      |       |      |       |      |
| with Rear Disc                             |       |      |       |      |       |      |       |      |       |      |       |      |
| "B" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Light                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy                                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Station Wagon                              |       |      |       |      |       |      |       |      |       |      |       |      |
| Heavy Duty                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| "C" Body (See Legend)                      |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds                                 |       |      |       |      |       |      |       |      |       |      |       |      |
| Buick-Olds (Diesel)                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Drum                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Cadillac w/Rear Disc                       |       |      |       |      |       |      |       |      |       |      |       |      |
| "D" Body Fleetwood Limousine               |       |      |       |      |       |      |       |      |       |      |       |      |
| "Z" Body Cadillac-Commercial               |       |      |       |      |       |      |       |      |       |      |       |      |
| "E" Body                                   |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Drum                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Riviera w/Rear Disc                        |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Drum                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Toronado w/Rear Disc                       |       |      |       |      |       |      |       |      |       |      |       |      |
| Eldorado All                               |       |      |       |      |       |      |       |      |       |      |       |      |
| "K" Body Seville                           |       |      |       |      |       |      |       |      |       |      |       |      |
| "Y" Body Corvette                          |       |      |       |      |       |      |       |      |       |      |       |      |
| "S" 1982-83 & "T" 1983 Truck               |       |      |       |      |       |      |       |      |       |      |       |      |
| Light Truck                                |       |      |       |      |       |      |       |      |       |      |       |      |
| 11 1/2 x 1 or 11 1/2 x 1 1/2 Ft. Rotor     |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/2 Ft. Rotor                   |       |      |       |      |       |      |       |      |       |      |       |      |
| 12 1/2 x 1 1/2 or 12 1/2 x 1 1/2 Ft. Rotor |       |      |       |      |       |      |       |      |       |      |       |      |
| 14 1/4 x 1 1/2 Ft. Rotor w/Rear Disc       |       |      |       |      |       |      |       |      |       |      |       |      |

"A" Body, 1977-81 Malibu, Monte Carlo, Lemans, Grand Am, Grand Prix, Century, Regal  
 "A" Body, 1982-3 Celebrity, 6000, Ciera, Century  
 "C" Body, Malibu, Monte Carlo, Bonneville, Grand Prix, Cutlass, Regal  
 "J" Body, Cavalier, J2000, Frenza, Skyhawk, Cimarron  
 "B" Body, 1982-83 Impala, Caprice, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
 "B" Body, 1978-81 Impala, Caprice, Catalina, Grand Safari, Bonneville, Delta 88, Custom Cruiser, Lesabre, Estate Wagon  
 "C" Body, Ninety-Eight, Electra, Deville, Fleetwood  
 "X" Body, Nova, Citation, Omega, Skylark

Semi-metallic  
 Combination semi-metallic/asbestos disc lining  
 "B" Light With Overdrive Automatic Transmission

Memorandum for file

Subject: Introductory Remarks for Mr. Gene P. Baynes

- Mr. Gene Baynes after graduating with a B.S. in Mechanical Engineering from Purdue University, started in the automotive industry when he joined the Oldsmobile Division of General Motors in 1947.
- Mr. Baynes had earlier served as an artillery officer in World War II and was recalled for service during the Korean War.
- He was with Oldsmobile as a chassis engineer with responsibilities including brake systems.
- Mr. Baynes left Oldsmobile to join the Friction Materials Division of Bendix in 1956.
- After work on new product development and marketing with Bendix Mr. Baynes returned to General Motors at the Delco-Moraine Division in 1961.
- Mr. Baynes was later promoted to the position of Chief Engineer at Delco-Moraine with responsibilities which included not only friction materials, but brake systems design.
- Mr. Baynes has been interviewed widely in automotive circles, and his comments have appeared in such magazines as "Automotive Industries," "Brake and Front End Service," and others.

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- **Mr. Gene Baynes after graduating with a B.S. in Mechanical Engineering from Purdue University, started in the automotive industry when he joined the Oldsmobile Division of General Motors in 1947.**
- **Mr. Baynes had earlier served as an artillery officer in World War II and was recalled for service during the Korean War.**
- **He was with Oldsmobile as a chassis engineer with responsibilities including brake systems.**
- **Mr. Baynes left Oldsmobile to work on new product development at the Bendix Friction Materials Division in 1956, and returned to General Motors at its Delco-Moraine Division in 1961.**
- **Mr. Baynes later served as Chief Engineer and is now Director of Engineering at the Delco-Moraine Division, with responsibilities not only for friction materials but for brake systems design.**

**FRICTION MATERIALS STANDARDS INSTITUTE, INC.**

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

April 13, 1984

Mr. D. L. Emrick  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Don:

Per our conversation, enclosed are one copy each of the following  
BULLETINS: 752, 753, 754, 755, 767, 773, 781, 791.

It is now apparent on several of these Bulletins that copies were  
never sent to you. Five of these were requests for the Historical  
Sales data, and these were sent to Fred Yost. On those bulletins  
I normally mail copies only to those who are responsible for the  
Sales Statistics.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

E. W. Drislane  
Executive Director

EWD/e

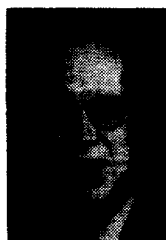
File 6 -

APR 10 1984

## **GM planner, Debbink, to head Inland Division**

DETROIT. — John D. Debbink, the man who directed the corporate review that led to the reorganization of General Motors' North American automotive operations, has a new job.

He has been named general manager of GM's Inland Division in Dayton, which makes a wide variety of componentry and hardware for GM vehicles. At Inland, Debbink succeeds Leonard P. Roberts, who died March 19.



John D. Debbink

Debbink, who will be 60 on April 24, was with Chevrolet from 1949 to 1974, rising to general director of purchasing, production control and traffic.

He became director of corporate product planning in 1974 and general manager of Delco Moraine Division in 1976. He was given the corporate review assignment in September, 1982.

DELCO - MORaine



01 August 83

Jim Drislane

FMSI  
Bergen Mall Office Center  
East 210 Route 4  
Paramus, New Jersey 07652

Attention: Mr. Ed Drislane

SUBJECT: GENERAL MOTORS DEALER BULLETIN - DISC BRAKE ROTOR  
SURFACE REFINISH FOR SEMI-METALLIC BRAKE LININGS

Dear Mr. Drislane:

I am enclosing a copy of a recently issued GM Dealer Service Bulletin emphasizing the importance of disc brake rotor refinish quality to the break-in performance of the brakes. This is particularly significant when semi-metallic brake linings are being replaced with new semi-metallic pads. Please note that rotor refinish is not recommended unless dimensions or surface condition (deep scoring) dictate need.

Field observations indicate that many technicians are using a fast tool cross feed on the lathe finish cut and are thereby producing a rotor surface finish considerably rougher than specification. A slow cross feed rate of .002 inch per revolution is needed.

Other factors such as equipment condition and tool sharpness are reemphasized in this bulletin.

Please bring these service recommendations to the attention of the general trade technicians and vocational training centers as is within your power to do so. Thank you for your cooperation.

Very truly yours,

DELCO MORaine DIVISION  
General Motors Corporation

*F. R. Yost*  
F. R. Yost  
Service Manager

/lb  
Enclosure

Delco Moraine Division General Motors Corporation 1420 Wisconsin Boulevard P.O. Box 1245 Dayton, Ohio 45401 (513) 227-5000

Brake Systems • Engine Bearings • Transmission Components • Friction Materials

FMSI 13417



# DEALER SERVICE BULLETIN



*Official Car for the Games of the XXIIIrd Olympiad Los Angeles 1984*

|               |          |
|---------------|----------|
| Model Year    | 1983     |
| Bulletin No.  | 83-159   |
| File In Group | 50       |
| Number        | 1        |
| Date          | July '83 |

**SUBJECT: DISC BRAKE SURFACE REFINISH**

**MODELS AFFECTED: ALL EQUIPPED WITH SEMIMETALLIC BRAKE LININGS**

Semimetallic brake linings have been selected for many new vehicles based upon brake system performance requirements. In order to maintain this performance, semimetallic linings are also specified for service replacement.

Good contact is important between the rubbing surfaces of any brake system. But this is more important with semimetallic lining as they are less tolerant to a rough refinished surface which can temporarily reduce braking effectiveness.

The original equipment new disc brake rotors have an initial rubbing surface finish of 10 to 50 micro inches and all have a nondirectional swirl pattern.

## SERVICE RECOMMENDATIONS:

- o Routine replacement of disc brake shoe and linings does not require rotor refinish.
- o Should rotor refinish be required because of parallelism, runout, or because of deep scoring, the semimetallic brake lining requires a micro inch surface refinish like the new vehicle rotor specification.
- o The recommended procedure for obtaining this finish is as follows:

|                          | <u>Rough Cut</u> | <u>Finish Cut</u> |
|--------------------------|------------------|-------------------|
| Spindle Speed            | 200 RPM          | 200 RPM           |
| Depth of Cut Per Side    | .005"            | .002"             |
| Tool Cross Feed Per Rev. | .006"-.010"      | .002" Max.        |
| Vibration Dampener       | Yes              | Yes               |
| Swirl Pattern-120 GRIT   | No               | Optional*         |

\*Duplication of new rotor and smoother finish for best initial brake effectiveness.

OVER



**BUICK MOTOR DIVISION**

**SERVICE DEPARTMENT**

**FLINT, MICHIGAN 4855**

**PLEASE CIRCULATE TO ALL PERSONNEL AFFECTED**

**FMSI 13418**

When installing new rotors from service stock, "do not" refinish the surface as these parts are to recommended finish. It also is not required to refinish a rotor on a vehicle which has a smooth finish.

When refinishing brake rotors for semimetallic linings, the following is important:

- o The brake lathe must be in good working order and have capability to produce the intended surface finish.
- o Use correct tool feed and arbor speeds. Too fast a speed or too deep a cut can result in a rough finish.
- o Cutting tools must be sharp.
- o Adapters must be clean and free of nicks.
- o Lathe finish cuts should be further improved and made nondirectional by dressing rotor surface with a sanding disc power tool (AMMCO Model 8350 Safe Swirl Disc Rotor Grinder or equivalent).
- o Rotor surfaces are to be refinished to 10 to 50 micro inches.

To become familiar with the required surface finish, drag a fingernail or a penny over the surface of a new rotor from parts stock or one on a new vehicle. If your brake equipment cannot produce this smooth a finish when correctly used, contact the equipment manufacturer for corrective instructions.

DELCO MORaine

TELEPHONE (201) 845-0440

**FRICTION MATERIALS STANDARDS INSTITUTE, INC.**

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

February 22, 1984

Mr. G. P. Baynes  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Gene:

Per our conversation, I am enclosing some recent correspondence and minutes from Arne Anderson's SAE J866 Task Force. I'm on the Task Force but will not be able to attend the Monday February 27 Task Force Meeting. I don't think anyone on that Task Force would object if someone like Gerry Jacoby sat in on that meeting. Mr. Jim Coulter of the GM Tech Center is on that Task Force.

In case I was unclear on the phone, Bob Gibson address is:

Mr. R. W. Gibson  
Bridge Bungalow  
Borwich NR Carnforth  
Lancs.  
England LA6 1JU

If Bob is at the SAE Sub 2 Meeting, I will invite him to your luncheon-reception on Wednesday. I'll look forward to seeing you then.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

E. W. Drislane  
Executive Director

EWD/e

FMSI 13420

**FRICION MATERIALS STANDARDS INSTITUTE, INC.**

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

July 21, 1983

Mr. Gene P. Baynes  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Boulevard  
Dayton, OH 45401

Dear Gene:

This is to confirm our recent phone conversation as concerns our 1984 Annual Membership Meeting.

The Institute would like you to address its Membership, on Wednesday afternoon, June 13, 1984. This should be a follow-up or critique of the presentation that you gave the Membership in Scottsdale in 1978. You are free, of course, to select whatever content or theme which would be of interest to manufacturers of brake linings in the automotive markets.

The 1984 Meeting will be held at:

LaCosta Hotel & Spa  
Carlsbad, California

La Costa is near San Diego--about 35 miles north of the Airport. The Institute would pay your travel costs to and from LaCosta plus your LaCosta room and meal charges. It would probably be best to arrive on Tuesday June 12, stay over on Wednesday June 13 and depart on Thursday. Messrs. Emrick and Yost will also be invited from Delco.

I will go over this again with you in January should there be any changes in plans on your part.

With best regards to you and Sally,

Sincerely,

FRICION MATERIALS STANDARDS INSTITUTE

E. W. Drislane  
Executive Director

FMSI 13421

Memorandum for file

Subject: Introductory Remarks for Mr. Gene P. Baynes

- Mr. Gene Baynes after graduating with a B.S. in Mechanical Engineering from Purdue University, started in the automotive industry when he joined the Oldsmobile Division of General Motors in 1947.
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Delco

TELEPHONE (201) 845-0440

**FRICTION MATERIALS STANDARDS INSTITUTE, INC.**

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

May 25, 1983

Mr. Fred Yost  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Fred:

When I talked with you the other day I said I would look through my back copies of BRAKE AND FRONT END to see if there were any articles on turning rotors and drums.

I was missing a few copies, but I searched back through 1978 and have enclosed copies. There does not appear to have been as much there as I thought, but what I did find is enclosed.

See you in June.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

E. W. Drislane  
Executive Director

EWD/e

Dec. 82, 46  
Nov. 81, 4  
May 81, 42  
Feb. 82, 50  
June 80, 36  
May 79, 66  
Aug. 79, 106

FMSI 13423



# Major Product Lines

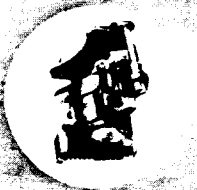
Welcome  
to

**Delco Moraine**



**THE BRAKE SYSTEMS PEOPLE**

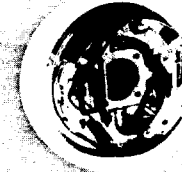
Disc brake callipers



Engine bearings



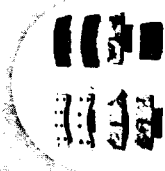
Drum brake assemblies



Friction materials  
automotive transmission



Clutch  
torque  
converter



Disc  
brake  
linings



Combination  
valves



Brake  
master  
cylinders



Power  
brakes

Shown here are some of our best known and most widely used products. Delco Moraine is a supplier of components to the worldwide automotive industry for use on cars, trucks, and off-the-road equipment. We design and develop about half of the brake systems for all U.S. made cars and light trucks. In the automotive aftermarket, we offer a complete line of quality replacement parts.

Because of the critical importance of our products and their contribution to reliability and safety, we must maintain an extremely high degree of quality. That means accepting only the highest quality products from our suppliers.

## Visiting Hours

9 AM to 4 PM Daily  
Monday thru Friday

**The People To See**



OCT 07 1982

# Buyer's Guide Directory

## Executive Staff

**Thomas P. Stokes**  
General Manager

**Gene P. Baynes**  
Director — Engineering

**Kenneth P. Clayton**  
Divisional Comptroller

**William C. Brooks**  
Director — Personnel & Public Relations

**James J. Hovorka**  
General Sales Manager

**D. Dale Lewis**  
Director — Manufacturing Engineering

**Peter Mushovic**  
Director — Materials Management

**Gerald R. Russell**  
Director — Reliability & Quality Control

**Ronald L. Stump**  
General Manufacturing Manager

**Richard R. Wolf**  
Manufacturing Manager

Telephone Number  
(Area Code 513)\*

## Director of Purchasing

Edward G. Case ..... 227-6216

## Productive Materials

**Kenneth H. Dunlope**, Purchasing Agent — Raw Materials & Engineering ..... 227-6373  
(Also buys Production Chemicals, Friction Materials, Packaging Supplies & Powder)

**Robert L. Barton**, Senior Buyer — Engineering Materials & Outside Processing ..... 227-6088

**Fred B. Revis**, Senior Buyer — Steel, Non-Ferrous Wrought Metals & Friction Paper ..... 227-6205

**Robert R. Howell**, Purchasing Agent — Components & Castings ..... 227-6077

**Rebecca M. Daulton**, Senior Buyer — Ferrous & Non-Ferrous Castings ..... 227-6204

**Gerald L. Fowler**, Senior Buyer — Screw Machine, Headed Parts, Powder Metal & Electrical Components ..... 227-6530

**G. Michael Lipscomb**, Buyer — Spring, Wire Forms, Linings & Outside Assembly ..... 227-9005

**Rex A. Strine**, Purchasing Agent — Components ..... 227-6076

**Carol G. Holley**, Senior Buyer — Stampings & Brake Shoes ..... 227-6502

**Michael Howard**, Senior Buyer — Plastic Parts ..... 227-6503

**James L. Todd**, Senior Buyer — Rubber Parts ..... 227-6504

## Non-Product Materials & Facilities

**James M. Livesay**, Purchasing Agent ..... 227-6411

**Robert W. Terrel**, General Supervisor — Non-Product Materials ..... 227-6410

**Walter C. Baker**, Senior Buyer — Processing Materials, Chemicals, Oils & Janitorial Supplies ..... 227-6293

**Michael L. Jones**, Buyer — Maintenance Supplies, Heating Fuel, Std. & Special Tooling ..... 227-6309

**Frances L. Judson**, Buyer — Bearings, Electrical Hardware, Medical, Stationery & Office Supplies ..... 227-9144

**Roy A. Porter**, Senior Buyer — Std. & Special Cutting Tools, Protective Clothing ..... 237-1369

**Richard W. Ballou**, Senior Buyer — Mfg. Facilities, Capital Equipment, Construction & Plant Eng. Materials ..... 227-6329

**Ervin L. Anderson**, Buyer — Std. & Special Die Tooling, Data Processing Equipment & Machine Repair ..... 227-6326

## Material & Production Control — Fredericksburg, Virginia Operations

**Joseph P. Pantano**, Manager ..... 703-899-5050

**Richard A. Moorman**, Senior Buyer — Non-Product Materials ..... 703-899-5053

\*You can dial these numbers direct using the area code and the number shown.  
For directory assistance from outside the plant dial the area code and 227-5000.

## Purchasing Policy

Purchasing is the only organization authorized to negotiate and contract for production materials, non-productive materials, supplies, services, capital equipment, facilities, and real estate.

It is recognized that liaison is often necessary between suppliers and engineering, supplier reliability or other departments both before and after purchasing commitments have been made. Such liaison, however, does not in any way constitute authority for purchase of goods or services. Purchasing is the only department with the authority to commit for the expenditure of monies to purchase goods or services.

HAZARDOUS MATERIAL samples may not be delivered or carried into the plant for testing or demonstration without a properly approved Purchase Order."

## We're Glad You Called

We appreciate the effort you are taking to acquaint us with products or services which might prove helpful to our products or operations.

Our division is constantly on the lookout for new ideas, better materials, and cost reduction items. Only through your cooperation can we maintain our reputation of quality and reliability.

# Delco Moraine

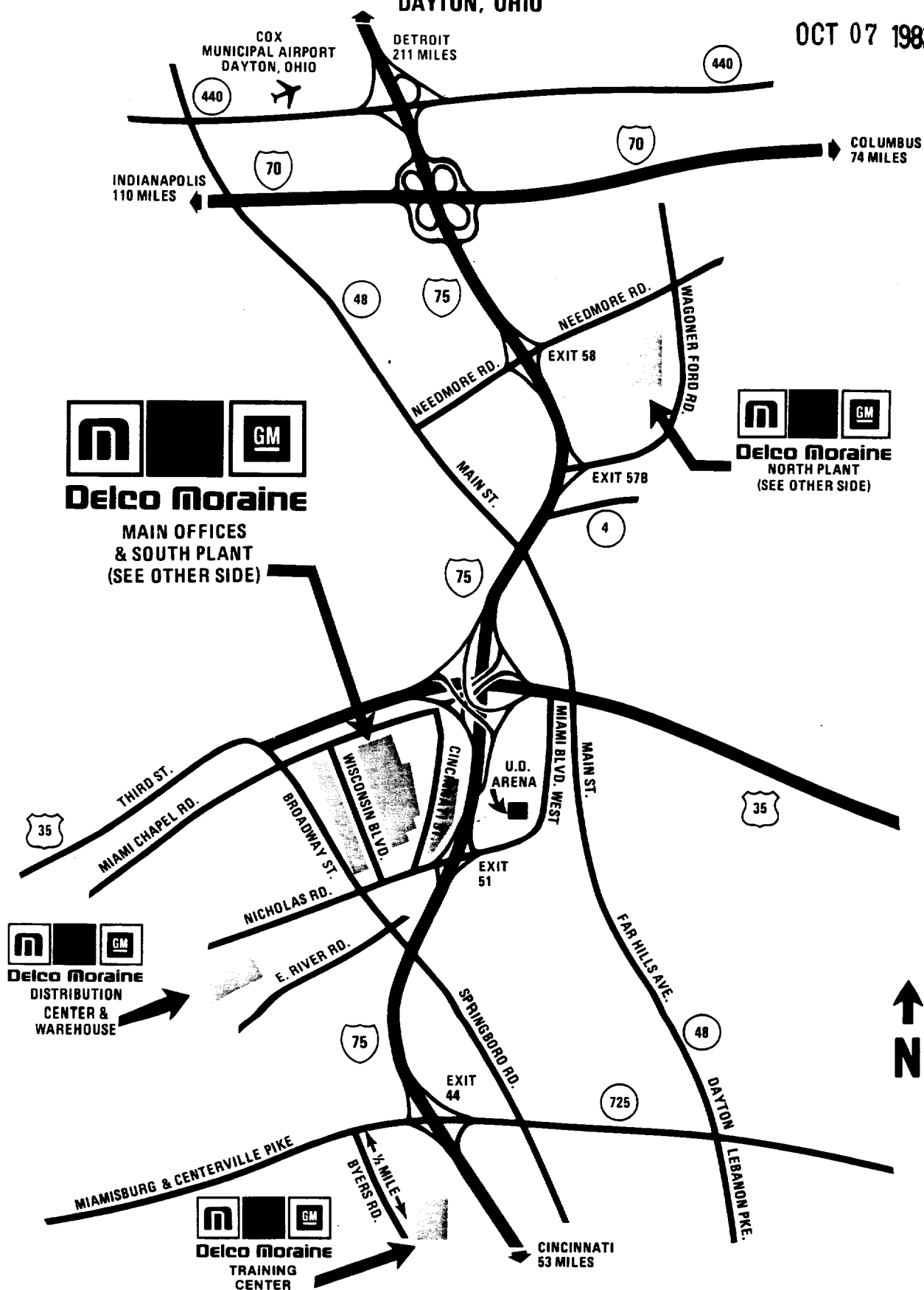


Delco Moraine Division  
General Motors Corporation  
1420 Wisconsin Boulevard  
P.O. Box 1245  
Dayton, Ohio 45401

# DELCO MORaine FACILITIES LOCATIONS

DAYTON, OHIO

OCT 07 1982

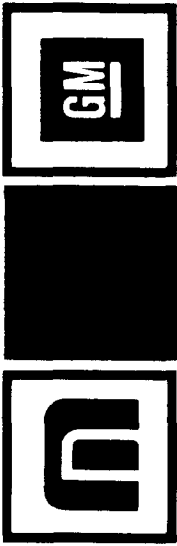




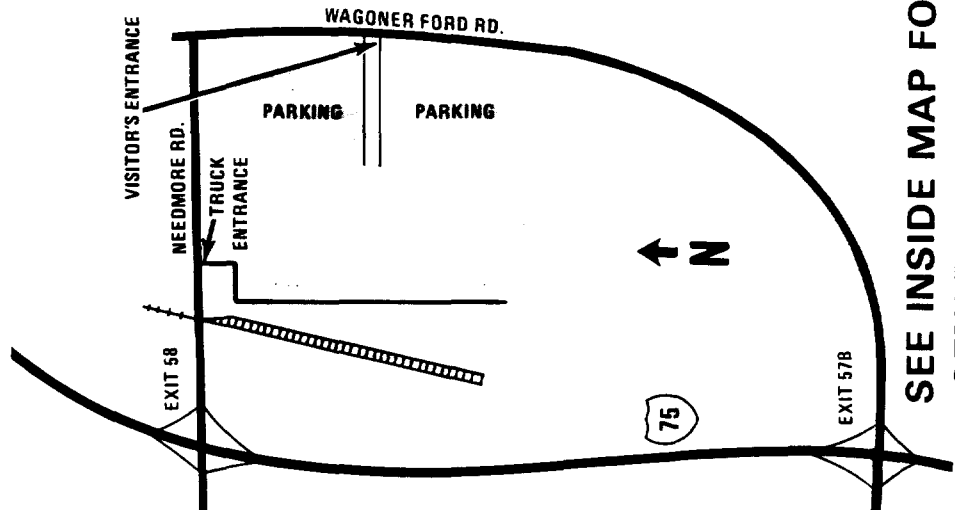
**NORTH  
PLANT**



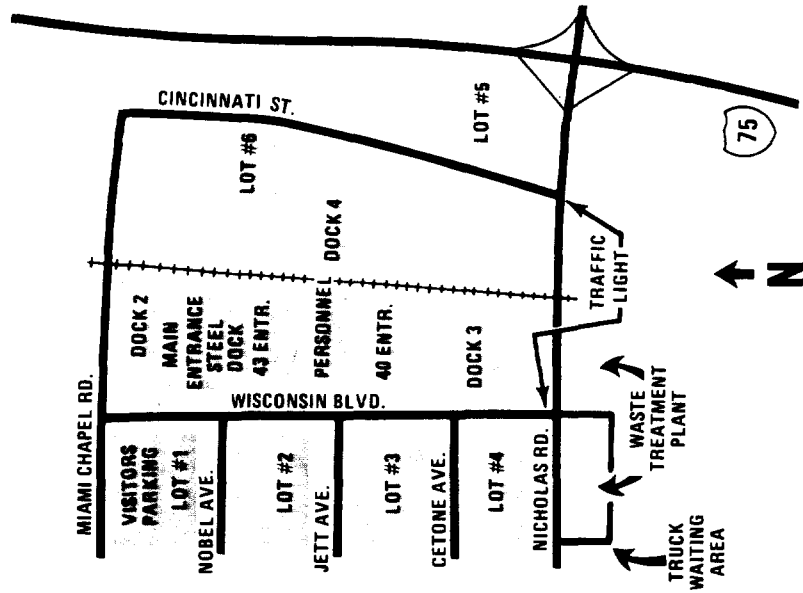
**MAIN  
OFFICES  
& SOUTH  
PLANT**



**Delco Moraine**  
Division of General Motors Corporation



**SEE INSIDE MAP FOR  
GENERAL LOCATION**



**SEE INSIDE MAP FOR  
GENERAL LOCATION**

# FACILITIES LOCATIONS

**BRAKE SYSTEMS  
ENGINE BEARINGS  
FRICTION MATERIALS**

**Delco Moraine Division**  
**General Motors Corporation**  
1420 Wisconsin Blvd.  
P.O. Box 1245  
Dayton, Ohio 45401  
(513) 227-5000



# Major Product Lines

NOV 12 1981

# Welcome to

## Delco Moraine



## THE BRAKE SYSTEMS PEOPLE

Shown here are some of our best

known and most widely used products. Delco Moraine is a supplier of components to the worldwide automotive industry for use on cars, trucks, and off-the-road equipment. We design and develop about half of the brake systems for all U.S. made cars and light trucks. In the automotive aftermarket, we offer a complete line of quality replacement parts.

Because of the critical importance of our products and their contribution to reliability and safety, we must maintain an extremely high degree of quality. That means accepting only the highest quality products from our suppliers.

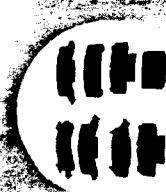
Brake  
master cylinder



Brake  
master cylinder



Clutch  
torque  
converter



Clutch  
torque  
converter



Brake  
master  
cylinder

Brake  
master  
cylinder

Visiting Hours

9 AM to 4 PM Daily  
Monday thru Friday

The People To See

FMSI 13428



# Buyer's Guide Directory

Telephone Number  
(Area Code 513) \*

## Director of Purchasing

Edward G. Case ..... 227-6216

## Productive Materials

Kenneth H. Dunlope, Purchasing Agent - Raw Materials & Engineering ..... 227-6373  
 Robert L. Barton, Senior Buyer - Engineering Materials ..... 227-6088  
 Fred B. Revls, Senior Buyer - Steel, Non Ferrous Wrought Metals ..... 227-6205  
 Walter M. Strong, Senior Buyer - Chemicals, Powder, Friction Materials, Packaging & Babbitt ..... 227-6374  
 Robert R. Howell, Purchasing Agent - Components & Castings ..... 227-6077  
 Rebecca M. Adams, Senior Buyer - Ferrous & Non-Ferrous Castings ..... 227-6204  
 Gerald L. Fowler, Senior Buyer - Screw Machine, Headed Parts, Powder Metal & Electrical Components ..... 227-6530  
 Michael M. Schardt, Buyer - Springs, Wire Forms, Linings & Outside Assembly ..... 227-9005  
 Rex A. Strine, Purchasing Agent - Components ..... 227-6076  
 Carol G. Holly, Buyer - Stampings & Brake Shoes ..... 227-6502  
 Michael Howard, Senior Buyer - Plastic Parts ..... 227-6503  
 James L. Todd, Senior Buyer - Rubber Parts ..... 227-6504

## Non-Product Materials & Facilities

James M. Livesay, Purchasing Agent ..... 227-6411  
 Richard W. Bailou, Senior Buyer - Capital Equipment, Construction & Plant Engineering Materials ..... 227-6329  
 Robert W. Terrel, General Supervisor - Non-Product Materials ..... 227-6410  
 Robert N. Elaner, Senior Buyer - Std. & Special Die Tooling, Fuels & Data Processing Equipment ..... 227-6309  
 Raymond Henes, Senior Buyer - Processing Mat'l, Chemicals, Oils, Janitorial Supplies & Mach. Repair Parts ..... 227-6293  
 Francis M. Judson, Buyer - Electrical, Abrasive & Hardware Supplies, Bearings ..... 227-9144  
 Roy A. Porter, Senior Buyer - Maintenance, Office & Stationery Supplies, Protective Clothing & Non-Product Steel ..... 227-6326  
 Harold E. Sweet, Buyer - Standard & Special Cutting Tools & Bushings ..... 237-1369

## Material & Production Control - Fredericksburg, Virginia Operations

Joseph P. Pantano, Manager ..... 703-899-5050  
 Richard A. Moorman, Senior Buyer - Non-Product Materials ..... 703-899-5053

\* You can dial these numbers direct using the area code and the number shown.  
 For directory assistance from outside the plant dial the area code and 227-5000.

## Purchasing Policy

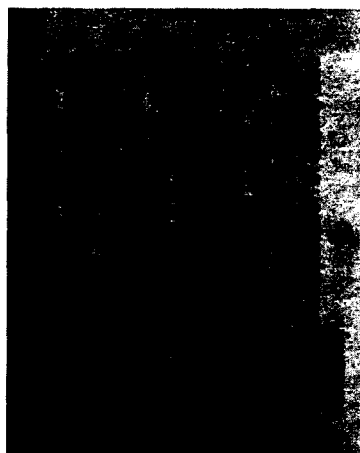
Purchasing is the only organization authorized to negotiate and contract for production materials, non-productive materials, supplies, services, capital equipment, facilities, and real estate.

It is recognized that liaison is often necessary between suppliers and engineering, supplier reliability or other departments both before and after purchasing commitments have been made. Such liaison, however, does not in any way constitute authority for purchase of goods or services. Purchasing is the only department with the authority to commit for the expenditure of monies to purchase goods or services.

"HAZARDOUS MATERIAL samples may not be delivered or carried into the plant for testing or demonstration without a properly approved Purchase Order."

## Executive Staff

John D. Deblink  
General Manager  
 Gene P. Baynes  
Director - Engineering  
 Kenneth B. Clayton  
Divisional Comptroller  
 Lynn R. Evans  
Director - Personnel & Public Relations  
 James J. Hovorka  
General Sales Manager  
 D. Dale Lewis  
Director - Manufacturing Engineering  
 Donald A. Pals  
Director - Materials Management  
 Gerald R. Russell  
Director - Reliability & Quality Control  
 Ronald L. Stump  
General Manufacturing Manager  
 Richard R. Wolf  
Manufacturing Manager



Delco Moraine Division  
General Motors Corporation  
1420 Wisconsin Boulevard  
Dayton, Ohio 45401

OCT 11 1982

### General Motors

General Motors has appointed John D. Debbink, 58, to coordinate a corporate organizational review and report to the chairman of the board.

Thomas P. Stokes, 49, has been named to replace Debbink as general manager of Delco Moraine Division, Dayton.



John D. Debbink



Thomas P. Stokes

Stokes has been general manufacturing manager of Harrison Radiator Division, Lockport, N. Y.

Debbink became head of Delco Moraine in 1976 following two years as director of corporate product planning in the GM Central Office. He joined Chevrolet in 1949 and was general director of purchasing, production control and traffic for the division before being named to the corporate post.

Stokes has spent all but one of his 27 GM years in Dayton. He was with Frigidaire until becoming general manufacturing manager for Delco Air Conditioning Division when that division was formed in 1975. He went to Harrison Radiator when Harrison and Delco merged in 1976.

# FRICION MATERIALS STANDARDS INSTITUTE, INC.

BERGEN MALL OFFICE CENTER

E. 210 ROUTE 4

PARAMUS, N. J. 07652

September 15, 1982

Mr. Gerry Jacoby  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Gerry:

Per our conversation, enclosed is a list of our Regional Members which includes the Mexican manufacturers. Names of contacts at the Mexican Regional Members are:

|                     |                                            |
|---------------------|--------------------------------------------|
| Duramax, S.A.       | Ricardo Escobedo V.                        |
| Franco-Mex, S.A.    | Miguel Rivacoba Marin,<br>Michel Duval W.  |
| Friccion, S.A.      | Victor Contreras Martinez                  |
| Itaps, S.A. de C.V. | Guillermo Vela Reyna                       |
| Mex-Bestos, S.A.    | Jesus Trejo Guevara,<br>Raul Sanchez Celis |

Best Regards.

Sincerely,

FRICION MATERIALS STANDARDS INSTITUTE

E. W. Drislane  
Executive Director

EWD/e

DELCO

August 25, 1981

Mr. Donald L. Erick  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, OH 45401

Dear Don:

This relates to the changes for the T Diesels. I intend to keep my new FMSI number assignments, FMSI 7115 for the lining and D191 for the shoe. I am releasing the enclosed BULLETIN as regards the lining. I trust it is accurate.

FMSI 7115 LINING

My understanding is that FMSI 7115 profile is identical to the earlier No. FMSI 7089. However, 7115-Inner is integrally molded where 7089-Inner was bonded.

I will need: 1. Prints for 7115-I and 7115-O ✓  
2. Overall thickness--finished--for the 7115-D191 assemblies (Inner and Outer) ✓

FMSI D191 SHOE

I intend to change my note in the SHOE BULLETIN to read as follows:

FMSI D191-Inner is same as D162-Inner except it is integrally molding and it has a retaining spring. It will interchange with D162-O. D191-O is same as D162-O except for larger molding holes.

Is the above O.K.?

I will need: 3. Print for D191-Inner. ✓

\* \* \* \* \*

Thanks for your help in straightening this out.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

EWD/arc  
Enc:

E. W. Drislane  
Executive Director

FMSI 13432

DATA BOOK BULLETIN NO. 308A

August 26, 1981

CORRECTION:

This is a special bulletin to correct size information on the General Motors T Diesel release of FMSI 7115\*\*.

The FMSI 7115\*\* dimensions and prints released with BULLETIN NO. 308 were incorrect. Plans for this change in lining profile from the earlier Chevette 7089\*\* were scrapped. The FMSI 7115 release will stand, as both inner and outer are now integrally molded. However, the 7115 lining profile will be identical to the 7089 lining profile.

There is no reason to scrap BULLETIN NO. 308, as the application information is correct. The only change will be in the size specifications shown for 7115. In addition to this correction, please note that the steel shoes will conform to the earlier Chevette/T1000 steel in shape. However, a new shoe assignment will be shown as the inner and outer are now both integrally molded. That change will be shown in a forthcoming SHOE BULLETIN.

We do not have the corrected prints and final dimensions. They will be sent as soon as available.

EWD/erc

E. W. Drislane  
Executive Director

NOTE: As this is a change which should affect the manufacturer only, we have not sent along extra copies of this bulletin that some Members order.

DELCO

June 23, 1981

Mr. Fred Yost  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, Ohio 45401

Dear Fred:

This is a note of appreciation for Delco's participation in the Golf Tournament, and your gifts to the golfers. Also, of course, my thanks for the Josten's Barometer. It arrived safely in Paramus after the long trip North.

Again many thanks.

Sincerely,

FRICION MATERIALS STANDARDS INSTITUTE

EWD/erc

E. W. Drislane  
Executive Director

FMSI 13434

→ *Delco Moraine*

October 28, 1980

Memo to File

*Cue*

SUBJECT: MATERIAL USAGE ON GENERAL MOTORS DISC BRAKES

On October 21, 1980 Mr. Gene Rogers of Bendix called concerning usage of semi-metallic materials on the rear disc brakes of General Motors cars. He particularly pointed to the standard disc brake rears (FMSI 7070A) on the Seville and Eldorado along with the optional disc brake rears on the Toronado, Riviera and Firebird Trans Am. He stated that there was some question about the recommendations for semi-metallic usage on these rear disc brakes because of parking brake requirements.

Based on this inquiry, I called Mr. Don Emrick of Delco-Moraine Division on the semi-metallic usage. He indicated that up through 1980 all disc brake rears on GM cars use organic material. This pattern continued for 1981 General Motors cars. These are the E cars (Eldorado, Toronado and Riviera) and the Seville and Firebird Trans Am. The only exception is that Buick, in 1981, has semi-metallic material front and rear and used a proportioning valve to accomplish this change. So for 1981, these cars have semi-met on the front disc brakes and organic material on the rear disc brakes, with the exception of Riviera which has semi-met front and rear on their discs.

EWD/lmc

E. W. Drislane  
Executive Director

November 3, 1980

11-6-80!  
DON EMERICK - CIOEV LISTS  
P-10 (=P1500) ON HIS DATA.

Mr. D. L. Emrick  
Delco-Moraine Division  
General Motors Corporation  
1420 Wisconsin Blvd.  
Dayton, Ohio 45401

Dear Don:

This is a question concerning the GMC Truck line for 1981. When you gave me the lining information for the 1981 models, it was basically the same as 1980 except that ~~Skyhawk~~ and Skyhawk had been dropped.

*Attention*  
In going over data that I received directly from GMC Truck for medium and heavy-duty linings as well as clutch facings, I noted that the P-1500 Truck was not listed. Do you have information that this truck has been discontinued for 1981, or is it actually in production even though not listed by GMC Truck? I am trying to get the GMC Truck listing up-to-date should they have dropped this model. Your help is most appreciated.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

EWD/lmc  
Enc.

E. W. Drislane  
Executive Director

FMSI 13436

APPLICATION FOR MEMBERSHIP

TO THE BOARD OF DIRECTORS OF  
FRICTION MATERIALS STANDARDS INSTITUTE, INC.

*Accepted May 1st 1971*

Gentlemen:

The undersigned hereby applies for membership in the FRICTION MATERIALS STANDARDS INSTITUTE, INC., as an Active Member, and certifies to the following:

1. Name of Applicant: Delco Moraine Division. G.M.C.
2. State of Incorporation: Delaware - G.M.
3. Principal Office: Dayton - Delco Moraine
4. Date of Incorporation: 1908 - G.M.
5. Length of time dealing with friction materials: Over 35 Years
6. Do you manufacture friction materials from the basic materials or do you buy partially finished products from other companies: Both
7. Type of friction materials manufactured, and approximate annual capacity of plant: Disc Lining, Disc Shoe & Lining, and  
Drum Shoe & Lining
8. State approximate amount of said materials manufactured in commercial quantities: \_\_\_\_\_
9. Is the distribution of your product national, international or local or in how many states: International
10. Do you list the materials you manufacture in catalogs or in some other form; if so, will you furnish us with a copy of same: Yes
11. Reference as to financial strength in relation to operations: \_\_\_\_\_
12. Is plant owned by applicant or leased: Corporate Owned

APPLICATION FOR MEMBERSHIP

Page two

The undersigned hereby acknowledges receipt of a copy of the Constitution and By-Laws of the Institute and agrees that, if elected to membership, it will accept and be bound by the said Constitution and By-Laws, together with any amendments that may from time to time be made thereto.

The undersigned hereby designates Robert J. Kick  
as its delegate and Donald L. Emrick as its alternate  
delegate, to represent it at any meeting of the membership.

Gene P. Baynes

BY Delco Moraine Division, G.M.C.

*March 11, 1971*

# Moraine Friction Materials



**Delco Moraine**

Division of General Motors Corporation



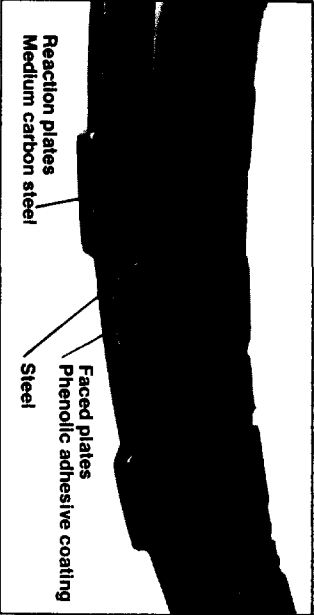
FMSI 13439

# Moraine, depend on our durable friction material products to help keep friction under control.

Delco Moraine has been developing, testing, and manufacturing friction materials for many years. For a wide variety of applications. Conventional ones like passenger cars, trucks, and buses. And special applications like off-road trucks, and grader and earth moving equipment manufacturers.

Included in the Delco Moraine friction materials line is our converter lock-up clutch, as well as a variety of automatic transmission clutch plates. Annually, Delco Moraine manufactures millions of clutch plates.

## Moraine Clutch Plate Materials



According to our customers, Moraine clutch plates are more durable, and offer more uniform quality than competitive products. The reason is Delco Moraine's own special formulation and processing of clutch plate materials.

Our skilled engineers can work with you in custom designing new clutch plate applications to fit your specific needs, or upgrading clutch plates in existing systems for performance.

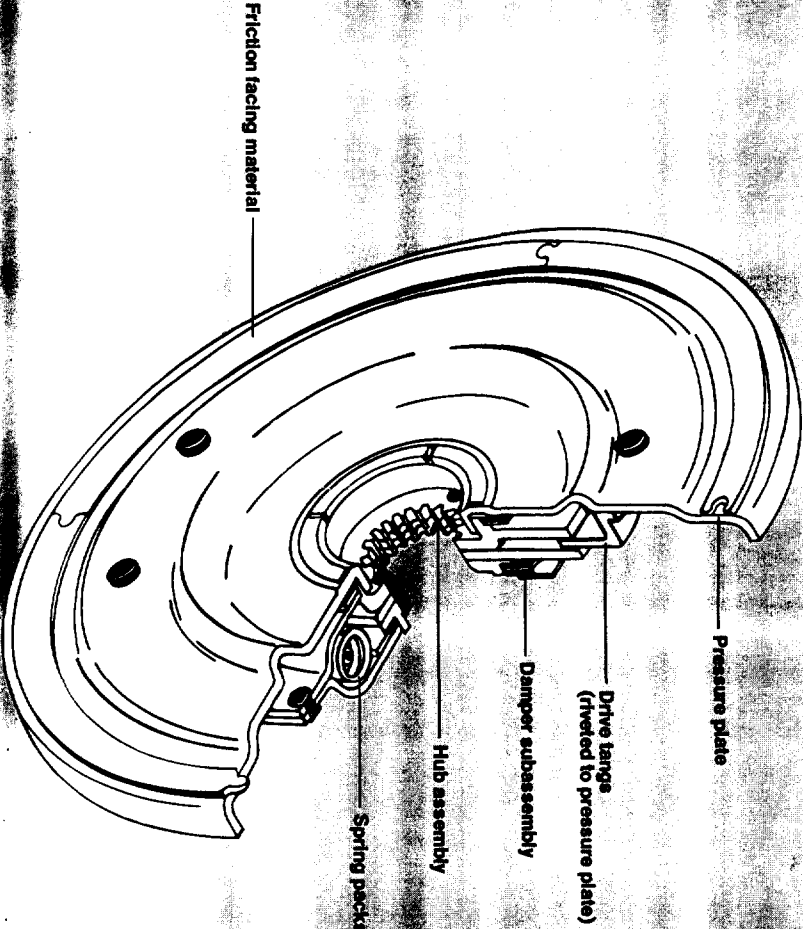
In our complete prototype facilities, we can develop prototype parts, if a customer so desires. Experimental materials are formulated, then tested in our laboratory facilities on clutch dynamometers. Delco Moraine has the advanced technological capability to design new and unique clutch plate processes.

Friction materials from Delco Moraine. You can expect them to offer smooth shifting performance, torque capacity, durability, and low wear for long clutch life.

## Typical Clutch Plate Specifications

| Reaction Plates |  | 1035 Steel                           |  |
|-----------------|--|--------------------------------------|--|
| Material        |  | 1035 Steel                           |  |
| Thickness       |  | 1.61 mm (.0658")<br>1.83 mm (.0725") |  |
| Hardness        |  | Rc 24-32                             |  |
| Surface Finish  |  | 20 AA Max                            |  |

| Faced Plates                       |  | Minimum                            | Maximum                            |
|------------------------------------|--|------------------------------------|------------------------------------|
| Steel Core Hardness                |  | R <sub>b</sub> 94<br>Rc 24-32      | R <sub>b</sub> 104<br>Rc 32        |
| Thickness (1)                      |  | .71 mm (.028")<br>.96 mm (.038")   | .81 mm (.032")<br>1.06 mm (.042")  |
| Thickness (2)                      |  |                                    |                                    |
| Bonded Friction Material Thickness |  | .64 mm (.025")                     | .74 mm (.029")                     |
| Plate Assembly Thickness (1)       |  | 1.93 mm (.076")<br>2.18 mm (.086") | 2.39 mm (.094")<br>2.59 mm (.102") |
| Thickness (2)                      |  |                                    |                                    |



Behind the development of every Delco Moraine product, lies a continuing effort toward improved vehicle fuel economy. As part of this effort, for the past four years, Delco Moraine engineers have been involved in the development and refinement of automatic transmission lock-up clutch assemblies.

The Moraine lock-up clutch eliminates slippage, by locking the torque converter during high gear operation. The result is a 6 percent fuel economy gain, based on 1978 FTP standards.

And thanks to its compression spring design, the Moraine lock-up clutch absorbs engine torque variations,

such as chuggle and growl, that occur under a wide variety of driving conditions. As a result, your customers can be assured, that these annoying engine vibrations will be dampened, for smooth vehicle operation.

Best of all, you can count on Delco Moraine's skilled engineers to have the expertise needed to develop dampers for new applications, or quickly solve any problems affecting current applications. Thanks to our excellent research and testing facilities and our vast computer capabilities, we can work with you to design, build, test, and validate a lock-up clutch assembly to match the drive train of your specific system.

# Proof of our dedication to quality: Moraine friction materials testing.

As with Moraine brake components and systems, testing is a very important part of the manufacturing of Moraine friction materials. At Delco Moraine, we have complete facilities for friction materials, from engineering development through production testing operations.

In the laboratory, clutch plates are tested using an engine dynamometer. To simulate severe transmission shifting conditions, they're cycled thousands of times. In addition, we subject them to a special clutch dynamometer test to measure dimensional changes and durability.

We also install Moraine clutch plates in test vehicles. Then we abuse them. Intentionally. The most abusive treatment a transmission would normally receive by a driver, would be the "rocking" of a vehicle out of snow and ice or gravel. Test vehicle transmissions are shifted quickly and repeatedly from drive to reverse at high engine speed. With the rear wheels on the ground, it simulates rocks or gravel, while having the rear wheels off the ground simulates snow or ice.

During every phase of production, clutch plates are continually inspected and tested to assure all design intents are met.

Moraine lock-up clutch assemblies also undergo a complete gamut of testing, 24 hours a day. For example, fatigue stroke tests check durability under high mileage driving conditions. For a total of millions of cycles.

Lock-up clutch compression springs alone are tested for additional millions of cycles.

We also mount lock-up clutch assemblies in transmissions. Then, using engine dynamometers and test vehicles, we test the torsion damper



and friction material for function and durability. For a total of thousands of engagements under part and full throttle.

In the field, Moraine friction materials are installed in large test fleets. Hundreds of thousands of miles later, we evaluate the results. Any abnormal vehicle operation is thoroughly investigated. It's because of durability testing like this, that we can tell our customers that Moraine friction materials will operate over a wide range of road, vehicle, and driver conditions.

It all adds up to this. At Delco Moraine, the testing never stops. We're continually striving to bring you quality friction materials. For current applications, and the ever more exacting applications of the future.

## We know friction materials

For other informative booklets on our complete line of Delco Moraine products, write: Marketing Staff, Delco Moraine Division, General Motors Corporation, 1420 Wisconsin Boulevard, Dayton, Ohio 45401.

We will be happy to assist you with follow-up technical data, if desired. Our experienced staff engineers and sales engineers are available to answer any questions regarding custom-designed parts or tailored applications of our extensive product line to your individual requirements. Phone (513) 445-4921.

**Delco Moraine**  
Division of General Motors Corporation



Pc. No. DM-1880 (B)

FMSI 13441