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AUTOMOTIVE MANUFACTURING ASSESSMENT SYSTEM

Volume I: Master Product Schedules

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FINAL REPORT

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16. Abstract Volume I, Master Product Schedules, is part of a four volume set documenting areas of research resulting from the development of the Automotive Manufacturing Assessment System (AMAS) for the DOT/Transportation Systems Center. AMAS was designed to assist in the evaluation of industry's capability to produce fuel efficient vehicles. Through extensive research and synthesis of publicly available information, Master Product Timing Schedules were generated to portray, chronologically, current and future product changes and technological advances for each domestic auto (1975-85), light truck (1975-80) and selected import manufacturers (1975-80). The Schedules show (by make, model, and year): all new vehicle introductions, highlighting downsizing; styling changes; and significant technological advances in the areas of engines, transmissions, fuel metering, emission control and safety. Extensive notes and reference lists are tabulated to assist the researcher in obtaining additional information beyond that identified on the schedules.

Volume II, Product Schedules of Engine/Driveline Combinations, identifies the available engine, transmission and rear axle combinations for all models of each domestic auto manufacturer for the model years 1975 through 1978.

Volume III, Materials-Weight Analysis, is a detailed compendium of material applications to automotive vehicles and components with emphasis on technological advances and weight reduction potential.

Volume IV, Engine Manufacturing Analysis, describes a complex modern high volume engine production facility (Ford Windsor Engine Plant) and assesses the impact of year-to-year model changes and government regulatory action on the manufacturing process.

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PREFACE

Volume I (Master Product Schedules) was prepared for the Department of Transportation, Transportation Systems Center (TSC) and presents the results of research and analysis of the historical and projected introductions of new autos and light trucks of the major domestic and import vehicle manufacturers. The work was directed by the Transportation Industry Analysis Branch under the sponsorship of the Energy Programs Division.

The motor vehicle manufacturers' ability to meet 1979-1985 fuel economy goals is heavily dependent upon the timeliness and degree by which they are able to reduce the size and weight of today's fleets, and incorporate more fuel efficient power plants, drivelines, safety and emission control devices. When each manufacturer's past and announced future plans in these areas are monitored, a better understanding of the overall manufacturing process is obtained including the impact of regulatory requirements behind new vehicle introductions, and the lead time and planning involved. The results of this analysis for each of the manufacturers are in the form of Master Product Schedules which provide graphically, time phased relationships of model changes by make, year and market class.

Volume I contains the results of one of four major areas investigated under the Automotive Manufacturing Assessment System (AMAS) which was designed to evaluate the capability of the automotive industry to produce fuel efficient cars and light trucks, and to assess the impact such conversion will have on producers and consumers. The other three areas are: Product Schedules of Engine/Driveline Combinations (Volume II); Materials/Weight Analysis (Volume III); and Engine Manufacturing Analysis (Volume IV).

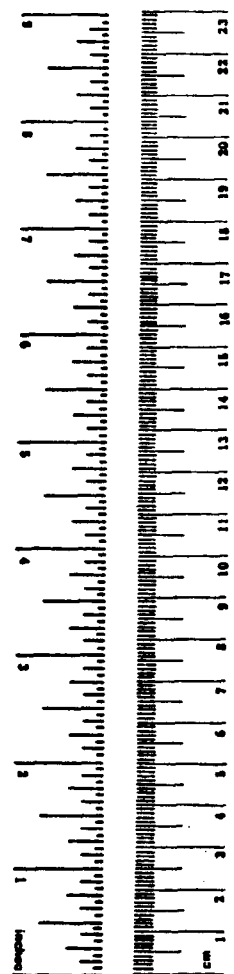
This volume is divided into four sections and appendices. Section One presents the methodology used to develop the Master Product Schedules and the product development cycle for new auto and engine introductions. Sectins 2, 3, and 4 cover product schedules for the U. S. domestic auto, domestic light truck, and import manufacturers, respectively. Supporting notation and reference sources are located in the appendices.

Corporate-Tech Planning wishes to acknowledge the guidance and assistance provided by Mr. George E. Byron, Transportation Industry Analysis Branch at TSC, who was the Technical Monitor for this program.

METRIC CONVERSION FACTORS

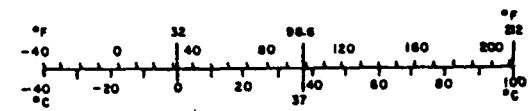
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
in^3	cubic inches	16.4	cubic centimeters	cc
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
L	liters	61.02	cubic inches	in^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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LIST OF ABBREVIATIONS

A/C	Air Conditioner
AE	Automotive Engineering
AI	Automotive Industries
AL	(Alum.) Aluminum
AMAS	Automotive Manufacturing Assessment System
AMC(AM)	American Motors Corporation
AMM	American Metal Market Metalworking News Edition
AN	Automotive News
bbl	Barrel
BL	British Leyland
B-O-P	Buick-Oldsmobile-Pontiac
BRAT	Bi-drive Recreational All-terrain Transporter
BW	Business Week
C	Chrysler
CAFE	Corporate Average Fuel Economy
CID	Cubic Inch Displacement
CIS	Continuous Injection System
CO	Carbon Monoxide
CR	Consumer Reports
CTP	Corporate-Tech Planning Inc.
CVCC	Compound Vortex Controlled Combustion
c.w.	Curb Weight
DFP	Detroit Free Press
DOT	Department Of Transportation
ECC	Electronically Controlled Carburetor
EEC	Electronic Engine Control
EFI	Electronic Fuel Injection
EFM	Electronic Fuel Management
EGR	Electronic Gas Recirculation
EPA	Environmental Protection Agency
ESC	Electronic Spark Control
EST	Electronic Spark Timing
F	Ford Motor Company
FDB	Front Disk Brakes
FI	Fuel Injection

FIOD	Ford Integral Overdrive
FWD	Front-Wheel Drive
GLC	Great Little Car
GM	General Motors Corporation
GMC	GMC Truck & Coach Division, General Motors Corp.
GVW	Gross Vehicle Weight
GVWR	Gross Vehicle Weight Rating
HC	Hydrocarbons
H.D.	Heavy Duty
HP	(hp) Horse Power
IH	International Harvester
L (ℓ)	Liter
L-M	Lincoln-Mercury
MB	Mercedes-Benz
MCA	Mitsubishi Clean Air
MFR	(mfr) Manufacturer
MPC	Multi Purpose Carrier
MPG	(mpg) Miles Per Gallon
MPH	(mph) Miles Per Hour
MT	Motor Trend
MVMA	Motor Vehicle Manufacturers Association Of The United States, Inc.
MY	Model Year
NHTSA	National Highway Traffic Safety Administration
NO_x	Oxides Of Nitrogen
OHC	Overhead Camshaft
OHV	Overhead Value
ORV	Off Road Vehicle
PB	Power Bench
PFDB	Power Front Disk Brakes
PM	Popular Mechanix
PROCO	Programmed Combustion
PS	Power Steering (In Notes)
PS	Popular Science (In References)
PS-B	Power Split Bench
PU	Pick-Up Truck

LIST OF ABBREVIATIONS (Continued)

PV	Pick-Up, Van And 4WD
RFI	Radio Frequency Interference
R&T	Road & Track
SA	Scientific American
SAE	Society Of Automotive Engineers
SEEC-T	Subaru Exhaust Emission Control - Thermal And Thermodynamic Control
T	Time
TGP	Turbulence Generating Pot
THM	Turbo Hydramatic
TSC	Transportation Systems Center
TTCS	Toyota Total Clean System
VV	Variable Venturi
VW	Volkswagen
WAR	Ward's Automotive Reports
WAW	Ward's Auto World
WAY	Ward's Automotive Yearbook
WB	Wheelbase
WEU	Ward's Engine Update
WSJ	Wall Street Journal
4WD	(4-WD) Four-Wheel Drive

1. INTRODUCTION

1.1 BACKGROUND AND PURPOSE

The development of the Master Product Schedules for the major U.S. automotive manufacturers resulted directly from work performed on the design of the Automotive Manufacturing Assessment System (AMAS) data base. The purpose of AMAS was to provide the Department of Transportation with a means to evaluate the capability of the automotive industry to produce fuel efficient cars and to assess the impact--both on producers and consumers--of converting to such vehicles. During the development of this system, a need arose for a better understanding and representation of the automotive product planning cycle, including scheduled introduction dates of both vehicles and technology improvements, and the lead times required. Master Product Schedules were designed to fill this need.

The schedules provide a means for tracking changes in each manufacturer's product plans. Historical as well as projected introduction of new vehicles, and the frequency of change in the existing vehicles by make, model, and year are depicted. When used in conjunction with the Product Planning Cycles (timing diagrams) the schedules also assist in estimating the lead time a manufacturer may require towards meeting the fuel economy and emission standards of subsequent years.

1.2 PRODUCTION TIMING PHASES

Each manufacturer uses internal Production Timing Schedules to track each of the many product programs which are on-going at any one time. These Schedules present the significant milestones and lead times required to institute changes for any given year.

The introduction of each new auto, as well as major body and styling changes requires a considerable degree of planning and advanced scheduling. It is a complex process with hundreds of interlocking events. The planning process and major phases leading up to Job Number 1 (full volume production) consist of: cycle planning and concept definition; vehicle sizing and concept development; styling and design; engineering; prototype building and testing; tooling and

facilities; and full volume production. This process spans a period from thirty months to six years depending upon the extent of change, technology required, and resources committed. The automotive industry generally uses a 60-month nominal cycle for evolutionary type changes such as the introduction of completely new automobile or major body restyling.

Figure 1-1 is an example of the Production Timing Schedule applied to the development of an all new domestic auto. The time duration and degree of overlapping between each phase should be noted. The major milestones are not precise dates, but often periods extending for weeks, or as much as a month, depending upon complexity of the program, and tempo of competitive forces, economic market, and corporate strategy. The Final Program Approval (Month 28) is a significant event in that a decision is made for volume production and capital expenditure. Up to that time, only a relatively small proportion of the total investment for that model year has been spent. Applying this example to a new 1984 model vehicle, initial planning would have just started in 1978 if the manufacturer expects to achieve volume production by August 1983. The Program Approval decision will have to be made in April 1981. A more detailed description of the production timing phase activities is provided in Table 1-1.

The Timing Cycle, a product of fifteen to twenty years of fine tuning the automotive design and manufacturing process, is a compromise between resource commitment, lead time, and ability to react to consumer and competitive forces with last minute work-in-process changes. Except for differences among individual phases, the 60-month timing cycle seems to apply to engines as well (see Figure 1-2); although historically, new engine introductions are less frequent (production duration of ten years or more are typical) than styling changes.

Recent evidence indicates that product planning cycles have been stretching out over the years. Prior to 1975, the normal cycle was 42 months (versus the 60-month cycle discussed above). Reports suggest this cycle may well expand to ten years in the near future. The extention of the cycle reflects the intense additional effort to plan new products to meet increasingly stringent federal regulations

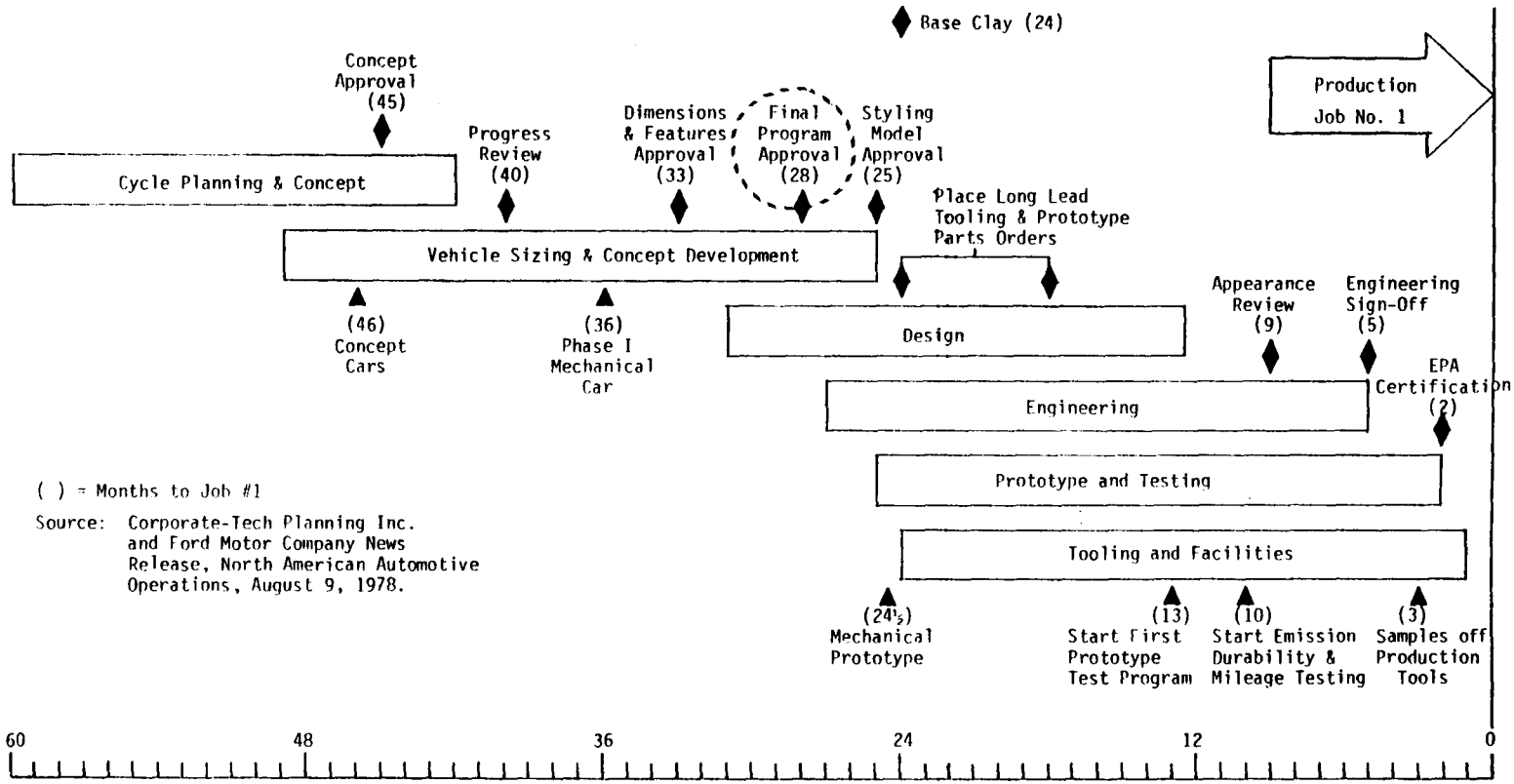


FIGURE 1-1. STANDARD VEHICLE TIMING PLAN (FORD MOTOR COMPANY)

TABLE 1-1. PRODUCTION TIMING PHASES

Phase	Activities
Cycle Plan and Concept Definition	. Styling, engineering and product planning . Manufacturing costs, competitive pressures and projected market options and alternatives . Tentative new car line proposal . Advanced testing of experimental system for emission, fuel economy
Vehicle Sizing and Concept Development	. Car production program initiation-establishment of broad car development objectives. Number of models offered, performance level, equipment and options, size and weight, cost trade-offs, producibility investigation, body styling, space envelope, exterior and interior dimensions, etc. . Program approval, management review of preliminary design, commitment of major corporate resources
Design	. Hard point establishment . Detailed styling with alternatives . Clay model development and review . Final styling selection
Engineering	. Detailed parts, components and subsystem design . Detailed specifications and drawings . Material lists . Manufacturing methods and production process engineering . Tooling design, patterns, and facility requirements, plant layout . Material and parts flow
Prototype and Test	. Engineering prototype build . Full scale model approval . Prototype testing-mechanical, engineering and EPA certification
Tooling and Facilities	. Parts procurement . Selection of vendors and suppliers . Tool construction . Tooling installation . Specialized machinery and tooling test and checkout . Pilot assembly and experimental production runs
Production	. Production build up . Full scale production

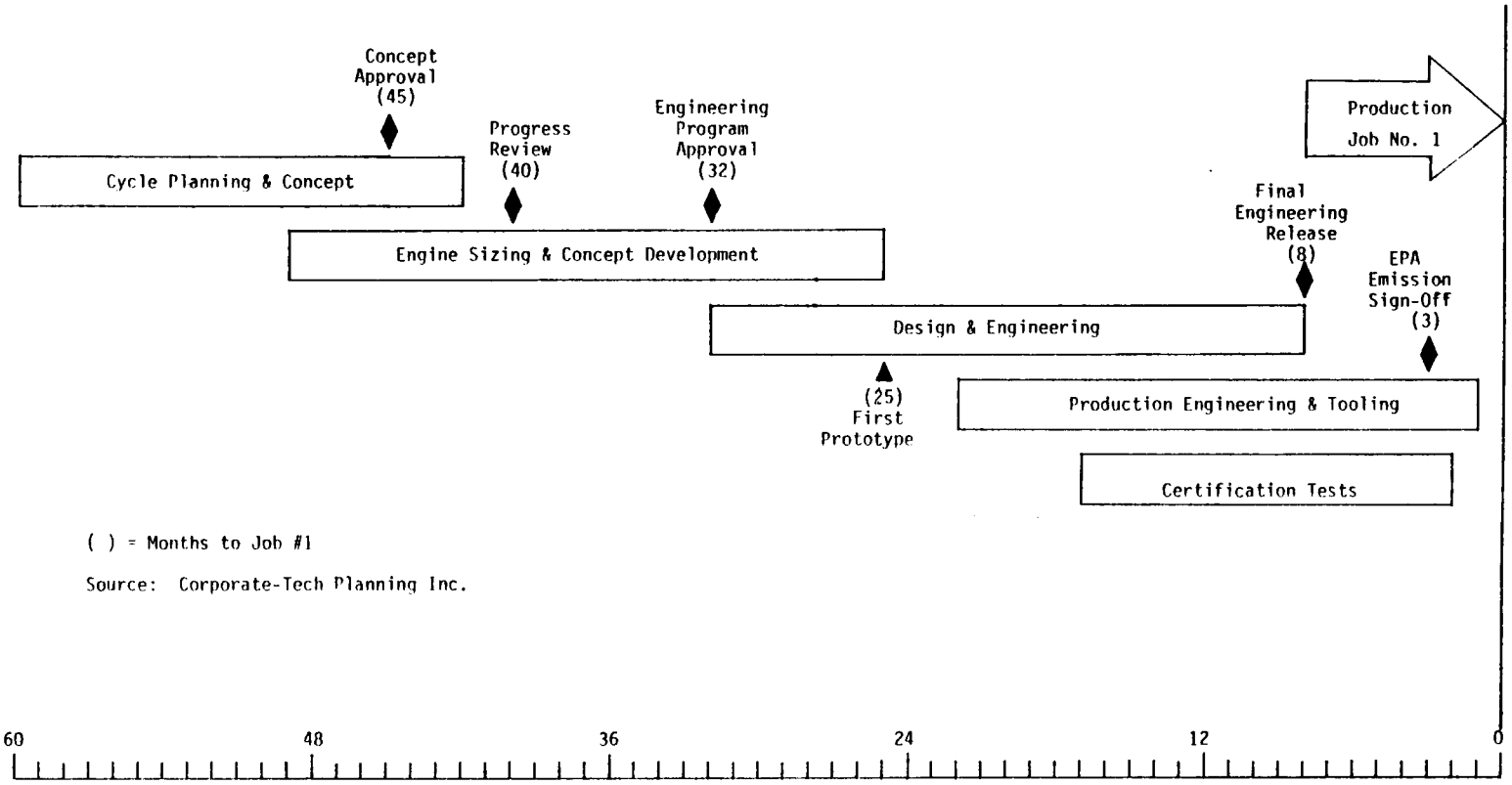


FIGURE 1-2. STANDARD ENGINE TIMING PLAN (FORD MOTOR COMPANY)

(emissions safety, fuel economy) and still be competitive in the marketplace. This expansion of the planning cycle appears to contradict the current need to shorten the lead time in order to be more responsive to change in the regulatory climate. New products are replacing old at a much faster pace resulting in the commitment of vast amounts of capital in a relatively short span of time.

Conventional timing cycles are not valid for products that differ from the standard internal combustion engine and front engine mounted - rear drive domestic auto. GM and Ford estimate as much as six years for design, engineering and tooling of the new power plants to meet the proposed emission, safety and fuel economy standards of the mid 1980's and as much as 15-20 years for alternative turbine and stirling engines. These durations are primarily due to: absorption of new technology in solving basic regulatory problems (emissions, safety, etc.); development or conversion of manufacturing plants and tooling to mass produce the new more efficient vehicles; testing and certification of such vehicles; and the orderly phase-in of the new vehicles as the production of conventional autos winds down.

The magnitude of these efforts can be appreciated from the timing diagrams of a given model year. As an example (Figure 1-3), in going into the 1979 model year, one manufacturer has: (a) wound-up production for the 1978 year; (b) initiated 1979 volume production on completely new full size vehicles and performed facelifts on all other models; (c) placed tooling orders and started prototyping testing for 1980 model year vehicles, some of which will undergo major body changes while others will have facelifts; (d) is in the middle of styling, review of base clay, and engineering for the 1981 models; and (e) is in the planning and concept phase for the 1982 through 1984 models. Interlaid among these activities are the engine and vehicle modifications necessary to meet the more stringent emission and fuel economy standards in successive years. Moreover, resource and capital limitations restrict the amount of change a manufacturer can perform yearly. As the example shows, major redesign or an all new vehicle introduction is limited to a few model lines while the majority of vehicles undergo only minor or no change.

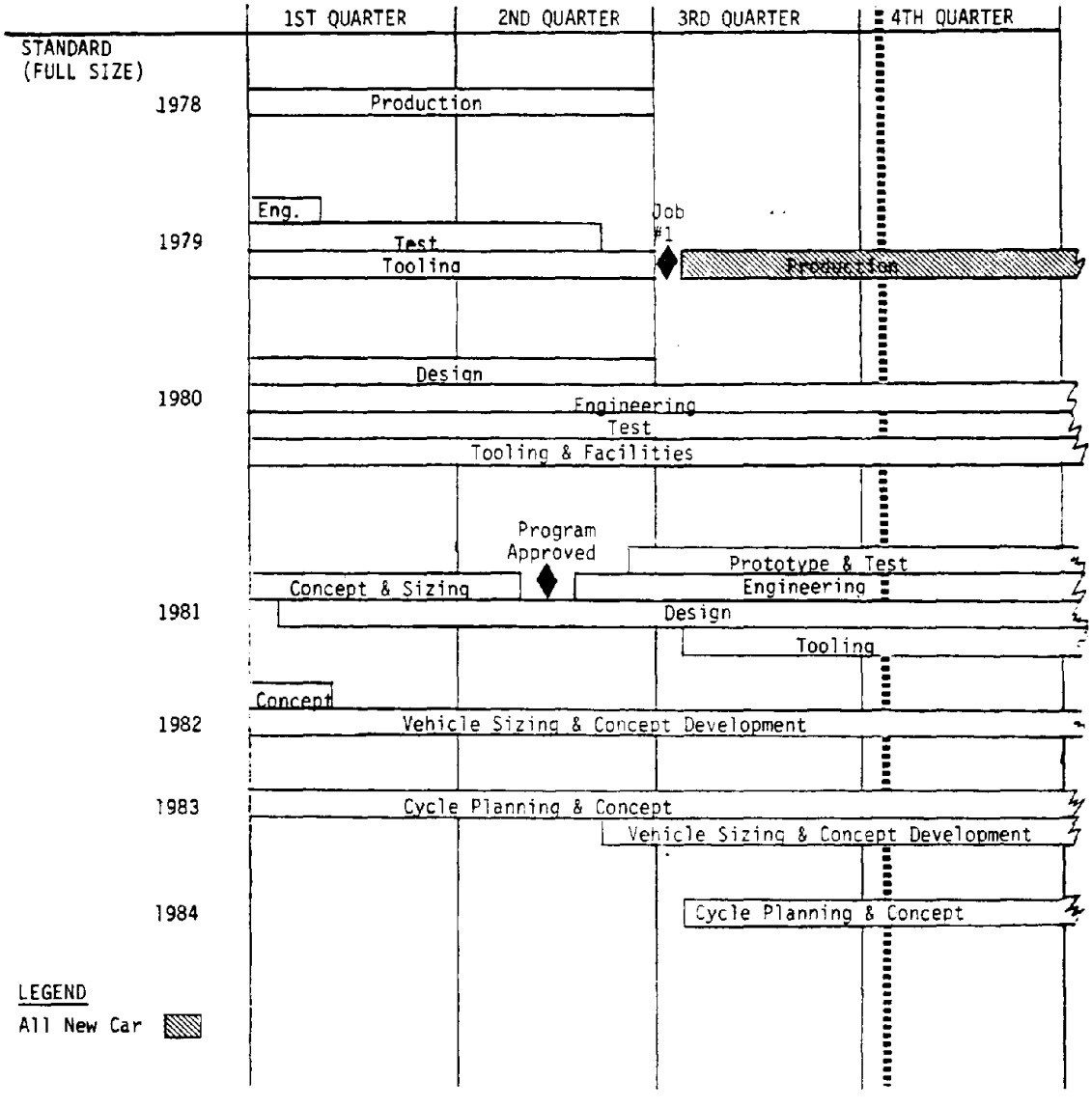


FIGURE 1-3. COMPOSITE OF SUCCESSIVE MODEL YEAR TIMING SCHEDULES

1.3 MASTER PRODUCT SCHEDULES

With the industry product timing cycles as a basis for defining the automotive production process, Master Product Schedules were developed for the domestic automobile and light truck manufacturers, and a select number of the foreign import manufacturers. The effort involved extensive research and synthesis of publicly available information (trade journals, news media) starting with the 1975 model year through to the present, with projections to 1985 to the extent that data was available.

The domestic auto Master Production Schedule was the basis of methodology development, and was extended, with some modification, to light trucks and selected foreign import manufacturers. The basic methodology for the domestic autos was the development of a series of charts, (one for each manufacturer) which recorded continuously, yearly changes in a manufacturer's product offerings by model series, body size, and market class. The changes identified included: all new auto introductions, major body and styling changes, downsizing, new engines, driveline and other technological advancements, and their respective time phase relationships.

The charts are designed to provide an overall perspective of a manufacturer's product plan, and how these plans changed in response to current and future regulatory requirements. The charts also indicate a manufacturer's product mix (along with basic specifications of wheelbase and curb weight), what vehicles are derivatives of others, length of time since the last vehicle's change, and when vehicles' name plates are added or changed to counter competitive offerings or to revise market position.

A detailed description of the domestic auto Master Product Schedules is contained in Section 2.

The methodology used for the light trucks (Section 3) is basically the same as for passenger cars except that the variation of mission for each vehicle is emphasized rather than the market class. To facilitate ease in comparison, the format of the light trucks is similar to that of passenger cars. More detailed specifications are provided for each vehicle to reflect the subtle changes usually made

from year to year. Model changes for light trucks are shown in the same manner as for passenger cars.

The format used for domestic passenger cars and light trucks was also retained for the foreign passenger cars (see Section 4). In addition to the U.S. introduction date, the introduction date in the home market is highlighted since many models have been previously tested in the domestic market.

2. THE DOMESTIC AUTO MANUFACTURERS

2.1 GENERAL

The current and projected product schedules of new domestic passenger cars reflects technology improvements based on research sources through May 1, 1978. The Master Product Schedules for all four domestic manufacturers are presented in Figure 2-1 through Figure 2-8 with explanatory notes and cross-reference lists pertaining to the schedules in Appendix A. Some general comments applicable to all schedules are as follows:

Market classification, as used here, broadly categorizes models according to size or particular market segment (i.e., luxury, compact). The convention follows the industry trade and media practices* except for some minor changes to maintain consistency. For example, the Buick and Oldsmobile C-Bodies, along with Cadillac C-Body models, are all considered Luxury-Standards. Moreover, Luxury-Standard applies only to large luxury cars (Lincoln, full-sized Cadillacs, New Yorker, etc.) even though other luxury models exist in the smaller classes, such as the intermediate size Cadillac Seville. Specialty cars such as the Riviera, Corvette, Thunderbird, Cordoba, etc., are located in the class closest to their size or market.

The four basic levels of body changes used by each manufacturer are shown by number coding the models each year. These changes are:

① All new car, new body
② New sheet metal
③ New grille, tail lights, trim
④ Carryover, no change

Table 2-1 describes these changes in more detail. Although each auto manufacturer may differ on terminology, there is general agreement on substance. The lead time from clay approval to volume production refers to the production timing phases discussed in

*Wards Automotive Reports and Automotive News Market Classification

Section 1. An all new vehicle requires the most lead time whereas a new grille, minor sheet metal or ornamentation change requires less.

TABLE 2-1. CATEGORIES OF VEHICLE CHANGE

CATEGORY TYPE	LEAD TIME (CLAY APPROVAL TO VOLUME PRODUCTION)	DEGREE OF CHANGE
All New Vehicle All new body	24½ months	All new car; or all new body; or complete exterior sheet metal including new roof. (Requires new hard points/basic vehicle dimensions).
Major New Sheet Metal	23½ months	All new sheet metal below the window line; or new front and rear-end sheet metal; or new front or new rear sheet metal with new roof.
New Grille, Tail Lights, Minor Sheet Metal, and Trim	20 to 22½ months	New front or new rear end sheet metal; or new fenders; or new quarter panels; or new roof; and/or new grille, new taillamps, new exterior ornamentation.
Carry Over	18 months	No change at all to vehicle; or very slight change to ornamentation at most.

An all new car or completely new body is a major resource expenditure; hence, the changes are made sparingly and not on all models in a single year. Once a new model or body has been introduced, it receives little or no change (carry-over) the following year, and then minimal facelift (trim, grille, tail light, etc.) each succeeding year thereafter until the style has run its course. Ford's Maverick and Pinto were introduced in 1970 and 1971 respectively as new models and were offered in the 1977 model year with little styling change other than minor sheet metal and trim.

The fact that the same type of body change is often shown for all model series within the same classification is not by coincidence. Industry typically will introduce a basic body or new

auto for a given class, and then derive all other models in the same class from this basic style. The derivatives will often be introduced in the same model year in order to maximize promotional benefits. Name plate changes and body derivatives have been emphasized, particularly when it affects a change in market segment.

Major technology improvements are presented at the bottom of the chart or within the market class to which they apply. Such improvements include: all new engines and transmissions; new engine control systems; and other innovations affecting fuel economy such as material substitutions, etc.

The emission control requirements alone constitute an all new car change when it comes to resource expenditures and investment, and these changes contribute little to the shape or style of the car. The response to demands for smaller engines, lighter vehicles and shorter wheelbases shows up on all charts for 1976 on. The reduction of models and options offered for 1976, as well as minimization of styling changes, is due in large part to redirection of resources towards meeting emission control and fuel economy requirements for 1979 and beyond. The standard and intermediate size vehicles saw a concentration of weight reduction and shorter wheelbases in 1977 and 1978 as industry attempted to maintain large car sales levels by offering "roominess" on a more economical basis. This same strategy prevails in 1979 as all manufacturers attempt to re-size their complete model line up.

The extension of product changes to 1985 is based on manufacturers' changes prior to 1980 in conjunction with future plans as reported in the media. Consequently, five to six year intervals between major styling changes were carried through for General Motors, six to eight year intervals for Ford and Chrysler, and eight year intervals for AMC. AMC's product scheduling has been the most difficult to estimate due to the severity of its current business problems and estimations beyond the 1979 model year are speculative in nature. Beyond 1981, estimations are equally speculative for the other three manufacturers.

A wheelbase change is a convenient measure for monitoring down-

sizing trends. Name plates and wheelbase data therefore, are projected in as much detail as is known. Known specific weights of models are also identified and are helpful in tracking weight reduction programs.*

As the vehicle wheelbase and curb weight are reduced, the engine sizes required to maintain equivalent performance levels correspondingly become smaller. Therefore, cases where a manufacturer drops a large engine from its inventory are noted.

As mentioned previously, capital and other resource limitations allow only a few new model introductions in a given year. Occasionally, a newly introduced downsized car in one market class may end up equal in size or even smaller than its counterpart in the next smaller market class. This results in two vehicle lines competing against each other in the same weight range, a dilemma faced by all manufacturers trying to downsize their complete vehicle spectrum by the 1982 model year.

This situation may be circumvented in a number of ways. One option is to drop competing lines. Chrysler plans to do this in 1979 by discontinuing the older intermediate B-Body and replacing it with the new full sized R-Body cars (which were reduced to the former B-Body weight class). Another approach is to allow the two lines to compete in the same weight class for one year until the next class is downsized. GM pursued this strategy in 1977 when the weight of the new, downsized, standard B-Bodies competed in the same weight class as the old intermediate A-Body in order to preserve the A-Body customer base.

The following commentary summarizes each manufacturer's past and future product plans in the vehicle and technology areas.

*Refer to Volume III, Materials-Weight Analysis for more detailed discussion.

2.2 GENERAL MOTORS

GM's six year plan calls for each car in the entire corporate passenger car lineup (except the Chevette which was new for 1976) to be reduced in size between 1977 and 1982. In domestic automobile manufacturing, GM is number one and provides the leadership due to its greater resources and ability to accomplish model introductions and weight reduction in a more systematic manner. Figures 2-1 and 2-2 present GM's passenger car Master Product Timing for 1975 to 1980 and 1980 to 1985 respectively.

Technology is advancing so fast, that information can become obsolete in a matter of months. Because of the rapid changes in engine developments at GM, many new engines planned for the 1980's have come to light since May 1978 when the Schedules were completed. As a result, only about half of the potential new engines are shown on the Schedules.

1977 - The complete line of B and C Bodies (Standard and Luxury Standard models) were downsized with an all new structure, frame and styling. Wheelbases were reduced five to nine inches with a corresponding weight loss of 700 to 800 pounds. Pontiac introduced the 151 CID, L-4 "Iron Duke" engine which replaced the Chevy 140 CID, L-4 aluminum block engine in 1978.

1978 - Downsizing extended to the Intermediate class as GM introduced all new A-Bodies. Vehicle weight was reduced by 400 to 800 pounds as the wheelbase dropped to 108.1 inches from 112 to 116 inches. Chevy and Buick each introduced new 90^{o} V-6 engines of 200 and 196 CID, respectively, for use by the new A-Body models. The Olds 350 CID diesel V-8 engine (GM's first passenger diesel) was introduced on full-sized Olds models and the Cadillac Seville in mid-year. The relatively unpopular Vega and Astre Subcompact nameplates were dropped with the Monza and Sunbird lines expanding to include hatchback and wagon models. A new Chevette 4-door model was introduced with a wheelbase three inches larger than the two-door at 97.3 inches. The Chevette also received the first passive belts to be offered on a domestic vehicle available in the spring as an option. Buick introduced its new 231 CID turbocharged V-6

engine on the Regal and LeSabre which is the first turbocharged engine to employ electronic spark control to retard the spark at the first sign of engine knock. Introduction of the first 3-way catalyst equipped car using electronic carburetion was initiated on several California models.

1979 - The front-wheel drive Toronado and Eldorado E-Body luxury cars and the Riviera B-Body rear drive will be downsized to new front-wheel drive E-Body models. This new E-Body is essentially a stretched A-Body frame with front-wheel drive. A new THM 325 automatic transaxle will be used in these new models. The Riviera will use a turbocharged 231 CID V-6 engine as standard, the Toronado will use a 260 CID V-8, and the Eldorado will use a 350 CID V-8. Oldsmobile is expected to introduce a new 260 CID diesel V-8 during the model year. A new turbocharged 151 CID L-4 engine will be introduced by Pontiac for use on selected models. The introduction of all new front-wheel drive X-Body compacts has been delayed until the Spring of 1979 and will be introduced as 1980 models. Improvements in carburetors and the use of light weight materials continued selectively on all models.

1980 - The new X-Body compacts with front-wheel drive will be introduced as early 1980 models in the Spring of 1979 with an expected wheelbase of 103.5 inches and a curb weight of 2700 pounds. Buick and Oldsmobile will have two and four door notchback sedans and Pontiac and Chevrolet will have two and foor door hatchback sedans. A new THM 125 automatic transaxle and four speed manual transaxle will be available on the new X-Bodies. Chevy will have a 2.8 liter, 60° V-6 and Pontiac, a transverse 151 CID L-4 available on the compacts. The Cadillac Seville will be an all new K-Body on a stretched A-Body frame with a wheelbase of 114 inches. The B and C-Body standard cars will have all new sheet metal with weight reduction of 200 pounds. Other new engine introductions include: a 267 CID Chevrolet V-8; a 2.2 liter transverse Pontiac L-4; and a Buick 231 CID diesel V-6. A new three-speed automatic transmission with lock-up torque converter should be available on the larger cars. The Chevrolet Corvette will get new lightweight

materials and a smaller 305 CID V-8 engine which will reduce the weight of this car by 400 pounds.

1981 - The subcompacts will be downsized and changed to front-wheel drive and separated into two distinct designs. The Monza and Sunbird will be new U-Body front-wheel drive subcompacts and the Starfire and Skyhawk new sporty X-Special front-wheel drive subcompacts. A new front-wheel drive X-Body station wagon with a wheelbase of 104.9 inches and a curb weight of 3000 pounds is expected to be introduced. A-Body models will receive all new sheet metal, and a new four-speed automatic transmission with overdrive and lock-up torque converter will be available. Airbags will again be offered as optional equipment on large cars. The 5.0 liter (305 CID) V-8 will be the largest gasoline engine. (The 350 CID diesel V-8 will still be offered). New engines will include a turbocharged 260 CID Oldsmobile V-8, and a 1.8 liter Chevy L-4. Phase II 3-way catalytic converters with closed loop electronic fuel metering will be offered on all non-diesel powered engines. EFI single point injection systems will be offered on selected models.

1982 - The F-Body Camaro and Firebird will be downsized to a wheelbase of 102 and 103 inches and will retain the conventional rear wheel drive configuration. This completes the downsizing of the entire General Motors passenger car line-up. The front-wheel drive, E and K-Bodies will receive new sheet metal and Chevrolet is expected to introduce an all new, from the ground up, 350 CID diesel V-8 engine.

1983 - The second round of downsizing starts this year with the C-Body luxury standards being reduced to a wheelbase of 118 inches and converted to front-wheel drive. The B-Body standard cars will also be downsized to a wheelbase of approximately 112 inches. A new four-speed overdrive automatic transaxle will be available for the new downsized front-wheel drive C-Bodies. The Chevette is also expected to be converted to front-wheel drive on a 90 inch wheelbase. The 267 CID Chevy V-8 will be the largest engine available on any model with the exception of the Corvette which will still have a 305 CID engine offered.

1984 - The Corvette will be an all-new Y-Body downsized to a curb weight of 2500 pounds. A smaller turbocharged engine is expected to be offered in the Corvette at this time.

2.3 FORD MOTOR COMPANY

Ford has allowed GM to test the market's acceptance of downsizing and has decided not to start its general downsizing program until 1979 with the introduction of new standard size cars, two years behind General Motors. To stay competitive with GM, Ford introduced new compact models in 1978 which were designed to compete against GM's new downsized A-Body intermediates. The complete revision of the intermediate/mid-size line-up of cars in 1980, and the introduction of new luxury standard models will essentially bring Ford up to date with General Motors in their downsizing strategies. Figures 2-3 and 2-4 present Ford's passenger car Master Product Timing for 1975 to 1980 and 1980 to 1985 respectively.

1977 - In addition to the new Cougar and Thunderbird, the Versailles was introduced as a new luxury intermediate at mid-model year. This was the last year of production for the Maverick and Comet.

1978 - New compacts to replace the Maverick and Comet were offered. Named Ford Fairmont and Mercury Zephyr, they include a complete line of two and four door sedans and station wagons in the 3,000 pound inertia weight class. With a wheelbase of 105.5 inches and increased interior volume, these models were marketed against the new GM A-Body intermediates in the mid-size class. The Fiesta front-wheel drive imported mini car was introduced to test the small car market. Electronic engine control (EEC I) was introduced on the Versailles 302 CID V-8 engine with the capability of controlling both spark advance and EGR flow rate. Three-way catalysts were introduced for the first time on a limited number of California models (Pintos and Bobcats). Torque converters on all automatic transmissions were improved to increase their efficiency and improve fuel economy.

1979 - Ford's new downsized standard models, as well as an all-new upsized Mustang and Capri highlight the model year. Aluminum

intake manifolds will be offered on 351 CID V-8 engines. The Mustang and Capri will be available with a new 140 CID turbocharged L-4 engine. EEC II (Electronic Engine Control of Spark, EGR, and air/fuel ratio using a three-way catalyst and feedback carburetor) will be in wide use on California models. Improvements in weight reduction continue to be selectively used on all engines and models.

1980 - Luxury-Standard models will be downsized with wheelbases six to ten inches less. New intermediate models will be introduced with wheelbases similar to the Granada/Monarch which will be merged into the intermediate line. A new 255 CID V-8 engine will be introduced as the 400 CID V-8 engine is dropped. This new engine will be widely used in the intermediate as well as standard models. Passive belts will be available on some models.

1981 - A new front-wheel drive (European/American) Pinto notchback compact will be introduced with a two-seat sport version. By this time, the Fairmont/Zephyr will have been upgraded to low price intermediates and the new Pinto along with the Mustang and Capri will become compacts. All vehicles will be equipped with three-way catalysts and exhaust sensors with either feedback carburetors or electronic fuel metering systems. New 1.6 liter and 1.3 liter four cylinder engines with aluminum intake manifolds and aluminum heads will be used on the new front-wheel drive Pintos. Air bags will be optional on large cars.

2.4 CHRYSLER CORPORATION

Chrysler's master plan is to standardize all models on four basic wheelbases with two wheelbases being used in the subcompact and compact classes in front-wheel drive configurations, and two wheelbases being used in the intermediate and standard classes with conventional rear-drive configurations. This standardization will allow Chrysler to offer a full line of models yet still be able to obtain manufacturing efficiencies and cost savings which will keep it competitive in the market. Figures 2-5 and 2-6 present Chrysler's passenger car Master Product Timing for 1975 to 1980 and 1980 to 1985 respectively.

1977 - The M-Body Dodge Diplomat and Chrysler LeBaron were introduced as intermediates in mid-year. Two and four-door coupes and sedans with 318 CID V-8 lean burn engines were included in the initial offering. This was the last year for the C-Body Grand Fury, Royal Monaco, and Newport sedan and wagon.

1978 - Station wagons were added to the Diplomat/Lebaron line as no more full-sized wagons are offered. The Fury and Monaco B-Bodies became the interim standard-sized car pending the introduction of the new R-Body in 1979. The Magnum XE edition of the Charger SE was introduced and will replace the Charger for 1979. The Dodge Omni and Plymouth Horizon subcompact L-Body models were introduced mid-year as four-door hatchbacks with front-wheel drive and a transverse VW 1.7 liter four cylinder engine. The use of the lean burn spark advance system was extended to all V-8 engines and a new lock-up torque conterter was standard on most six and eight cylinder engines using automatic transmissions.

1979 - The new downsized R-Body standard and luxury standard models will be introduced on a wheelbase of 118.5 inches. This is a reduction of three to six inches over the old models. The 400 CID and 440 CID V-8 engines will be dropped making the 360 CID V-8 engine the largest engine. The Fury, Monaco, and Charger SE intermediate models will be dropped. On the other end of the scale, new two-door, front-wheel drive subcompact Omni/Horizon models will be introduced to complement the four-door models introduced in 1978. A new three-speed automatic transaxle with lock-up torque converter will be available on the L-Body subcompacts. The lean burn system will be dropped on four and eight cylinder engines in favor of an electronic spark control system. Advances in weight reduction will continue to be instituted selectively on all models.

1980 - The entire intermediate line received new sheet metal and wheelbase changes to conform to the Volare/Aspen size. The Cordoba/Magnum two-door models will be reduced slightly to a wheelbase of 112.7 inches which is the same as the Diplomat/LeBaron and Volare/Aspen four-door sedans. The Diplomat/LeBaron two-door coupes will be reduced to a wheelbase of 108.7 inches, the same size as the Volare/

Aspen two-door coupes. This is the last year for the conventional Volare/Aspen, since they will be changed to front-wheel drive in 1981. The Imperial nameplate will be revived on a new luxury Y-Body intermediate with a wheelbase of 112.7 inches in mid-year. A turbocharged 1.7 liter four cylinder engine will be available for the sporty two-door L-Body subcompacts.

1981 - The Volare/Aspen compacts will be downsized to a wheelbase of 100 inches and changed to a front-wheel drive configuration called the K-Body. Weight will be reduced 600 to 700 pounds. A new 2.2 liter four cylinder Chrysler engine with a new Chrysler four speed overdrive manual transaxle will be used in the new front-wheel drive K-Body. The Omni/Horizon will receive new sheet metal and will be resized to a wheelbase of 94 inches.

1982 to 1984 - In 1982, a new front-wheel drive luxury compact K-Body will be introduced giving Chrysler luxury models in the compact, intermediate, and full sized classes. A second round of downsizing is expected to start in 1983 with the full-sized R-Bodies being reduced to a wheelbase of approximately 110 inches and the intermediate models being reduced to a wheelbase of 106.7 inches in 1984. Several diesel engines will be introduced and also a new small four cylinder engine to replace the 1.7 liter VW engine.

2.5 AMERICAN MOTORS

Business problems, continuing deterioration of sales, a shortage of capital and other resources for design, development and tooling, permit very few improvements in AMC passenger car lines. Beyond the Pacer station wagon, introduced in 1977, no new introductions are planned before 1984. Changes which are implemented will be cosmetic and limited to sheet metal only. Figures 2-7 and 2-8 present American Motor Corporation's passenger car Master Product Timing for 1975 to 1980 and 1980 to 1985 respectively.

1977 - The two-door Pacer station wagon was introduced as an all-new model in the compact class. The Gremlin received major sheet metal improvements and an optional Audi four cylinder 2 liter engine.

1978 - The Pacer sedan and wagon received a new hood and front end with an optional 304 CID V-8 engine. The complete Hornet line was upgraded with new interior, instrument panel, headlights, grille, and new front and rear ends. The Hornet nameplate was dropped in favor of the AMX for hatchback coupes and Concord for the rest of the line. In mid-year, a SPacer van package was introduced as a dress-up option for the Pacer wagon.

1979 - The subcompact Gremlin will receive all-new sheet metal and will be renamed. All automatic transmissions will receive the Chrysler lock-up torque converter.

1980 - The Audi four cylinder 2 liter engine will be dropped and AMC will pruchase the Pontiac 151 four cylinder engine in its place. This move will be made to conserve capital which would have been required to build the Audi engine.

1981 to 1984 - Sheet metal changes predominate as the Pacer sedan, wagon and Concord are revised, one per year. A new mini car is expected to be introduced in 1984 weighing approximately 2,000 pounds and obtaining forty miles per gallon.

GENERAL MOTORS

MARKET CLASSIFICATION MAKE-SERIES

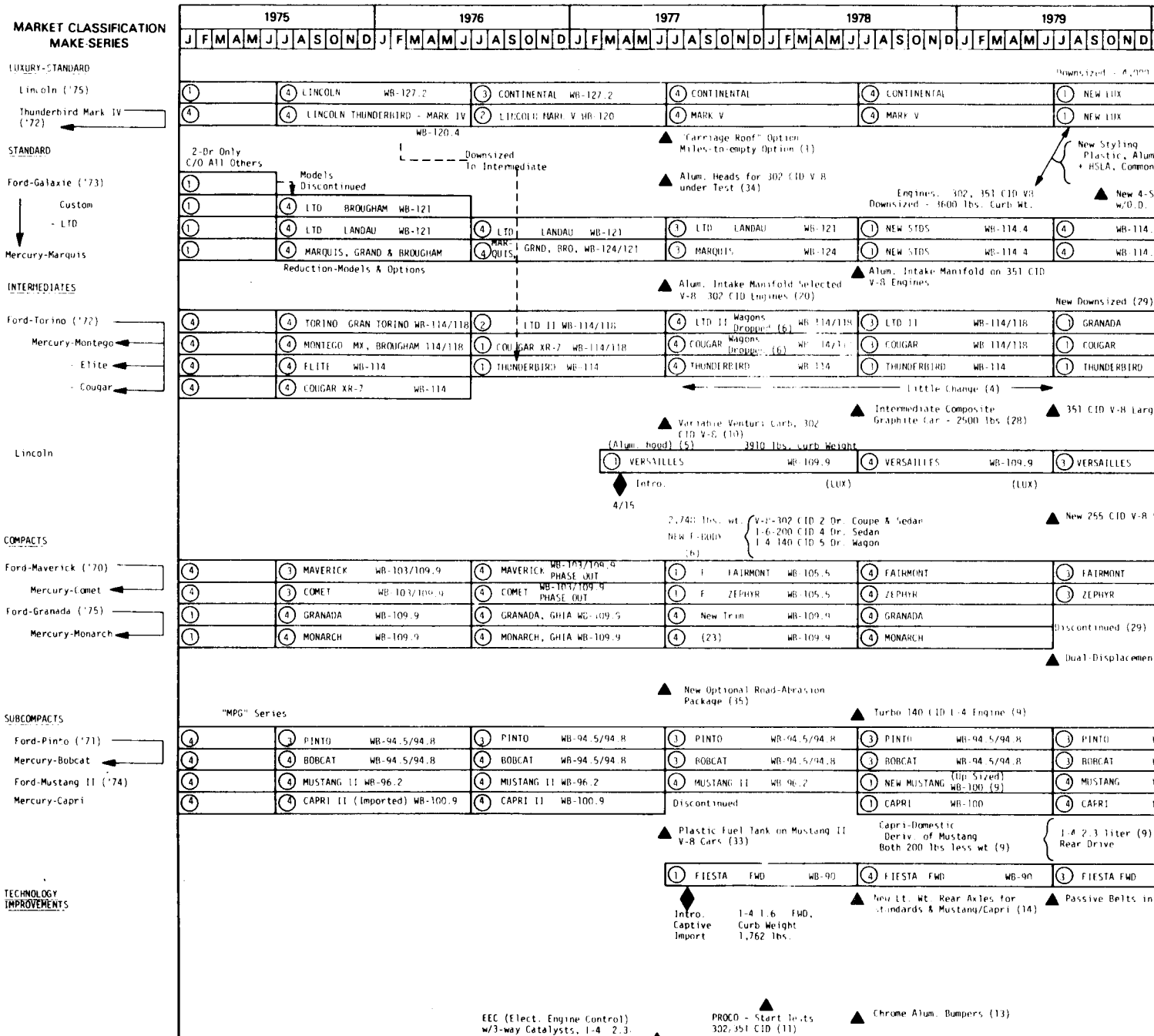
		1975	1976	1977	1978	1979
		J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S
LUXURY-STANDARD				▲		
Cadillac	C	(4) DeVILLE | (3) CALAIS, DeVILLE WB-130	(1) NEW C WB-121	(4) C WB-121	(1) C	(2)
Cad., Olds., Buick	E	(4) ELDORADO, TOR, RIV. | (3) TORONADO, RIVIERA, WB-122 ELDO 126	(1) RIVIERA NEW B WB-122/126	(4) TOR&ELDO WB-122/126,RIV WB-116		New Sheet
Oldsmobile	C	(4) 98, REGENCY | (3) 98, REGENCY WB-127	(1) NEW C WB-119	(4) C WB-119	(3) C	(2)
Buick	C	(4) ELECTRA | (3) ELECTRA, LIMITED 225, WB-127	(1) NEW C WB-119	(4) C WB-119	(3) C	(2)
			Light Weight (700-800 lbs) Shorter Wheelbase	Olds V-8 Diesel, Option 350 CID (1) ▲	STRETCHED A-BODY FWD	
STANDARD (Regular)						New Sheet
Chevrolet	B	(4) BELAIR-IMPALA | (3) CAPRICE, IMPALA WB-121.5	(1) NEW B WB-116	(4) B WB-116	(3) B	(2)
Pontiac	B	(4) CATALINA | (3) CATALINA-BONNEVILLE WB-123/127	(1) NEW B WB-116	(4) B WB-116	(3) B	(2)
Buick	B	(4) LeSABRE | (3) LeSABRE, CUSTOM WB-124	(1) NEW B WB-116	(4) B WB-116	(3) B	(2)
Oldsmobile	B	(4) DELTA 88 | (3) DELTA 88, CUSTOM CRUISER WB-124	(1) NEW B WB-116	(4) DELTA 88 B HOLIDAY 116	(3) B	(2)
		Reduction-Models/Options				
				Light Weight (400-800 lbs) (New A) (2)	(1) FWD (3) (NEW) TOR,ELDO,RIVIERA WB-114	(4)
INTERMEDIATES (Mid-Size)						
Chevrolet	A	(4) CHEVELLE | (3) CHEVELLE-MALIBU-A WB-112/116	(3) A WB-112/116	(1) MALIBU NEW A (39) WB-108.1	(4) A	(3)
Chevrolet & Pontiac	A Spec.	(4) MONTE CARLO, G, PX | (3) MONTE CARLO, GRAND PRIX A sp	(3) A spec. WB-116	(1) REGAL NEW A (39) WB-108.1	(4) A	(3)
Pontiac	A	(4) LeMANS | (3) LeMANS-GRAND LeMANS A WB-112/116	(3) A WB-112/116	(1) NEW A WB-108.1	(4) A	(3)
Buick	A	(4) CENTURY | (2) CENTURY, SPECIAL CUSTOM, REGAL	(3) A WB-112/116	(1) NEW A WB-101.1	(4) A	(3)
Oldsmobile	A	(4) CUTLASS | (3) CUTLASS S-SUPREME, BROUGHAM	(3) A WB-112/116	(1) NEW A WB-108.1	(4) A	(1)
Cadillac	K	(1) SEVILLE | (1) SEVILLE - K WB-114.3	(3) K WB-114.3	(4) - WB-114.3	(3) K	(1) FWD
				(4) ▲ New 90°V-6, 200 CID (Chevelle)	▲ New THM 325 Auto Trans for FWD (3)	
				(5) ▲ New 90°V-6, 196 CID (Buick)		
				(6) ▲ V-8 Olds. Diesel (Seville)		(8) (New X) FWD Curb Wt
COMPACTS						
Chevrolet	X	(4) NOVA | (3) NOVA - CONCORS WB-111	(3) X WB-111	(4) X NOVA		(1) FWD 2&4 Dr. HB
Chevrolet	F	(4) CAMARO | (3) CAMARO, LT WB-108	(3) F WB-108	(3) New Soft Bumpers (18)F	(3) CAMARO F WB-108	(4)
Pontiac	F	(4) FIREBIRD | (3) FIREBIRD - ESPRIT, TRANS AM WB-108	(3) F WB-108	(3) F	(3) FIREBIRD F WB-108	(4)
Pontiac	X	(4) VENTURA | (3) VERTURA-SJ, LANDAU WB-111	(3) X WB-111	(4) X PHOENIX (39)		(1) FWD 2&4 Dr. HB
Buick	X	(4) SKYLARK | (3) SKYLARK, S, S/R WB-111	(3) X WB-111	(4) X SKYLARK		(1) FWD 2&4 Dr. NB
Oldsmobile	X	(4) OMEGA | (3) OMEGA, SX, LANDAU, BROUGHAM WB-111	(3) X WB-111	(4) X OMEGA		(1) FWD 2&4 Dr. NB
		"MPG" Series		(46) ▲ Optional Trip Master Elec. Dash (Seville)	4" Shorter Length WB - 103	
						▲ THM 125 Transaxle (Au
						▲ MacPherson struts (11
						▲ 4-Speed Manual Transa
SUBCOMPACTS						
Chevrolet	H	(4) VEGA | (3) HOTCHBACK ▲ 37 CABRIOLET	(4) H WB-97	Vega - Discontin. (12)		
Chevrolet	H Spec.	(1) MONZA | (1) TOWNE COUPE 34 SPYDER	(4) H WB-97	(1) New Hitchback H Wagon	(3) H	(4)
Pontiac	H,H Spec.	(1) ASTRE | (1) SUNBIRD - ASTRE WB-97	(3) H WB-97	(1) SUNBIRD only H (New Wagon)	(3) H	(4)
Buick	H Spec.	(1) SKYHAWK | (4) SKYHAWK WB-97	(3) H WB-97	(4) H	(3) H	(4)
Oldsmobile	H Spec.	(1) STARFIRE | (4) STARFIRE, SX WB-97	(3) H WB-97	(4) H	(3) H	(4)
Chevrolet Special	Y	(4) CORVETTE | (4) CORVETTE WB-98	(4) Y WB-98	(3) Y	(4) Y	(2)
				(12) ▲ Alum 140 CID L-4 dropped ▲ 151 CID L-4 Pontiac used for all		New Ligh 305 CID,
		Light Weight 4-Speed	T-Size	(13) ▲ Temporary Spare Tire		
MINI						
Chevrolet	T	(1) CHEVETTE WB-94.3	(4) T	(1) New 4-Dr. (14) T WB-97.3	(3) T WB-94.3/97.3	(3) CHE
TECHNOLOGY IMPROVEMENTS						
					(54) ▲ Alum. Intake Manifold 1.6 L-4	▲ 261 CI 305 CI
					(41) ▲ Auto Seat Belt Option (Chevette)	
					(41) ▲ Passive Belts - More Models	▲ New 3-
				▲ New Pontiac 151 CID L-4 (Iron block) (19)	▲ (20) New 2-bbl single stage carburetor ("V" engines) New 2-bbl 2-stage carburetor (In-Line engines)	▲ 2.2
				(15) Even firing 90° V-6, 231 CID ▲		▲ Phase
						▲ Chevy 165 CID 60°

GENERAL MOTORS

MARKET CLASSIFICATION
MAKE-SERIES

		1980	1981	1982	1983	1984
		J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S
LUXURY-STANDARD						
Cadillac	C	② DeVILLE	④ C WB-119/121	③ C	① FWD New C Downsized WB-118 (34)	④ FWD C	③ FWD
Oldsmobile	C	NINETY-EIGHT					
Buick	C	ELECTRA					
		▲ Air-Bags Optional (41)	▲ 350 CID V-8 Chevy Diesel Engine New from ground up (56)		▲ New 4-Speed O.D. Auto Transaxle (51)		
STANDARD (Regular)						
Chevrolet	B	② IMPALA	④ B WB-116	③ B	① New B Downsized WB-112 (27)	④ B	③
Pontiac	B	CATALINA					
Buick	B	LeSABRE					
Oldsmobile	B	DELTA 88					
		▲ New 4-Speed Auto Transmission w/O.D. & Lockup (Model 200/4R) (49)					
INTERMEDIATE (Mid-Size)						
Cadillac	(Lux) K	① SEVILLE	④ FWD K WB-114	② FWD K	④ FWD K	③ FWD K	① FWD
Cadillac	(Lux) E	④ ELDORADO	③ FWD E WB-114	② FWD E	④ FWD E	③ FWD E	① FWD
Oldsmobile	(Lux) E	TORONADO					
Buick	(Lux) E	RIVIERA					
Chevrolet	A Spec.	③ MONTE CARLO	② A Spec. WB-108.1	④ A Spec.	④ A Spec.	① A Spec.	④
Pontiac	A Spec.	GRAND PRIX					
Buick	A Spec.	REGAL					
Chevrolet	A	③ MALIBU	② A WB-108.1	④ A	④ A	① A	④
Buick	A	CENTURY					
Oldsmobile	A	CUTLASS					
Pontiac	A	LeMANS					
		▲ Turbo 260 CID V-8 (Olds) (50)					
COMPACT						
Chevrolet	F	④ CAMARO	④ F WB-108	① New F WB-102/103 Conventional Rear-Drive (47)	④ F	③ F	②
Pontiac	F	FIREBIRD					
Chevrolet	X	① NOVA	④ FWD X WB-103.5	③ FWD X	② FWD X	④ FWD X	③ FWD
Buick	X	SKYLARK					
Oldsmobile	X	OMEGA					
Pontiac	X	PHOENIX					
		◆ New Car/Van Wagon FWD X Body Called MPC. WB-104.9, Curb Wt-3000 lbs. (28)					
SUBCOMPACT						
Chevrolet	H Spec.	③ MONZA	① FWD Downsized New U (29)	④ FWD U	③ FWD U	② FWD U	④ FWD
Pontiac	H Spec.	SUNBIRD					
Oldsmobile	H Spec.	③ STARFIRE	① FWD New X Spec. (29)	④ FWD X Spec.	③ FWD X Spec.	② FWD X Spec.	④ FWD
Buick	H Spec.	SKYHAWK					
Chevrolet Special	Y	② CORVETTE	④ Y	④ Y	④ Y	① New Y 2500 lbs (55)	④ FWD
		▲ 1.8 Liter L-4 Chevy Engine (w/Diesel Version) (52)					
MINI						
Chevrolet	T	③ CHEVETTE	③ T WB-94.3/97.3	④ T	① New FWD T WB-90	④ FWD T	③ FWD
TECHNOLOGY IMPROVEMENTS						

FORD MOTOR CO.



FORD MOTOR CO.

MARKET CLASSIFICATION MAKE-SERIES

1980 | 1981 | 1982 | 1983 | 1984

J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N

LUXURY-STANDARD

Lincoln ('80)
Mark V ('80)

(1) | (4) CONTINENTAL WB-117.4 / MARK V WB-114.4 | (3) | (4) | (3) | (1)

▲ Air Bags Optional on Large Cars (42)

STANDARD

Ford - LTD ('79)
Mercury - Marquis

New Downsized

(4) | (3) LTD MARQUIS WB-114.4 | (3) | (4) | (3) | (1)

INTERMEDIATES (High Price)

Granada ('80)
Thunderbird
Mercury Cougar

Lincoln - (77½)
Versailles

(1) | (4) GRANADA / THUNDERBIRD / COUGAR WB-110 | (3) | (4) | (3) | (4)

(3) | (4) VERSAILLES WB-109.9 | (3) | (4) | (1)

▲ New 3.8ℓ&3.2ℓ 90° V-6 Engines w/Alum. Heads (17)

INTERMEDIATES (Low Price)

Ford-Fairmont ('78)
Mercury - Zephyr

(3) | FAIRMONT / ZEPHYR WB-105.5 | (4) | (2) | (4) | (3)

▲ Turbo 1.6ℓ L-4 Engine (39)
New FWD Pinto Eur./Amer. Erika Notchback Compact (15)

2-Dr. MPV Van Based on the FWD Pinto Mid'80's (38)

COMPACTS

Ford - Pinto ('71)

(3) | (1) PINTO FWD WB-94 | (4) | (3) | (4) | (4)
(1) 2-SEAT SPORT PINTO FWD | (4) | (3) | (4) | (4)

Ford-Mustang ('79)
Mercury-Capri

(3) MUSTANG / CAPRI WB-100 | (4) | (3) | (1) | (4)

▲ New 1.6ℓ&1.3ℓ 4-Cyl. Engines w/Alum. Intake Manifolds and Alum. Heads (30)

MINI/SUBCOMPACTS

Ford - Fiesta ('78)

(3) | (3) FIESTA/FWD WB-90 | (4) | (1) | (4) | (3)

▲ New Ford Auto Transaxle and Toyo Kogyo Manual Transaxle (30)

Vehicle Composition: 1, Twice Aluminum and Plast

TECHNOLOGY IMPROVEMENTS

▲ All Alum. Version of the 2.3ℓ 4-Cyl. Engine (45)

▲ 2-Seat Commut 1.0ℓ Engine,

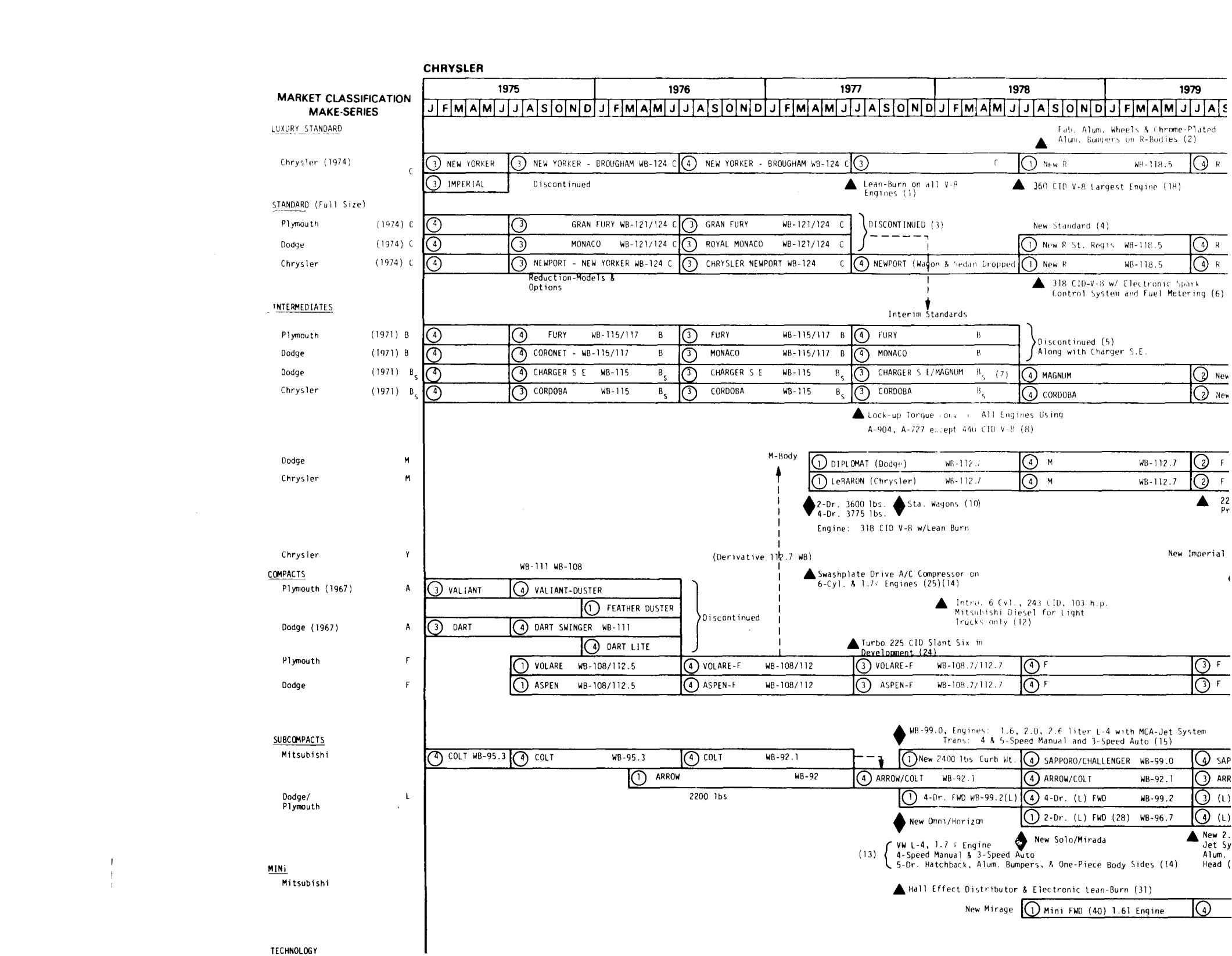
▲ 3-way Catalyst and (16) Exhaust Sensors - (All Vehicles)

▲ PROCO w/Stratified Charge (Limited Production) 302 CID V-8 (18)

302 CID V-8 largest engine (19)

Stratifed Charg

▲ EEC III w/EFM on


CHRYSLER
MARKET CLASSIFICATION
MAKE-SERIES
1975
1976
1977
1978
1979
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S
LUXURY STANDARD
Chrysler (1974) C
STANDARD (Full Size)
Plymouth (1974) C
Dodge (1974) C
Chrysler (1974) C
INTERMEDIATES
Plymouth (1971) B
Dodge (1971) B
Dodge (1971) B
Chrysler (1971) B
Dodge M
Chrysler M
Chrysler Y
COMPACTS
Plymouth (1967) A
Dodge (1967) A
Plymouth F
Dodge F
SUBCOMPACTS
Mitsubishi
Dodge/ Plymouth L
MINi
Mitsubishi
TECHNOLOGY
3 NEW YORKER
3 NEW YORKER - BROUGHAM WB-124 C
4 NEW YORKER - BROUGHAM WB-124 C
3 C
1 New R WB-118.5
4 R
3 IMPERIAL
Discontinued
Lean-Burn on all V-8 Engines (1)
360 CID V-8 Largest Engine (18)
Fab. Alum. Wheels & Chrome-Plated Alum. Bumpers on R-Bodies (2)
3 GRAN FURY WB-121/124 C
3 GRAN FURY WB-121/124 C
DISCONTINUED (3)
New Standard (4)
3 MONACO WB-121/124 C
3 ROYAL MONACO WB-121/124 C
1 New R St. Regis WB-118.5
4 R
3 NEWPORT - NEW YORKER WB-124 C
3 CHRYSLER NEWPORT WB-124 C
4 NEWPORT (Wagon & Sedan Dropped
1 New R WB-118.5
4 R
Reduction-Models & Options
318 CID-V-8 w/ Electronic Spark Control System and Fuel Metering (6)
Interim Standards
4 FURY WB-115/117 B
3 FURY WB-115/117 B
4 FURY B
Discontinued (5) Along with Charger S.E.
4 CORONET - WB-115/117 B
3 MONACO WB-115/117 B
4 MONACO B
4 CHARGER S E WB-115 B
3 CHARGER S E WB-115 B
3 CHARGER S E/MAGNUM B (7)
4 MAGNUM
2 New
3 CORDOBA WB-115 B
3 CORDOBA WB-115 B
3 CORDOBA B
4 CORDOBA
2 New
Lock-up Torque Conv. in All Engines Using A-904, A-727 except 440 CID V-8 (8)
M-Body
1 DIPLOMAT (Dodge) WB-112.7
4 M WB-112.7
2 F
1 LeBARON (Chrysler) WB-112.7
4 M WB-112.7
2 F
2-Dr. 3600 lbs. 4-Dr. 3775 lbs.
Sta. Wagons (10)
Engine: 318 CID V-8 w/Lean Burn
New Imperial
(Derivative 112.7 WB)
WB-111 WB-108
Swashplate Drive A/C Compressor on 6-Cyl. & 1.7 Engines (25)(14)
3 VALIANT
4 VALIANT-DUSTER
1 FEATHER DUSTER
Discontinued
3 DART
4 DART SWINGER WB-111
4 DART LITE
Intro. 6 Cyl., 243 CID, 103 h.p. Mitsubishi Diesel for Light Trucks only (12)
Turbo 225 CID Slant Six in Development (24)
1 VOLARE WB-108/112.5
4 VOLARE-F WB-108/112
3 VOLARE-F WB-108.7/112.7
4 F
3 F
1 ASPEN WB-108/112.5
4 ASPEN-F WB-108/112
3 ASPEN-F WB-108.7/112.7
4 F
3 F
WB-99.0, Engines: 1.6, 2.0, 2.6 liter L-4 with MCA-Jet System
Trans: 4 & 5-Speed Manual and 3-Speed Auto (15)
4 COLT WB-95.3
4 COLT WB-95.3
4 COLT WB-92.1
1 New 2400 lbs Curb Wt.
4 SAPPORO/CHALLENGER WB-99.0
4 SAP
1 ARROW WB-92
4 ARROW/COLT WB-92.1
4 ARROW/COLT WB-92.1
3 ARR
2200 lbs
1 4-Dr. FWD WB-99.2(L)
4 4-Dr. (L) FWD WB-99.2
3 (L)
1 2-Dr. (L) FWD (28) WB-96.7
4 (L)
New Omni/Horizon
New Solo/Mirada
New 2.
Jet Sy
Alum.
Head
(13) VW L-4, 1.7 ℓ Engine
4-Speed Manual & 3-Speed Auto
5-Dr. Hatchback, Alum. Bumpers, & One-Piece Body Sides (14)
Hall Effect Distributor & Electronic Lean-Burn (31)
New Mirage
1 Mini FWD (40) 1.6l Engine
4

CHRYSLER

MARKET CLASSIFICATION MAKE-SERIES		1980	1981	1982	1983	19
		J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J
LUXURY-STANDARD				New Downsized (39)		
Chrysler	R	(4)	(3) NEW YORKER R WB-118.5	(4) R	(1) H WB-110	(4) H
STANDARD (Full Size)				New Downsized (39)		
Chrysler	R	(4)	(3) NEWPORT R WB-118.5	(4) R	(1) H WB-110	(4) H
Dodge	R	(4)	(3) ST. REGIS R WB-118.5	(4) R	(1) H WB-110	(4) H
INTERMEDIATE					New Downsized (39)	
Chrysler Dodge	M_S	(2)	(4) CORDOBA MAGNUM M_S WB-112.7	(3) M_S	(4) M_S	(1) J WB-106.7
Chrysler	F	(2)	(4) LE BARON WB-108.7/112.7	(3)	(4) F	(1) J WB-106.7
Dodge	F		DIPLOMAT F	F		
Chrysler	Y	(1)	(4) IMPERIAL Y WB-112.7	(4) Y	(4) Y	(1) J WB-106.7
				▲ 225 CID 6 Cyl. One-Chamber Advanced Technology Diesel (17)		
COMPACT		New FWD Downsized 600-700 lbs less (23)				
Plymouth	K	(4)	(1) VOLARE WB-100	(4) FWD K WB-100	(4) K	(4) K
Dodge	K		ASPEN FWD K			
Chrysler	K	▲ CVCC Strat. Charge Version of 2.2ℓ Engine possibly with Alum. Heads (27)	(1)	FWD K WB-100	(4) K	(3) K
			◆ New Luxury Compact (39)			
SUB-COMPACT						
Mitsubishi		(3)	(3) ARROW,COLT,SAPPORO, CHALLENGER	(4)	(3)	(4)
Plymouth/ Dodge		(3)	(2) HORIZON/OMNI L WB-94	(4) L	(3) L	(1) L
Plymouth/ Dodge		(4)	(2) MIRADA/SOLO L WB-94	(4) L	(3) L	(1) L
			New Sheet Metal for L-Bodies (39)			
MINI						
Mitsubishi		(4)	(4) MIRAGE	(4)	(4)	(4)
TECHNOLOGY IMPROVEMENTS						

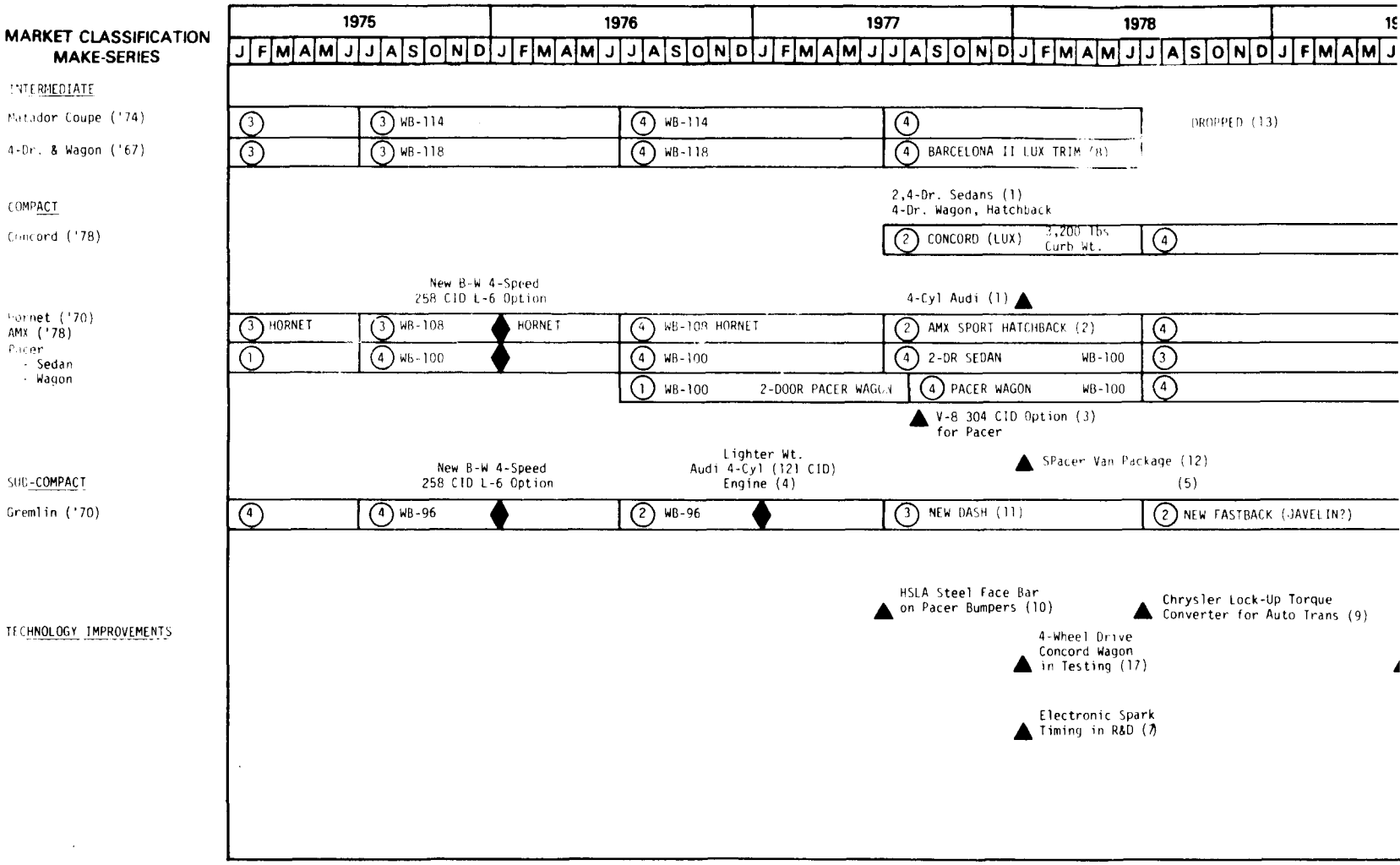
▲ New 4-Speed O.D. Manual Transaxle to Replace VW Unit (32)

▲ New 4-Cyl. less than 2.0ℓ to Replace 1.7ℓ VW Engine (38)

▲ Diesel 2.2ℓ 4-Cyl. Engine (19)

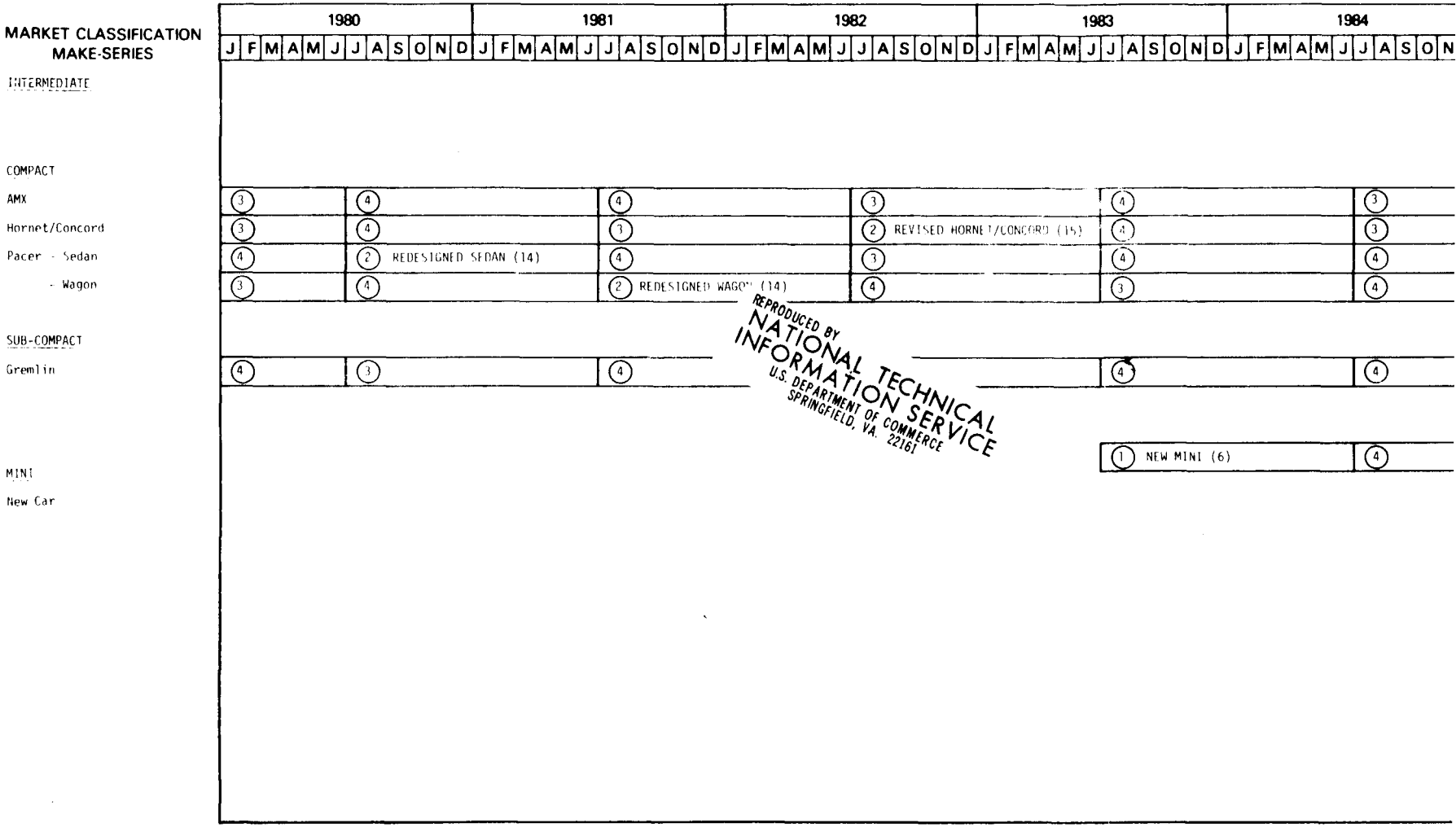
▲ Electronic Feedback Carbs, Fuel Metering, and Fuel Injection Systems w/3-Way Catalyst (39)

AMERICAN MOTORS



Source: Corporate Tech Planning

AMERICAN MOTORS



Source: Corporate Tech Planning

3. THE DOMESTIC LIGHT TRUCK MANUFACTURERS

3.1 INTRODUCTION

The current and projected product schedules of new light truck introductions and major styling changes for the five domestic light truck manufacturers are shown from 1975 through 1980 in Figures 3-1 through 3-10. Light trucks covered by the Product Schedules are restricted to vehicles of 10,000 pounds GVW or less. Some general comments applicable to all schedules are:

a. Vehicle Classification - A classification system is used to provide some means for categorizing vehicles according to their market and mission. Each classification is defined as follows:

- Pickup - open bed cargo carrier available in the following configurations:
  1. Regular Cab
  2. Extended Cab
  3. Crew Cab
  4. Chassis Cab
  5. Stake and Platform
  6. Car Type
  7. Imported Compact
- Van - enclosed box shaped cargo or passenger area available in the following configurations:
  1. Cargo (generally without side windows)
  2. Passenger (generally with side windows)
  3. Step
  4. High Cube
  5. Chassis Cab
  6. Imported Compact
- Utility - on or off road vehicle, generally four-wheel drive, with a small cargo or passenger area (enclosed or open).
- Wagon - Similar in style to the passenger auto station wagon but built on a truck chassis providing larger payloads.

The vehicles are also classified by size as follows:

	Wheelbase	Overall Length
Compact	Less than 110"	and Less than 180"
Intermediate	Less than 120"	and Less than 190"
Full Size	Over 120"	and/or Over 190"

b. Silhouettes - a set of silhouettes which generally show the outline of the vehicles within each class are provided for each series. For example, for the Ford Motor Company pickups, Styleside and Flareside regular cab pickups are shown as well as the Supercab, Crew Cab, Chassis Cab and Stake models.

c. Technology Improvements - significant technology improvements as they relate to light trucks. These include new light truck engines and other innovations such as the introduction of diesel engines and light weight materials (i.e., plastic fender liners).

d. Body Changes - body changes are shown by number coding the models each year in a similar manner to the domestic automobile master product schedules. A comparison between the light truck and domestic automobile schedules shows that body changes are not as prevalent in light trucks. Each light truck manufacturer uses increased availability of optional equipment, rather than styling changes, as a means of differentiating yearly model changes.

e. Statistics - basic statistics pertaining to each model are shown on the charts. These include payload, curb weight, GVW, wheelbase, engines and transmissions as well as two or four wheel drive options. These statistics are provided whenever available.

f. Projections - the extension of product changes to 1980 is based on what the manufacturer did prior to 1978 as well as published reports in the media. Intervals between major styling changes are carried forward where it appears that a regular interval actually exists. Most light truck manufacturers do not follow a standard interval between major styling changes and, as a result, projections are not possible in those cases.

Recently, fuel economy standards have been established for light trucks up to 8,500 pounds GVW for 1980 and 1981 which all manufacturers must meet. These standards are divided for two different categories of light trucks, two-wheel drive and four-wheel drive, and are shown below with the 1979 industry estimate.

	Industry Estimate (MPG)	Final Standard (MPG)	
	1979	1980	1981
2WD	14.6	16	18
4WD	12.4	14	15.5

Trucks are still primarily work-horses despite increased recreational use, hence emission and fuel economy goals are more modest. The requirement to haul heavy loads safely means that weight reduction potential for light trucks is limited due to durability constraints.

As each manufacturer changes its product line to comply with increased fuel economy, safety, and emissions requirements, more changes in the near future will become evident. These changes are now just starting to become available through the traditional reference sources.

3.2 OPTIONAL EQUIPMENT

A Master Product Schedule similar to the one described above was compiled for each manufacturer, showing the major changes in optional equipment for each model by year in lieu of the basic changes in statistics. These charts depict more clearly the way light truck manufacturers differentiate their year to year offerings by the increased use of comfort/convenience and special trim options rather than by actual changes in styling.

3.3 GENERAL MOTORS LIGHT TRUCKS

Two makes of light trucks are produced by General Motors (GM), Chevrolet, and GMC. The make and series names shown on the Master Product Schedule are for the Chevrolet line of light trucks. The GMC line is identical except for minor trim differences and the name plates. The trend in pickups has been similar to Ford in that

an all new body or new sheet metal is introduced every six years. The general trend of increasing availability of comfort options and other extras in the light truck line is being actively followed by GM.

GM Product Schedules are shown in Figures 3-1 and 3-2; the notes and cross-reference lists are in Appendix B.

1976 - The Blazer was redone to include a new steel cab design and conventional steel doors. All four-wheel drive vehicles equipped with automatic transmissions received the full time four-wheel drive transfer box.

1977 - Most light truck lines received only minor changes to include new trim. New comfort/convenience options were added to most lines to include the industry's first adjustable steering column available in vans.

1978 - The El Camino is all new as it is derived from the new GM A-body cars. The Olds 350 CID V-8 diesel engine is available as optional equipment on the pickups. This is the first use of a diesel engine by GM in a light truck. Additional comfort/convenience and exterior decor options are available in most light truck lines.

1979 - Pickups are scheduled for new bodies as they had new sheet metal in 1973. All other lines will be carryovers.

1980 - A new front wheel drive compact van with a 105" wheelbase will be introduced. It is currently called the MPC and is derived from the new front wheel drive X-Body compact car.

3.4 FORD LIGHT TRUCKS

The trend in pickups has been to have an all new body or new sheet metal every six years, whereas the vans are on a seven year cycle. A new major introduction is announced almost every year in one of the Ford lines. Again, the major trend has been to increase the availability of comfort/convenience options and other extras in the light truck line since more people are looking at light trucks as basic transportation instead of being solely for commercial use.

Ford Product Schedules are shown in Figures 3-3 and 3-4; the notes and cross-reference lists are in Appendix B.

1975 - Ford introduced the first body on frame vans midway through the model year. In the pickup area, a new F-150 pickup truck line was introduced between the F-100 and F-250 models.

1976 - All light truck lines received new comfort/convenience options with the pickups also getting new grilles and trim. A new F-150 four wheel drive pickup truck was introduced in a 133 wheelbase only. Vans received the first optional factory installed swivel highback bucket seats.

1977 - The Ranchero car-type pickup received all new sheet metal. Pickup trucks again received new grilles and trim. A new F-250 redesigned 4 x 4 with increased payload, smoother ride, special options, and easier steering was introduced. The Courier imported pickup truck was all new, with two different wheelbases and cargo box sizes available. The 360 and 390 CID engines were dropped as the 351 and 400 CID V-8 engines took their places. A new 2.75:1 economy axle was introduced. Pickups got new plastic front inner fenders and rear wheel house liners. The Broncho four-wheel drive utility vehicle received a new 14-gallon plastic fuel tank. Again, all light truck lines received improved comfort/convenience options.

1978 - The Broncho Utility vehicle is all new. Designed like a chopped down version of the pickup truck, it competes head-on with the Chevy Blazer. An optional 300 CID L-6 dual-displacement engine was scheduled to be introduced in mid-year, but was dropped due to problems.

1979 - An all new pickup truck line is due. Continuation of the trend to more comfort/convenience and decor options is expected.

3.5 CHRYSLER LIGHT TRUCKS

Chrysler withdrew from the heavy truck market in 1975, and the medium truck market in 1977, to concentrate on the very profitable light trucks. With the Dodge line of light trucks, Chrysler

Corporation is expected to introduce two new compact vehicles for the 1979 model year in order to maintain its momentum as the fastest growing light truck manufacturer.

Product Schedules for Chrysler are shown in Figures 3-5 and 3-6; notes and cross-reference lists are in Appendix B.

1976 - Only minor changes were made to all light truck lines. All models are considered carryovers and vans are equipped with automatic transmissions with a new electronic transmission fluid level and temperature sensor.

1977 - Pickups and the Ramcharger utility vehicle were given new grilles and trim while the Ramcharger was offered in both four-wheel drive and two-wheel drive versions.

1978 - All vans got new sheet metal. Pickups received a new optional 6 cylinder 105 horsepower diesel engine by Mitsubishi for mid-year introduction (a first for Chrysler). Other models were carryovers.

1979 - New compact pickup will be introduced along with a new front wheel drive compact van. A new diesel version of the 225 CID Slant Six engine will be introduced.

3.6 AMERICAN MOTORS LIGHT TRUCKS

The optimism which American Motors (AMC) has for its Jeep line can clearly be seen by the major structure and design changes which have been made in these vehicles. The increase in buyer preference for utility and four-wheel drive vehicles, and the dominance of the Jeep name in this market segment, will result in the light truck line contributing more than its share toward the profitability of AMC in the future. Changes in each model line are expected to be dramatic and popular to capitalize on its current marketing position.

AMC Product Schedules are shown in Figures 3-7 and 3-8; notes and cross-reference lists are in Appendix B.

1976 - AMC introduced the new CJ-7 utility vehicle with an all new structural polycarbonate plastic hardtop option. The CJ-6 was

dropped from the U. S. market and will only be produced for export. All Jeep lines received new improved frames and suspension systems as well as minor cosmetic changes.

1977 - Cherokee Wagon became available in two and four door versions as the bottom of the line four door Wagoneer was dropped. Gross vehicle weight ratings (GVWR) were increased three to four hundred pounds for the J-20 pickup trucks.

1978 - All models were carryovers with only minor increases in optional equipment availability.

1979 - New "Shorty" Flareside Pickup will be introduced with a 108.7" wheelbase. This is 10 inches shorter than the standard Jeep pickup. A new 2.7 liter four cylinder 70 horsepower diesel engine will be available on the CJ series of Utility Vehicles.

1980 - New "Jeep II" downsized utility vehicle with a 76 inch wheelbase will be offered with a new 2 liter four cylinder engine.

3.7 INTERNATIONAL HARVESTER LIGHT TRUCKS

Information pertaining to the advanced product planning of International Harvester (IH) is very difficult to obtain due to its small market position and the limited number of models available. Its general strategy has been to drop lines which are not profitable and expand those lines which are popular.

International Harvester Product Schedules are shown in Figures 3-9 and 3-10; notes and cross-reference lists are in Appendix B.

1975 - A new 150 series of light duty pickups, Travelall wagons, and Scout utility vehicles were introduced to augment the existing line.

1976 - The Travelall wagon and conventional light duty pickups were dropped completely. The Scout line of utility vehicles was expanded to include new intermediate sized pickups and wagons called the Terra and Traveler. A new 6-cylinder diesel engine was introduced as optional equipment on all light truck lines, making IH the first domestic light truck manufacturer to offer a diesel engine. The Scout II Travel Top was a carryover from 1975.

1977 - All Scout models received new trim. New comfort/convenience options and off road driving packages were introduced in all Scout lines.

1978 - The trend toward more comfort/convenience options was continued as a convertible top (with or without a sun roof), rear step bumper, and other options were added to each model.

GENERAL MOTORS

MARKET CLASSIFICATION MAKE-SERIES	1975	1976	1977	1978	197
	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J
Pickup		Transfer Cases on all 4-wheel Drive series: 2-speed manual w/manual trans and 2-speed full-time w/auto. trans.			
 C10/K10		④ 4x2, 4x4 WB 117.5", 131.5" GVW 6050-7000 Engines: 250 L-6, 350, 400, 454 V-8 Trans: 3-M, 4-M, 3-A	③ Payload 999-2205 4x2, 4x4 Curb Wt. 3560-4235 WB 117.5", 131.5" GVW 4900-6200 Engines: 250 L-6, 305, 350, 400, 454 V-8 Trans: 3-M, 4-M, 3-A	④ 4x2, 4x4 Curb Wt. 3559-4154 WB 117.5", 131.5" GVW 4900-6200 Engines: Same as '77 Except add 350 V-8 Diesel Trans: Same as '77	①
 BIG-10*		④ 4x2 WB 117.5", 131.5" GVW 6050-6200 Engines: 250 L-6, 350, 454 V-8 Trans: 3-M, 4-M, 3-A	③ Payload 2017-2391 4x2 Curb Wt. 3659-3882 WB 117.5", 131.5" GVW 6050-6200 Engines: 250 L-6, 350, 454 V-8 Trans: 3-M, 4-M, 3-A	④ 4x2, 4x4 Curb Wt. 3640-3781 WB 117.5", 131.5" GVW 6050-6200 Engines: Same as '77 Except add 350 V-8 Diesel Trans: Same as '77	①
 C20/K20**		④ 4x2, 4x4 WB 131.5", 164.5" GVW 6400-8400 Engines: Same as '77 Trans: 3-M, 4-M, 3-A	③ Payload 2148-4014 4x2, 4x4 Curb Wt. 4051-4870 WB 131.5, 164.5" GVW 6400-8400 Engines: 292 L-6, 350, 400, 454 V-8 Trans: 3-M, 4-M, 3-A		①
C30/K30**		④ 4x2, 6x4 WB 131.5", 164.5" GVW 6600-10000 (Chas) 135.5", 159.5" Engines: Same as '77 Trans: 4-M, 3-A	③ Payload 2207-5231 4x2, 4x4 6x4, 6x6 Curb Wt. 4209-5470 WB 131.5", 164.5" GVW 6600-10000 (Chas) 135.5", 159.5" Engines: 292 L-6, 350, 400, 454 V-8 Trans: 4-M, 3-A		①
Pu-Car					
 El Camino		③ 4x2 WB 116" GVW 5200-5750 Engines: 250 L-6, 350 V-8 Trans: 3-M, 3-A	① Payload 1250 4x2 Curb Wt. 3752-3784 WB 116" GVW 4935-5550 Engines: 250 L-6, 305, 350 V-8 Trans: 3-M, 3-A	① Payload 1250 4x2 Curb Wt. 3174 WB 117.1" GVW 4424-4674	
Utility					
 Blazer		④ WB 106.5" GVW 6050-6200 Engines: 250 L-6, 350, 400 V-8 Trans: 3-M, 4-M, 3-A	③ Payload 1798-2160 4x2, 4x4 Curb Wt. 3940-4291 WB 106.5" GVW 6050-6200 Engines: 250 L-6, 305, 350, 400 V-8 Trans: 3-M, 4-M, 3-A		
GVW 4900-6200					
Pu-Import					
 L U V	④	④ Payload 1190 Curb Wt. 2460	④ Payload 1490 4x2 Curb Wt. 2205-2440		

GENERAL MOTORS

MARKET CLASSIFICATION
MAKE-SERIES

1975	1976	1977	1978
J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D

Van

G10

G20

G30*

Step-Van

P10

P20

P30

Suburban

C10/K10

G10

1975	1976	1977	1978
	④ 4x2 WB 110", 125" GVW 4800-5600 Engines: 250 L-6, 350 V-8 Trans: 3-M, 3-A	④ 4x2 Payload 1037-1931 Curb Wt. 3600-4102 WB 110", 125" GVW 4800-5600 Engines: 250 L-6, 305, 350 V-8 Trans: 3-M, 3-A	③

G20

1975	1976	1977	1978
	④ 4x2 WB 110", 125" GVW 6400 Engines: Same as '77 Trans: 3-M, 3-A	④ 4x2 Payload 2023-2775 Curb Wt. 3625-4077 WB 110", 125" GVW 6400 Engines: 292 L-6, 350, 400 V-8 Trans: 3-M, 3-A	③

G30*

1975	1976	1977	1978
	④ 4x2, 6x4 WB 110", 125", 146" GVW 6400-10000 Engines: Same as '77 Trans: 3-M, 3-A	④ 4x2, 6x4 Payload 1982-4498 Curb Wt. 3858-5810 WB 110", 125", 146" GVW 6400-10000 Engines: 292 L-6, 350, 400 V-8 Trans: 3-M, 3-A	③

P10

1975	1976	1977	1978
	④ 4x2 WB 102" GVW 6200 Engine: 292 L-6 Trans: 3-M, 4-M, 3-A	④ 4x2 Payload 1917-2319 Curb Wt. 3878-4280 WB 102" GVW 6200 Engine: 292L-6 Trans: 3-M, 4-M, 3-A	

P20

1975	1976	1977	1978
	④ 4x2 WB 125", 133" GVW 6800-8000 Engines: 292 L-6, 350 V-8 Trans: 3-M, 4-M, 3-A	④ 4x2 Payload 1122-3158 Curb Wt. 4733-5564 WB 125", 133" GVW 6800-8000 Engines: 292 L-6, 350 V-8 Trans: 3-M, 4-M, 3-A	

P30

1975	1976	1977	1978
	④ 4x2, 6x4 WB 125", 133", 157" GVW 7600-10000 Engines: 292 L-6, 350, 454 V-8 Trans: 4-M, 3-A	④ 4x2, 6x4 Payload 1383-5047 Curb Wt. 4953-6103 WB 125", 133", 157" GVW 7600-10000 Engines: 292 L-6, 350, 454 V-8 Trans: 4-M, 3-A	

C10/K10

1975	1976	1977	1978
	④ 4x2, 4x4 WB 129.5" GVW 6050-7300 Engines: 250 L-6, 305, 350, 400, 454 V-8 Trans: 3-M, 4-M, 3-A	④ 4x2, 4x4 Payload 1347-2468 Curb Wt. 4260-4742 WB 129.5" GVW 6050-7300 Engines: 250 L-6, 305, 350, 400, 454 V-8 Trans: 3-M, 4-M, 3-A	

GENERAL MOTORS

MARKET CLASSIFICATION
MAKE-SERIES

1975												1976												1977												1978												
J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A

PICKUP ('67)

C10/K10

All 4x4 (4WD) Vehicles With Auto. Trans. Will have only Full-Time 4-Wheel Drive (4)

Modest Decor Changes (1)

4WD Added to Chassis Cabs & Crew Cabs (8)

New Grille, Power Windows, & Door Locks on Pickups (8)

4	4	3	4	1

Big-10*

New Step-side "Sport Truck" Trim Option (5)

New Rear Window Defroster Optional-All Pickups (14)

4	4	3	4	1

New "Bonanza" Decor Option for all Pickups (5)

C20/K20**

4	4	3	4	1

4WD Added to 30 Series (8)

C30/K30**

4	4	3	4	1

PU-CAR ('73)

El Camino

New Trim & Head Lamps (3)

All New El Camino, GMC Sprint Name Dropped for Caballero (18)

4	3	4	1	4

UTILITY ('69)

Blazer

All New Bumpers, Steel Cab Design & Conventional Steel Doors (1)

New Grille - Power Windows & Door Locks Optional (8)

4	2	3	4	4

New Soft Top Option (6)
New "Chalet" Chinook-built Camper Option (6)

PU-IMPORT ('72)

LUV

Revised Rear Suspension, Opt. Auto. Trans., 5 hp Higher Engine (1)

New "Mighty Mike" Exterior Trim Group Option on LUV (16)
Increased Payload, Optional High-back Bucket Seats & Sliding Rear Windows (15)

4	4	4	4	4

New Variable Ratio Steering Gear & Rear Shocks (15)

TECHNOLOGY IMPROVEMENTS

▲ New 305 CID V-8 Engine (9)

▲ New Olds 350 CID V-8 Diesel Engine for Pickups (12)

GENERAL MOTORS

MARKET CLASSIFICATION
MAKE-SERIES

	1975												1976												1977												1978												1979									
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S

◆ All Call

① ①

VAN ('70)

G10

(4) (4) (4) (3) (4) (4)

New Easy to Remove Rear Seats (1)

New "Caravan" Custom Decor Option Package (7)
New "Nomad" Travel/Rec Vehicle (Van) (7)

New Grille & Headlights on All Vans (17)

New "Bonanza" Decor Option for All Vans (5)

New Optional Swivel Reclining Bucket Seats & Adjustable Steering Column (an Industry First)(11)

G20

(4) (4) (4) (3) (4) (4)

G30*

(4) (4) (4) (3) (4) (4)

STEP-VAN

P10

(4) (4) (4) (4) (4) (4)

P20

(4) (4) (4) (4) (4) (4)

P30

(4) (4) (4) (4) (4) (4)

SUBURBAN

New Grille - Power Windows & Door Locks Optional (8)

C10/K10

(4) (4) (3) (4) (4) (4)

New 4WD Versions (13)

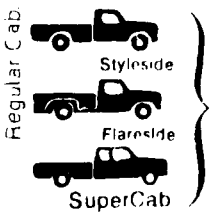
FORD MOTOR CO.

MARKET CLASSIFICATION
MAKE-SERIES

1975	1976	1977	1978	
J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M

Engines for F-150-F-350: 300 L-6, 351, 400, 460 V-8
Trans for F-100-F-250: 3-M, 4-M, 3-A

Pick-Ups ('67)



F-100

1975	1976	1977	1978
④ 4x2, 4x4	③ 4x2, 4x4	③ 4x2, 4x4	①
	WB 117", 133", 139", 155" GVW 4600-5700	Payload 1060-1720 WB Same as '76 GVW 4700-5650 Engines: 300 L-6, 302, 351, 400 V-8	

F-150

1975	1976	1977	1978
④ 4x2 Only	③ 4x2, 4x4 ①	③ 4x2, 4x4	①
	WB 133", 139", 155" GVW 6050-6400	Payload 2030-2325 WB Same as '76 GVW 6050-6200	

F-250*

1975	1976	1977	1978
④ 4x2, 4x4	③ 4x2, 4x4	③ ① 4x2, 4x4	①
	WB 133", 139", 150", 155" GVW 6200-8100	Payload 1805-3745 Redesigned 4x4 (34) WB Same as '76 GVW 6200-8100	

F-350*

1975	1976	1977	1978
④ 4x2	③ 4x2	③ 4x2	①
	WB 140", 155", 166.5" GVW 6650-10000 Stake 137", 161"	Payload 2075-5990 WB Same as 76 GVW 6750-10000 Trans: 4-M, 3-A	

First Body on Frame Vans (21)

Trans for All Vans: 3-M, 3-A

Vans ('75)

E-100

1975	1976	1977	1978
① 124", 138" WB	④ 4x2 WB 124", 138" GVW 5100-5800	④ 4x2 Payload 1360-1910 WB 124", 138" GVW 5150-5750 Engines: 300 L-6, 351 V-8	

E-150

1975	1976	1977	1978
① 124", 138" WB	④ 4x2 WB 124", 138" GVW 6050-6250	④ 4x2 Payload 2199-2365 WB 124", 138" GVW 6150 Engines: 300 L-6, 351 V-8	

E-250

1975	1976	1977	1978
① 138" WB	④ 4x2 WB 138" GVW 6870-8350	④ 4x2 Payload 2340-4495 WB 138" GVW 6800-8400 Engines: 300 L-6, 351, 460 V-8	

E-350

1975	1976	1977	1978
① 138", 158" WB	④ 4x2 WB 138", 158" GVW 8650-9900	④ 4x2 Payload 3070-5730 WB 138", 158" GVW 8600-10000 Engines: 300 L-6, 351, 460 V-8	

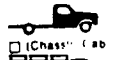
Ranchero ('72)

1975	1976	1977	1978
④ 4x2	④ 4x2 WB 118" GVW 5685	② 4x2 Payload 1250 Curb Wt. 3919-3993 WB 118" GVW 5170-5240 Engines: 302, 351, 400 V-8 Trans: 3-A	

Bronco ('66)

1975	1976	1977	1978
④ 4x4	④ 4x4 WB 92" GVW 4400-4900	④ 4x4 Payload 900-1365 Curb Wt. 3495 WB 92" GVW 4400-4900 Engines: 302 V-8 Trans: 3-M, 3-A	① 4x4 WB 92" GVW 4400-4900 Engines: 302 V-8 Trans: 3-M, 3-A

FORD MOTOR CO. REVISE

MARKET CLASSIFICATION MAKE-SERIES	1975 J F M A M J	J A S O N D	1976 J F M A M J	J A S O N D	1977 J F M A M J	J A S O N D	1978 J F M A M J	J A S O N D	1979 J F M A M J	J A S O N D	J F M A
PICKUP ('67)											
 F-100	Supercab Introduced (1)		New Elec. Rear Window Defroster (5), Increased GVW (11), <6000 lb GVW Reduced Axle Ratios (7), Special Trim (10)		Dura Spark Ignition Standard (18), Plastic Inner Fenders (23), Rust Prevention (22), Speed Control w/351 & 400 CID Engines (17)						
	(4)		(3)		(3)		(4)	(1)	(4)		
 F-150	New (9)		New 4x4 (12)		Electric Rear Window Defroster on Supercabs (21)						
	(1)		(3)	(1)	(3)		(4)	(1)	(4)		
 F-250*											
	(4)		(3)		(3)	(1)	(4)	(1)	(4)		
					◆ Redesigned F-250						
 F-350*					4x4 w/Increased Payload, Easier Steering, Lower Step Height (34)						
	(4)		(3)		(3)		(4)	(1)	(4)		
VAN ('75)											
 E-100	First Body on Frame Vans (20)		New "Cruising Van" Option (29), New Options in Convenience Group (2), <6000 lb GVW Reduced Axle Ratios (7), Highback Bucket Seats (19)		Expanded Options List (31), A/C on 300 CID Six (24), New Dura Spark Ignition Standard (18), Speed Control w/351 CID Engine (17)						
	(1)		(4)		(4)		(4)		(4)		
 F-150											
	(1)		(4)		(4)		(4)		(4)		
 E-250											
	(1)		(4)		(4)		(4)		(4)		
 E-350											
	(1)		(4)		(4)		(4)		(4)		
RANCHERO ('72)			New Power Bench Seats, Optional Heavy Duty Electrical System, Anti-Theft Alarm (3)		New Illuminated Entry System & Two-tone Paint (16) New S.M. (30)						
	(4)		(4)		(2)		(4)		(4)		
BRONCO ('66)			New Power Front Disk Brakes, Power Steering Ratio, Optional Front Stabilizer (8), GVW Increased (4)		New Plastic Fuel Tank-14 gal. (15)		New Bronco - Chopped-down Version of Pickup - Ford Answer to the Chevy Blazer (28				
	(4)		(4)		(4)		(1)		(4)		
COURIER ('72)				New "Soft Ride" Option w/700 lb Payload (36)		"Free Wheeling" Options (40), New 7' Box, F- Series Tailgate & Design, 107" & 113" W.B. (38), Larger Fuel Tanks (35)					
	(4)			(4)		(1)		(4)		(4)	(4)
TECHNOLOGY IMPROVEMENTS						▲ New 2.3ℓ Engine (37)					
					▲ 351 & 400 CID V-8 Engines Introduced, 360 & 390 Engines Dropped (27)			▲ Dual-Displacement Engine Option on 300 CID Six (39)			

CHRYSLER

MARKET CLASSIFICATION MAKE-SERIES

1975 | 1976 | 1977 | 1978

J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A

Engines for all series are as follows (except as noted): (17)
225 CID L-6, 318, 360, 400, & 440 CID V-8

Transfer Case for all 4-wheel drive models: 2-speed full time

◆ New Compact Pickup (15)

① [ ]

Pickup ('72)

D100/W100

④ 4x2, 4x4 — 5000-6100 lb GVW

Reg & Chas 115", 131" WB
Ext 133", 149" WB

③ 4x2, 4x4 — Curb Wt. 3120-4440

WB - Same as '76 5000-6100 lb GVW
Engines: as above Trans: 3-M,3-A, 4 close-M, 4 wide-M, 4 O.D.-M

D200/W200

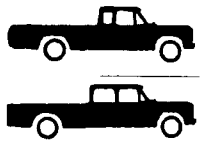
④ 4x2, 4x4 — 6200-9000 GVW

Reg 131" WB Ext 149" WB
Crew 149", 165" WB
Chas 131", 149", 165" WB 4

③ 4x2, 4x4 — Curb Wt. 3325-4805

WB - Same as '76 6200-9000 lb GVW
Engines: as above Trans: 3-M,3-A, 4 close-M, 4 wide-M

D300/W300



④ 4x2, 4x 4 — 6600-10000 GVW

Reg 131" WB, Ext 149" WB
Chas 135", 149", 159", 165" WB

③ 4x2, 4x4 — Curb Wt. 3755-4525

WB - Same as '76 6600-10000 lb GVW
Engines: as above Trans: 4 close-M 4 wide-M, 3-A(17)

◆ New FWD Compact Van (16

① [ ]

Van ('71)

B100

④ 4x2 — 4600-5500 lb GVW

109", 127" WB

④ 4x2 — Curb Wt. 3440-3620 — ② [ ]

109", 127" WB 4600-5500 lb GVW
Engines: 225 L-6, 318, 360 V-8
Trans: 3-M, 4 O.D.-M, 3-A

B200

④ 4x2 — 5500-6100 lb GVW

109", 127" WB

④ 4x2 — Curb Wt. 3515-3955 — ② [ ]

109", 127" WB 6100-6400 lb GVW
Engines: as above
Trans: 3-M,3-A ④

B300

④ 4x2 — 6400-8200 lb GVW

109", 127" WB

④ 4x2 — Curb Wt. 3715-4060 — ② [ ]

109", 127" WB 6400-8200 lb GVW
Engines: as above
Trans: 3-M, 3-A ④

CB300

④ 4x2 — 7700-10000 lb GVW

127", 145" WB

④ 4x2 — Curb Wt. 4515-5625 — ② [ ]

127", 145" WB 7700-10000 lb GVW
Engines: 225 L-6, 318, 360, 440 V-8
Trans: 3-M, 3-A(17)

Utility ('74)

Ramcharger

④ 4x2, 4x4 — 4900-6100 lb GVW

106" WB

③ 4x2, 4x4 — 4900-6100 lb GVW

106" WB

CHRYSLER

MARKET CLASSIFICATION
MAKE-SERIES

1975												1976												1977												1978												1979											
J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J

PICKUP ('72)

D100/W100

◆ New Compact Pickup (15)

Optional Glass Skylight Vent/ Sunroof for All Lt. Trucks (14)

Hinged Seat Back & Swing-out Spare Tire Carrier (3)

New "Retriever" Factory Option
Vendor-Built Wrecker (8)
New Grille & Trim (9)

4	4	3	4	4	4

New "Warlock" Custom Trim Option (7)

New "Powerwagon" Option With 4-WD & Custom Trim (10)

D200/W200

4	4	3	4	4	4

D300/W300

4	4	3	4	4	4

VAN ('71)

B100

◆ New Compact Van-FWD (16)

New Rear A/C Package - All Vans (3), Vans w/Auto. Trans. get New Elec. Trans. Fluid Level & Temp. Sensor (4)

New Swivel Highback Bucket Seats Optional & Standard

225 CID 2-Bbl L-6 Engine (14)

New Sheet Metal on All Vans (18)

4	4	4	2	4	4

New "Street Van" Custom Fit Model (7)

B200

4	4	4	2	4	4

B300

4	4	4	2	4	4

CB300

4	4	4	2	4	4

UTILITY ('74)

Ramcharger

Improved Ground Clearance (3)

New 4-Wheel Drive Option (9)
New Grille & Trim (9)

4	4	3	4	4	4

New "Four by Four" Custom Option Package (14)

AMERICAN MOTORS

MARKET CLASSIFICATION
MAKE-SERIES

1975 | 1976 | 1977 | 1978

J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M

◆ New "Shorty" Flareside Pick

① 108.7" WB 4x4

Pickup ('63)

J10

③ 118.7" & 130.7" WB 6025 lb GVW 4x4

④ 118.7" & 130.7" WB 6025 lb GVW 4x4 Engines: 258 L-6, 360 & 401 V-8. Trans: Same as J20

J20

③ 130.7" WB 6500, 7200, & 8000 lb GVW 4x4

④ 130.7" WB 6800, 7600, & 8400 lb GVW 4x4 Engines: 360 & 401 V-8 Trans: 3-M, 4-M, 3-A. 2-speed Transfer or Quadra-Trac full-time 4-wheel drive

CJ-6 Dropped in U.S. (7)

Utility ('72)

Produced for Export Only

CJ-5

② 83.5" WB 4x4

④ 83.5" WB, 3750 & 4150 lb GVW 4x4 Engines: Same as CJ-7 Trans: 3-M, 4-M, 2-speed Transfer

◆ New Stretched version of CJ-5(2)

CJ-7

① 93.5" WB 4150 lb GVW (Hardtop) 4x4 3750 & 4150 lb GVW (Softtop)

④ 93.5" WB GVW - Same as '76 4x4 Engines: 232 & 258 L-6, 304 V-8. Trans: 3-M, 4-M, 3-A. 2-speed Transfer or Quadra-Trac full-time 4-wheel drive.

Wagon ('63)

2 Door Only

Cherokee

③ 108.7" WB

2 Door & 4 Door (New)(11)

④ ① 108.7" WB. 6025 lb GVW 4x4 Engines: 258 L-6, 360 & 401 V-8. Trans: 3-M, 4-M, 3-A. 2-speed Transfer or Quadra-Trac

4 Door Only

Wagoner

③ 108.7" WB

④ 108.7" WB 6025 lb GVW 4x4 Engines: 360 & 401 V-8. Trans: 3-A. Quadra-Trac full-time 4-wheel drive.

AMERICAN MOTORS

MARKET CLASSIFICATION MAKE-SERIES

1975 | 1976 | 1977 | 1978 | 19

J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J

PICKUP ('63)

J-10

◆ New "SHORTY" Flareside Pickup

(1)

*New Custom "Honcho" Package on Pickups (8)

(4) | (3) | (4) | (4) | (4)

2-Bbl 258 CID L-6 Engine Standard on J-10 instead of 1-Bbl Versions (9)

*New Golden Eagle Option Package on J-10 (14)

J-20

(4) | (3) | (4) | (4) | (4)

GVWR of J-20 Increased 300-400 lbs. (12)

CJ-6 Dropped in U.S. (7)

UTILITY ('72)

(4)

Produced for Export Only

New Extra Low Gear Ratios on 4-Speed Transmission for CJ Series (10)

New Windshield & Top (2)

CJ-5

(4) | (2) | (4) | (4) | (4)

New Optional Tilt Steering Column & Air Conditioning for CJ Series (13)

◆ New Stretched CJ-5 (2)

CJ-7

(1) | (4) | (4) | (4)

Quadra-Trac Full-time 4-Wheel Drive & Auto. Trans. Avail. on CJ-7 -A "First" for the CJ Series (6)

*New Golden Eagle Option Package for CJ Series (14)

WAGON ('63)

2-Door Only

2-Door & 4-Door (New) (11)

Cherokee

(4) | (3) | (1) | (4) | (4)

2-Bbl 258 CID L-6 Engine Standard on Cherokee instead of 1-Bbl Version (9)

Bottom-of-the-Line 4-Door Wagoneer Changed to Cherokee (11)

4-Door Only

Wagoneer

(4) | (3) | (4) | (4) | (4)

TECHNOLOGY IMPROVEMENTS

▲ New Structural Polycarbonate Plastic Hardtop for CJ-7 (4)

▲ All Jeeps have New Improved Frames & Suspension Systems (5)

▲ New 2.7l 4 Cyl. 70 hp Diesel for CJ Series (16)

*Interior/Exterior Custom Trim & Sport Dressup Packages

Source: Corporate Tech Planning

INTERNATIONAL HARVESTER

MARKET CLASSIFICATION MAKE-SERIES

1975 | 1976 | 1977 | 1978 | 1979

J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S

Pickup ('76)

New 150 Series(2) — Conventional Pickups Dropped (1)

◆ New "Intermediate" Size Pickup Based on Scout II (1)

Length of Cargo Box - 6' (6)

Terra

① Payload 2400 lb (4)(6)

WB 118" GVW 6200 lb
4x2, 4x4 w/1 or 2 speed Transfer Case
Engines: 196 L-4, 304, 345 V-8, 198 L-6 Diesel (4)
Trans: 3-M, 4 wide-M, 4 close-M 3-Auto (14)

③ Payload 2400 lb

4x2, 4x4 — Chassis Wt. 3526-3781 lb.

WB 118" GVW 6200 lb
Transfer Case: 1 or 2 speed
Engines: Same as 1976
Trans: Same as 1976 (14)

④ ④ ④

Utility ('71)

Scout II Travel Top

New 150 Series(2)

④ Payload 2400 lb (4)

WB 100" GVW 6200 lb
4x2, 4x4 w/1 or 2 speed Transfer Case
Engines & Trans: Same as Terra

③ Payload 2400 lb.

4x2, 4x4 — Chassis Wt. 3511-3766 lb.

WB 100" GVW 6200 lb
Transfer Case: 1 or 2 speed
Engines: Same as 1976
Trans: Same as 1976 (14)

④ ④ ④

Wagon ('76)

New 150 Series(2) — Travelall Wagon Dropped (1)

◆ New "Intermediate" Size Wagon Based on Scout II (1)

Traveler

① Payload 2400 lb (4)

WB 118" GVW 6200 lb
4x2, 4x4 w/1 or 2 Speed Transfer Case
Engines & Trans: Same as Terra

③ Payload 2400 lb.

4x2, 4x4 — Chassis Wt. 3776-4031 lb.

WB 118" GVW 6200 lb
Transfer Case: 1 or 2 speed
Engines: Same as 1976
Trans: Same as 1976 (14)

④ ④ ④

Technology Improvements

▲ New Nissan 198 CID 92 hp Diesel Engine Offered on all Lt. Truck Lines (3)

INTERNATIONAL HARVESTER

MARKET CLASSIFICATION
MAKE-SERIES

1975 | 1976 | 1977 | 1978 | 1979

J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S

New 150 Series (2)

PICKUP ('76)

④ Conventional Pickups Dropped (1)

Optional Cruise Control with V-8 & Auto Trans. on All Models (9)
New ORV Off-Road Driving Package Optional on All Models (12)
Expanded Availability of Tilt Steering Wheel (13)
New Trim

◆ New "Intermediate" Size Pickup Based on Scout II (1)

Terra

① 6 ft. Box — 2400 lb Load Capacity (6)

③ Optional Tie-down Rails (9)
New Sutanner Option — 4-way Convertible (12)

④ ④ ④

UTILITY ('71)

New 150 Series (2)

New Price Leader "Echo" Model (7)

New Trim

Scout II Travel Top

④ ④ ③ ④ ④ ④

③ New SS-II Option with Extra-Heavy Duty Suspension, Brush Guards, Roll Bar, Soft Top, No Doors, & Off-Road Lights (10)

New 150 Series (2)

WAGON ('76)

④ Travelall Wagon Dropped (1)

◆ New "Intermediate" Size Wagon Based on Scout II (1)

New Trim

Traveler

① Steel Reinforced Fiberglass Top with Hatchback Styling and Rear Door (5)

③ Optional Sliding-Pane Rear Window (9)

New Family Cruiser Interior Option Package (11)

New Family Wagon Option with Reclining Swivel High-back Bucket Seats (12)

④ ④ ④

4. THE MAJOR IMPORT MANUFACTURERS

4.1 INTRODUCTION

4.1.1 General

The current and projected product timing schedules for selected foreign automotive manufacturers, illustrated in Figures 4-1 through 4-11, provide a means for comparing differences and similarities among the various manufacturers and their products.

Domestic manufacturers group models into specific market classes by body type and/or wheelbase size. The import manufacturers, on the other hand, do not group models by the same criteria; emphasis is placed on vehicle weight and engine size and not the body styles. Moreover, a larger wheelbase need not imply a heavier vehicle or one which is less fuel efficient or produces higher emissions.

Information presented on the schedules was derived from many reference sources including technical and trade journals, MVMA specification forms, annual reports, company literature, etc. Although these sources provide some insight into the current products offered by import manufacturers, data is sparse regarding future import product plans when compared to the information available on the domestic manufacturers' plans.

Foreign manufacturers are cognizant of U.S. vehicle standards regarding fuel economy, safety, and emissions in product planning, and allocate resources to comply with these standards as well as to react to consumer and competitive forces. Import manufacturers must also contend with forces and standards imposed in their own home market which often exceed those in the U.S. Nevertheless, some producers seem to make styling changes and technological improvements within the bounds of limited resources in a faster and more precise manner compared to U.S. manufacturers. The level of change, technology, resources, and lead times required in introducing new vehicles or modifying current products is proportionally as considerable for foreign manufacturers as it is for U.S. manufacturers, although affecting a smaller volume of vehicles.

Analysis of appropriate sources indicates that the introduction of a new model involves approximately six planning process activities. Those used by Toyota* are:

Concept Definition
Styling
Engineering
Prototype and Testing
Tooling and Manufacturing
Full Volume Production.

This product planning cycle is representative of other import manufacturers.

The product planning cycles of foreign manufacturers often seem erratic or non-existent when correlated to the introductory date into the U.S. market. Actually, a car may have been produced for the home market for two or three years before it is "Americanized" and exported to the U.S. The decision to introduce a car to the U.S. market may be due to a combination of factors, among them:

Excessive productivity at home
Salability to a small but specific segment of the U.S. market
The mystique of owning a foreign auto
Lower prices than domestics
Innovative technology
Opportunity for increased profits from larger sales volume
Market analysis indicating a need for this vehicle.

Weight reduction and fuel economy are generally not the greatest problems faced by import manufacturers (although there are a few notable exceptions). The U.S. market has a larger variety of market segments than most import manufacturers have products in which to compete. As a result, as domestic manufacturers' vehicles become smaller and compete more directly with the import manufacturers, the limited variety of vehicles offered by import manufacturers may be their major problem.

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*Refer to The Wheel Extended (a Toyota in-house publication), Spring 1975, pages 38-46, for a full discussion.

4.1.2 Product Schedules

The selected sample vehicles displayed for each manufacturer are arranged in ascending curb weight. The derivatives of a basic vehicle are clustered around this curb weight, even if the weight of one derivative vehicle is higher than another "core" vehicle. For example, while a Toyota Celica coupe weighs less than a Corona, a Celica liftback may be heavier than a Corona; however, the liftback is displayed between the Celica coupe and the Corona to highlight the derivation from the basic Celica model. Trucks, pick-ups and vans are always displayed last.

Vehicle class, though not as clearly discernible for the imports as for the domestics, follows engine displacement rather than body size. The engine displacement in cubic centermeters is noted for each year's models. Many importers designate models by series with the model numbers referring to passenger capacity, doors, number of barrels in carburetor, body style, or other distinguishing features.

Unlike domestic vehicles, where once a new body or all new car is introduced will usually not be changed again for a number of years, foreign vehicles offered in the U.S. market can more readily be replaced by a vehicle already offered in the home market (once U.S. emission and safety regulations have been met). New body or new auto introductions are restricted each year by limited resources, with most new auto or body changes derived from existing vehicles. This is possible because, generally speaking, foreign manufacturers offer only a portion of their entire fleet to the U.S. market.

Body changes are shown by number coding the models each year in a similar manner to the domestic automobile master product schedules. These changes are: 1) all new car, new body; 2) new sheet metal; 3) new grille, taillights, trim; and 4) carryover, no change. In addition to body changes, the import manufacturers will periodically make major component changes to selected models. These changes are shown by using "dashed lines" for the year in which the change occurred.

Because auto manufacturers are traditionally reticent about disclosing future styling plans, projections beyond the 1979 model year are somewhat speculative. Sources of information are identified on each chart by numbers in parentheses which refer to the cross-reference matrices found in Appendix C.

Technological advances, as they relate to safety, emissions, and fuel economy, are displayed on the bottom of the schedules to track prototype and research changes.

Since introduction dates for the home country and the U.S. can vary widely, different symbols are used to show this variance.

4.2 JAPANESE IMPORTS (Figures 4-1 through 4-5)

Japanese automobile manufacturers have been very successful in marketing their products in the U.S. market. These products have consisted of small, lightweight, fuel efficient automobiles and compact light trucks which are well engineered, reliable, provide high quality, and feature many items as standard equipment which are usually optional on domestic vehicles. With emission standards in Japan considered to be more severe than in the United States, along with higher gasoline cost, much research has gone into innovative engines and emission control systems which provide reduced emissions with minimal effects on fuel economy.

As U.S. manufacturers reduce the average vehicle size of their fleet to meet fuel economy regulations, and the U.S. dollar continues to devaluate against the yen, the Japanese manufacturers will face greater competition in the small car market. This generally means that the traditional emphasis on attracting price-conscious buyers will have to be modified. The 1979 model cars will be dressed up to appeal to a "more youth-oriented market" and will include more American-type styling including a wider range of exterior and interior trim options.

Recent sharp price increases have hurt sales causing inventories to rise. Further drops in the value of the dollar could signal the end of some low-volume, relatively low-profit models in the U.S. to reduce overall dealer inventories. As a result of these pricing and sales problems, each major Japanese auto maker is considering building assembly plants in the U.S. if the cost and stability of U.S. labor make it advantageous.

4.2.1 Toyota

Toyota first sold passenger cars in 1957 but produced four-wheel drive utility vehicles prior to that. Since Toyota is more likely than any other importer to take a model off the U.S. market and replace it with another one previously available only in Japan, any significant model change or introduction of a new vehicle in Japan is of primary significance here in the U.S. Toyota offers six basic models in the United States. These include: the Corolla; the Celica; the Corona; the Mark II/Cressida; the Land Cruiser; and a compact pick-up truck. (See Figure 4-1 for product schedule.)

The Corolla line (introduced in 1973) includes two and four-door sedans, a three-door hatchback, and a five-door wagon, available with either a four-speed manual or optional automatic transmission. In 1976, new SR-5 sport coupe and deluxe liftback models with five-speed overdrive manual transmissions were introduced. A new, smaller, 1200 cc engine was introduced in 1977 as standard equipment on the base two-door sedan to provide improved fuel economy; in addition, a new grille, front air dam, instrument panel and increased sound insulation were added. A new front-wheel-drive sub-Corolla was introduced in Japan for 1978 with a 1452 cc four-cylinder longitudinally mounted engine; four and five speed manual, as well as automatic transmissions were offered. This sub-Corolla may be introduced in the United States in 1979 at the same time the base Corolla receives new sheet metal.

The Celica is the sporty Toyota with three versions offered: the GT Liftback; the GT Sport Coupe; and the ST Sport Coupe. Standard features on the Celica include a 2189 cc overhead cam four-cylinder engine, transistorized ignition, and a five speed manual transmission; automatic transmission and power steering are available as options. The Celica, when initially introduced in 1971, included only ST and GT coupe models. In 1975, the new larger 20-R four-cylinder engine was made standard replacing the 18-R engine. In 1976, the GT Liftback model was added to the line and aside from this, there was little change until 1978. The Celica was all new for 1978 providing 35 percent more glass area than the old model, a five-speed manual transmission as standard rather than the four-speed, and a curb weight reduced by one hundred pounds. For 1979 and 1980, all Celica models are expected to be carry-overs.

The Corona is a larger, roomier model available in two-door or four-door sedans, and a five-door wagon version. Initially introduced in 1974, the Corona is available with the same overhead cam engine used in the Celica; four or five-speed manual or an automatic transmission are available. In 1977, the Corona received a restyled hood, grille, and taillights. Power steering was added for the first time and the suspension system was improved. A Luxury Edition Corona was added to the series to fill the gap created by the discontinuation of the Mark II in 1976.

Toyota has three types of diesel cars in production all based on the Crown four-door sedan, which are sold only in Japan. The one with a four-cylinder overhead cam 2188 cc diesel engine and a four-speed manual transmission may be offered in the United States if diesel emission standards can be met.

The Mark II, Toyota's largest and most luxurious sedan, was dropped at the end of 1976 in preparation for the production of two new cars derived from the Mark II. One model, the Chaser, is sold only in Japan. It has a three-way catalyst, two liter six-cylinder fuel injected engine and is expected to comply with all

4.2.2 Datsun

The Datsun trade name was derived from the initials of the three financial backers of the Kaishinsha Motor Works, predecessor of Nissan Motor Company. Their names were Den, Ayoama, and Takeuchi. At first the company name selected was "Datson," intended to mean "son of DAT," but the word "son" sounded too much like the Japanese word for "loss" so the car was renamed "Datsun."

Except for a few commercial vehicle lines, such as Nissan Caball and Nissan Junior, all the company's exported products are called "Datsun." In the domestic market, both Nissan and Datsun are used as product names. For example, the Datsun 810 in the U.S. is a Datsun Bluebird in Japan but the Datsun 710 in the U.S. is a Nissan Violet in the home market. The Nissan label extends to the top of the line vehicles while the Datsun name mainly applies to lower priced cars. All vans, trucks and busses carry the Nissan designation in Japan. Table 4-1 presents the complete model lineup for all Nissan passenger cars. Figure 4-2 shows the 1975-80 Product Schedule.

TABLE 4-1. NISSAN PASSENGER CAR MODEL LINEUP

Domestic Market	USA and Canada	Other Overseas Markets
Nissan Cherry F-11	F-10	100-A, 120-A
Datsun Sunny	B-210	120Y
Nissan Silvia	200-SX	Not sold
Nissan Violet	710	140-J, 160-J
Datsun Bluebird	810	160-B, 180-B
Nissan Skyline	Not sold	180-K, 240-K
Nissan Laurel	Not sold	200-L
Nissan Fairlady Z	280-Z	260-Z
Nissan Cedric	Not sold	200-C, 260-C
Nissan Gloria	Not sold	200-C, 260-C
Nissan President	Not sold	Not sold

Source: Automotive News, October 31, 1977, page 19.

emission standards of both Japan and the U.S. The other, the Cressida, was introduced to the U.S. market at the beginning of 1978 and is available in a four-door sedan or five-door wagon. It uses the same six-cylinder 2563 cc engine as the old Mark II but is 146 pounds lighter and is available only with an automatic transmission. The Cressida styling is essentially the same as the Chaser except for different front grille designs.

The Land Cruiser, available as a two-door hardtop or four-door wagon, has been sold for twenty-six years. The wagon has a 106 inch wheelbase, uses a six-cylinder engine and, at 4300 pounds, is the heaviest Toyota imported.

Toyota also produces compact pick-up trucks for the U.S. market. Initially available with only a standard bed with either a deluxe four-speed or automatic transmission, an SR-5 sport version with a five-speed manual transmission was introduced in 1975. In 1976, the new long bed version was introduced along with a more powerful 2189 cc four-cylinder engine.

Toyota has engaged in fuel economy research since 1972 and emissions research since 1973 with research on the Toyota Total Clean System (TTCS) ongoing. To meet Japan's tough 1978 emissions standards, Toyota will utilize its turbulence generating pot (TGP) combustion method in the 1600 cc 12T-U type engine.

The F110, a front-wheel drive prototype vehicle with a rotary engine under consideration for introduction in the 1980's, will be a six passenger luxury sedan with a sliding door.

An experimental stratified charge rotary engine with greater fuel economy than the two liter piston engine has been tested in Toyota Crown and Mark II vehicles. At 21 mpg in 1978, a ten percent increase is expected before production. When this engine is approved for production, it may first appear in the U.S. market in a Cressida.

The B-210, which arrived in the U.S. in 1974 and replaced the old model 1200, has undergone only minor changes since its introduction. These minor changes have included: a larger 1397 cc engine in 1975; a new grille, five-speed manual transmission option, and a seventy-five pound weight reduction for 1977; and an automatic transmission option for 1978. Major changes are scheduled for 1980 when it will be squared off, have more glass area, and will undergo a weight reduction of one hundred pounds. The B-210 is available in two-door coupe, three-door hatchback, and four-door sedan versions.

The front wheel drive F-10 is available in a hatchback with a five-speed manual transmission and a two-door sport wagon with a four-speed manual transmission. Introduced in the United States in the middle of 1976, the F-10 uses the same engine as the B-210 but is not available with an automatic transmission. A front-wheel drive vehicle based on the B-210 is expected to replace the F-10 in the U.S. market in the middle of 1979.

In 1978, a new 510 model was introduced in the United States to replace the old 710 model which was originally introduced in 1973. This new 510 is similar to the 510 model sold in the United States from 1968 to 1972 with the exception of some suspension changes. Currently, the 510 is available in two and four-door sedans and a five-door wagon version with a four-speed manual transmission or an optional automatic; a three-door hatchback is also available with only a five-speed manual transmission. The 510 uses the same 1952 cc four-cylinder engine which was introduced on the old 710 in 1975. A new 710 model was introduced in Japan in 1977 but is not currently scheduled for introduction in the United States.

A new 810 model was introduced in the U.S. in 1977 as a replacement for the smaller 610 model. The 810 uses a 2393 cc six-cylinder engine rather than the 1952 cc four-cylinder engine used on the 610 and has a 104.3 inch wheelbase compared with the 98.4 inch wheelbase on the 610. This engine is a detuned version of the one used on the old 240-Z sports car.

At the beginning of 1978, a new B-310 model was introduced in Japan. This vehicle is currently not scheduled for introduction in the United States.

The 200-SX, introduced to the U.S. in 1977, has the same wheelbase as the B-210 but uses the same 2 liter engine found in the 510. The 200-SX has a five-speed manual transmission as standard equipment with optional automatic transmission.

The 280-Z, which replaced the 260-Z in 1975, had electronic fuel injection offered on the 2753 cc engine. (The 260-Z replaced the 240-Z in the early 1970's.) The 280-Z 2+2 version introduced at the end of the 1975 model year is longer and provides a rear seat not offered on the base 280-Z. Electronic fuel injection was standard with the 2753 cc engine. In 1977, the more advanced Bosch L-Jetronic fuel injection system was standard and an automatic transmission was offered as an option. A new model introduced in 1978 in Japan will probably be offered in the U.S. in 1979 as the 290-Z.

Datsun also offers compact pick-up trucks in the U.S. market. In 1976, a long body version was introduced with an 88.6 inch long bed versus the 73.2 inch bed in the standard pick-up. Also introduced in 1976 was a king cab version with additional space behind the front seat for storage. This is the only compact pick-up truck currently offered with this feature. A "cab-over" pick-up truck is currently in production for the Japanese market and may be introduced in the United States in 1979.

4.2.3 Honda (Figure 4-3)

Honda entered the U.S. market in 1973 with the introduction of the Civic, available in two-door sedan or hatchback versions. The Civic remained unchanged until 1978 when it received new trim and a name change to the Civic 1200 to distinguish it from the Civic CVCC series. Offered with a 1237 cc conventional four-cylinder engine, the Civic is not available in California or high altitude locations due to emissions requirements. (See Figure 4-3 for Product Schedule.)

The Civic CVCC is available in two-door sedan, three-door hatchback, and five door wagon versions. The compound vortex controlled combustion (CVCC) engine was introduced in 1975 and is currently available on all Honda models except the Civic 1200. The Civic CVCC models use a 1488 cc four-cylinder engine; the two-door sedan and three-door hatchback have an 86.6 inch wheelbase and the five-door wagon has an 89.9 inch wheelbase. As in the Civic 1200, all Civic models received new trim for 1978 and will be all new in Japan for 1980.

The Accord CVCC was first introduced in the United States in the middle of 1976. Built on a 93.7 inch wheelbase with a wider track than the Civic, the Accord uses a 1600 cc CVCC four-cylinder engine. A luxury LX model with variable assist power steering, air conditioning, and other luxury items was introduced in the United States in 1978. At the same time, a four-door Accord was introduced in Japan. For 1979, a new 1800 cc CVCC engine will replace the current 1600 cc engine; the four-door Accord will be offered to the U.S. market at this time only in the LX version. A 2+2 sports car based on the Accord will be introduced in Japan in 1980.

All Honda passenger cars are equipped with transverse mounted engines and front-wheel drive and can use leaded fuel. Available transmissions include: a two-speed semi-automatic on all models; a four-speed manual transmission on all Civic models; and a five-speed manual on the Civic CVCC sedan and hatchback and all Accords.

Honda is currently testing a CVCC V-8 engine for possible future application in passenger cars.

4.2.4 Subaru

Subaru started exporting cars to the United States in the late 1960's when Malcom Bricklin was its chief U.S. distributing agent. The increased popularity of the Subaru line is easily evidenced by its climb from twelfth in import sales in 1976 to fifth in 1978. New vehicle introductions are not restricted to

the beginning of the model year but occur throughout the year. All Subaru models use front-wheel-drive and horizontally opposed four-cylinder engines. (See Figure 4-5 for the Product Schedule.)

The SEEC-T (Subaru Exhaust Emission Control - Thermal and Thermodynamic control) engine was introduced on all 1976 models in both the 1400 cc and 1600 cc engine sizes. In 1977, the 1400 cc engine was dropped and all Subaru models now use the 1600 cc SEEC-T engine. In 1977, the Subaru was called the cleanest car in the world.

Subaru conducted a two-phase improvement program for all its models. Phase I was completed in 1977 with the upgrading of its engine and drivetrain. A sheet metal change made on all models in 1978 completed Phase II.

The GF hardtop is a two-door model with roll-down rear windows. In 1976 it was offered only with an automatic transmission but a five-speed manual was added for 1977.

The DL series includes a two-door coupe, four-door sedan, and five-door wagon. The coupe has "pop out" rear windows and is available only with a five-speed manual transmission. The sedan and wagon are available with four or five-speed manual transmissions as well as automatic. In 1976, the wagon was introduced and the coupe and sedan were redesigned.

Also introduced in 1976 was the 4WD wagon (four-wheel drive) based on the DL wagon. This is the only factory-produced four-wheel drive compact wagon offered in the U.S. market. In 1978, a four-wheel drive vehicle which looks like a mini pick-up truck but equipped with two seats facing the rear in the bed was introduced for the recreational market and called the BRAT (Bi-drive Recreational All-terrain Transporter). Both four-wheel drive vehicles are available only with a four-speed manual transmission.

4.2.5 Mazda

Mazda's commitment to the rotary engine is the strongest of any car manufacturer. Since the early sixties, it has manufactured more rotary-powered cars and trucks than any other company. High speed acceleration and performance are considered to be among the rotary's chief selling strengths, and the Mazda RX7 is the sportiest rotary made. After the successful introduction in the U.S. of Mazda's first rotary powered car in 1973, sales suffered due to bad publicity about the low fuel economy of the rotary engine. Mazda is trying to rebuild the image of the rotary engine as a high performance sports car engine rather than as an efficient engine for compact or smaller vehicles. Since then it has received recognition as an alternative to the internal combustion piston engine where small size and high performance are important. Mazda is currently putting more emphasis on the conventional piston engine vehicles it produces. (See Figure 4-5 for Production Schedules.)

Mazda vehicles are distributed by three different distributors in the United States, broken down into three different geographic areas: the West Coast; Central States; and East Coast. Not all models are offered in each zone nor is a given model introduced at the same time by each distributor. In addition, prices may vary in the three different areas.

In 1976, the Mazda 808 Mizer was introduced as a fuel economy version of the 808 sedan with a smaller 1272 cc four-cylinder piston engine versus the 1586 cc engine in the sedan. All 808 models were dropped in the United States at the end of 1977 after the successful introduction of the GLC three-door hatchback. The GLC uses the same 1272 cc four-cylinder piston engine as the old 808 Mizer and was expanded in 1978 to include five-door hatchback and three-door sport versions. The GLC is available with either a four or five-speed manual transmission, as well as a three-speed automatic.

The RX3 coupe was the first rotary car introduced in the United States by Mazda in 1973. For 1978, it was made into a sportier version and called the RX-3SP. This was used as the forerunner of the RX-7, a very classy two-seat sports car, which was introduced in May 1978. The RX-7 uses a slightly larger 1300 cc two rotor engine and is designed to compete with the Datsun 280Z and Chevrolet Corvette.

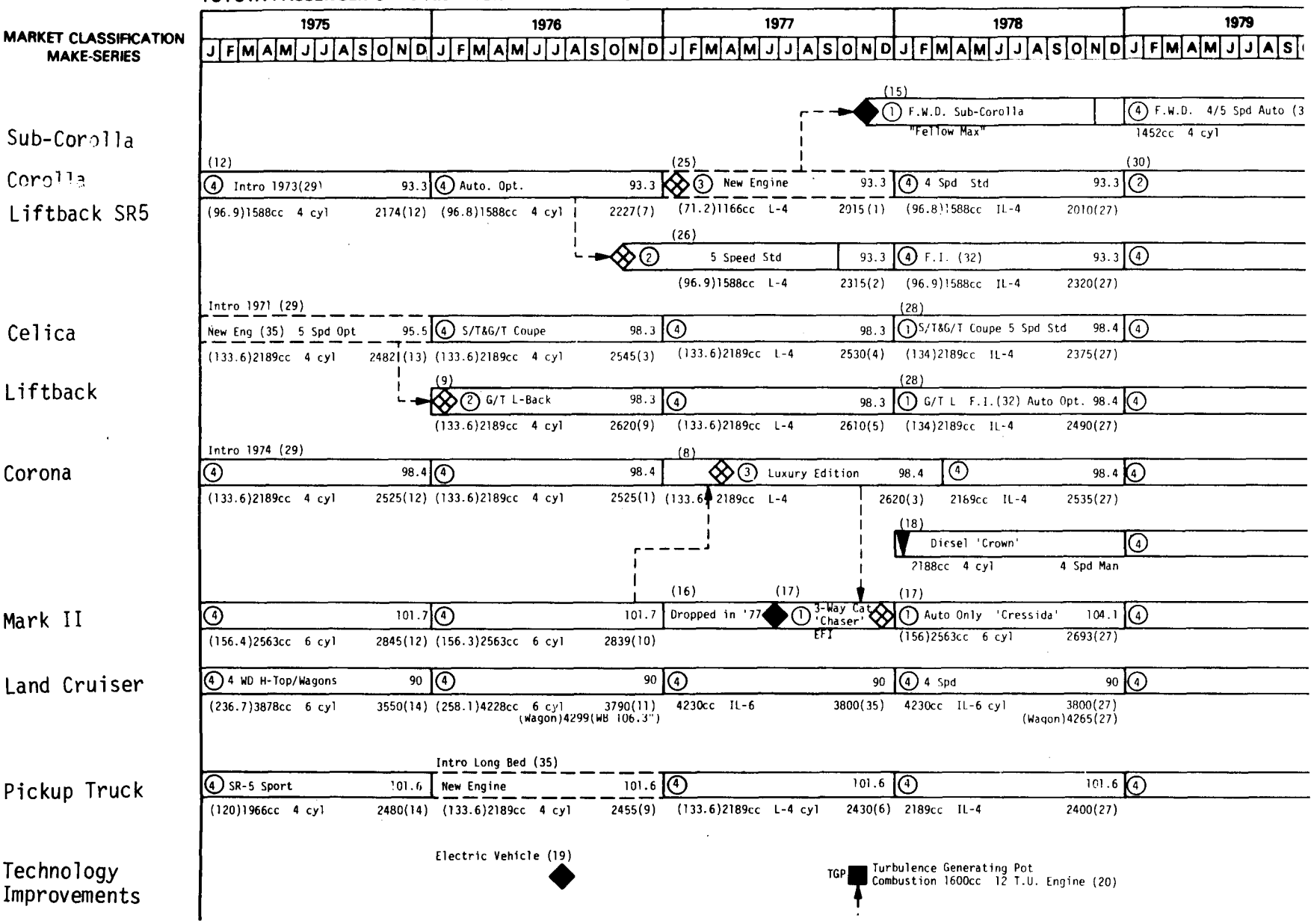
In 1974, Mazda introduced the RX-4 sedan in two-door, four-door, and wagon versions. This is a larger, heavier car than the RX-3 and uses a 1308 cc two rotor engine. The Cosmo hardtop was introduced in 1976 as a luxury version of the RX-4 sedan. It uses the same engine, drivetrain, and wheelbase as the RX-4 and received the same trim changes in 1977. The Cosmo is also known as an RX-5 in some markets and as the Legato in Europe.

A new model called the Luce Legato, was introduced in Japan for 1978 and utilizes either a rotary engine or a new two-liter four-cylinder engine. There are no plans at this time to export this vehicle to the U.S.

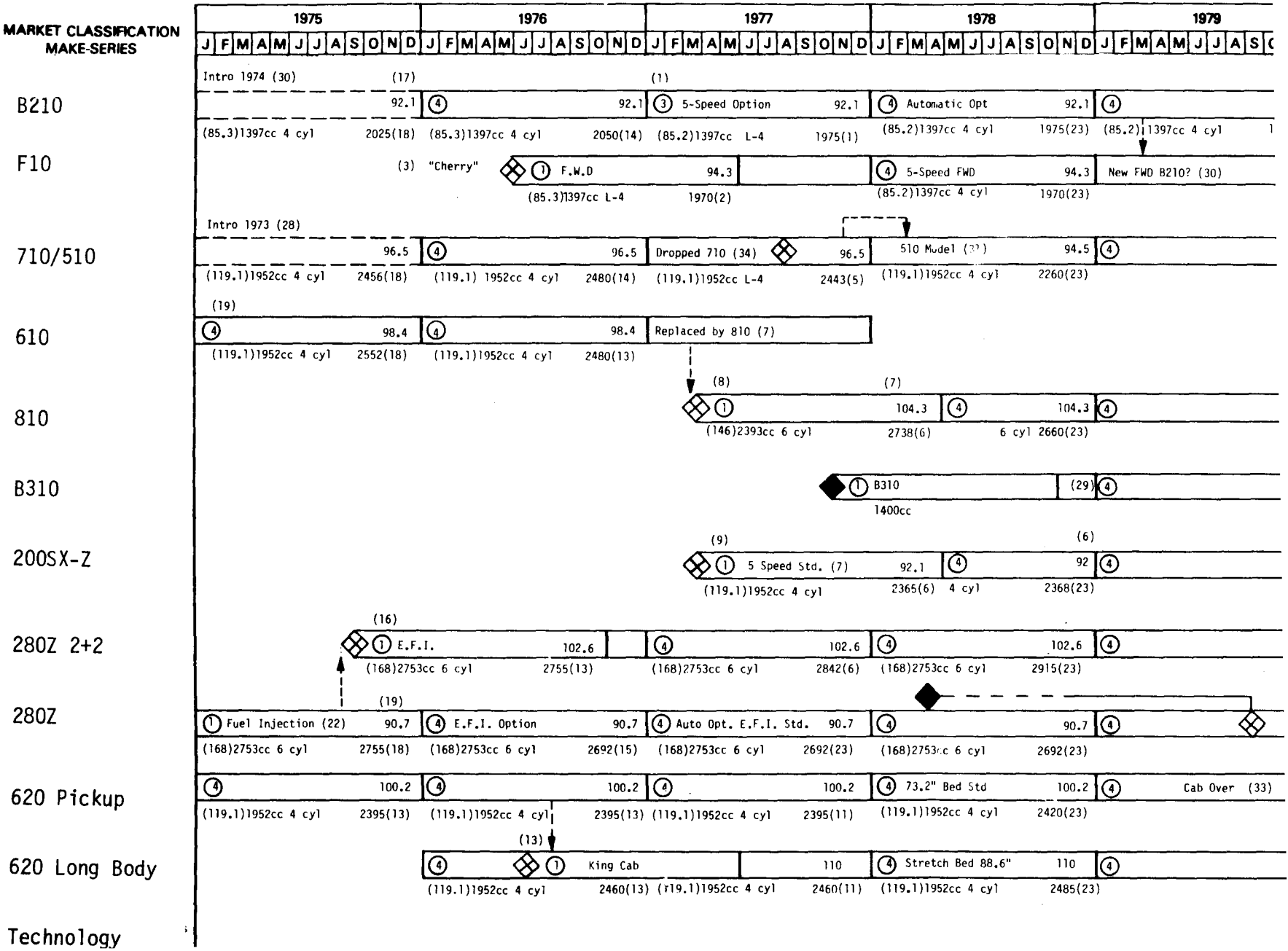
The Mazda pick-up introduced in 1976, was offered with a rotary engine through the end of 1977. In 1978, there were three versions offered: the older B-1600, now with a four-cylinder 1586 cc engine on a 104 inch wheelbase; the new short bed B-1800 pick-up with a 1796 cc four-cylinder engine and a 107 inch wheelbase; and the new long bed B-1800 with a 113 inch wheelbase.

For 1979, Mazda will offer only three basic vehicles in the U.S., and only one will have a rotary engine. The GLC and RX-7 passenger cars will remain along with the pick-up trucks. All other models will be dropped in an effort to rebuild the image of the rotary engine and to establish Mazda as a leader in piston engine technology.

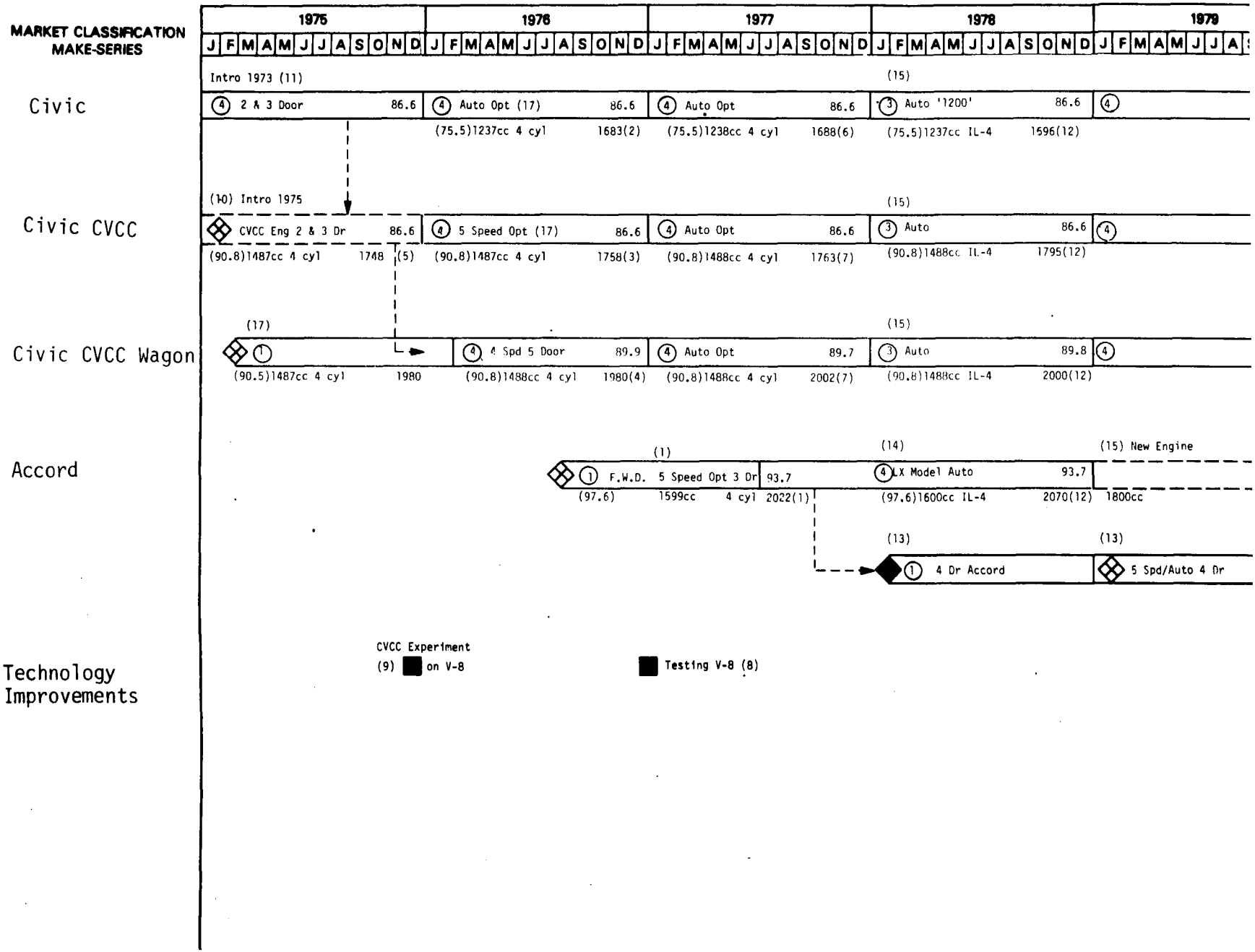
TOYOTA PASSENGER CARS AND LIGHT-DUTY TRUCKS



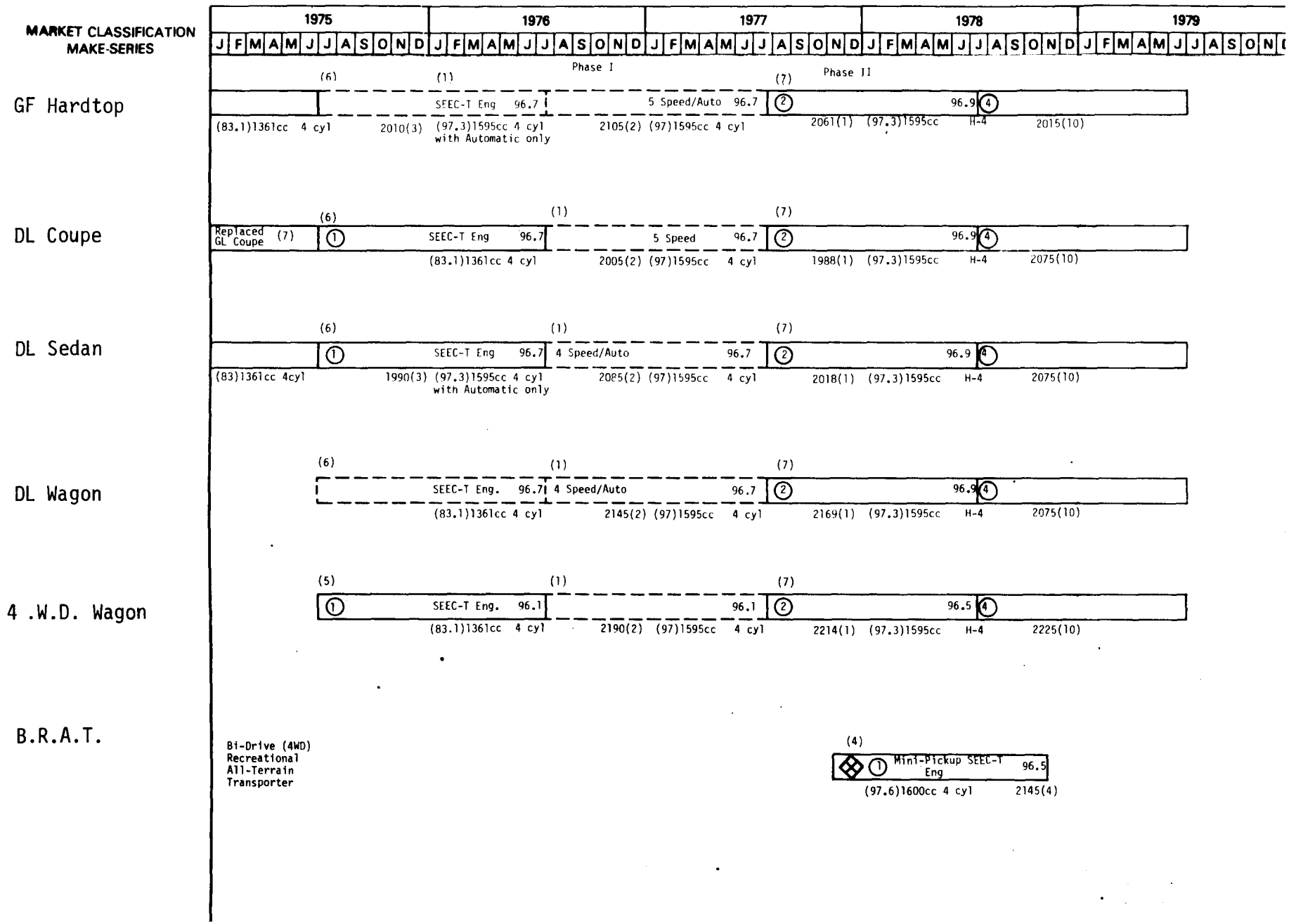
DATSUN PASSENGER CARS AND PICKUPS



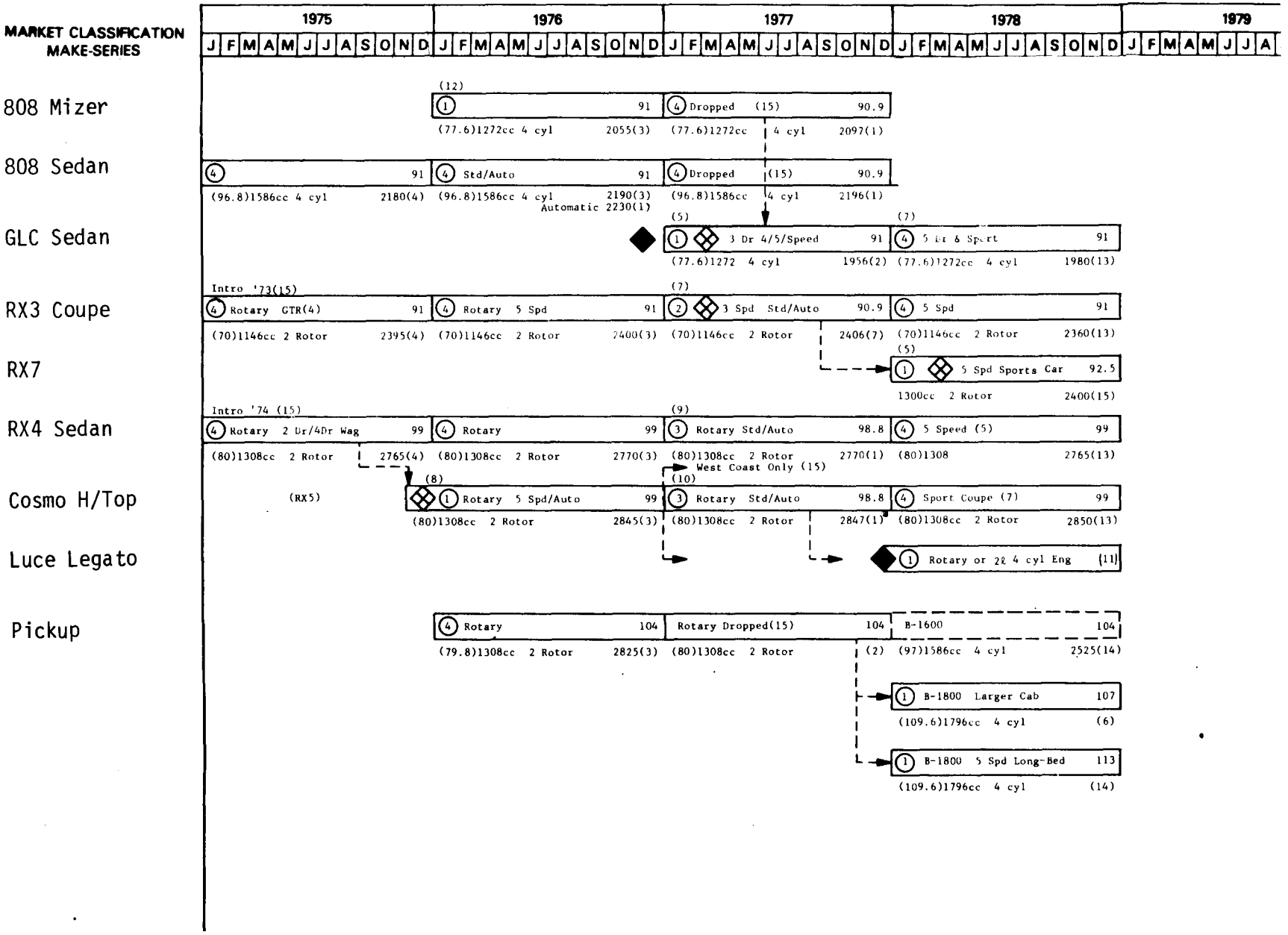
HONDA PASSENGER CARS



SUBARU PASSENGER CARS AND LIGHT TRUCKS



MAZDA PASSENGER CARS AND LIGHT TRUCKS



4.3 EUROPEAN IMPORTS

Since European auto manufacturers export a significant portion of their production, they must be conscious of the regulatory differences between many countries. A lack of international cooperation indicates a need for more common market initiative in solving problems shared by all manufacturers including emissions, energy, safety, and economic restraints, such as import/export tariffs and regulatory controls. Bureaucratic intervention frequently has had a counter-productive impact on the European automobile industry due to excessive controls from government agencies that do not fully understand the industry or market. Excessive taxation and state ownership without regard to principles of free enterprise plague the industry as well.

External factors also cause concern among the West European countries. East European countries often price exports well below identical models sold domestically in order to acquire needed currencies for exchange; at the same time, West European countries are usually excluded from marketing their products in the East European bloc. In some cases, a West European manufacturer contracts to provide a "turnkey" plant for an eastern country to produce models essentially identical to vehicles offered in the west. Competition is further enhanced when the eastern nation then exports those same vehicles, much to the dismay of the providing company. Japanese exports also have a deleterious effect as they begin to compete more heavily in the European market. In addition, European companies have difficulties marketing their models in the lucrative developing nations as the latter move to protect their own emerging industries.

In Europe, productivity is the key element in the automobile business as it is most elsewhere in the world. It is defined as:

a) Number of cars built per worker;

b) Capital investment per worker.

In 1977, Renault was near the top in both measures while Ford and Chrysler European affiliates were near the bottom. Productivity

improvements become harder to achieve due to frequent wildcat strikes and the job protection requirements of labor unions. In addition, regulatory requirements of the various governments put an increased burden on both personnel and capital which tends to lower productivity.

All foreign auto manufacturers exporting vehicles for the United States market must comply with the United States fuel economy, emissions, and safety standards designated for model years 1978-1985. Currently, the average European car imported to the United States satisfies the 1980 and 1981 CAFE requirements of 20 and 22 miles per gallon. While a number of individual production models meet the 1985 CAFE requirement, such as the diesel version of the Volkswagen Rabbit which has a combined fuel economy rating of 45 miles per gallon, no manufacturer's current corporate average achieves the 1985 CAFE requirement of 27.5 miles per gallon, nor does any manufacturer's fleet meet the 1980-1985 emission standards.

Alternatives available to meet the CAFE regulations are restricted by the lead times required to develop and implement new technologies. Application of new engine types and alternative power systems are, therefore, not feasible for the short-term period from 1979-1985. Instead, the European companies are concentrating on weight reduction techniques, expanded use of diesel and turbocharged engines, and vehicle designs which incorporate aerodynamic principles. For example, substitution of lightweight plastic, aluminum and high strength steel for mild steels; improved manufacturing processes; and replacement of heavy and complex parts with electronic equipment all contribute to weight reduction. Volkswagen has estimated that a 10 percent reduction of the aerodynamic drag coefficient could result in a 3.5 percent fuel saving. The majority of European manufacturers already offer or are developing diesel and/or turbocharged engines which achieve higher fuel economy ratings than comparable sized gasoline engines. However, until diesel emissions standards are established by the United States Environmental Protection Agency (EPA), continued diesel engine development by the European manufacturers will not be without some degree of risk.

Based on currently available data, it appears that manufacturers can comply with 1985 fuel economy standards if certain circumstances prevail. The predominant factor is continued acceptance of diesel (and turbocharged) engines both by the consuming public and EPA emissions standards; other factors include availability of financial and technological resources to expand vehicle offerings and weight reduction programs, as well as additional engine improvements.

4.3.1 Volkswagen

Volkswagen was the second foreign manufacturer to export vehicles to the United States for sale in 1949 (British Leyland was first in 1948). Since 1949 when two Beetles were sold, VW sales climbed steadily to more than 500,000 per year in 1968 through 1971. As the value of the dollar declined against the German Mark so did Volkswagen sales until by 1976 only 200,000 vehicles were sold in the U.S. The decision was made at that time to establish a vehicle assembly plant in the United States in order to soften the impact of currency fluctuations. With the start of assembly operations of the technologically advanced front wheel drive Rabbit in the United States, Volkswagen hopes that it will once again regain its position as the number one import manufacturer (including the sales of its domestically assembled vehicles). Figure 4-6 shows the Volkswagen Product Schedule.

The VW Beetle, introduced in the United States in 1949, was the most popular import vehicle ever. This popularity, in part, was due to its inexpensive price and the fact that it experienced only minor changes between then and 1978 when it was discontinued. The Super Beetle is slightly larger than the regular Beetle but uses the same 1,584 cc 4-cylinder air cooled rear engine equipped with the Bosch-L-Jetronic electronic fuel injection system. The Super Beetle sedan was also dropped in 1978 so only the Super Beetle convertible is still available in the U.S.

The VW Rabbit (called Golf in Germany), has front-wheel-drive with a transversely mounted overhead cam, and uses either water cooled gasoline or a diesel engine. When initially introduced in 1975, the Rabbit was offered with a conventional carburetor and a catalytic con-

verter but in 1976, the engine size was increased from 1,470 cc to 1,588 cc and the catalytic converter was eliminated. At this time the brakes were modified so that when the brake linings were worn down to the safety limit a "bump" would be felt in the brake pedal to alert the driver that the linings needed to be replaced. In 1977, since there were problems with the conventional carburetor, it was replaced by Bosch-K-Jetronic CIS (continuous injection system) fuel injection; the diesel version was also introduced. In 1978, the engine was scaled down from 1,588 cc to 1,457 cc but the power was increased by 7 horsepower. This technical change provided a smoother running engine and increased fuel economy by 1 mile per gallon. Other changes included new suspension, larger radiator, and passive seat-belts as standard on the deluxe version. Late in 1978, the U.S. manufactured Rabbits appeared with rectangular headlights and a new grille. A 1-barrel carburetor instead of fuel injection may be offered on a limited basis in 1979. The custom version of the Rabbit is the only model currently produced in the United States but a luxury version may be added later along with new pick-up and wagon versions. For 1979, a five-speed manual transmission will be added to the four-speed manual and automatic currently available.

The diesel Rabbit is only assembled in Germany and not at the Westmoreland, Pennsylvania plant. It uses a 1,471 cc transversely mounted engine and achieves an EPA rated fuel economy of 50 miles per gallon on the highway. The diesel Rabbit is only available with a four-speed manual transmission.

The VW Polo, which is not exported to the U.S., is said to have influenced the style of the Ford Fiesta. The Derby, another version of the Polo produced in Europe has a new notch-back style and is a foot longer. A Rabbit notch-back with similar styling may be available in the future.

The Scirocco is essentially identical to the Rabbit except that it has a sporty body style. It shares the same wheelbase, engine and drivetrain as the Rabbit. New in 1975, trim changes for 1978 included polyurethane coated bumpers, front spoilers, and wraparound turn signals. In 1977, a special limited edition called the Sidewinder I

was offered and a Sidewinder II version was introduced in 1978. A Spider coupe model may also be produced for 1979.

The Dasher (called Passat in Germany), first introduced to the U.S. in 1974, has a front-wheel drive with a longitudinally mounted 1,470 cc four-cylinder water cooled overhead cam engine. Initially offered with a standard carburetor, the engine received the new Bosch-K-Jetronic (CIS) fuel injection system in 1976 when the engine size was increased to 1,588 cc. Styling changes for 1978 include new front end sheet metal which gives it a sleeker look, wraparound polyeurethane covered bumpers in both front and rear, a front end spoiler, a new dashboard, and a new suspension system. Two and four door sedans, three door hatchback, and five door wagon versions are available with either an automatic or four speed manual transmission. There are no plans for a Dasher diesel at this time.

The Audi Fox, introduced in 1973 with a Bosch-K-Jetronic fuel injector system, is available in two and four door sedans and a five door wagon, and is essentially a Dasher twin. Changes for 1978 diminished the similarity as the Fox received new sheet metal, a wraparound grille, dual head lamps, new tail lights, a plastic fuel tank, and aluminum cylinder heads. For 1980, the Audi sedans may be produced at the Westmoreland, Pennsylvania plant with the station wagon following at a later date.

The Audi 100 LS, introduced in 1970, was dropped from the U.S. market in 1978 with the introduction of the Audi 5000 C. The 100 LS used a 1,871 cc 4-cylinder engine while the 5000 C uses a 2,144 cc in-line 5-cylinder, both in front-wheel drive configurations. The 100 model is being used to test different Wankel and diesel engines which may be introduced later. The 5000 model uses a new solderless radiator, has light alloy cylinder heads, a Bosch CIS fuel injection system, and a controlled deformation front end. The front end is designed based on the Timoshenko theory that certain steel members of the body deform in regular folds to disperse energy in a shorter length than when body sections are allowed to crumple. This allows the passenger compartment to maintain an unusually high level of integrity in a front end collision. A 6-cylinder diesel and

a turbocharged diesel should be available in 1979 and 1980.

The VW bus/campmobile, also called the Type II and KOMBI, uses an air cooled rear mounted 1,970 cc 4-cylinder engine with the same Bosch-L-Jetronic fuel injection system as the Beetle. New glass and sheet metal were added to the bus for 1978. A diesel version is being considered for an unspecified future date.

An experimental vehicle, called Integrated Research Volkswagen (IRVW), was accepted by the U.S. Department of Transportation for testing in June 1977. It has a combined EPA rating of 60 miles per gallon using a turbocharged diesel and a five-speed manual transmission. Also available on the vehicle are 40 mile per hour frontal crash protection, a passive restraint system, and extremely low emissions. Most of the components used on the IRVW will start to appear in other models before 1980.

4.3.2 Fiat

Of the 1.1 million cars sold in Italy per year, Fiat has 49 percent of the market. The Fiat 127, which is not sold in the U.S., holds 17 percent of that share, making it the top selling car in Europe since 1973.

By 1980, Fiat hopes to install a total electronic engine control system in all its cars. As an interim step, certain models will feature electronic spark advance in 1979 with the model 128 as the most likely candidate. (Figure 4-7 shows the Product Schedule.)

Introduced in the U.S. in 1969, the Fiat 128 was the first front-wheel drive car it produced. In 1971, the sporty 128 SL three-door hatchback was introduced but underwent a name change to the 128 3P in 1976. Currently, the 128 is available in the U.S. in two and four-foor sedans and a three-door hatchback; the 128 wagon was discontinued in 1978. The 128 is due for a change in 1979 when a 1,500 cc engine and 5-speed manual transmission will be added. Three-door and five-door hatchbacks will be offered with

optional automatic transmission. The Fiat 138 sedan, introduced in Europe in 1978, is a derivitive of the 128 sedan. The model 128 GLX, a modified version of the 128 coupe, was introduced in Italy in 1978 and like the 138 sedan, is not currently scheduled for export to the United States.

The X 1/9 mid-engine sport coupe was introduced to the United States in 1973. In 1979, a new 1,500 cc engine will replace the current 1,290 cc 4-cylinder unit. A new 5-speed manual will be standard for 1979 along with restyled bumpers and interior trim.

In 1979, the Fiat 124 Spider will have a new 2,000 cc engine replacing the current 1,756 cc version and an optional automatic transmission.

The Fiat 131 sedan and wagon were new in 1975. A diesel version was offered in Italy for 1978 but is not expected to be exported to the U.S. Improvements to the 131 in 1978 included new interior trim, performance and economy improvements, as well as a styling "face-lift."

The Fiat 132 is the top of the line model but is not exported to the U.S.

The front-wheel drive Lancia Gamma was introduced in Italy in March 1976 as a replacement for the 130, which was dropped in 1975. Luxury sedan and coupe versions will be introduced in the United States in 1979 to compete with other cars in the $20,000 price range.

The Lancia Beta sedan and coupe were introduced to the U.S. in 1976 and, like the Lancia Gamma, are front-wheel drive vehicles. All Lancia models are expected to have a new 2,500 cc fuel injected 4-cylinder engine for 1979.

4.3.3 British Leyland (BL Ltd.)

British Leyland manufactures five different makes of automobiles: MG; Triumph; Jaguar; Rover; and Austin; and, in 1948, was the first foreign manufacturer to export to the United States.

BL produces a Mini which has been in production in England for eighteen years but is not sold in the U.S. A new Mini is scheduled for production at the end of 1979 and may be offered in Europe while the old Mini is still being produced. (See Figure 4-8 for Production Schedule.)

The MG Midget is a small two-seat sports car convertible on an 80" wheelbase with a 1,493 cc 4-cylinder engine. It has remained unchanged since 1974 and no changes are planned for the near future. The MGB is slightly larger, built on a 91" wheelbase and uses a 1,798 cc 4-cylinder engine. In 1977, it received a new instrument panel, sealed cooling system, and front and rear anti-roll bars. The MGB is also available as a convertible.

The Triumph Spitfire, introduced in 1963, has received only minor modifications since that time. It is built on an 83" wheelbase and is equipped with the same 1,493 cc 4-cylinder engine as the MG Midget. In 1977, the Spitfire received a new intake manifold and carburetor, and improvements to the cylinder head, exhaust manifold, and distributor which resulted in improved fuel economy. The Triumph TR7, new in 1975, is built on an 85" wheelbase and uses a 1,998 cc 4-cylinder engine. In 1978, an automatic transmission was introduced as an option, a first for a BL Sports Car. The TR8 was new in 1978 in England and uses an aluminum V-8 engine developed in the 1960's for the Oldsmobile F-85. This vehicle is expected to be introduced to the United States in the near future.

The Jaguar XJ6L has undergone only minor changes since its introduction in 1969. In 1977, the wheelbase was increased to 112.8" from 109" but the 4,235 cc 6-cylinder engine was retained. For 1978, a three-way catalytic converter and fuel injection were introduced. The Jaguar XJ12 was introduced in 1974 as both sedan and coupe versions. It received fuel injection on its 5,345 cc 12-cylinder engine in 1975 and a new automatic transmission in 1978. When the wheelbase was increased to 112.8" in 1977, the coupe was dropped. The XJS was introduced in 1976 as a replacement for the XKE and use the same 5,343 cc 12-cylinder engine as in the

XJ12. Utilizing the Lucas fuel injection system, and built on a 102" wheelbase, this vehicle is the most aerodynamically designed of any produced by British Leyland and is the most expensive, priced at approximately $24,000.

The Rover, Europe's car of the year for 1977, has not been sold in the United States since 1974; it will be reintroduced in 1980 when emission and fuel economy problems can be overcome. Two new Rover models for 1978, the 2,300 using a 4-speed manual transmission and the 2,600 using a 5-speed manual transmission, each with a new 6-cylinder engine will not be sold in the U.S.

The Austin Marina was built on a 96" wheelbase and used the same engine as the MGB but was dropped from the U.S. market in 1976. Austin still produces models in England but none are scheduled for export to North America.

4.3.4 Volvo

Volvo models are numbered using a three digit code to represent specific characteristics of each vehicle. The first digit represents the body styling; the second, the number of cylinders in the engine; and the third, the number of doors. For example, the 244 is style 2, uses a 4-cylinder engine, and has 4-doors. (See Figure 4-9 for Product Schedule.)

In 1975, Volvo replaced its 140 series (in production since 1967) with the new 240 series. Two and four-door sedans and a five-door wagon are offered. A new front end, front suspension, and other engineering changes were the direct result of work done on the Volvo experimental safety car. The 6-cylinder 164 sedan was replaced in 1976 by a new 260 series which included both two and four-door sedans and a five-door wagon equipped with a fuel injected 2,664 cc aluminum alloy V-6 engine. A new aluminum alloy 2,127 cc overhead cam 4-cylinder engine was also introduced in the 4-cylinder 240 series in 1976.

The Volvo 3-way catalyst Lambda-Sond emission control system was introduced in the 240 series in 1977 on cars sold in California. In 1978, this system became optional throughout the United States and was made standard on all Volvo models in 1979. It uses an oxygen sensor in the exhaust and feed-back control of the air/fuel ratio to maintain the optimum oxygen level in the exhaust for maximum emission control by the 3-way catalyst. In the continuous injection system (CIS) used by Volvo, fuel is metered based on the air flow volume. A turbocharger, planned for installation by 1981, will fit between the air flow meter and intake manifold. This placement will allow the meter to automatically adjust the fuel flow based on the volume of air forced into the engine by the turbocharger.

All 1978 Volvos received a new grille and headlights. At the same time, 242-GT and 262-C coupes were introduced. These new coupes were designed primarily for the North American market. By 1979, Volvo intends to have a VW designed diesel engine available on European cars and perhaps on U.S. models by 1981.

The Volvo 343 mid-sized car introduced in Europe in 1976 is not expected to be exported to the U. S.

4.3.5 Mercedes-Benz

Mercedes-Benz, the second largest West German passenger car producer (behind Volkswagen), is West Germany's most successful manufacturer of large luxury cars.

Mercedes future research programs concentrate on problems related to U.S. fuel economy, emission, and safety standards. Plans include: 1) further development of diesel engines (which constitute 46 percent of 1977 U.S. sales), turbocharged engines, catalytic converters, and passive restraint systems; 2) research into diesel emission controls in alternative power systems; and 3) implementation of weight reduction programs, primarily light alloy engines and selected body components. Figure 4-10 shows the Product Schedule.

Model designations used by Mercedes describe the engine size and type and body size. The numbers represent the engine displacement; e.g., 230 represents approximately a 2,300 cc or 2.3 liter engine. Letters designate body size and/or engine type; e.g., D for diesel, E for fuel injection, and S for the series of large cars. All fuel injected Mercedes models use the Boch-K-Jetronic continuous fuel injection system.

Mercedes-Benz introduced the W114/115 Series in 1967. Development on a new W123 Series began in 1970; it was introduced in Europe in 1976, and replaced the old W114/115 Series in the U.S. in 1977. This series consist of the 230, 240D, 280E, 300D, 280CE, and 300CD models. Mercedes also imports the 116 series of vehicles which includes the 280 SE and all 450 models except the 450SL, two door, two passenger, sport convertible, which is a 107 series vehicle. Mercedes usually introduces a new vehicle in Europe one year before the U.S. introduction. A six-year model development cycle is generally used by Mercedes-Benz with production runs scheduled for eight years. The designed vehicle life span is twelve years compared to only ten years for U. S. vehicles.

In 1985, the downsized, lightweight successors to the 123 Series will be introduced to the U.S. market in both turbo-diesel and gasoline versions. The gasoline engine construction will be either all aluminum or thin walled cast iron with an aluminum cylinder head. Mercedes projects that aerodynamic efficiency will be increased by 5 percent, as will transmission efficiency.

The body/chassis engineering which was used for the larger 116 series models, was used in the design of the W123 Series. The front sub-frame was eliminated on the 123 Series and the engine and front suspension are now attached directly to a unitized body/frame. Center offset steering, sometimes called centerpoint steering, was added. The instrument panel also received engineering and styling changes.

In 1981, Mercedes will replace the current 116 Series (280SE and most 450 models) with a smaller 126 Series of cars powered by

lighter weight six and eight-cylinder gasoline engines and turbocharged diesel engines. A 3-way catalyst and continuous fuel injection will be fitted on the gasoline engines; increased acceleration and fuel economy will result from a new 4-speed automatic transmission. Body styles will feature a lower and wider grille, rubber and plastic bumpers with chrome inserts, improved aerodynamics, and weight savings of approximately 450 pounds.

The model 230 will be fitted with a continuous injection system and 3-way catalytic converter in 1982 for the European market; however, the vehicle's popularity is down in the U.S. and it has been phased out of this market in 1978. The 240D is scheduled to receive a new turbocharged 4-cylinder diesel engine in 1983. The 280E was equipped with fuel injection for the U.S. market when it was newly introduced in 1977. The 300CE 5-cylinder diesel coupe and 280CE fuel injected 6-cylinder coupe are the coupe versions of the W123 Series sedan but share a slightly smaller wheelbase (106.7 inches for coupes versus 110 inches for sedans).

Between 1982 and 1984, the 450SL sport version (2-seat convertible) will be replaced by a smaller version which will have aluminum front and rear deck and the same lighter weight engine used in the sedans. The 450SLC received a new 5-liter aluminum block engine to become the 450SLC 5.0 for the European market in 1978. Other changes included an aluminum hood, trunk, and wheels, which, when added to the aluminum engine, result in a total weight savings of 220 pounds. The addition of front and rear spoilers currently only available in Europe, reduced aerodynamic drag by 9 percent. The 280SE sedan, new in 1975, uses a 2,746 cc 6-cylinder engine with a continuous injection system. The 300 SD sedan, introduced to the U.S. in mid-1978, was the first turbocharged diesel production car to enter the market. Sharing the same body as the 280SE, the 300SD is equipped with a 5-cylinder, fuel injected diesel engine, a Garrett turbocharger, and automatic transmission. The 450SEL sedan is equipped with a V-8 fuel injected engine and 3-speed automatic transmission. Introduced in 1977 to the U. S. and equipped

with a 6.9 liter V-8 fuel injected engine and 3-speed automatic transmission, the 450SEL 6.9 sedan is essentially the same as the 450SEL except for the engine. In early 1979, Mercedes will introduce a 5-cylinder diesel powered station wagon in the U.S. This 300TD wagon will have a new self-leveling rear suspension and other technological improvements and will undoubtedly be the most expensive station wagon available.

4.3.6 Saab

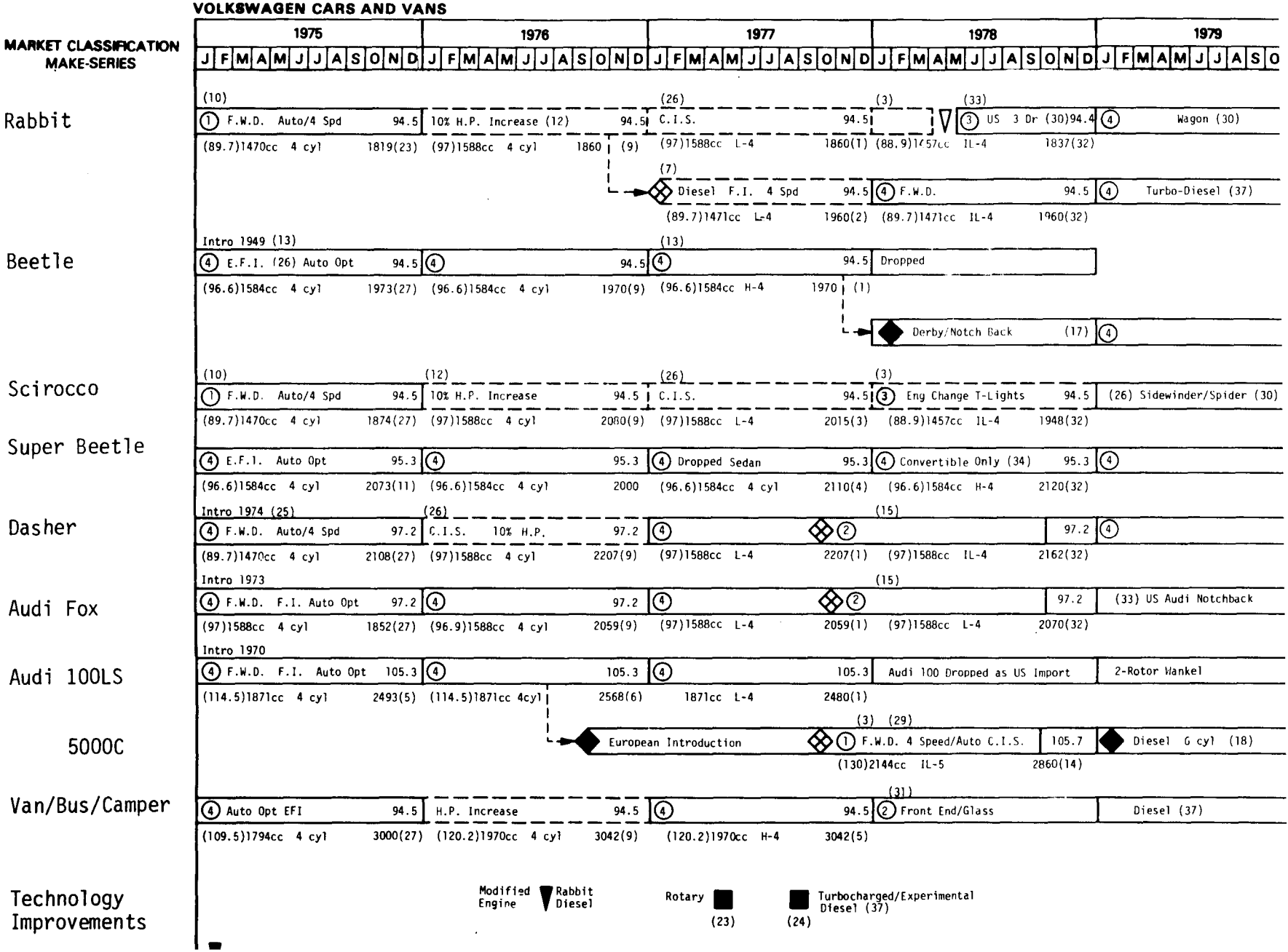
Saab produces three basic types of automobiles: two-door sedans; three-door hatchbacks; and five-door hatchbacks. These cars are generally available in three trimlines: the GL standard trim; GLE luxury trim; and EMS heavy duty sport package. The present styling of all models was introduced in 1969. In 1976, the only changes to the model line were minor refinements of engineering or styling details; e.g., rear brake caliper pistons, push button trip odometer, side lights, and some minor trim changes. In 1977, a five-door wagonback was added to the three-door model. The entire model line-up for 1977 included the 99GL in two and four-door sedans, and three and five-door wagonbacks; the 99GLE in two and four-door sedans only; and the 99EMS two-door sedan. All Saabs are front-wheel drive and use the same engine, four-speed manual transmission, and optional three-speed automatic transmission. (See Figure 4-11 for Product Schedule.)

In 1970, electronic fuel injection was added; a new 2-liter overhead cam four-cylinder engine was made standard in 1973; and, in 1975, the Bosch CIS (continuous injection system) mechanical fuel injection replaced electronic fuel injection. In 1977, the Lambda-Sond exhaust emission system with oxygen sensor and feedback control of the air/fuel ratio, and a 3-way catalyst was introduced in California and high altitude areas. This system, which meets all future U.S. emission requirements, was extended to all models sold throughout the U.S. in 1978.

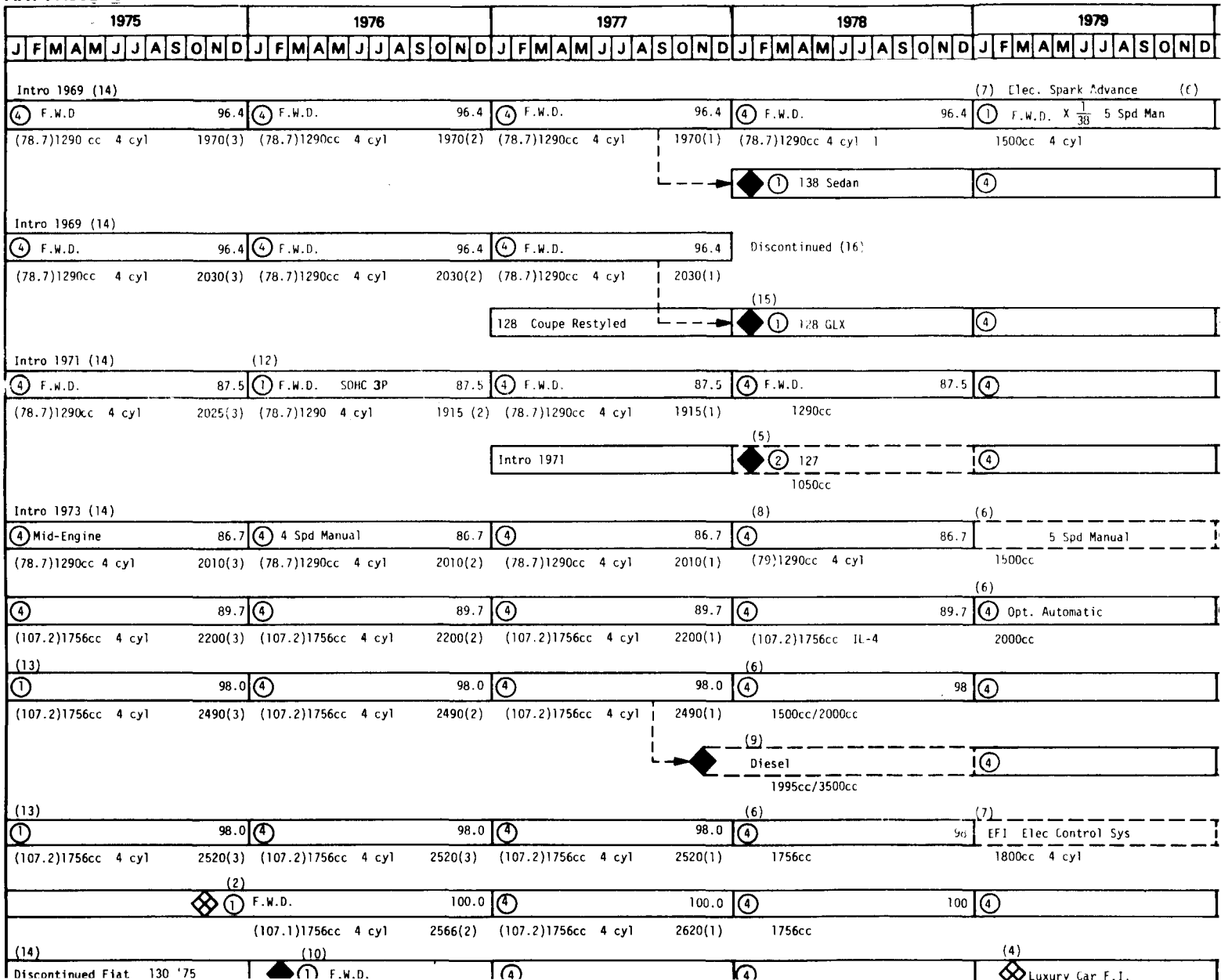
Several modifications were made in 1978. The wagonback name was dropped in favor of hatchback and the style was extended to the GLE and EMS models as well as the GL. The two-door EMS and four-door sedan GL models were dropped completely. The complete line for 1978 consists of the 99GL in two-door sedan, three-door hatchback and five-door hatchback versions; the 99 GLE in three-door hatchback model available with or without a turbocharger.

The Turbo EMS was first introduced to the U.S. in 1978. Only available with the 4-speed manual transmission, it is equipped with the same Lambda-Sond emissions control system and 2-liter four-cylinder engine as all Saab models. The turbocharger provides an additional twenty horsepower to the engine; and, as a result, the Saab Turbo EMS is designed to compete with other performance cars.

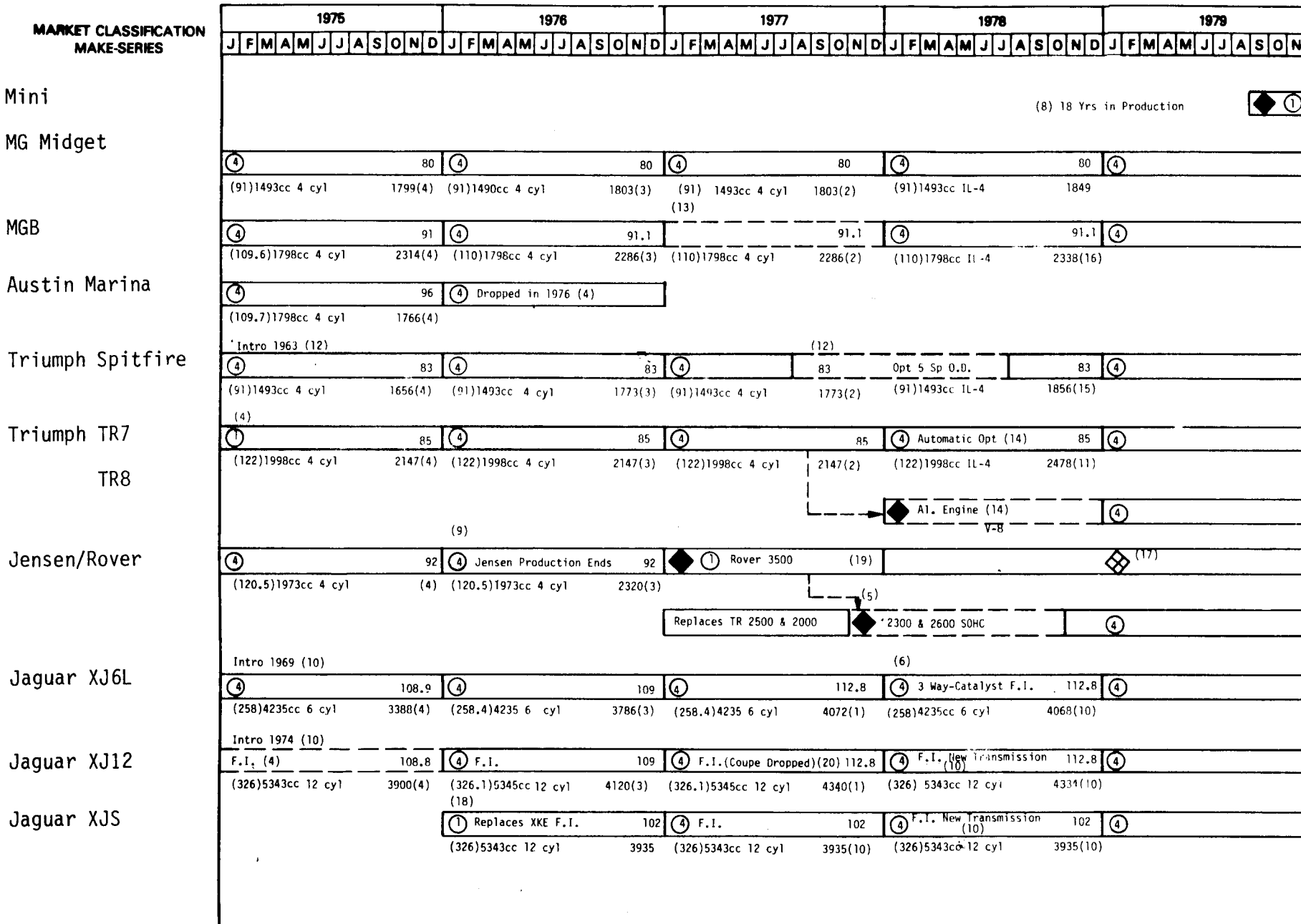
VOLKSWAGEN CARS AND VANS



FIAT PASSENGER CARS



BRITISH LEYLAND PASSENGER CARS



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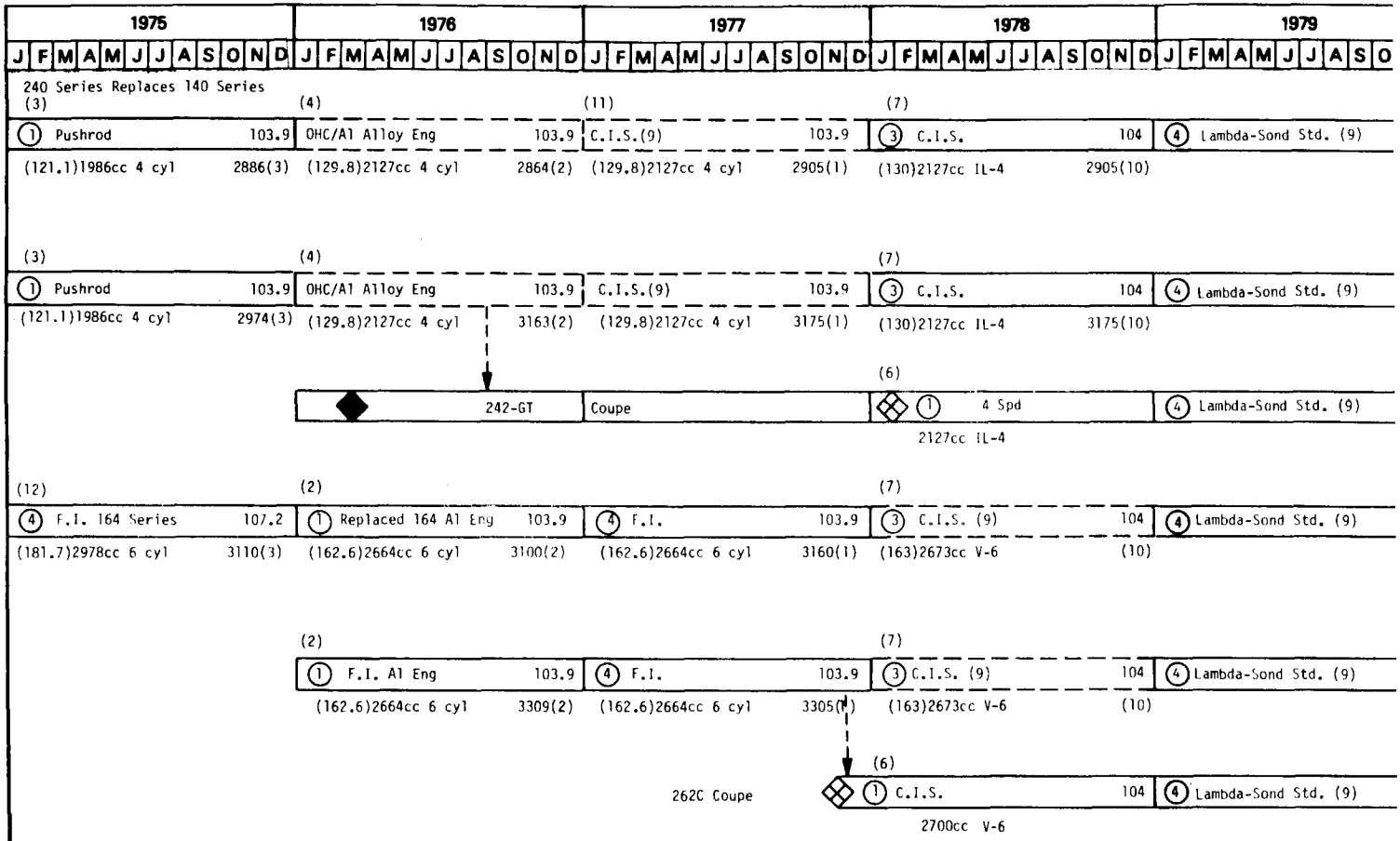
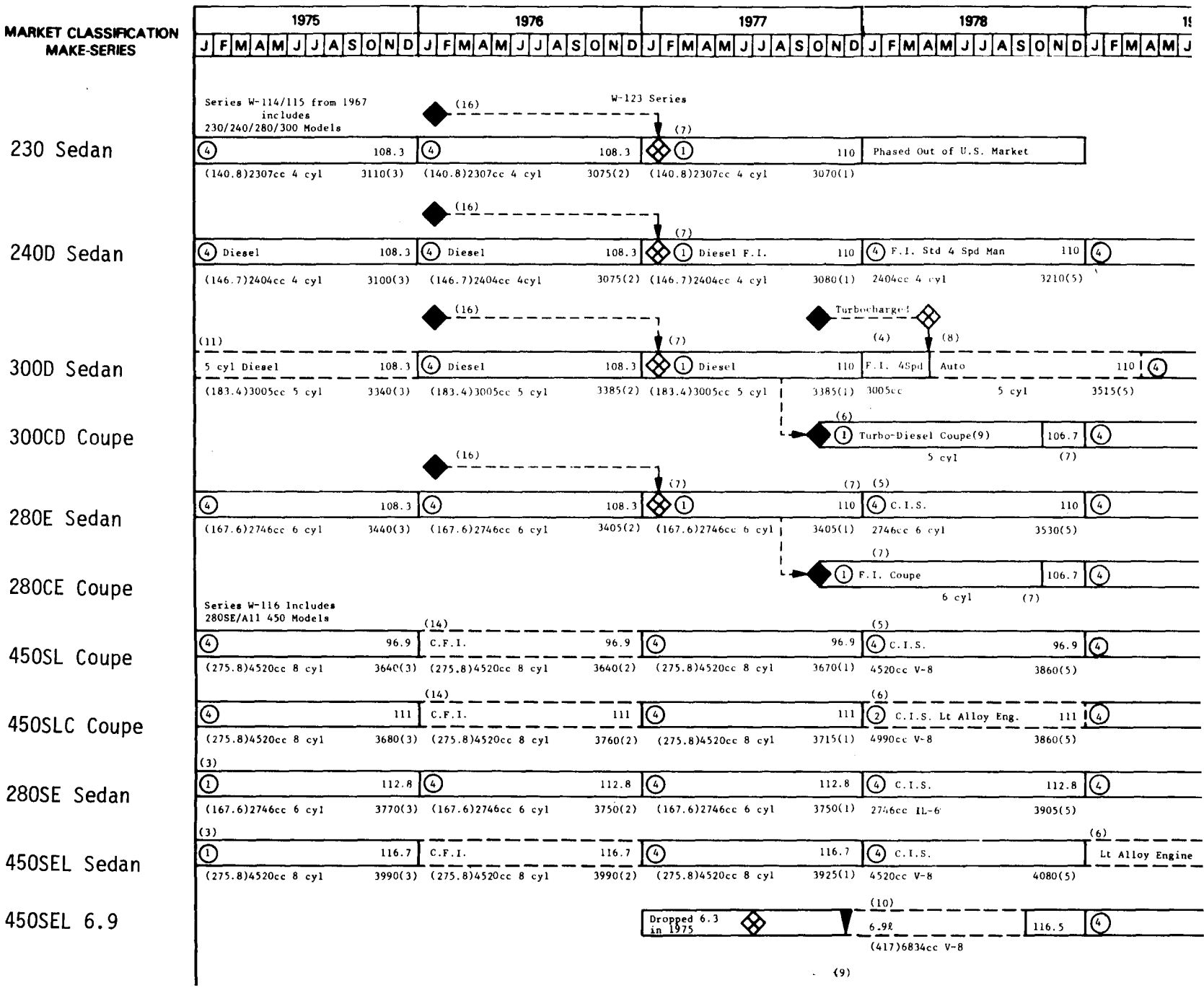
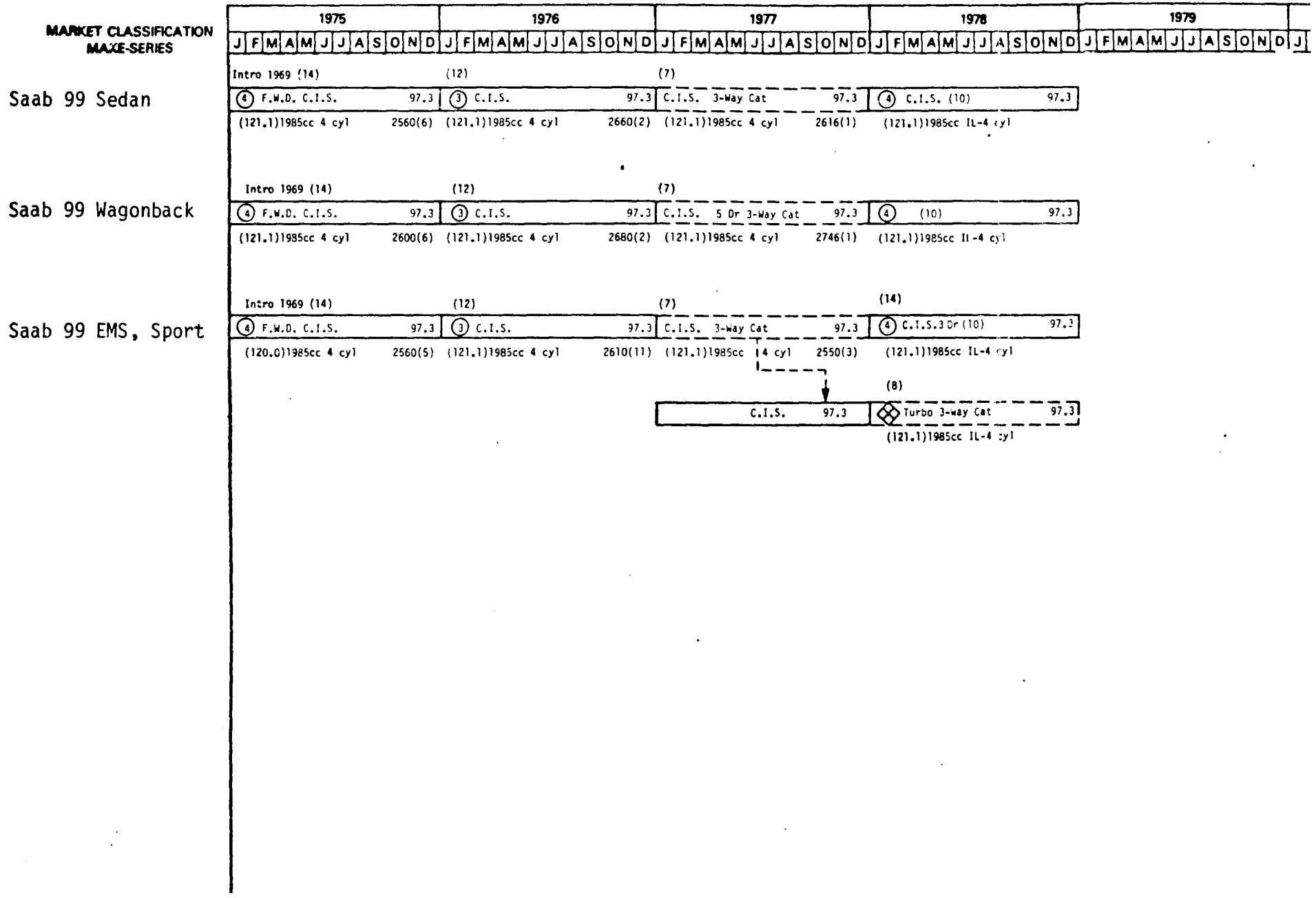


MERCEDES-BENZ PASSENGER CARS



SAAB PASSENGER CARS



APPENDIX A

DOMESTIC AUTO NOTES AND CROSS-REFERENCE LISTS

This appendix contains notes and cross-reference matrices pertaining to the domestic automobile manufacturers. The notes (Tables A-1 through A-4) are keyed by reference number (as shown on the Master Product Schedules in Section 2, Figures 2-1 through 2-8) and model year(s). The cross-reference matrices (Figures A-1 through A-4) correlate the appropriate reference number with the original research sources.

Information provided in this appendix can be used to obtain additional details beyond those highlighted on the schedules. Original sources may be identified for further research and location of diagrams, photographs, etc. Source abbreviations are located in the List of Abbreviations at the front of this report.

TABLE A-1. GENERAL MOTORS

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1978	Oldsmobile to offer 350 CID V-8 Diesel option on Delta 88s and Ninety-Eights.
2.	1978	New A-Bodies 550-972 lbs. lighter, WB 108.1 in. using body and full-frame construction. Station wagons to have two-piece tailgate/window assemblies and 4-door sedans have fixed glass in rear doors.
3.	1979	New FWD Toronado, Eldorado, and Riviera E-bodies, WB 114 in. Riviera to use Turbo 231 CID V-6 engines, Toronado the 260 CID V-8, and Eldorado the 350 CID V-8. New THM 325 Automatic transmission will be used.
4.	1978	New Chevrolet 200 CID 90°V-6 engine with aluminum intake manifold and Dualjet carb.
5.	1978	New Buick 196 CID 90°V-6 even-firing engine.
6.	1978½	Oldsmobile Diesel V-8 to be available on the Cadillac Seville.
7.	1980	New FWD K-body Seville, WB 114 in.
8.	1980	New FWD X-body to be introduced in the Spring of 1979, WB 103.5 in., curb wt. 2700 lbs. Chevy and Pontiac to have 2-door and 4-door hatchback models, Buick and Olds 2-door and 4-door notchback versions.
9.	1980	Chevy 1.6 liter L-4 engine converted to diesel by Pontiac.
10.	1980	New THM 125 auto transaxle for X-bodies in 1980. Manual 4-speed version will also be available.
11.	1980	New X-bodies will have MacPherson strut suspensions.
12.	1978	The Vega and Astre to be discontinued as well as the Aluminum 140 CID L-4 Chevrolet engine. The Pontiac 151 CID L-4 iron engine will be used in its place on the Monza and Sunbird, which have been expanded to include the old Vega/Astre lines including the station wagon.
13.	1978	A temporary space-saving spare tire will be standard on all new A-bodies.
14.	1978	Chevette to be offered in a 4-door hatchback version, WB 97.3 in. vs 94.3 in for the 2-door.
15.	1978	The Buick 231 CID 90°V-6 engine converted to even firing.

TABLE A-1. GENERAL MOTORS

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
16.	1978	Turbocharged 231 CID V-6 with ESC (electronic spark control) available on Regal and LeSabre models.
17.	1978	Three-way catalyst with electronic feedback carburetor on some California models with Pontiac 2.5ℓ and Buick 3.8ℓ engines.
18.	1978	Camaro gets soft front and rear bumper similar to the Firebird.
19.	1977 1978½ 1980	New 151 L-4 Pontiac iron block engine. High-performance version of the 151 CID engine. Transverse and light-weight versions of the 151 CID engine with aluminum intake manifolds for the new X-bodies and other models.
20	1978	Two new carburetors introduced: Dualjet 2 bbl single stage carb for all "V" engines and the Varajet 2 bbl 2-stage carb for all inline engines. Limited use only in 1978, expanding in 1979.
21	1979	New turbocharged 151 CID L-4.
22	1980	New 3-speed automatic transmission with lockup torque converter to be steadily phased in through 1985.
23	1980	New transverse 2.8 liter (171 CID) 60°V-6 engine built by Pontiac for FWD X-bodies.
24	1979	The in-line six cylinder engine to be dropped.
25	1980	New Chevy 267 CID V-8 engine possibly with turbocharging, and dual-displacement version of the 305 CID V-8.
26.	1978	New Regal to be an A-special body.
27	1983	New downsized bodies with conventional rear drive; WB 112 in.
28	1981	New car/van wagon FWD X-body called MPC; WB 104.9in, curb wt. 3000 lbs.
29.	1981	New U-body FWD subcompact replacement for H-body Chevy Monza and Pontiac Sunbird. Olds Starfire and Buick Skyhawks become sportier X-special models on a smaller compact X-body.

TABLE A-1. GENERAL MOTORS

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
30.	1979	Chevette gets mild facelift.
	1981	Skin change for Chevette with major wt. reduction.
	1983	New Chevette FWD T-body; WB 90 in.
31.	1981	5.0 liter V-8 largest engine.
	1983	5.0 liter V-8 dropped except in Y-body.
	1984	3.8 liter V-6 largest engine, 5.0 liter V-8 dropped in Y-body.
	1985	Diesel usage of 25% expected as a result of a 5% increase per year in the early 1980s.
32.	1980	New Chevrolet aluminum block 165 CID 60°V-6 for FWD and models.
33.	1980	All California gasoline engines to have Phase II 3-way catalyst.
	1981	All non-diesel cars will have closed-loop fuel control systems, electronic engine controls, and 3-way catalyst systems.
34.	1983	Cadillac, Buick and Olds C-bodies to be switched to FWD, and downsized to a WB of 118 in.
	1987	B-bodies to be switched to FWD.
35.	1978	Corvette to get a complete face-lift both fore and aft, switching to a fastback design.
36.	1978	Chevrolet A-bodies get plastic front header panels (resulting in wt. saving of 7-12 lbs.) with a polyurethane primer to cover up imperfections which permits finishes comparable to those on sheet metal parts. The Monte Carlo gets soft plastic front and rear bumpers with aluminum reinforcement bars. Chevy, Olds, and Buick A-bodies get plastic inner fender liners saving over 10 lbs.
37.	1978	Pontiac revives the Grand Am nameplate on a sporty version of the LeMans.
38.	1979-80	Corvette weight to be cut 400 lbs. by using a new fiberglass technique called in-mold coating, new plastic seats, lighter gauge steel, alum. or plastic wheels, one-piece plastic hood, composite doors, and completely redesigned bumper system. Engine in 1980 will be the 305 CID V-8.

TABLE A-1. GENERAL MOTORS

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
39.	1978	Chevelle name dropped in favor of Malibu, Ventura dropped for Phoenix.
40	1980	Major sheet metal changes for B and C bodies to reduce weight by 200 lbs. through the use of light-weight materials.
41.	1978½ 1979 1981	Passive seat belts optional on Chevettes in late spring. Passive belts available on several more models. Air Bags optional on full size cars.
42.	1978	Aluminum intake manifold saves 31 lbs. on Seville 350 CID V-8. Aluminum hood on most C-body Cadillacs saves 45 lbs.
43.	1978	Aluminum intake manifold on Chevy 305 and 350 CID V-8s; wt. savings 35 lbs.
44.	1979 1980	New Olds 260 CID V-8 diesel engine available on the Cutlass. Buick 231 V-6 diesel.
45	1980	New 165 CID (2.7L) 60°V-6 transverse and conventional Chevy iron block engines with aluminum intake manifold.
46.	1978	Cadillac Seville offers optional Tripmaster electronic dashboard giving many functions in digital format.
47.	1982	New F-body Camaro/Firebird models with conventional drive.
48.	1980	New Pontiac 2.2 liter (135 CID) L-4 engine.
49.	1981	New Model 200/4R 4-speed automatic transmission with overdrive and lock-up torque converter.
50.	1981	New turbocharged version of the Olds 260 CID V-8.
51.	1983	New 4-speed O.D. automatic transaxle for FWD C-body models.
52.	1981	New Chevy 1.8 liter L-4 engine with iron block and head. Diesel version also being tested.
53.	1981	New EFT system using 2 injectors in the throttle body, each servicing half the cylinders (single point injections).
54.	1979	Chevy 1.t liter L-4 engine gets aluminum intake manifold.

TABLE A-1. GENERAL MOTORS

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
55.	1984	Corvette gets all new Y-body using the 151 CID L-4 turbo-charged engine. Curb wt. 2500 lbs.
56.	1982	Chevy 350 CID diesel V-8 new from the ground up.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
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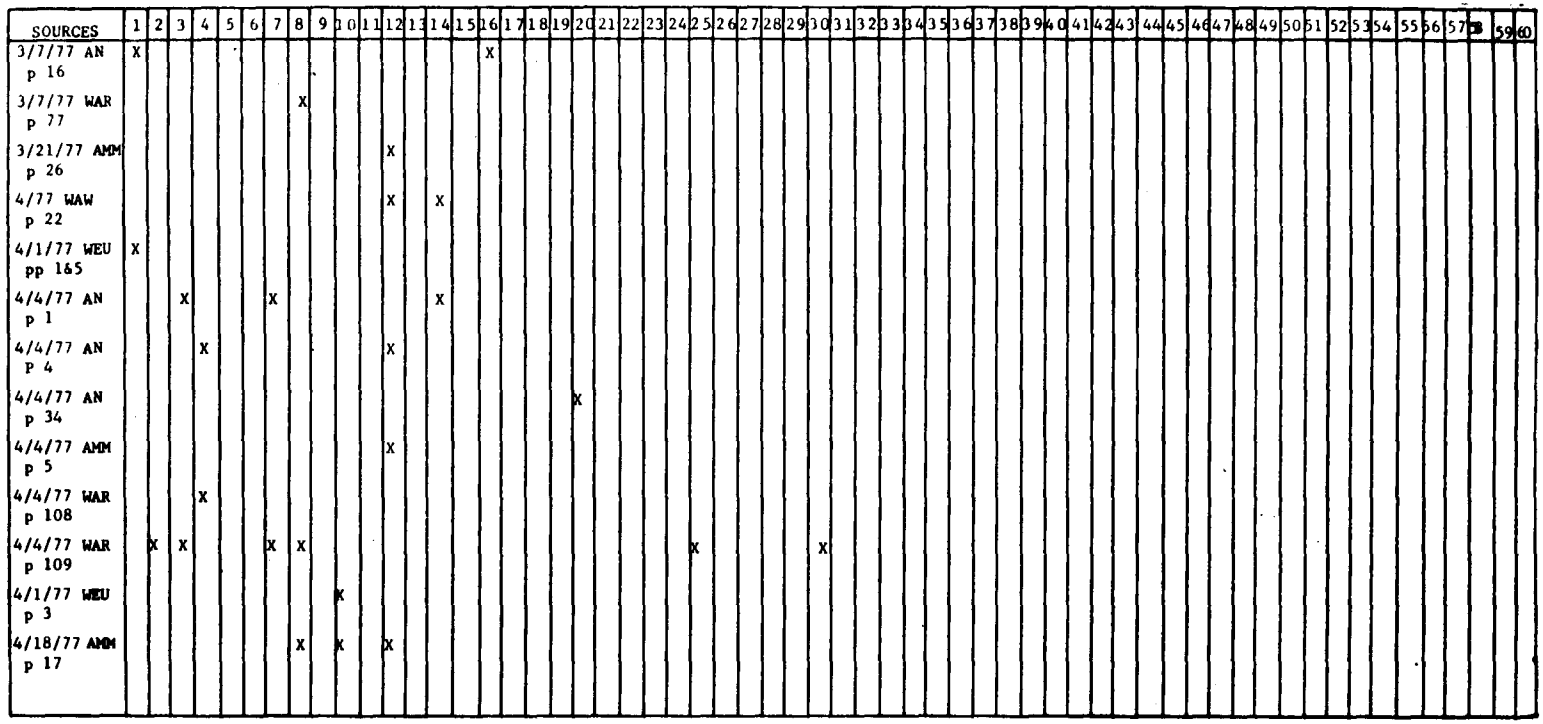
FIGURE A-1. GENERAL MOTORS

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
3/7/77 AN p 16	X															X																																													
3/7/77 WAR p 77								X																																																					
3/21/77 AMM p 26												X																																																	
4/77 WAW p 22												X		X																																															
4/1/77 WEU pp 1&5	X																																																												
4/4/77 AN p 1			X				X							X																																																
4/4/77 AN p 4				X								X																																																	
4/4/77 AN p 34																				X																																									
4/4/77 AMM p 5												X																																																	
4/4/77 WAR p 108				X																																																									
4/4/77 WAR p 109		X	X				X	X																	X					X																														
4/1/77 WEU p 3										X																																																			
4/18/77 AMM p 17								X		X		X																																																

FIGURE A-1. GENERAL MOTORS

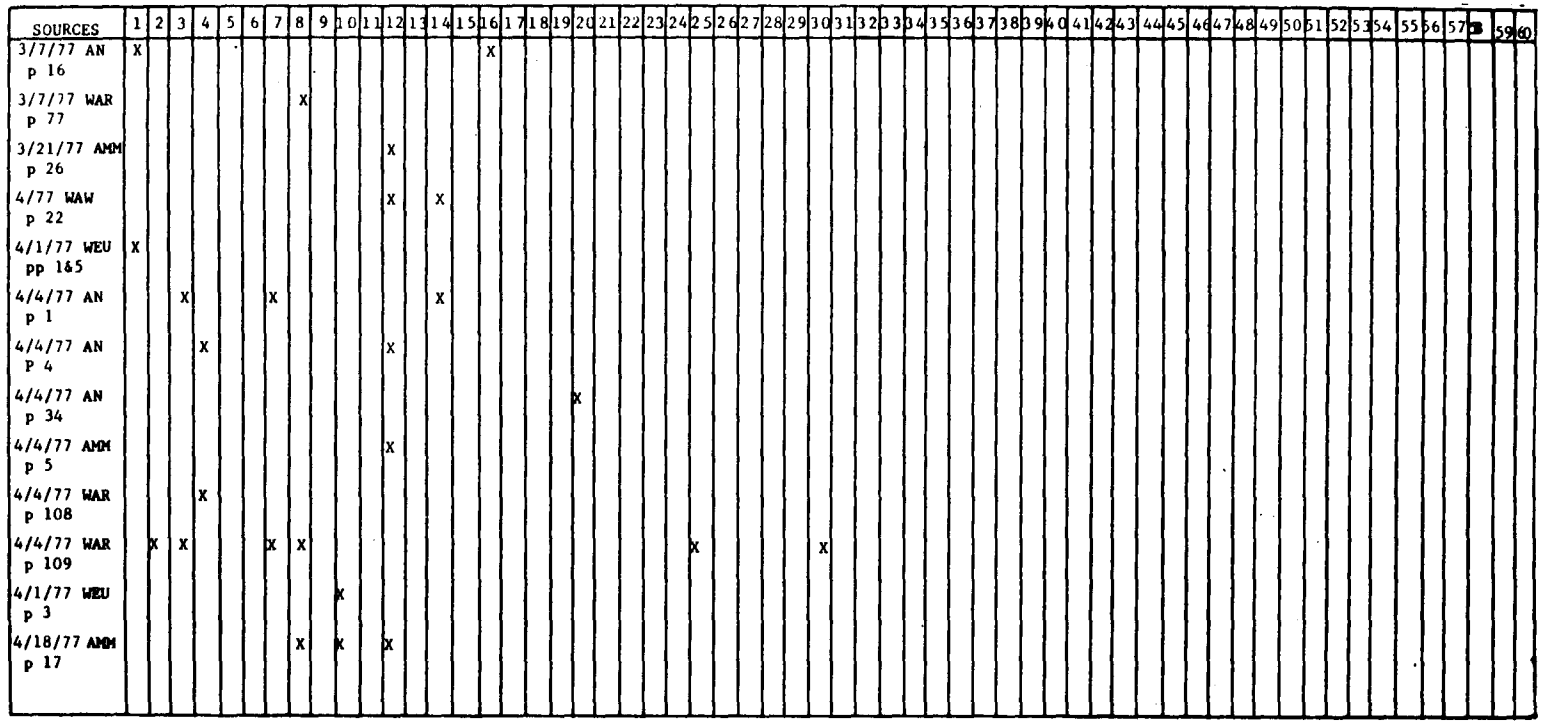
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1/7/77 WEU pp 1&4																X																																														
1/10/77 WAR p 11	X																																																												
1/31/77 AN p 3								X																																																				
2/77 MT p 21																													X																																
2/4/77 WEU pp 1&8																				X																																								
2/7/77 WAR p 43								X															X																																					
2/18/77 WEU pp 1&8																			X																																									
2/21/77 AN p 1				X																	X																																							
2/28/77 AN p 21																	X																																												
2/28/77 WAR p 68	X																																																												
3/4/77 WEU p 1																																X																													
3/4/77 WEU p 2																	X																																												
3/4/77 WEU p 6	X																																																												

A-7

FIGURE A-1. GENERAL MOTORS

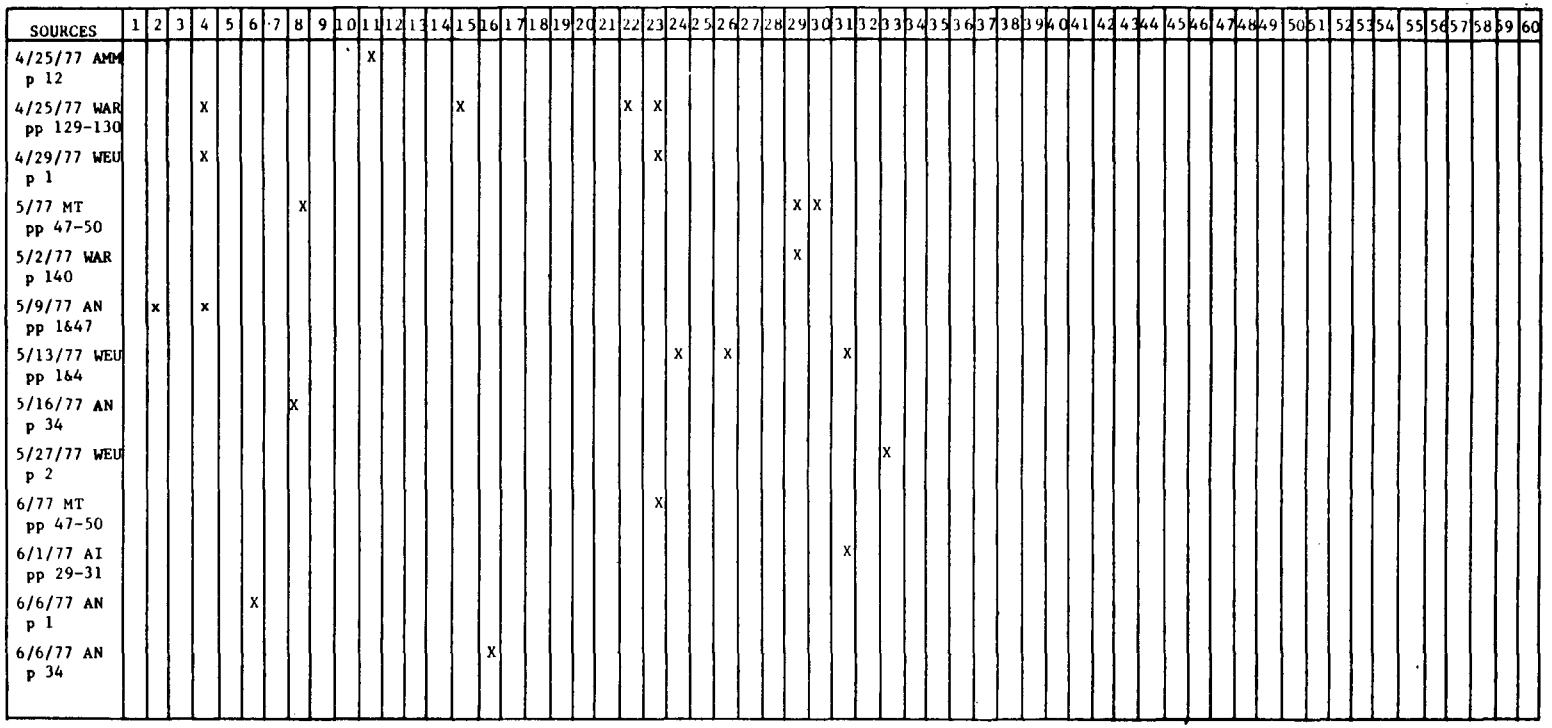
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
3/7/77 AN p 16	X															X																																													
3/7/77 WAR p 77								X																																																					
3/21/77 AMM p 26												X																																																	
4/77 WAW p 22												X		X																																															
4/1/77 WEU pp 1&5	X																																																												
4/4/77 AN p 1			X				X							X																																																
4/4/77 AN P 4				X								X																																																	
4/4/77 AN p 34																				X																																									
4/4/77 AMM p 5												X																																																	
4/4/77 WAR p 108				X																																																									
4/4/77 WAR p 109		X	X				X	X																	X					X																														
4/1/77 WEU p 3										X																																																			
4/18/77 AMM p 17								X		X		X																																																

FIGURE A-1. GENERAL MOTORS

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
4/25/77 AMM p 12											X																																																			
4/25/77 WAR pp 129-130				X											X							X	X																																								
4/29/77 WEU p 1				X																			X																																							
5/77 MT pp 47-50								X																					X	X																																
5/2/77 WAR p 140																													X																																
5/9/77 AN pp 1647		x		x																																																										
5/13/77 WEU pp 164																								X		X					X																																
5/16/77 AN p 34								X																																																						
5/27/77 WEU p 2																																X																														
6/77 MT pp 47-50																							X																																							
6/1/77 AI pp 29-31																															X																														
6/6/77 AN p 1						X																																																								
6/6/77 AN p 34																X																																														

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

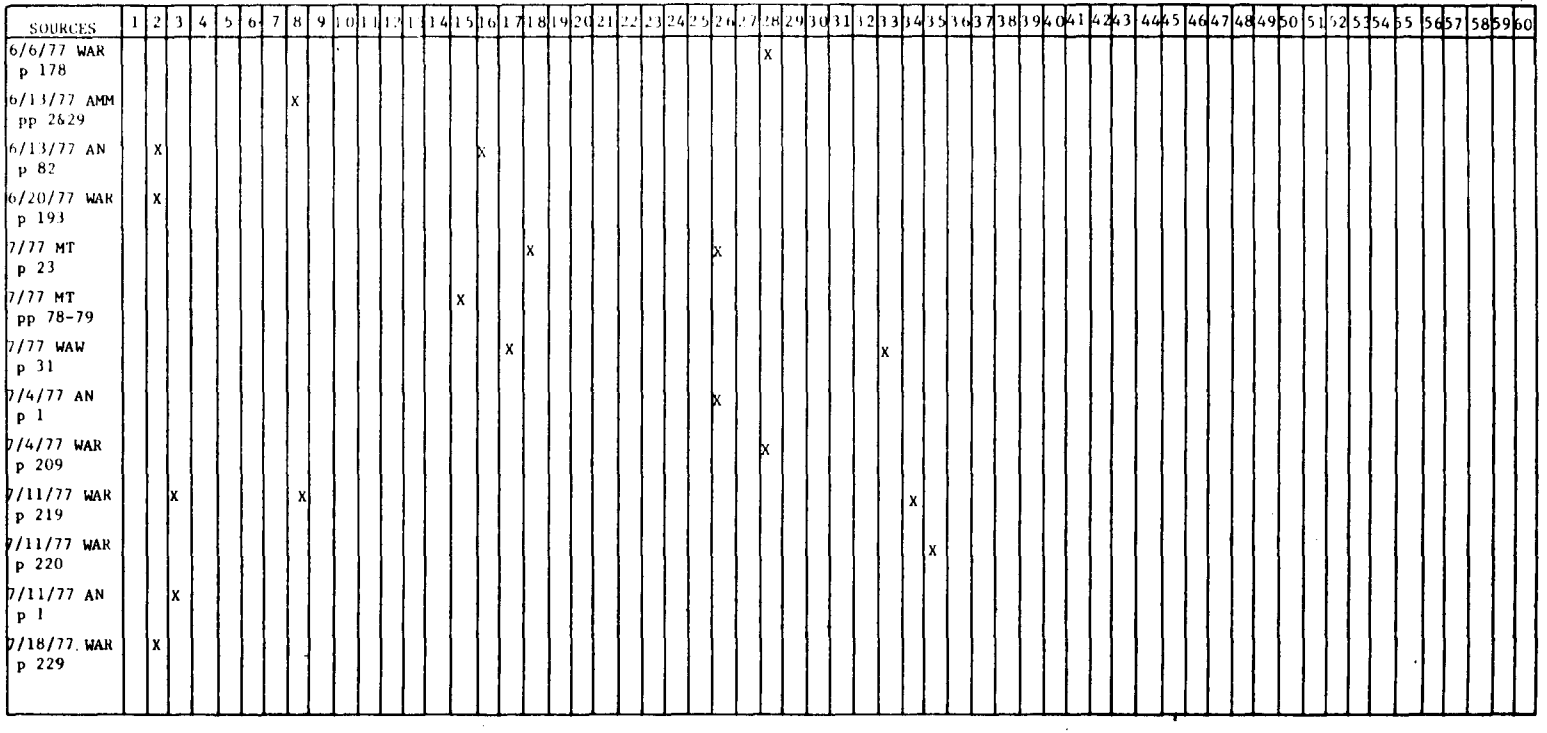
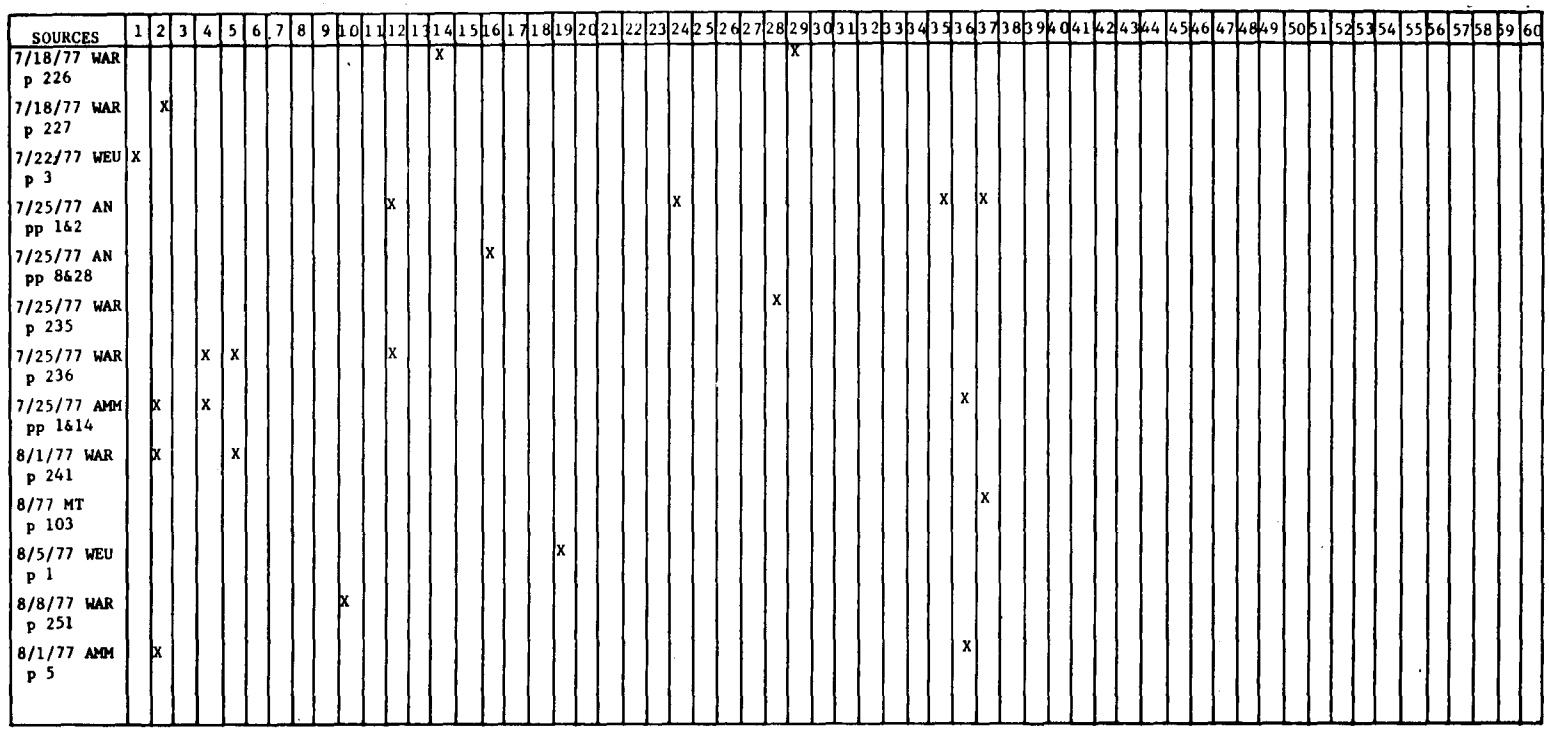


FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)



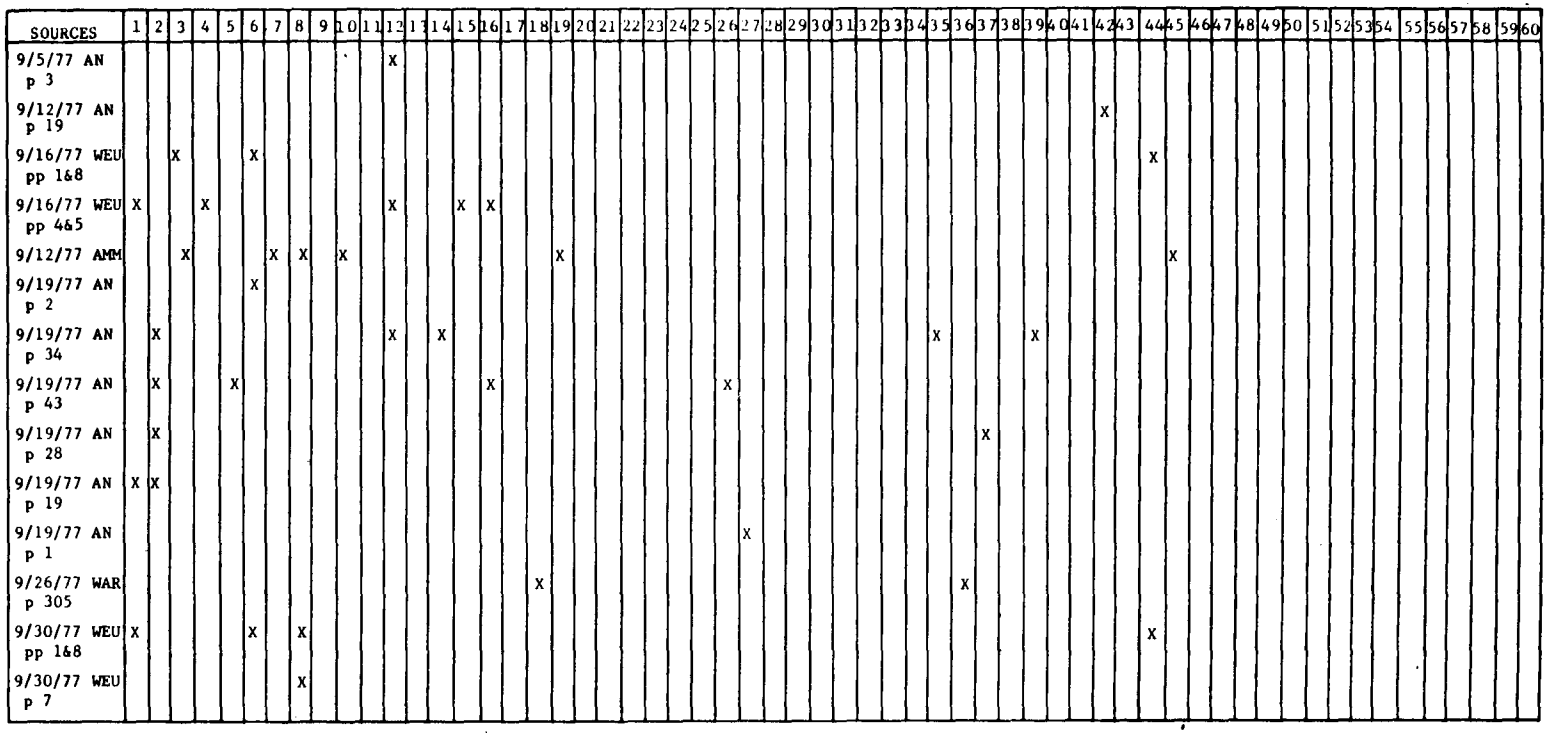
SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
7/18/77 WAR p 226														X															X																																
7/18/77 WAR p 227		X																																																												
7/22/77 WEU p 3	X																																																													
7/25/77 AN pp 1&2												X											X												X		X																									
7/25/77 AN pp 8&28																X																																															
7/25/77 WAR p 235																												X																																			
7/25/77 WAR p 236				X	X							X																																																				
7/25/77 AMM pp 1&14		X		X																																X																												
8/1/77 WAR p 241		X			X																																																											
8/77 MT p 103																																					X																											
8/5/77 WEU p 1																			X																																													
8/8/77 WAR p 251										X																																																							
8/1/77 AMM p 5		X																																		X																												

A-11

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78) (Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
8/77 WAW p 25	X																																																													
8/8/77 AN p 3																																						X																								
8/15/77 WAR p 259																						X																																							
8/15/77 AN p 1																																							X																								
8/19/77 WEU pp 1,4,5															X	X																																																
8/25/77 DFP p 13B																X																																																
8/29/77 AN p 2																X		X																																														
8/29/77 WAR p 275																																	X																														
8/29/77 WAR p 277																																																															
8/29/77 WAR p 276													X					X																																															
9/77 PS pp 84-87																X																																																
9/77 PS p 76			X				X																																																									
9/2/77 WEU pp 1,4,5																X																																																

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(cont.)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
9/5/77 AN p 3												X																																																		
9/12/77 AN p 19																																										X																						
9/16/77 WEU pp 1&8			X			X																																					X																						
9/16/77 WEU pp 4&5	X			X								X			X	X																																																
9/12/77 AMM			X				X	X		X									X																										X																						
9/19/77 AN p 2						X																																																											
9/19/77 AN p 34		X										X		X																						X				X																							
9/19/77 AN p 43		X			X											X									X																																						
9/19/77 AN p 28		X																																			X																									
9/19/77 AN p 19	X	X																																																													
9/19/77 AN p 1																										X																																					
9/26/77 WAR p 305																		X																		X																										
9/30/77 WEU pp 1&8	X					X		X																																																								
9/30/77 WEU p 7								X																																																							

A-13

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
10/1/77 AI pp 22-28		X										X	X	X		X		X																			X	X	X		X																						
10/77 PS PP 92-95	X	X		X								X		X	X	X		X																																															
10/77 MT p 104																X																																																
10/77 MT p 84	X																																																																
10/77 AE p 64-69				X	X										X																																																			
10/77 AE p 35-42	X	X														X	X																																																	
10/77 WAW p 113	X		X			X																																																														
10/77 R&T pp 139-142	X	X												X		X		X																		X																													
10/77 MT pp 42-57	X	X		X	X							X	X	X				X																		X		X		X																							
10/77 MT p 106																																															X																			
10/1/77 AI pp 45-51	X			X								X			X	X	X																																																	
10/3/77 AN p 1																													X	X																																			
10/17/77 WAR p 333																											X																																						

A-14

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
10/24/77 AN pp 1658																												X	X	X																																	
10/24/77 WAR p 337			X					X																					X						X														X														
11/77 WAW pp 31-35															X																																	X																
11/77 PS p 60	X		X									X	X																																				X																
11/77 AE p 24-27	X																																																														
11/7/77 AN p 2								X																				X																																				
11/25/77 WEU pp 266				X																																																														
12/9/77 WEU pp 1-3																															X																																		
12/12/77 AMM p 13																				X																															X														
12/19/77 AN p 3			X																																																																	
12/19/77 AN p 18																															X																																		
12/26/77 AN p 30																														X																																		
1/78 PS p 78	X																																																																	
1/16/78 WAR p 17																	X																																																	

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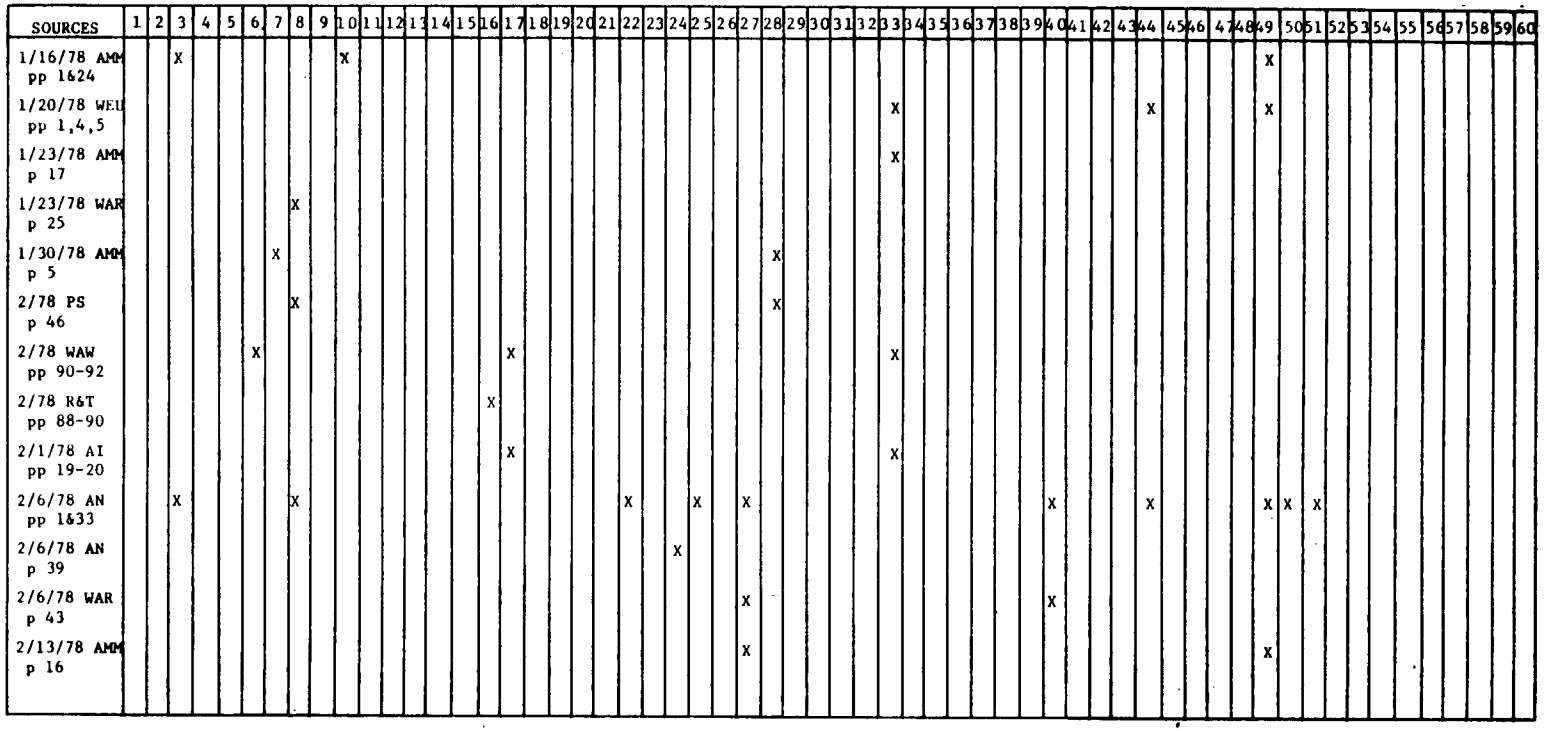
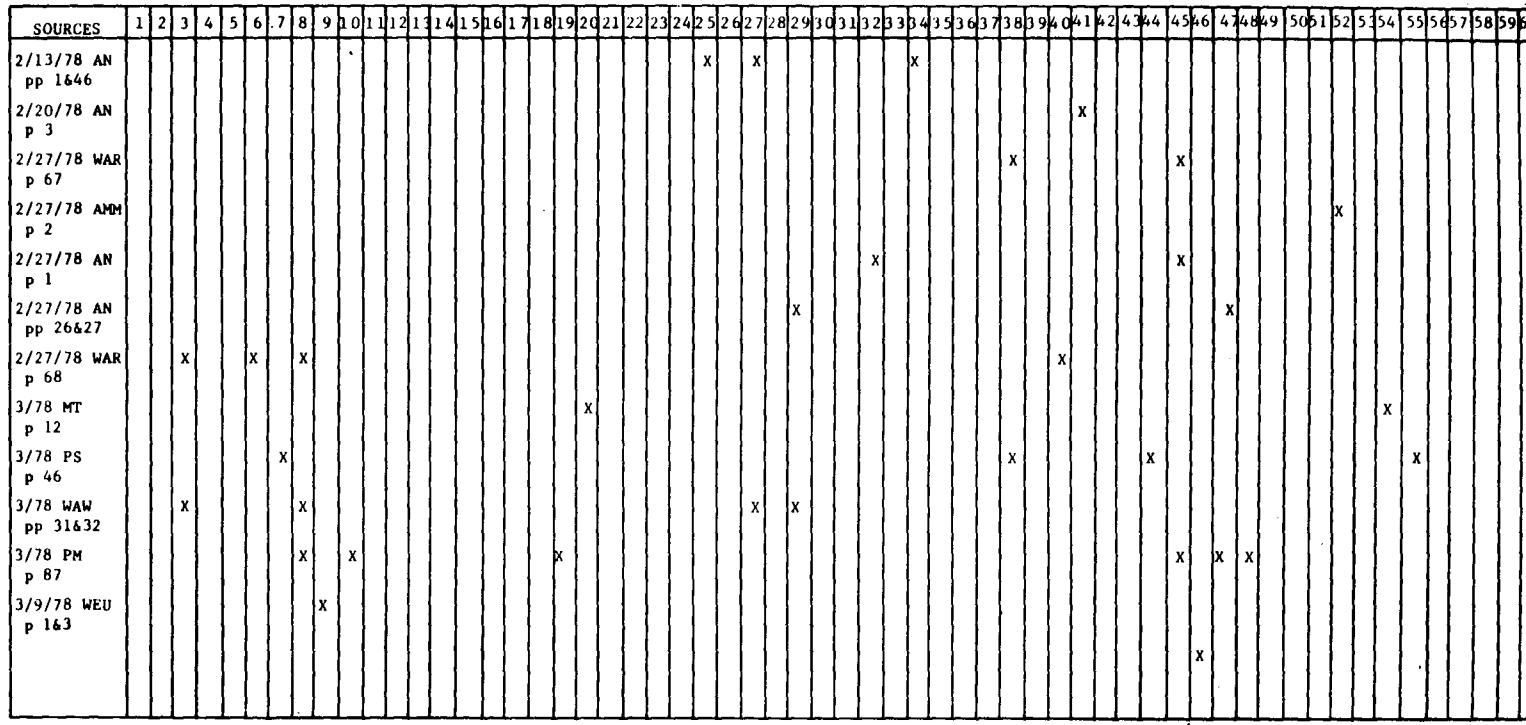
FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1/16/78 AMM pp 1&24			X							X																																								X													
1/20/78 WEL pp 1,4,5																																	X											X						X													
1/23/78 AMM p 17																																	X																																
1/23/78 WAR p 25								X																																																										
1/30/78 AMM p 5							X																					X																																						
2/78 PS p 46								X																				X																																					
2/78 WAW pp 90-92						X											X																X																																
2/78 R&T pp 88-90																X																																																			
2/1/78 AI pp 19-20																	X																X																																
2/6/78 AN pp 1&33			X					X														X			X		X															X					X				X	X	X									
2/6/78 AN p 39																								X																																									
2/6/78 WAR p 43																											X															X																							
2/13/78 AMM p 16																											X																																					

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
2/13/78 AN pp 1&46																									X		X							X																													
2/20/78 AN p 3																																								X																							
2/27/78 WAR p 67																																						X						X																				
2/27/78 AMM p 2																																																																		
2/27/78 AN p 1																																X													X																				
2/27/78 AN pp 26&27																													X																				X															
2/27/78 WAR p 68			X			X		X																																X																								
3/78 MT p 12																				X																																													
3/78 PS p 46							X																															X							X																				
3/78 WAW pp 31&32			X					X																			X		X																																			
3/78 PM p 87								X		X									X																																													
3/9/78 WEU p 1&3									X																																																										

A-17

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
3/6/78 AN p 3						X																																							X																	
3/13/77 AN p 63																																																						X								
3/13/78 AMM p 20								X		X									X									X				X														X																
3/15/78 DFP p 8D																																	X																																	
3/17/78 WEU p 1																																	X																																	
3/20/78 AN pp 2&106																																	X																																	
3/20/78 WAR p 91																									X																																									
3/31/78 WEU p 5																																																												X								
3/31/78 WEU pp 1&4								X																																																				X								
4/78 R&T p 124	X																																																																			
4/78 WAW p 75						X																																																															
4/78 PS p 18			X																									X																																							
4/3/78 AN p 47																									X																																									

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
4/10/78 AN p 1																																												X																				
4/10/78 AN p 43																																																							X								
4/24/78 AMM p 21			X				X			X																								X																																
4/24/78 AN p 53																																						X																														
4/24/78 WAR pp 129-130			X					X																																																													
4/24/78 AMM p 19											X																																																										
4/24/78 AMM pp 1&24																																																																					
4/28/78 WEU pp 1&8																																																																					
4/17/78 AMM pp 1&35																									X																																											

FIGURE A-1. GENERAL MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

TABLE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1978	Mark V "Carriage Roof" option -- solid white vinyl with a canvas weave over steel. Miles-to-empty option using a digital microprocessor. All Lincolns get windshield-washer fluid level indicator.
2.	1979	Standard sized Ford and Mercury models to be downsized. Curb weight 3600 lbs., WB 114.4 in., length 208 in. Approximately 700-800 lbs. lighter and 14 in. shorter.
3.	1980	Lincoln and Continental Luxury-full sized models to be downsized and share underbodies with standards. Mark V WB 114.4 in., Continental WB 117.4 in. Curb weight 4000 lbs.
4.	1978-79	Little change for intermediates.
5.	1978	Versailles will have all Aluminum hood.
6.	1978	New Ford F-body Fairmont/Zephyr using 140 CID L-4, 200 CID L-6, and 302 CID V-8 engines. Models include 2-dr, 4-dr, & station wagons (LTD II and Cougar wagons dropped). Approximately 300 lbs. lighter and 4 inches shorter than Maverick/Comet which they replace. WB 105.5 in. New gauge package and power options available with the Zephyr Z-7 and Farimont Futura personal specialty cars being introduced mid-year (2-door coupes).
7.	1978	Fairmont/Zephyr have unibody construction, revised MacPherson strut front suspension with the coil springs between the lower A-arms and the number two crossmember, and a new 7½ in differential with less offset allowing lower ratios. Variable ratio rack-and-pinion power steering available (also Pinto/ Bobcat and Mustang II), with a pressure bypass circuit that decreases the driving power required when power assist is not called for.
8.	1981	Current compacts become intermediates after 1980.
9	1979	Mustang all new 4-seater in notchback and hatchback, new Capri domestic derivative of Mustang in notchback only. Built on shortened Fairmont frame with

TABLE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
		soft front and rear ends, resulting in 200 lbs. less weight. Upsized from the current 96.2 in. WB to 100.4 in. Turbocharged 4-cylinder engine available for Mustang, Capri and Pinto.
10.	1978	California Pintos and Bobcats with auto transmission and 2.3 liter engine have 3-way catalysts and feedback carburetors using analog electronics. Carbs supplied by Holley. Versailles' 302 CID V-8 has EEC-1 electronic engine control of spark timing and EGR flow rate as vell as a Variable Venturi (VV) carburetor. The VV carb is also on all California 302 CID V-8 engines.
11.	1978	PROCO (Programmed Combustion) Stratified Charge direct injection engine starts tests on 302/351 CID V-8 engines.
12.	1979	Model 2700 Variable Venturi carburetor tc be available in all states (Mass produced for V-8 engines). Model 2150 (ECC) electronically controlled feedback carburetor available nation-wide on selected engines.
13.	1979	Chrome plated aluminum bumpers on selected models.
14.	1979	New light weight rear axles with new ratios: 7½ and 8½ in. for new downsized standard cars, 6-3/4 in. for the Mustang and Capri.
15.	1981	Ford's "Erika" Eur./Amer. FWD replacement for the Pinto and Escort will be a notchback rather than a hatchback design; WB 94.0 in.
16.	1981	Exhaust sensors and 3-way catalyst, on all vehicles. EEC III (electronic engine control of EGR, spark timing, and air/fuel ratio) using electronic fuel metering rather than a carb on selected vehicles. Electronics designed by Motorola. Robert Bosch Corp. will supply the fuel injector components.
17.	1982	New V-6 Production: a 3.8 (232 CID) and a 3.2 liter (195 CID) to be ready. The 3.8 liter engine will be a 90°V with alum. cylinder heads.

TABLE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
18.	1982	PROCO stratified charge, direct injection engine to be ready on the 302 CID V-8 first in limited production.
19.	1980	New 255 V-8 engine pulled off the 302 CID V-8 block. Biggest engine will be the 351 CID V-8.
	1985	Largest engine will be the 302 CID V-8.
20.	1978	Aluminum intake manifold used on some 302 CID V-8 engines.
21.	1978	New FWD Fiesta with a 1.6 liter OHV I-4 Kent engine modified for the U.S. market and emissions requirements, 4-speed manual transaxle, MacPherson strut front suspension, and lifetime sealed Timken preset front wheel bearings. WB 90.0 in.
22.	1978	New improved more efficient reduced slip torque converters for all automatic transmissions.
23.	1978	All Ford and L-M models are carryovers except for all Farimont/Zephyr and Fiesta and new grille, headlights and tail lights on the Granada/Monarch (first minor style change since 1975 intro.)
24.	1978	Warranty coverage broadened to include service adjustments for 12 months or 12,000 miles.
25.	1978	Several Ford and L-M models (especially the new models) get improved aerodynamics, i.e. front spoilers.
26.	1978	Pinto/Bobcat get digital AM clock radio option, first of many for all Ford models.
27	1979	EEC II on selected models - electronic control of EGR, spark timing, and air/fuel ratio control with feedback carb and 3-way catalyst and exhaust sensor. Electronic voltage regulator to be standard on all Ford cars. (Introduced in 1978 on selected models).
28	1979	Composite Graphite Test Car -- intermediate size but only 2500 lbs. w/graphite wheels, bumpers, hood, deck lid, seat frames, front end assembly and doors.

TABLE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
29.	1980	New intermediate car introductions. LTD II name to be dropped (in favor of Granada). Cougar (instead of Monarch) and T'Bird models will use underbodies similar to Fairmont/Zephyr but will be a little larger. WB 108.0 in. Granada/Monarch compacts dropped.
30.	1981	Two transverse 1.6 and 1.3 liter 4-cylinder engines for Erika. Hemispherical combustion chambers will be used. They will have alum. intake manifolds and possibly alum. heads. A new U.S.-built auto transaxle will be introduced for these engines. The manual transaxle will be imported form Toyo Kogyo of Japan.
31.	1985	Average Ford car to weigh 3000 lbs. vs. 4000 lbs. in 1978 and 4200 lbs. in 1977.
32.	1985--	Two-seat commuter cars to be on the market with less than 1000cc engines and 65-70 mpg.
33.	1978	Plastic fuel tanks on Mustang II 8-cylinder models - the only car with them.
34.	1978	"Unique Cooling" approach makes aluminum heads cost-effective. Testing 302 CID V-8.
35.	1978	New Optional road-abrasion package -- a spray-on strip of polyvinyl chloride along the lower edge of the car between the prime coat and finish coat to reduce paint chipping from road gravel (all cars).
36.	1978	Plans cancelled for dual displacement 300 CID L-6 engine.
	1980	Dual displacement or vari-cube V-8 engine still in testing for the 1980's with the 302 CID V-8 version to be installed in selected mid-sized models in 1980. Emissions appear to be causing problems.
37.	1978	Aluminum rear cover plates for L-6 engines. Weight savings of 1-2 lbs. realized.
	1979	Aluminum rear cover plates for 140 CID L-4 and 302 CID V-8 engines.

TABLE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
38.	Mid '80s	FWD van prototype off the new Erika which has 2 doors and is a multipurpose vehicle.
39.	1981	Super Pinto high performance version of the Erika will be a sporty 2-door hatchback with a turbocharged 1.6 liter OHC 4-cylinder engine with an aluminum cylinder head and CVCC stratified charge combustion chambers.
40.	1985	Second round of downsizing will begin two years behind GM.
41.	1978	New ignition system in testng which eliminates distributor and reduces RFI (Radio Frequency Interference).
42.	1980 1981	Ford testing plans include introduction of a passive belt system in some models. An air bag option will be available for its large cars and passive belts in some small cars.
43	1978½	A commercial mini-van, the Pinto Panel Delivery Van, will be introduced for businesses that do not need larger trucks. Also being introduced is a Thunderbird T-Roof option with tinted glass roof panels.
44	1981	FWD 2-seater sports car may be introduced, derived from the all new Pinto.
45	1980s	Ford considering an all aluminum version of its 2.3 liter 4-cylinder engine.
46	1979	Bobcat and Pinto get new headlamps and grille. Bobcat name to be dropped.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WEU 12/24/76 p 1			x																																					
WEU 2/4/77 p 4						x																																		
WAR 2/14/77 p 53										x																														
WEU 2/18/77 p 1										x																														
AMM 2/28/77 p 1									x																															
MT 3/77 p 13						x																																		
AMM 3/14/77 p 1											x																									x				
WEU 3/18/77 p 1											x																									x				
AMM 3/28/77 p 1		x																																					
AN 4/4/77 p 2		x		x			x																																
WAR 4/4/77 p 109															x																									
AMM 4/11/77 p 24					x																																			
AMM 4/11/77 p 38							xx																																	
WEU 4/15/77 p 5									x																															
WEU 4/15/77 p 1																x																								
WAR 4/25/77 p 130			x																																				
MT 5/77 p 16										x																														

A-25

FIGURE A-2. FORD
AUTOMOBILE PRODUCE SCHEDULE CROSS-REFERENCE LIST (5/78)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AMM 5/16/77 p 15		x																																						
AMM 5/23/77 p 6															x																									
AMM 5/23/77 p 20														x																									
AMM 5/23/77 p 24													x																										
WEU 5/27/77 p 1																		x																					
WEU 5/27/77 p 5											x				x																								
AN 5/30/77 p 2										x							x																						
WAR 5/30/77 p 171															x			x	x																				
AMM 6/6/77 p 20			x																																				
AMM 6/6/77 p 22												x																											
AN 6/6/77 p 34			x																																				
WEU 6/10/77 p 3			x																																				
WEU 6/10/77 pp 1 & 5							x							x																									
WAR 6/13/77 p 188						x																																	
AN 6/27/77 p 38			x																																				
MT 7/77 p 19											x																									x			
AN 7/4/77 p 5	x																																						

FIGURE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAR 7/4/77 p 212	x																																							
WEU 7/8/77 pp 1 & 8										x		x																												
AMM 7/11/77 p 18																					x																			
AMM 7/25/77 p 5																			x																					
AN 7/25/77 p 8									x																															
MT 8/77 p 13		x																																					
MT 8/77 p 16																					x																		
WEU 8/5/77 p 6																					x																		
WAR 8/8/77 p 252										x																														
WAR 8/15/77 p 259			x																																				
AN 8/15/77 p 4																		x																					
DFP 8/30/77 p 12A						x																																	
MT 9/77 pp 28-43						x	x			x															x															
PS 9/77 pp 80-83						x	x			x													x	x															
WEU 9/2/77 pp 2 & 3										x																														
AN 9/5/77 pp 14,18,&31	x					x	x			x												x	x		x														

A-27

FIGURE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAR 9/5/77 p 284							x																																	
WAR 9/5/77 p285																							x																	
DFP 9/15/77 p 11C																								x																
WEU 9/16/77 p 2											x							x																						
AMM 9/19/77 pp 1&14							x							x																										
R&T 10/77 p 142	x									x															x															
MT 10/77 pp 80-81							x																																	
AE 10/77 pp 36-41						x	x			x															x															
AI 10/1/77 pp 28-36	x					x	x																		x	x														
AI 10/1/77 pp 51-53										x										x	x	x																		
AN 10/3/77 p 1															x																									
AMM 10/10/77 p 5			x																											x									
AN 10/17/77 pp 1&66																													x										
AN 10/24/77 pp 1&58		x																											x	x									
WAR 10/24/77 p 338									x																															
WEU 10/28/77 p 1 & 5																														x									

FIGURE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WEU 10/28/77 p 8																																x								
MT 11/77 p 21						x																																		
WAW 11/77 pp 33-35	x									x																														
AN 11/7/77 p 44										x																														
AMM 11/7/77 pp 2&20																														x										
AMM 11/7/77 p 18																												x												
AMM 11/14/77 pp 1&22																	x																							
AN 11/21/77 p 3						x																																		
AN 11/21/77 p 32																										x														
WEU 11/25/77 p 1 & 8																														x										
AMM 12/12/77 p 17																														x										
AMM 12/19/77 p 20			x														x													x										
WEU 12/23/77 p 1																														x										
WEU 12/23/77 pp 1&5	x									x						x											x													
AMM 12/26/77 pp 1&32																																				x				
AMM 12/26/77 p 15	x																																							
MT 1/78 p 12		x	x								x	x		x																						x				

A-29

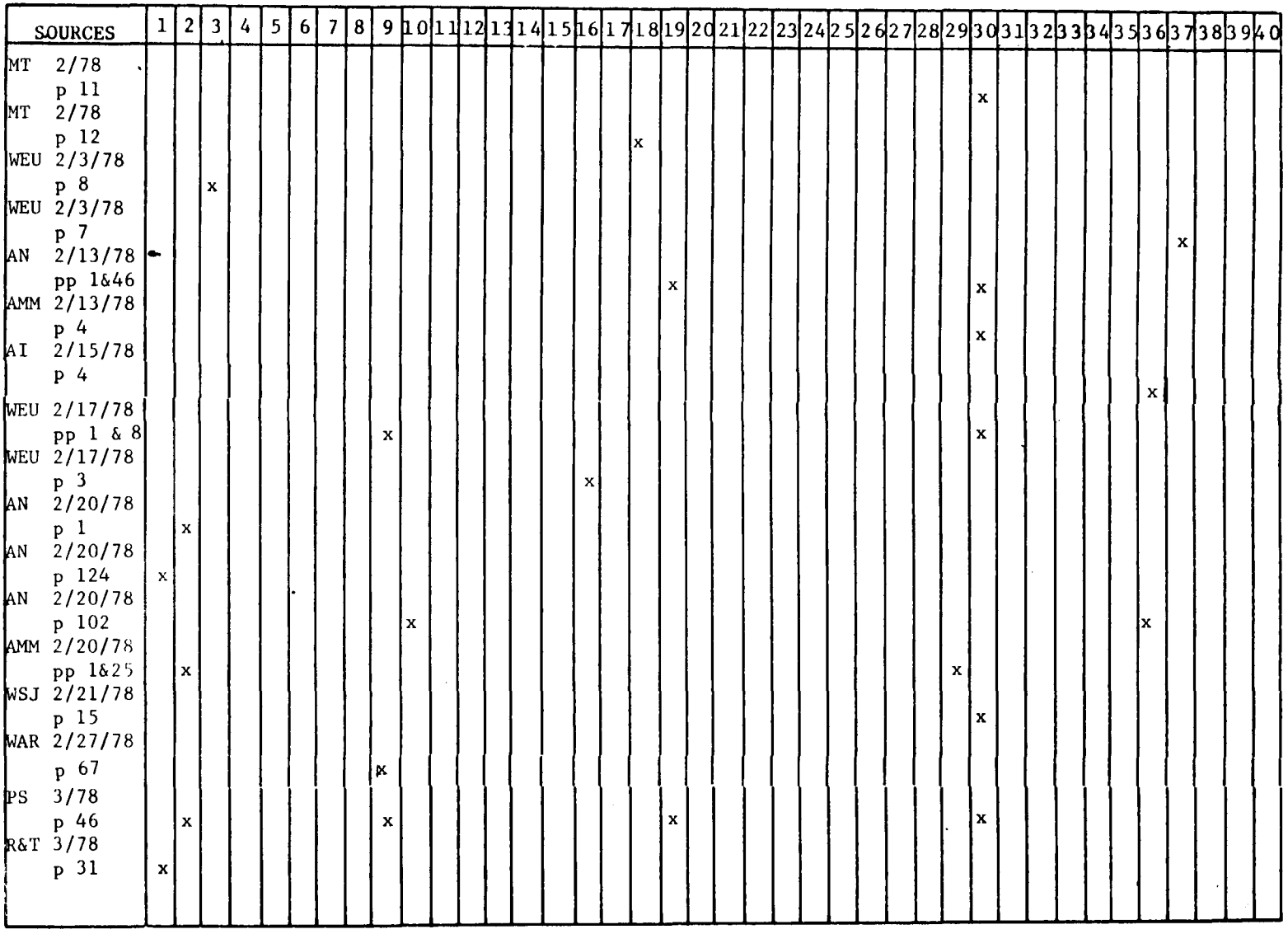
FIGURE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCT LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 1/78 p 10										x						x										x	x													
AE 1/78 pp 32-37																																		x							
WAR 1/2/78 p 5																																	x							
AN 1/2/78 p 7	x									x																x	x								x					
WEU 1/6/78 pp 1 & 8																																				x				
WEU 1/6/78 p 5																														x										
AMM 1/9/78 pp1&19																														x										
AN 1/9/78 p 13																																			x					
WSJ 1/10/78 p 15																																				x				
DFP 1/10/78 p 6B																																				x				
AN 1/16/78 p 38																																				x				
AN 1/16/78 pp 1&38									x																															
WEU 1/20/78 pp 1&8																														x										
WEU 1/20/78 p 5																																				x				
WSJ 1/27/78 p 4																			x																					
WAR 1/30/78 p 35																	x		x											x										

FIGURE A-2. FORD

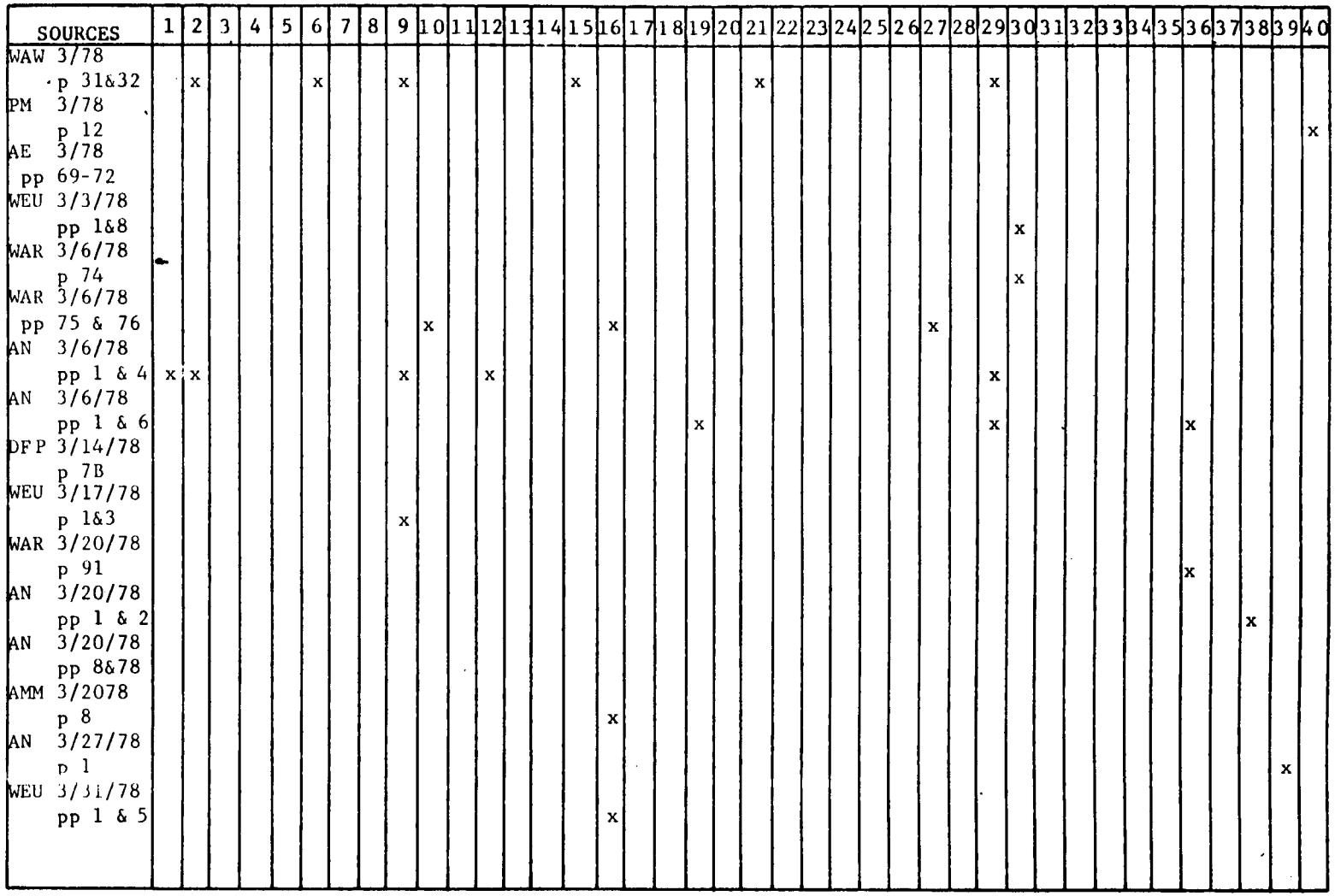
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
MT 2/78 p 11																														x											
MT 2/78 p 12																		x																							
WEU 2/3/78 p 8			x																																					
WEU 2/3/78 p 7																																					x			
AN 2/13/78 pp 1&46																			x											x										
AMM 2/13/78 p 4																														x										
AI 2/15/78 p 4																																				x				
WEU 2/17/78 pp 1 & 8									x																					x										
WEU 2/17/78 p 3																x																								
AN 2/20/78 p 1		x																																						
AN 2/20/78 p 124	x																																							
AN 2/20/78 p 102										x																										x				
AMM 2/20/78 pp 1&25		x																											x										
WSJ 2/21/78 p 15																														x										
WAR 2/27/78 p 67									x																																
PS 3/78 p 46		x							x										x											x										
R&T 3/78 p 31	x																																							

FIGURE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 3/78 p 31&32		x				x			x						x						x								x										
PM 3/78 p 12																																								x
AE 3/78 pp 69-72																																								x
WEU 3/3/78 pp 1&8																														x										
WAR 3/6/78 p 74																														x										x
WAR 3/6/78 pp 75 & 76										x						x											x												
AN 3/6/78 pp 1 & 4	x	x							x			x																	x											
AN 3/6/78 pp 1 & 6																			x										x							x				
DFP 3/14/78 p 7B																																								x
WEU 3/17/78 p 1&3									x																															
WAR 3/20/78 p 91																																				x				
AN 3/20/78 pp 1 & 2																																						x		
AN 3/20/78 pp 8&78																																								x
AMM 3/2078 p 8																x																								
AN 3/27/78 p 1																																							x	
WEU 3/31/78 pp 1 & 5																x																								

FIGURE A-2. FORD
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 4/78 p 9									x																															
WAW 4/78 p 76																																								x
AN 4/10/78 p 43																																								
AN 4/10/78 p 1																																							x	
AN 4/17/78 p 6		x															x		x										x										
AN 4/17/78 p 55									x																														x	
AN 4/24/78 p 2																																								

FIGURE A-2. FORD

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

TABLE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1978	Electronic Lean Burn on all V-8 engines.
2.	1979	New R-body cars to have fabricated aluminum wheels and chrome-plated aluminum bumpers.
3.	1978	Gran Fury, Royal Monaco, and Newport Town & Country Wagon and Sedan discontinued; Fury and Monaco interim standards until 1979.
4.	1979	New R-body standard size cars, Dodge (4-dr. St. Regis) and Chrysler (2- & 4-dr. Newport & New Yorker) only--no Plymouth. WB-118.5 in.
5.	1979	Fury and Monaco B-bodies discontinued.
6.	1979	318 CID V-8 with electronic spark control system and fuel metering standard for new R-bodies.
7.	1978	New Magnum XE 2-dr. coupe, sporty version of Charger SE (unchanged). Cordoba gets new front and rear ends. Charger SE to be scrubbed in 1979.
8.	1978	Lock-up torque converter standard on automatic transmissions A-904 and A-727 with all engines except the 440 CID V-8.
9.	1980	Cordoba/Magnum will be redesgined and built on the 112.7 in. WB as a variation of the M-body.
10.	1977 1978	New Diplomat/LeBaron spring introduction in 2- and 4-dr. models. Station wagon versions added.
11.	1980	New 225 CID I-6 pre-chamber diesel derived from the slant six.
12.	1978	Introduction of Mitsubishi diesel in light trucks only. Engine is 6-cylinder, 243 CID, 103 hp.
13.	1978	New Omni/Horizon FWD L-body with 1.7 liter VW L-4 engine with aluminum head, 4-speed VW manual transaxle, and 3-speed Chrysler auto transaxle. Curb wt. 2,137 lbs., WB 99.2 in.

TABLE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
14.	1978	New Omni/Horizon tc be a 5-door hatchback with one-piece body sides, optional air conditioning using a swashplate drive compressor, and aluminum bumpers -- a first for Chrysler.
15.	1978	New Sapporo/Challenger subcompact luxury sports cars from Mitsubishi: WB 99.0 in.; curb wt. 2,400 lbs.; 4- and 5-speed manual and 3-speed automatic transmission; 1.6, 2.0, 2.6 liter 4-cylinder engines with MCA-Jet stratified charge system.
16.	1980½	New 2.2 liter 4-cylinder engine with EFM, MCA-Jet system, and electronic spark control. Aluminum heads are being considered.
17.	1983	New advanced technology one-chamber diesel 225 CID 6-cylinder engine.
18.	1979	The 400 & 440 CID V-8 engines to be dropped. The 360 CID V-8 will be largest engine.
19.	1982	Diesel version of the 2.2 liter 4-cylinder engine planned.
20.	1980	Turbocharged 1.7 liter engine for the sporty 2-door versions of the Omni/Horizon.
21.	1980	Diplomat/LeBaron 2-door coupes will be reskinned and built on the 108.7 in. WB of the Volare/Aspen F-body. The 4-door models will get a facelift and remain on a 112.7 in. WB.
22.	1978	Introduction of an advanced solid-state search-tune radio controlled by a digital microprocessor.
23.	1981	Smaller versions of the Volare/Aspen will be introduced as K-bodies with FWD; 100 in. WB, 212 liter engine, 2- and 4-door and wagon. Weight reduced 600-700 lbs.
24.	1978	Turbo 225 CID L-6 in development.

TABLE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
25.	1978	Swashplate drives 5-cylinder air conditioner compressor for all 6-cylinder engines: 10.2 lbs. less weight and requires less space.
26.	1978	Volare/Aspen and New Yorker new grille and tail lights.
27.	1981	CVCC stratified charge version of the 2.2 liter I-4 engine.
28.	1979	Omni/Horizon will be offered in a 2-door hatchback version called the Solo and Mirada with special styling; WB 96.7 in.
29.	1978	All cars from Mitsubishi have MCA-JET engines standard.
30.	1979	Introduction of new chrome-plated aluminum bumpers on the R-bodies-- a first for U.S. industry.
31.	1978	Omni/Horizon 1.7 liter engine is equipped with electronic lean burn and a "Hall-effect" distributor.
32.	1978	New 4-speed OD manual transaxle to mate with the new 2.2 liter FWD 4-cylinder engine as well as the 1.7 liter engine.
33.	1978	New light weight L-6 engine with more aluminum parts including a two-piece, electronic-beam-welded intake manifold.
34.	1979	New lock-up torque converter for auto transaxle on Omni/Horizon.
35.	1980½	New "prestige" small luxury car Y-body. Possible name: Imperial. Curb weight 3,500 lbs., WB 112.7in.
36.	1981	New aluminum heads for the 225 CID L-6 engine.
37.	1979	Introduction of induction manifold fuel injection and 3-way catalyst on Calif. 1V, 6-cylinder engines. Lean burn system dropped in favor of an electronic spark control system. Air/fuel ratio of 16:1 vs. 18:1 initially on all 4- and 8-cylinder engines.

TABLE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
38.	1983	New 4-cylinder engine smaller than 2.0 liters to replace the 1.7 liter VW engine.
39.	1981	New sheet metal on L-bodies. Wheelbase reduced to 94 in. Electronic feedback carbs, fuel metering, and fuel injection systems with 3-way catalyst in development for the 1980s.
	1982	A new luxury K-body may be introduced.
	1983	New H-body downsized to replace the R-body; WB 110 in., Curb weight 3,500 lbs.
	1984	New J-body to replace the M and Y bodies; WB 106.7in.
40.	1979	New Mitsubishi mini named the Mirage with FWD and 1.6 liter engine.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WEU 11/26/76 p 8						x																																		
AN 12/27/76 p 21															x																									
WEU 2/4/77 p 3											x						x																							
AN 2/21/77 pp 1&34															x																									
AMM 2/28/77 p 6				x	x																																		
AN 2/28/77 p 64								x			x																													
WAW 3/77 pp 21&22										x																													
MT 3/77 p 13														x																									
WAR 3/28/77 p 101			x		x					x				x																									
WAW 4/77 p 10				x			x																																
AN 4/4/77 p 1													x																										
WAR 4/4/77 p 109				x																																			
AMM 4/11/77 p 15								x																															
AN 5/2/77 p 2				x																																			
AMM 5/2/77 pp 1&29								x																															
WEU 5/13/77 pp 1 & 5								x																															

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FIGURE A-3. CHRYSLER
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AMM 5/23/77 p 14								x																																
WEU 5/27/77 p 1			x	x	x			x																																
WEU 5/27/77 p 3																x																								
MT 6/77 p 22														x																										
WEU 6/10/77 p 1												x																												
AMM 6/13/77 pp 1&28		x		x		x																																		
AMM 6/13/77 p 26								x																																
AN 6/13/77 pp 1&98													x																											
WAR 6/13/77 p 188										x																														
WEU 6/24/77 p 6								x																																
MT 7/77 p 20																		x																					
AN 7/4/77 p 27																													x										
WEU 7/8/77 pp 1&6												x	x	x																										
AN 7/18/77 p 42																				x																				
AN 7/18/77 p 2				x					x												x		x																
WAR 7/18/77 p 228															x																									
WEU 7/22/77 pp 1&8												x		x																										

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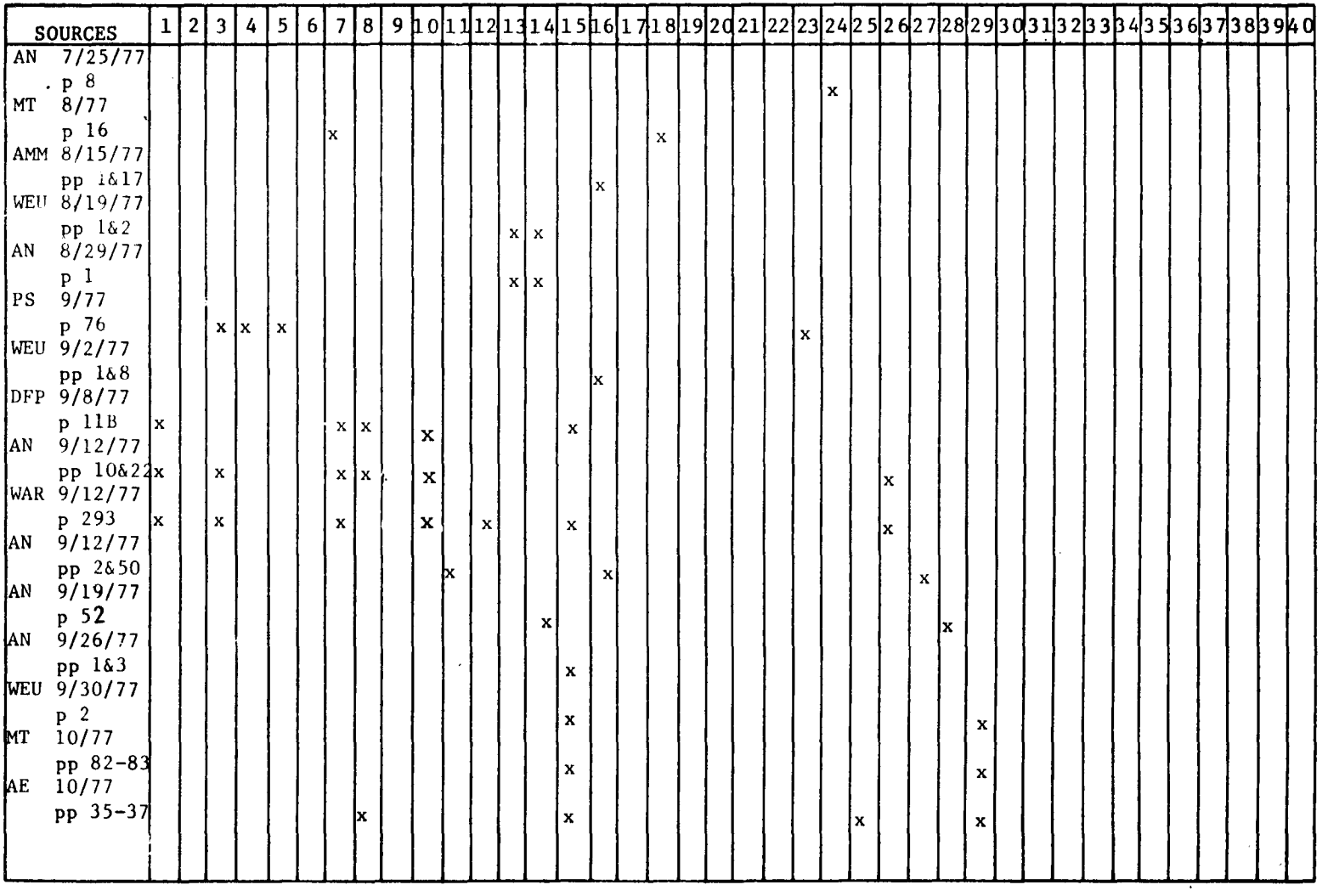
FIGURE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 7/25/77 p 8																								x																	
MT 8/77 p 16							x											x																						
AMM 8/15/77 pp 1&17																x																								
WEU 8/19/77 pp 1&2													x	x																										
AN 8/29/77 p 1													x	x																										
PS 9/77 p 76			x	x	x																		x																
WEU 9/2/77 pp 1&8																x																								
DFP 9/8/77 p 11B	x						x	x		x					x																								
AN 9/12/77 pp 10&22	x		x				x	x		x																x													
WAR 9/12/77 p 293	x		x				x			x		x			x											x													
AN 9/12/77 pp 2&50											x					x												x											
AN 9/19/77 p 52														x																									
AN 9/26/77 pp 1&3															x													x											
WEU 9/30/77 p 2															x														x										
MT 10/77 pp 82-83															x														x										
AE 10/77 pp 35-37								x							x										x				x										

FIGURE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
MT 10/77 pp 35-40	x		x				x	x							x																									
PS 10/77 pp 96-97			x				x	x		x																			x											
AI 10/1/77 pp 36-39			x				x			x					x																									
AI 10/1/77 pp 53-54	x							x				x													x				x											
R&T 11/77 pp 40-42															x																									
WAW 11/77 pp 31-35	x																					x																	
AE 11/77 pp 28-30								x																																
WEU 11/11/77 pp 4 & 5								x																																
R&T 12/77 pp 110-112	x						x	x				x			x							x																	
AI 12/1/77 pp 13-15													x	x																									
WEU 12/9/77 pp 6 & 7													x	x		x		x													x								
WAR 12/12/77 p 397													x	x		x												x											
AN 12/12/77 p 6													x	x																x									
WAR 12/19/77 p 404			x	x									x															x											
WEU 12/23/77 pp 2 & 3													x			x				x								x			x								
WAR 12/26/77 p 413																																	x							

FIGURE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 1/78 pp 37-40													x	x		x		x										x			x			x						
WAW 1/78 p 9																																			x						
MT 1/78 pp 29-34													x	x		x															x									
PS 1/78 p 37													x																		x									
R&T 1/78 pp 48-52													x	x																	x									
AMM 1/2/78 p 11		x	x	x	x	x																																		
WEU 1/6/78 p 5																x																								
AN 1/16/78 pp 1&38																				x								x												
AMM 1/23/78 p 2																x																x								
AMM 1/23/78 p 15													x			x																			x					
AN 2/13/78 p 46																																				x				
WEU 2/17/78 p 8																x																x								
WAR 2/20/78 p 59																x																								
AN 2/20/78 pp 2&177			x	x	x				x		x					x			x	x	x		x				x				x		x	x		x			
AMM 2/27/78 p 14											x									x																			
PS 3/78 p 46																		x																					

FIGURE A-3. CHRYSLER

AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 3/6/78 pp 1&6																				x												x								x
AMM 3/20/78 p 8																																					x			
AN 4/24/78 p 53																												x												
AN 4/10/78 p 43																			x																					
WEU 4/14/78 p 2																												x												
WEU 4/14/78 p 3				x			x											x												x									
WEU 4/28/78 pp 1 & 5																																				x				

FIGURE A-3. CHRYSLER
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78) (Concluded)

TABLE A-4. AMERICAN MOTORS

AUTOMOBILE PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1978	New Concord luxury compact to replace the Hornet. Available in 2 and 4-door sedans, hatchback, and 4-door wagon. The 2-door weighs 3,200 lbs. Audi's 4-cylinder 121 CID engine to be available mid-year.
2.	1978	Hornet dropped, AMX hatchback sport version remains pulled off the basic Concord.
3.	1978	304 CID V-8 option available on the Pacer.
4.	1977	Mid-year introduction of the 121 CID 4-cylinder Audi engine on the Gremlin.
5.	1979	New fastback subcompact. Gremlin name to be dropped, Javelin possible name.
6.	1984	New mini car delayed to 1984.
7.	--	AM working on new Electronic Spark Timing (EST).
8.	1978	Barcelona II luxury trim package now available in 4-door sedan as well as 2-door coupe Matadors.
9.	1979	AM to get Chrysler's locking torque converter for automatic transmissions.
10.	1978	Pacer uses HSLA steel face bar on bumper (new).
11.	1978	Minor trim change to Gremlin and a new dashboard.
12.	1978	Mid-year introduction of the SPacer - van package for the Pacer wagon.
13.	1979	Matador dropped. Will make only compact and smaller cars.
14.	1981	Redesigned Pacer Sedan.
	1982	Redesigned Pacer wagon.
15.	1983	Revised Concord.
16.	1980	AM will buy approximately 100,000 of GM's 151 CID 4-cylinder Pontiac engines a year instead of the Audi engine starting in 1980.
17.	1978	AM testing 4-wheel drive Concord wagon--future plans unknown.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AI 2/1/77 pp 14&15				x																																				
AI 3/1/77 pp 15&16	x				x																																			
AN 3/7/77 p.1	x																																							
WAR 4/25/77 p 131	x	x	x		x																																			
AMM 5/2/77 pp 1&18					x																																			
WEU 5/27/77 p 6			x																																				
WAR 5/30/77 p 171	x				x																																			
MT 8/77 p 16					x		x																																	
DFP 8/27/77 p 6B	x	x	x																																					
WAR 8/29/77 p 275	x		x																																					
AN 8/29/77 pp 1&20	x	x	x					x			x																														
WAR 9/5/77 p 282									x																															
WAR 9/26/77 p 305										x																														
MT 10/77 pp 33&34	x	x	x	x				x			x																														
R&T 10/77 p 142	x	x	x								x																														
AI 10/1/77 p 39	x	x	x					x			x																														
PS 10/77	x	x	x								x																														

FIGURE A-4. AMERICAN MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 10/77 p 113												x																												
AMM 11/7/77 p 46					x	x								x	x																								
AN 11/7/77 p 1					x							x																												
AN 11/28/77 pp 1&79	x																																							
DFP 12/16/77 p 5A	x																																							
WEU 12/23/77 p 7	x																																							
WAW 1/78 p 53	x																																							
MT 1/78 p 14					x																																		
WSJ 1/19/78 p 7																x																								
DFP 1/19/78 p 10C																x																								
AN 1/23/78 pp 1&32																x																								
WAR 1/23/78 p 28																x																								
AN 1/30/78 p 40	x			x																																				
WAW 2/78 p 92																x																								
WEU 2/3/78 pp 1&2																x																								
WAR 2/6/78 p 42																x																								

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FIGURE A-4. AMERICAN MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WEU 2/17/78 p 8																x																								
AN 3/20/78 p 1																	x																							
WSJ 4/17/78 p 8													x																											
WAR 4/17/78 p 121													x																											
AN 4/24/78 p 4													x																											

FIGURE A-4. AMERICAN MOTORS
AUTOMOBILE PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

APPENDIX B

DOMESTIC LIGHT TRUCK NOTES AND CROSS-REFERENCE LISTS

This appendix contains notes and cross-reference matrices pertaining to the domestic light truck manufacturers. The notes (Tables B-1 through B-5) are keyed by reference number (as shown on the Master Product Schedules in Section 3, Figures 3-1 through 3-10) and model year(s). The cross reference matrices (Figures B-1 through B-5) correlate the appropriate reference number with the original research sources.

Information provided in this appendix can be used to obtain additional details beyond those highlighted on the schedules. Original sources may be identified for further research and location of diagrams, photographs, etc. Source abbreviations are located in the List of Abbreviations at the front of this report.

TABLE B-1. GENERAL MOTORS

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1976	Blazer all new bumpers, steel cab design and conventional steel doors. Vans new easy to remove rear seats. Pickups only modest decor changes. LUV revised rear suspension, and additional 5 hp and optional auto. trans.
2.	1976	Selected specs.
3.	1976	El Camino gets a facelift (new trim and head lamps).
4.	1976	All 4 x 4 vehicles with auto. trans. will have only full-time four-wheel drive.
5.	1976	Pickups new Sport Truck option in stepside, pickups and vans new decor option called "Bonanza," both mid-year intros.
6.	1976	Blazer new soft top and Chinook-built camper option called the Chalet for mid-year.
7.	1977	GM to have custom vans, the Caravan custom option package and the Nomad travel/rec vehicle.
8.	1977	Pickups 4 x 4 added to Series 30, Chassis cabs and Crew cabs. Blazer, Suburban and Pickups new grille, new power windows and door locks.
9.	1977	All series new 305 CID V-8 engine.
10.	1977	Selected specs.
11.	1977	Vans optional swivel reclining bucket seats and adjustable steering column, first in industry.
12.	1978	Pickups to have optional Olds 350 CID V-8 Diesel Engine.
13.	1977	Suburban new 4 x 4.
14.	1977	Pickups new rear window defroster.
15.	1977	LUV increased payload, new optional high-back bucket seats and sliding rear window. New variable ratio steering gear and rear shocks.
16.	1977	LUV new "Mighty Mike" exterior trim group.
17.	1978	Vans new grille and headlights

TABLE B-1. GENERAL MOTORS

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
18.	1978	El Camino all new, GMC Sprint name dropped, all new Caballero.
19.	1980	New FWD compact van with 105 in. WB called MPC.
20.	1978	Selected specs.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 9/75 p 72	X																																							
AN 9/1/75 p 6	X	X		X																																				
AI 10/1/75 pp 23-25	X	X	X	X																																				
AN 10/27/75 p 24	X		X																																				
AN 11/3/75 pp 10&72	X	X																																					
WAR 12/29/75 p 413	X	X																																					
WAW 2/76 pp 54-55					X																																		
AI 2/1/76 p 16					X																																		
WAY 1976 p 224	X																																						
AI 4/1/76 pp 44,46& 47		X																																					
WAR 4/12/76 p 116						X																																	
WAW 5/76 pp 51&53							X																																
AI 6/15/76 p 13						X																																	

FIGURE B-1. GENERAL MOTORS
LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
MT 7/76 pp 28-34		X																																						
Car & Driver 7/76 pp 65-67, 74-75					X																																			
WAR 8/16/76 p 259								X																																
AN 8/23/76 pp 8&13							X	X	X	X																														
CR 9/76 pp 514-519		X																																						
WAW 10/76 pp 57-59							X	X	X		X																													
MT 11/76 pp 37-41	X	X																																						
AI 11/15/76 pp 17-20					X		X					X																												
Mechanix Ill. 1/77 pp 33-35						X		X		X			X																											
MT 3/77 pp 89-91						X																																		
WAY 1977 p 245							X	X						X																										
AN 3/28/77 p 6										X					X	X																								

FIGURE B-1. GENERAL MOTORS
LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 4/77 p 22															X	X																								
AI 4/1/77 pp 62, 63 & 65										X																													
AN 5/16/77 p 8																	X																						
AN 6/20/77 p 1																		X																					
AN 6/27/77 p 6												X																											
WAR 7/4/77 p 1																			X																				
WAR 7/25/77 p 235												X																											
1977 Chevy Truck Data Bk. 2/18/77										X																													
1978 Adv. GMC Truck 5/13/77																				X																			

FIGURE B-1. GENERAL MOTORS

LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

TABLE B-2. FORD

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1975	Supercab Pickup-new innovation (1 ½ cab PU).
2.	1976	Van opt. convenience group-new intermittent windshield wipers, d/n rear view mirror.
3.	1976	Ranchero-new PB seats or PS-B seats, opt. HD elec. system, antitheft alarm, new interior trim.
4.	1976	Bronco GVWs increased.
5.	1976	F Series-new electric rear window defroster.
6.	1976	F-100 and F-150-integral power steering (new) and F.D.B.
7.	1976	Pickups and vans w/GVW < 6,000 lbs have reduced axle ratios, better emission, catalysts.
8.	1976	Bronco-new PFDB and PS gear ratio; front stabilizer bar new option.
9.	1975	F-150 introduced.
10.	1976	Pickups - Explorer Special trim package repeat, other trim packages coming.
11.	1976	Pickups - new grille and increased GVWs.
12.	1976	F-150-new 6050 lb. GVW 4 x 4 133" WB.
13.	1976	Econoline van specifications.
14.	1976	F-100 specifications.
15.	1977	Bronco-new 14 gallon plastic fuel tank (inc. from 12.2 gal).
16.	1977	Ranchero-new illuminated entry system and two-tone paint.
17.	1977	Pickups and vans-new speed control with 2 bbl CID V8 engine (and 400 CID V8 on F Series).
18.	1977	Pickups and vans-new duraspark ignition standard.
19.	1976	Vans-first factory installed highback bucket seats (swivel).
20.	1975	Vans-industry's first body on frame vans unchanged for 1977 and 1976.

TABLE B-2. FORD

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
21.	1977	Pickups-new electric rear window defroster on Supercabs.
22.	1977	Pickups-extensive use of galvanized and precoated steel and zinc-rich primers.
23.	1977	Pickups-new plastic front inner fenders and rear wheel house liners (except 140" WB F-350).
24.	1977	Pickups and vans-new AM/FM manual radio and A/C on 6 cyl. engines.
25.	1977	Bronco-no change.
26.	1977	Trucks-new economy axle (2.75:1).
27.	1977	Trucks using 300 CID 6, 302, 351, 400 and 460 CID V-8s - 360 and 390 CID V-8s dropped.
28.	1978	Ford answer to Chevy Blazer - chopped-down version of the pickup truck using Bronco name.
29.	1977 & 1976	Vans-new special trim option incl. porthole, paneling, striping ("Cruising Van").
30.	1977	Ranchero-all new sheet metal.
31.	1977	Vans-expanded options list.
32.	1977	F Series-new grilles and trim.
33.	1977 & 1976	Courier specifications.
34.	1977	F-250-redesigned 4 x 4 w/lower step ht., incr. payload, smoother ride, tow and camper options, easier steering.
35.	1977	Courier-larger fuel tanks of 15 and 17.5 gal. w/6' and 7' box resp.
36.	1977 & 1976	Courier-soft ride option; payload on 900 lbs. instead of standard 1,400 lbs.
37.	1977	Courier-new 2.3ℓ engine w/4 or 5 speed manual and auto trans. (1.8ℓ standard only w/4 or 5 speed).

TABLE B-2. FORD

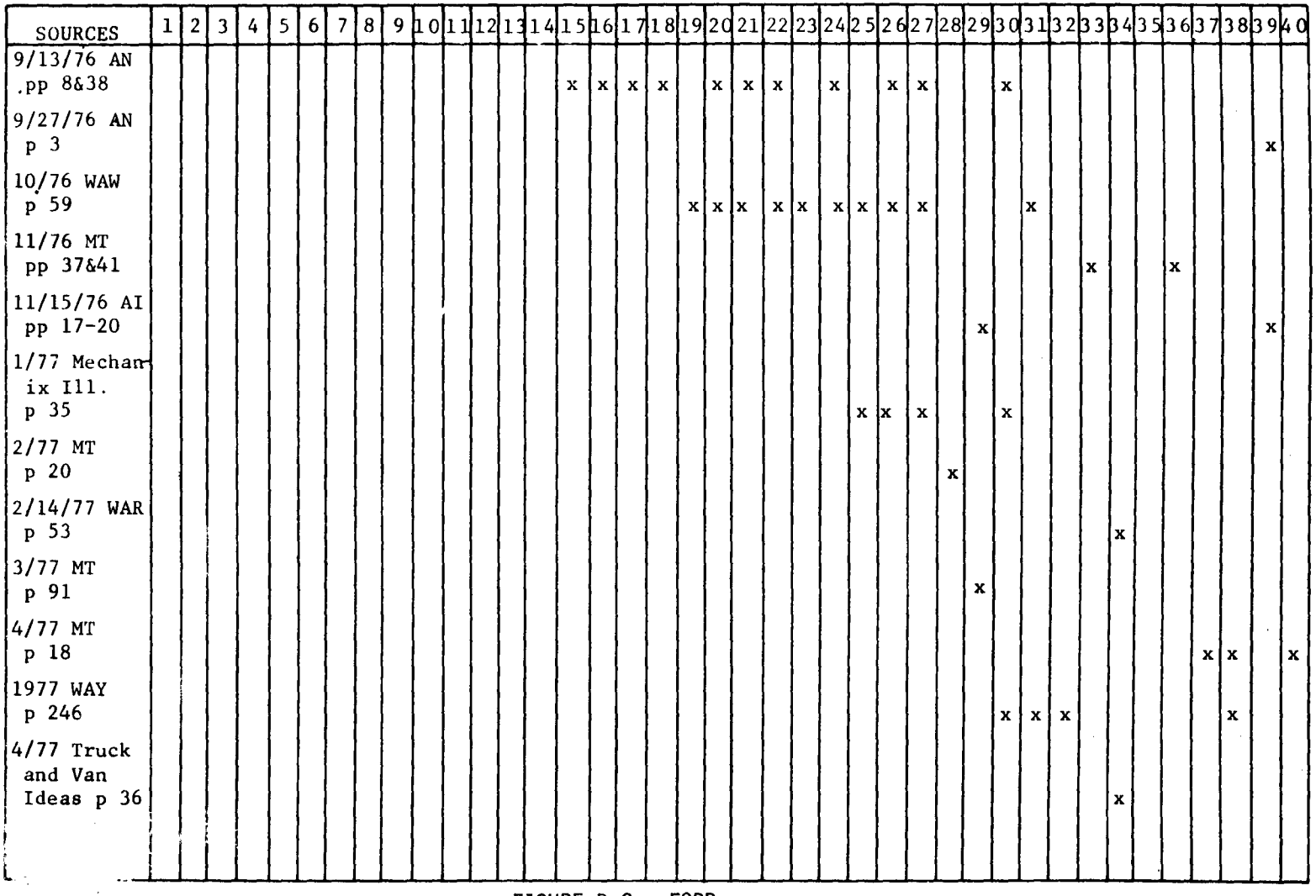
LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
38.	1977	Courier-new 107" WB 6' box 113" WB 7' box redesigned like F-Series pickups (incl. tailgate).
39.	1978½	Trucks to have dual displacement engine option.
40.	1977½	Courier-"Free Wheeling" option package; special trim and options.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1975 AN Prologue to Future p 84	x																																							
1975 WAY p 208																				x																					
9/75 WAW p 72								x			x	x																													
9/8/75 AN pp 8&13		x	x		x	x	x	x			x	x																													
10/1/75 AI p 25			x	x	x	x	x	x			x	x								x																				
11/3/75 AN pp 10-72							x	x	x			x																													
2/76 WAW p 55										x																															
3/15/76 WAR p 83																													x												
1976 WAY p 225											x	x																													
5/76 MT p 28																													x												
5/76 WAW p 51																			x										x												
6/15/76 AI p 13																													x												
7/76 MT p 35													x						x																						
9/76 CR p 519														x																											

FIGURE B-2. FORD

LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)



SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
9/13/76 AN .pp 8&38															x	x	x	x		x	x	x		x		x	x			x										
9/27/76 AN p 3																																							x	
10/76 WAW p 59																			x	x	x	x	x	x	x	x	x				x									
11/76 MT pp 37&41																																	x			x				
11/15/76 AI pp 17-20																													x										x	
1/77 Mechanix Ill. p 35																									x	x	x			x										
2/77 MT p 20																												x												
2/14/77 WAR p 53																																		x						
3/77 MT p 91																													x											
4/77 MT p 18																																					x	x		x
1977 WAY p 246																														x	x	x						x		
4/77 Truck and Van Ideas p 36																																		x						

FIGURE B-2. FORD

LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
4/77 Truck and Van Ideas pp 32-35																																	x		x	x	x	x		x
4/77 WAW p 22																																		x			x	x		
4/4/77 AN pp 8&22																																			x	x	x	x		x
6/27/77 AN pp 6&9																																							x	
7/11/77 AN p 3																																								x

FIGURE B-2. FORD

LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

TABLE B-3. CHRYSLER

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1974	Ramcharger introduced.
2.	1975	Chrysler Corp. withdraws from the heavy truck market to concentrate on light trucks.
3.	1976	Only minor changes to trucks including: Vans new rear A/C package, Ramcharger improved ground clearance, and pickups hinged seat back and swing-out spare tire carrier.
4.	1976	Vans with auto. trans. get a new electronic transmission fluid level sensor which also indicates overheating.
5.	--	Chrysler considering either a compact pickup or mini pickup.
6.	1976	Selected specs of Dodge Trucks.
7.	1976	Van mid-year custom kit model called the "Street Van." Pickup custom option called the "Warlock".
8.	1977	Pickups new factory option vendor-built wrecker called the "Retriever."
9.	1977	Pickups and Ramcharger have new grilles and trim with Ramcharger now offered in both 4 x 4 and 4 x 2.
10.	1977	New pickup option called "Powerwagon" with 4-WD and custom trim for mid-year intro.
11.	--	No plans for a mini pickup.
12.	1978	Pickup diesel option. Mid-year intro. of 4 cyl. 105 hp engine by Mitsubishi.
13.	1979	Chrysler diesel version of the 225 CID L-6 engine.
14.	1977	Vans unchanged except new swivel highback bucket seats and 225 CID 2-bbl L-6 as standard engine. Ramcharger new mid-year custom option package called "Four by Four". All Dodge lines get optional glass skylight vent/sunroof.
15.	1979	Chrysler new compact pickup.
16.	1979	Chrysler new compact van based on new FWD L-body.
17.	1977	Selected specs of Dodge Trucks.
18.	1978	Vans to get new sheet metal.

TABLE B-3. CHRYSLER

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78) (Cont.)

Ref. No.	Model Year	
19.	1977	Chrysler drops medium trucks, will produce light trucks only.
20.	1978	Pickup diesel from Mitsubishi to be introduced in mid-year is a 6-cyl. engine not 4-cyl.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAY 1974 p 226	X																																							
WAY 1975 p 207	X	X																																						
WAR 9/29/75 p 309			X	X																																			
WAW 10/75 p 21			X																																				
AI 10/1/75 pp 23-25			X	X																																			
AN 11/3/75 pp 10&72				X																																			
WAW 12/75 p 38					X																																		
AI 4/1/76 p 45						X																																	
MT 5/76 p 28							X																																
WAW 5/76 pp 51&53							X																																
AI 6/15/76 p 13							X																																
MT 7/76 pp 28-35						X																																	
WAW 8/76 pp 28-29		X					X	X						X																										

FIGURE B-3. CHRYSLER

LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 8/30/76 p 4									X																															
CR 9/76 pp 514-519						X																																		
WAR 9/13/76 p 292							X			X	X																													
MT 10/76 p 26												X	X																											
WAW 10/76 pp 57-59							X		X					X																										
AI 11/15/76 pp 17-20							X																																	
Mechanix Ill 1/77 pp 33-35							X		X																															
WAW 1/77 p 13										X				X																										
AN 1/24/77 pp 6&25							X			X				X																										
WAR 2/14/77 p 53										X				X																										
WAW 3/77 p 88															X	X																								
WAY 1977 p 246									X	X				X																										
AI 4/1/77 p 63																	X																						

B-16

FIGURE B-3. CHRYSLER
LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Cont.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 4/11/77 p 1																		X																						
AN 4/18/77 pp 6&16																			X																				
WAW 5/77 pp 63-64															X	X			X																				
WEU 6/10/77 p 1												X																												
AN 6/27/77 p 42															X	X																							
AN 6/27/77 p 1												X																												
AN 6/27/77 pp 6&9												X	X																											
MT 7/77 p 20							X			X				X																										
WAW 7/77 p 51																				X																			
WEU 7/8/77 p 1																				X																			
WAR 7/25/77 p 235																				X																			
8/77 MT pp 50-55																	X																						
Dodge Truck Data Book 1977																	X																						

FIGURE B-3. CHRYSLER

LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

TABLE B-4. AMERICAN MOTORS

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1975	All Jeep models unchanged.
2.	1976	New CJ-7 introduced, CJ-5 facelift, new windshield and top.
3.	1976	Selected specs of Jeep models.
4.	1976	New Structural polycarbonate plastic hard top on CJ-7.
5.	1976	All Jeeps have new frame and suspension systems.
6.	1976	CJ-7 Quadra-Trac full-time 4-wheel drive and automatic trans. available first time on CJ series.
7.	1976	CJ-6 replaced by CJ-7 but will continue to be built for export.
8.	1976	Pickup new custom "Honcho" package.
9.	1977	2 bbl 258 CID L-6 replaces 1 bbl 258 CID as standard engine on the Cherokee and J-10 models.
10.	1977	New extra low gears ratios on 4-speed trans. for CJ series.
11.	1977	Bottom-of-the-line 4-door Wagoneer changed to Cherokee.
12.	1977	J-20 GVWs have been increased 300-400 lbs.
13.	1977	CJ series new optional tilt steering column and air conditioning.
14.	1977	Golden Eagle option package for CJ series and J-10.
15.	1977	Selected specs of Jeep models.
16.	1979	CJ series optional diesel from Perkins, 2.7ℓ 4-cyl. 70 hp.
17.	1980 (approx)	New Jeep II 76" wb with 2ℓ 4-cyl. engine downsized version of the CJ-5.
18.	1979 (approx)	New Pickup called "Shorty," an upbeat flare-side with 108.7" wb.
19.	1977	Selected specs of Jeep models.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAY 1975 p 211	X																																							
AI 8/15/75 pp 28-31		X	X	X	X	X																																		
WAW 9/75 pp 71&72		X				X																																	
AI 10/1/75 pp 23-25		X		X		X																																	
AN 11/3/75 pp 10&72		X		X	X	X	X																																
AI 2/1/76 p 16								X																																
WAY 1976 p 228		X			X																																		
AN 9/6/76 pp 8&12			X					X	X	X	X	X	X						X																				
WAW 10/76 pp 57-59											X		X																										
AI 11/15/76 pp 17-20		X		X		X					X		X																										
AN 11/29/76 p 65														X																										
Mechanix Ill. 1/77 pp 33-35				X		X							X		X				X																				
MT 3/77 p 91														X																										

FIGURE B-4. AMERICAN MOTORS
LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WEU 3/18/77 p 2																X																									
WAY 1977 p 249											X		X	X																										
AN 4/25/77 pp 6&11								X						X																										
AN 6/6/77 pp 1&2																	X																							
WAW 7/77 pp 22-25		X				X										X	X	X																						
WAW 7/77 p 18																		X																						
Jeep Product Folder 1977																			X																					

FIGURE B-4. AMERICAN MOTORS
LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

TABLE B-5. INTERNATIONAL HARVESTER

LIGHT TRUCK PRODUCT SCHEDULE NOTES (5/78)

Ref. No.	Model Year	
1.	1976	Travelall wagon and conventional light pickups dropped. Scout line expanded to these areas as intermediates.
2.	1975	New 150 Series of light pickups, Travelall wagons, and Scout utility vehicles.
3.	1976	New 6 cylinder diesel engine option on all IH light truck lines. First domestic light truck manufacturer to offer a diesel.
4.	1976	Selected specs of new Scout vehicles.
5.	1976	Traveler Wagon - steel reinforced fiberglass top with hatchback styling and rear door.
6.	1976	Terra pickup - 6 ft box, 2400 lb load capacity.
7.	1976	Scout II Travel Top carryover from 1975 with a price leader "Echo" model.
8.	1977	All Scout models have new trim.
9.	1977	Terra optional tie-down rails, Traveler optional sliding-pane rear windows, and all Scouts optional cruise control with V-8 engines and auto trans.
10.	1977	Scout II new SS-II option with extra-heavy duty suspension, brush guards, roll bar, soft top, no doors, and off-road lights. Mid-year intro to compete with Jeep CJ series for "serious" off-road activities.
11.	1977	Traveler Family Cruiser interior option mid-year intro.
12.	1977	Terra new Suntanner option three-way convertible, Traveler new Family Wagon option with reclining swivel high-back bucket seats and all Scouts new ORV off-road driving package. Mid-year intro.
13.	1977	All Scouts expanded availability of cruise control and tilt steering wheel.
14.	1977	Selected specs of Scout vehicles.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAY 1975 p 18	X																																							
WAY 1975 p 211		X																																						
AN Prologue to Future 1975 p 84	X		X																																				
WAW 8/75 p 45	X		X	X	X	X																																	
WAW 9/75 p 71			X																																				
AI 10/1/75 pp 23-25	X		X	X	X	X																																	
AN 11/3/75 pp 10&72	X		X	X																																			
WAW 2/76 pp 54-55							X																																
AN M.D.B. Issue 1976 p 42	X		X																																				
WAY 1976 p 227	X		X																																				
AN 9/27/76 pp 6&35								X	X					X																										
WAW 10/76 pp 57-59	X							X	X																														

FIGURE B-5. INTERNATIONAL HARVESTER
LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AI 11/15/76 pp 17-20			X																																					
Mechanix Ill. 1/77 pp 33-35	X		X											X																										
WAW 1/77 p 13										X																													
AN 2/7/77 8&15											X	X		X																									
WAR 2/14/77 p 53								X			X																												
WAY 1977 p 248								X					X																										
AN 6/27/77 p 6&9			X																																			
WAR 7/25/77 p 235			X																																			
IH CT-404-Q Data Book 8/1/76														X																									

FIGURE B-5. INTERNATIONAL HARVESTER
LIGHT TRUCK PRODUCT SCHEDULE CROSS-REFERENCE LIST (5/78)(Concluded)

APPENDIX C

IMPORT MANUFACTURERS' CROSS-REFERENCE LISTS

This appendix contains cross-reference matrices pertaining to selected import manufacturers. The cross-reference matrices (Figures C-1 through C-11 are keyed by reference number (as shown on the Master Product Schedules in Section 4, Figures 4-1 through 4-11) and correlate the appropriate reference number with the original research sources.

Information provided in this appendix can be used to obtain additional details beyond those highlighted on the schedules. Original sources may be identified for further research and location of diagrams, photographs, etc. Source abbreviations are located in the List of Abbreviations at the front of this report.

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21*	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt Data Bk.																																								
p 27	x	x	x	x	x										x	x																								
p 77	x	x	x	x	x											x																								
1976 AN Mkt Data Bk.																																								
p 25									x		x																												
p 57									x		x																												
1977 WAY																																								
p 34	x	x		x		x		x																	x	x													
p 51	x	x		x		x																																	
1976 WAY																																								
p 45							x			x	x																												
1975 WAY																																								
p 26												x	x																										
p 43												x	x																										
7/4/77 WAR																																								
p 213															x		x																						
6/27/77 WAR																																								
p 203															x	x	x					x																	
5/16/77 WAR																																								
p 156								x								x																							
4/11/77 WAR																																								
p 115																							x																
4/4/77 WAR																																								
p 107	x		x																							x													
3/21/77 WAR																																								
p 7								x																															

*Not used

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FIGURE C-1. TOYOTA

PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
8/76 AE p 42																			x																						
11/76 AE p 44																						x																		
5/2/77 AN p 66																								x																
7/8/77 WEU p 3																		x																						
1978 Toyota Ad.																											x													
R&T 2/78 p 86																											x													
MT 1/78 pp 26,37, 40									x																x	x		x	x												
AN 12/26/77 p 1																														x										
WEU 12/9/77 p 1																															x									
AN 11/28/77 pp 22,80																		x													x	x	x							
WAW 10/77 p 10																	x																							
AN 11/21/77 p 49																												x												
AN 11/14/77 pp 1, 16																															x		x							

FIGURE C-1. TOYOTA

Revised 1/31/78

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
3/7/77 WAR p 84																		x																						
11/76 WAW p 22		x																								x														
8/76 R&T p 68		x																								x														
1974 WAY p 48														x																										
10/76 MT p 76		x																																						
4/1/76 AI p 38							x																																	
4/1/77 AI p 49	x																									x														
7/4/77 WAR p 213																						x																		
9/75 WAW p 42													x																											
5/77 MT p 101			x	x	x																																			
5/2/77 AN p 31	x		x					x																	x															
2/77 R&T p 40	x		x																																					
5/77 WAW p 26																				x																				

FIGURE C-1. TOYOTA

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PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WEU 11/11/77 p 16																	x	x													x		x								
R&T 12/77 p 112																												x												
WAW 11/77 p 23																	x																							
AN 10/24/77 pp 1,3																	x											x												
WAR 10/17/77 p 332																	x											x												
WAR 10/3/77 p 315																									x															
WEU 9/30/77 p 7																	x														x									
WAR 9/19/77 p 298								x									x																							
WEU 9/16/77 p 7																				x								x												
MT 9/77 p 91								x																																	
WEU 7/22/77 p 1																																		x						
WEU 5/13/77 p 1																															x									
WAW 12/77 p 98																	x											x					x							

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FIGURE C-1. TOYOTA

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 11/77 pp 41,43																												x	x												
MT 4/77 p 86																									x	x															
Frank Santino of Boston Toyota																																			x					

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FIGURE C-1. TOYOTA

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

SOURCES	1	2	3	4	5	6	7	8	9	10*	11	12*	13	14	15	16	17	18	19	20	21*	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt Data Bk. p 76						x																																		
1976 AN Mkt Data Bk. p 15			x																																				
p 57															x																								
p 58													x																										
1977 WAY pp 34-35	x				x		x	x	x																														
p 50													x																										
1976 WAY p 28		x														x																							
1975 WAY p 26																				x																		
p 43																	x	x	x																				
4/18/77 WAR p 123									x																														
2/7/77 WAR p 50							x	x																															
8/27/75 AN p 76																						x																	
2/74 CR p 155																	x																						
11/76 WAW p 24																						x																	
1974 WAY p 48																	x		x																				

*Not used

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FIGURE C-2. DATSUN

PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
4/1/76 AI p 38													x	x																											
4/1/77 AI p 49		x			x	x					x																													
9/75 WAW p 42																x																								
5/2/77 AN p 47									x																															
1978 Advertising																							x																	
2/78 R&T p 84																							x																	
2/78 MT p 19																								x						x										
John Doonan of Arlington Datsun and Charlie Berkley of Boston Datsun																			x						x															
12/26/77 AN p 1																										x														
12/77 R&T p 54																											x													
R&T 10/77 p 126																												x											

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FIGURE C-2. DATSUN

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WEU 11/11/77 p 8																													x												
WAW 11/77 p 23, 43						x																						x												
WEU 10/28/77 p 6																														x										
AN 10/14/77 pp 1,3,53																												x		x	x		x							
WAR 10/24/77 p 341																												x												
AN 10/31/77 p 17			x																													x	x							
WEU 6/24/77 p 7																												x						x						
MT 4/77 pp 82,89, 93,94,96	x				x	x	x	x	x		x																	x												
AN 11/18/77 p 22																								x																

Revised 1/31/78

FIGURE C-2. DATSUN

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt Data Bk. p 36	x																																							
p 72	x																																							
1976 AN Mkt Data Bk. p 58		x																																						
1977 WAY p 51						x																																		
1976 WAY p 45		x		x																																			
1975 WAY p 43					x																																		
MVMA 1977, Accord pp 2,5,27	x																																						
1/24/77 WAR p 27								x																															
MVMA 1977, Civic pp 2,5,27						x																																	
MVMA 1977, Civic CVCC pp 2,5,27							x																																
4/1/76 AI p 38		x	x																																				
4/1/77 AI p 49	x					x																																	

C-10

FIGURE C-3. HONDA

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PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1/10/75 CR p 625					x																																			
6/24/77 WEU p 5									x																															
1975 WAY pp 26,36										x																														
4/1/75 AI p 41						x																																		
1973 WAY p 50											x																													
1978 Honda Adv.												x		x		x																								
AN 12/12/77 p 1													x																											
Popular Sci. 12/77 p 26												x																												
AN 11/28/77 p 1A,22												x																												
WAR 11/14/77 p 362												x																												
AN 11/14/77 p 18														x																										
WEU 11/11/77 p 7														x																										
WAW 11/77 p 25														x																										

C-11

FIGURE C-3. HONDA

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PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 9/5/77 p 3														x	x																									
Car & Driver 8/76 p 67	x																																							
R&T 8/76 p 40	x																																							
MT 4/77 p 83																x																								
Gil Berkman of Honda/ Volvo Village, Newton Centre, MA																	x																							

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FIGURE C-3. HONDA

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt. Data Bk. pp 76-77	x																																							
1977 WAY pp 41,51	x			x																																				
4/1/77 AI pp 48-49	x																																							
1976 AN Mkt. Data Bk. pp 59-60		x																																						
1976 WAY pp 41,45		x				x																																		
4/1/76 AI pp 37-38		x																																						
1975 WAY pp 26,43			x		x																																			
4/1/75 AI pp 40-41			x																																					
MVMA 1977 Subaru pp 1,2,27	x																																							
AI 11/15/77 p 13				x																																				
AN 8/25/75 p 2						x		x																																
AN 11/24/75 p 8						x																																		

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FIGURE C-4. SUBARU

PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Atlantic Imported Cars, Subaru Dealer, Cambridge							x	x																																
WAR 4/11/77 p 115	x											x																												
MT 4/77 p 85									x																														
R&T 2/78 p 86										x																													
WAW 12/77 p 98											x																												
AE 7/77 p 35													x																										
WAW 5/77 p 26														x																									

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FIGURE C-4. SUBARU

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt Data Bk. pp 76-77		x																																						
1977 WAY pp 45,51		x			x		x																																	
4/1/77 AI pp 48-49	x	x																																						
1976 AN Mkt Data Bk. pp 59-60			x																																				
1976 WAY pp 34,45			x					x																																
4/1/76 AI pp 37-38			x																																				
1975 WAY pp 30,43				x																																			
4/1/75 IA pp 40-41				x																																			
MVMA 1977 Mazda pp 1,2,5,27	x																																						
MT 1/78 p 16					x																																		
AN 12/5/77 p 26						x	x																																
AN 11/28/77 p 76					x																																		

FIGURE C-5. MAZDA

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PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 11/7/77 p 28						x																																		
WAW 11/77 p 25							x																																	
AN 10/31/77 p 20					x			x																																
AN 10/10/77 p 25							x																																	
AN 8/15/77 p 3					x																																		
AN 8/1/77 p 21							x																																	
AN 5/10/77 p 51					x		x																																	
WAW 2/77 p 21					x																																		
WAR 1/17/77 p 19					x		x																																	
MT 4/77 p 84,90					x				x																															
MT 4/77 p 116										x																														
AN 11/28/77 p 23											x																													
AN 12/1/75 pp 2,4								x				x																												

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FIGURE C-5. MAZDA

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
R&T 2/78 p 86													x																											
1978 Mazda Adv.														x																									
Kevin Mahoney of Boston Mazda															x																								
AN 12/26/77 p 1					x																																		
WAR 1/26/75 p 30												x																											
WAR 10/27/75 p 341								x																															
WEU 7/8/77 p 5																x																							
MT 6/77 p 111																	x																						
AN 5/16/77 p 51																		x																					

FIGURE C-5. MAZDA

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PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

SOURCES	1	2	3	4	5	6	7	8*	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt Data Bk. pp 44,76	x	x	x	x	x																																x			
1976 AN Mkt Data Bk.																																								
p 57						x			x			x																												
p 58									x			x																												
1977 WAY																																								
p 51	x	x			x								x																											
pp 35,40			x				x																			x														
1976 WAY																																								
p 45						x			x																															
1975 WAY																																								
p 20										x																														
pp 26-27										x															x															
p 32										x																x														
p 43										x																	x													
6/27/77 WAR p 203														x	x																									
6/6/77 WAR p 179																								x																
5/9/77 WAR p 149																		x					x																	
1/31/77 WAR p 34																					x																			
1/17/77 WAR p 19							x																																	
7/4/77 AN p 6																									x										x					

*Not used

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FIGURE C-6. VOLKSWAGEN
PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
6/27/77 AN p 26																			x				x																	
5/16/77 AN p 6							x									x		x	x					x												x				
5/9/77 AN p 25							x																x	x																
1976 WAY p 17																												x											
5/16/77 WAR p 155																													x											
1974 WAY p 48											x																									x				
WAW 11/77 pp 25,42, 43			x																																					
WAR 10/24/77 p 341			x												x																x									
Volkswagen of America Herb Williamson/ Rob Blum																										x									x	x				
4/1/76 AI p 37						x			x																															
4/1/77 AI p 48	x		x		x																																			
WEU 7/8/77 pp 2,4																							x												x					

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FIGURE C-6. VOLKSWAGEN
PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
2/77 R&T pp 38-41	x		x																																					
6/77 AE p 59																						x																		
3/21/77 AN p 12		x					x							x				x			x																		
p 68		x																																					
2/14/77 WAR p 53																		x																					
R&T 2/78 pp 30,52, 84,86			x							x							x												x		x								
MT 2/78 p 18														x																x									
VW Advertisement '78																																x							
Popular Sci. 11/77 p 60																																x		x					
R&T 11/77 p 66																																			x				
p 126																																	x						
AN 10/17/77 p 1																																							
WAW 10/77 pp 37,71			x												x		x																						
WAR 9/26/77 p 310																																	x						

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FIGURE C-6. VOLKSWAGEN
PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 10/24/77 p 2															x																										
WAW 9/77 p 29																																	x							
WEU 8/19/77 p 5													x																											
WEU 8/5/77 p 4																																			x					
WAR 8/8/77 p 253			x																					x															
AN 8/8/77 p 18																								x																
AI 8/1/77 p 12																								x																
MT 7/77 p 39							x																																	
Det. Free Press 10/15/77 p 5A													x																											
Det. Free Press 8/16/77 p 5B													x																											
WAR 8/22/77 p 269			x																																				
AN 9/26/77 p 2			x												x																									

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FIGURE C-6. VOLKSWAGEN

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
MT 4/77 pp 86,89, 117												x														x														
WAW 9/75 pp 40,41, 44										x																														
AN 11/28/77 p 2																										x				x										
Popular Sci. 10/77 p 104																																			x					
Bob Lindstedt, Belmont VW, Belmont Mass.																										x														
Popular Sci. 9/77 p 34							x																																	
WEU 5/27/77 p 1																							x																	
AN 8/22/77 p 2													x																											
AN 11/7/77 p 36			x																																					
AN 9/19/77 p 2																																					x			

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FIGURE C-6. VOLKSWAGEN
PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt. Data Bk. pp 76-77	x																																							
1977 WAY pp 39,51	x	x																																						
4/1/77 AI pp 48-49	x																																						
1976 AN Mkt. Data Bk. pp 59-60		x																																					
1976 WAY pp 29,45		x																																					
4/1/76 AI pp 37-38		x																																					
1975 WAY pp 26,43		x	x										x																											
4/1/75 AI pp 40-41			x																																				
AN 11/28/77 p 28					x	x			x																														
AN 12/19/77 p 6				x		x				x																													
WEU 10/28/77 p 1							x																																
AN 9/19/77 p 52									x																														
WAR 8/29/77 p 278									x																														

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FIGURE C-7. FIAT

PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 8/29/77 p 10					x																																			
WAW 7/77 p 38					x				x																															
AE 6/77 p 20		x									x																													
AN 6/13/77 p 60											x																													
WEU 5/13/77 p 5					x				x																														
AN 5/9/77 p 45									x																														
WAR 4/25/77 p 134							x																																
WEU 10/14/77 p 1									x																														
AN 10/17/77 p 6						x				x																													
WEU 9/30/77 p 1								x																															
R&T 8/76 p 89												x		x																									
WAW 9/75 p 42													x																										
AN 12/29/75 p 12														x																									

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FIGURE C-7. FIAT

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 10/24/77 p 18															x																										
MT 8/77 p 19					x																																			
Fiat Sales, Arlington, Mass.																x																								

Revised 1/31/78

FIGURE C-7. FIAT
PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt Data Bk. pp 76-77		x																																						
p 72													x																												
1977 WAY p 51		x																																						
4/1/77 AI pp 48-49	x	x																																						
1976 AN Mkt Data Bk. pp 59-60			x																																				
1976 WAY p 45			x																																				
4/1/76 AI pp 37-38			x																																				
1975 WAY pp 26,32,43				x																																			
4/1/75 AI pp 40-41				x																																			
MVMA 1977 Jaguar pp 2,5,27	x																																						
AE 12/77 p 27					x																																		
AN 11/28/77 p 26,38					x																																		
WEU 11/25/77 pp 6,7					x	x																																	

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FIGURE C-8. BRITISH LEYLAND

PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 9/19/77 p 25							x												x																						
AN 3/21/77 p 41							x																																		
MT 2/77 p 130								x																																
1/77 p 19									x																															
R&T 12/77 p 48										x																														
AN 10/24/77 p 44										x																														
WEU 10/28/77 p 3										x																														
MT 12/77 p 88											x																													
R&T 11/77 p 120												x																												
AN 6/13/77 p 2												x																												
WEU 6/24/77 p 6												x																												
Jaguar 1978 Adv.										x																														
WAW 11/77 p 42														x																										

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FIGURE C-8. BRITISH LEYLAND

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PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Spitfire 1978 Adv.															x																									
MG 1978 Adv.																x																							
WAW 10/77 p 72					x																																		
WAW 9/75 p 44				x																																			
AN 12/26/77 p 6																	x																						
AN 9/15/75 p 2,29																		x																					
MT 4/77 pp 27,92 116																		x	x	x																			
WAR 8/15/77 p 250														x																									

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FIGURE C-8. BRITISH LEYLAND

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PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt. Data Bk.																																								
pp 76-77	x																																							
p 72											x																													
1977 WAY																																								
p 51	x																																							
4/1/77 AI																																								
pp 48-49	x																																							
1976 AN Mkt. Data Bk.																																								
pp 59-60		x																																					
p 57		x																																					
1976 WAY																																							
pp 37,45		x		x																																			
4/1/76 AI																																								
pp 37-38		x																																					
1975 WAY																																							
pp 26,34, 43			x																																				
4/1/75 AI																																								
pp 40-41			x																																				
MVMA 1977 Volvo																																								
pp 240,260																																								
pp 2-5,6,27	x																																							
MT 3/77 Reprint				x																																			

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FIGURE C-9. VOLVO

PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAR 10/24/77 p 340					x																																			
AN 11/21/77 p 44						x	x		x																															
WAR 11/14/77 p 77						x	x		x																															
WEU 10/28/77 pp 1,6						x		x	x		x																													
WEU 5/13/77 p 7									x																															
1978 Advertisement										x																														
AN 12/16/77 p 6								x																																
AN 10/13/75 p 9		x										x																												
AE 2/77 p 45									x																															

Revised 1/31/78

FIGURE C-9. VOLVO
PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt. Data Bk. pp 76-77	x				x																																			
p 72							x																																		
1977 WAY pp 37,51	x						x																																	
4/1/77 AI pp 48-49	x																																							
1976 AN Mkt. Data Bk. pp 59-60		x																																					
p 57														x																										
1976 WAY p 45		x																																					
4/1/76 AI pp 37-38		x																																					
1975 WAY pp 26,38, 43			x								x																												
4/1/75 pp 40-41			x																																				
12/77 MT p 46				x																																			
1978 Adv Sales/spec					x									x																									
12/77 R&T p 41						x																																	

Revised 1/31/78

FIGURE C-10. MERCEDES-BENZ

PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 11/21/77 p 30							x																																	
WAW 11/77 p 23							x																																	
R&T 12/77 p 81							x																																	
WEU 10/28/77 p 6							x																																	
AI 11/15/77 p 16							x																																	
WAR 10/3/77 p 317						x																																	
WEU 9/30/77 p 8								x																																
WAR 10/3/77 p 318									x																															
AN 9/26/77 p 2						x		x	x																															
p 3									x																															
p 27													x																											
WAR 9/12/77 p 292						x																																	
WAR 8/15/77 p 261									x																															
AN 8/8/77									x																															
MT 6/77 p 16							x																																	
p 32							x																																	

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FIGURE C-10. MERCEDES-BENZ

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PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAW 6/77 p 23										x																														
AN 6/6/77 p 10										x																														
MT 7/77 p 67										x																														
MT 8/77 p 43										x																														
WEU 5/27/77 p 5											x																													
MT 4/77 p 41												x																												
AN 10/31/77 p 28													x																											
MT 1/77 p 82							x																																
WAW 1/77 p 12							x									x																							
WAW 11/77 p 42							x																																
WAW 10/77 p 72						x																																	
MT 4/77 p 92	x																																						
WAW 9/75 p 45											x																												

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FIGURE C-10. MERCEDES-BENZ

PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONT.)

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 12/16/77 p 1															x																										
AN 12/11/75 p 6														x																										
MT 12/76 p 76							x																																

FIGURE C-10. MERCEDES-BENZ
PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

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SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1977 AN Mkt Data Bk. pp 76-77	x																																							
p 72										x																														
1977 WAY pp 46,51	x		x							x																													
1/77 AI pp 48-49			x																																				
1976 AN Mkt Data Bk. pp 59-60		x																																					
1976 WAY pp 43,45		x																																					
4/1/76 AI pp 37-38		x																																					
1975 WAY p 43						x																																	
4/1/75 AI pp 40-41					x	x																																	
Saab-Scania Specs for '75 Nov., 1974 p 4						x																																	
MVMA 1977 Saab 99 pp 2,6	x																																						
3/77 Adv. Brochure (Road Test)	x						x																																

*Not used

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FIGURE C-11. SAAB
PRODUCT SCHEDULE CROSS-REFERENCE LIST

SOURCES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN 11/14/77 p 1								x																																
R&T 10/77 p 40								x																																
AN 9/5/77 p 2								x																																
WEU 5/27/77 p 4								x																																
MT 5/77 p 34										x																														
MT 4/77 pp 28,90							x			x																														
AN 5/9/77 p 12										x																														
1976 Adv. Brochure											x																													
WAW 9/75 p 48					x																																		
AN 12/8/75 p 6												x																												
AN 12/5/77 p 16													x																											
Gaston Andrey of Boston														x																										

FIGURE C-11. SAAB

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PRODUCT SCHEDULE CROSS-REFERENCE LIST (CONCLUDED)

APPENDIX D

REPORT OF NEW TECHNOLOGY

After a thorough review of the work performed under this contract, no new innovations, discoveries, improvements or inventions were made or patents submitted.

The program did result in a better understanding of the automotive industry and its capacity to meet fuel economy goals due to the development of Master Product Timing Schedules for domestic autos and light trucks as well as for selected import manufacturers.