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MOTOR VEHICLE PRODUCTION: DEFTH CLASSIFI-CATION: A DEMONSTRATION. (Classification problems. 22). (Design series. 12),

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Works out a scheme for the depth classification of the subjects going with the Basic Subject Motor Vehicle Production. Describes 14 steps in the design of the schedule, demonstrating the use of the principles, postulates. and devices of classification. Each step is considered in four parts: Objective, Background knowledge and preparation, Result, and Verification. Gives a list of 9 selected micro documents classified according to the scheme. Demonstrates a new method of presenting the Feature Headings, and comments on the results.

ABBREVIATIONS USED

(A1)	= Array of Order 1	(IN) = Isolate Number(s)	
(A2)	= Array of Order 2	P Personality Facet	
(A3)	= Array of Order 3	[IPI] = [P] of Round I,	
(AD)	= Alphabetical De	vice Level I	
(AIN)	= Array Isolate	(QI) = Quasi Isolate(s)	
	Number(s)	T = Telescoping of	
(BC)	= Basic Class(es)	T 1 = Telescoping 1 of	
(BS)	= Basic Subject(s)	T2 = Telescoping 2 of	
(CN)	= Class Number(s)		
(FC)	 Fundamental 	T 20 = Telescoping 20 o	f
•	Category(ies)		

0 INTRODUCTION

01 METHODOLOGY FOR THE DESIGN OF DEPTH SCHEDULES
In November 1963 a method for the design and development of schedules for the depth classification of subjects going

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with a (BS) was formulated (12). About a hundred depth schedules for the classification of subjects going with about 500 different (BS) have since been constructed. This work has demonstrated the helpfulness of the new methodology. In this process and in teaching and guiding the students in the DRTC Course, some experience has been gained in the practical step-by-step procedure for the design and development of depth schedules particularly for subjects going with the (BS) in Commodity Production Engineering. A few empirical principles have also been formulated as guide lines for the work involved in some of the steps.

02 SCOPE OF THE PAPER

In the present paper, a stepwise procedure for the design of a depth schedule for the classification of subjects going with a (BS) in Commodity Production Engineering is described. For this purpose, the construction of a schedule for the depth classification of subjects going with the (BS) Motor Vehicle Production is taken as a case study. The procedure is described in fourteen steps. Each step consists of the following parts:

- 1 Objective;
- 2 Background knowledge and preparation;
- 3 Result; and
- 4 Verification.

1 STEP 1

10 OBJECTIVE

To choose a Scheme for Classification that is suitable for adaptation to depth classification.

11 BACKGROUND KNOWLEDGE AND PREPARATION

111 SPECIES OF SCHEMES FOR CLASSIFICATION

Schemes for Classification have been categorised into the following species:

- l Purely enumerative;
- 2 Almost enumerative;
- 3 Almost faceted;
- 4 Rigidly faceted; and
- 5 Freely faceted.

It has been shown that the Freely Faceted Classification is the most suitable for adaptation for depth classification (16).

112 FACET STRUCTURE

A Freely Faceted Classification is based on postulates and principles for the three planes of work — Idea Plane, Verbal Plane, and Notational Plane. In an a priori approach to the

design of such a scheme for classification, we may think of the possible subjects likely to arise by the attachment of various kinds of isolates to a particular (BS). This is based on the Consolidated Postulate about a Subject (15). The isolates will be manifestations of any of the Five (FC) in any Round and in any Level. Thus, thinking about all the possible subjects in this way is a help in the design of a Scheme for Classification. The range of subjects going with a (BS) may have at one extreme the bare (BS) and at the other extreme a subject with any number of facets which are manifestations of all the five (FC) and in any of the Rounds and in a number of Levels. The subject at the first extreme does not require for its classification the help of any schedule other than that of the (BC). For, its class is the (BC) itself. On the other hand, the subject at the other extreme will have to be represented by a Generalised Facet Structure (26), to comprehend the totality of the facets that a micro subject may present.

113 REDUCTION IN WORK

1131 Common isolates

It will not be necessary to construct de novo a schedule for each of the facets of the compound subjects going with particular (BS). For instance, the isolates in the Space Facet and in the Time Facet will be common to many subjects. Therefore, the schedules for each of these facets can be constructed for a scheme as a whole. Similarly, the schedule of Anteriorising Common Isolates, the schedule of Posteriorising Common Isolates, and the schedule of Common Value Isolates can also be constructed for the scheme as a whole. Therefore, we have to consider in particular about the construction of the schedule of Special Isolates in the Personality Facet, in the Matter Facet, and in the Energy Facet of any Round and of any Level.

Special Energy Isolates for each (BS) have been found to be a few. The work on Common Energy Isolates indicates that such Special Energy Isolates will be largely made up of Quasi Common Isolates. These can be determined by the Principle of Seminal Equivalence.

The Special Matter Isolates for each (BS) have also been found to be a few. Matter Isolates are deemed to be of two kinds: Matter (Material) and Matter (Property), each constituting a Level of the (FC) Matter. Each of these kinds of isolates turns out to be largely Common Isolates. It may be possible to draw up schedules for Common Matter Material and Common Matter (Property). The number of isolates in the former schedule will be quite large (estimated at 1010) as compared to the estimated 2.000 or 3.000 isolates in the schedule for the latter. However.

once these schedules of Matter Common Isolate are drawn up, any Special Matter Isolate required for the subjects going with a (BS) can be determined just as in the case of Special Energy Isolates. It has also been found that the number of isolates in each of the schedules of Special Energy Isolates and of Special Matter Isolates does not increase rapidly.

1132 Special Isolates in [1P]

But the isolates in the Personality Facet will be largely different with each (BS). The number of relevant characteristics to be used as the basis for designing the schedule of these Special Isolates will be fairly large. The number of Levels in the Personality Facet in Round 1 will be more than one. Further, the isolates in [1P1] change at a faster rate, new isolates being required to accommodate subjects arising as a result of the rapid developments in the universe of subjects. Therefore, the isolates in [1P1] will be the most numerous. They also usually have the greatest literary warrant.

Thus, the isolates in [IP] are the most important ones for enumeration. Even here, those in [IPI] should receive first consideration. Therefore, we should preferably begin with the construction of schedules of Special Isolates in [IPI], then in [IP2], and so on.

12 RESULT

On the basis of the discussion in Sec 11 to 1132, we have the following results:

I The Freely Faceted species of classification will be the most helpful one for adaptation in the design and development of a scheme for classification of the subjects going with the (BS) 'Motor Vehicle Production'.

2 The steps in the design described in the succeeding sections will be largely confined to the schedule of isolates in [1P1].

3 The principles and postulates already formulated and embodied in the *Prolegomena to library classification* (18) may be used in the design and development of the schedule.

2 STEP 2

20 OBJECTIVE

1 To arrive at an adequate definition of the term 'Motor Vehicle' and of the related terms.

2 To ascertain the scope of the subject-field "Motor Vehicle Production" and its divisions.

3 To study the developmental history of the subject field "Motor Vehicle Production" with a view to gaining sufficient

knowledge of the highways and byways of the subject - that is, to sense the landmarks in the evolution of the subject as a whole and of its divisions, and the present trend of research thereof.

BACKGROUND KNOWLEDGE AND PREPARATION

- 211 Consultation of the following kinds of documents may be helpful to achieve the objectives mentioned in Sec 20.
 - I Standard technical dictionaries; 2 Current technical glossaries of the subject;
 - 3 Standards on the nomenclature of the subject;
 - 4 Articles on the subject in general encyclopaedias;

 - 5 Articles in special encyclopaedias devoted to the subject;
 - 6 Orientation books;
 - 7 Books on the history of the subject;
 - 8 Treatises on the subject; and
- 9 Good review articles and trend reports on the subject. For example, in regard to Motor Vehicle Production, consultation of the appropriate sections in the following documents was found helpful:
 - 1 Encyclopaedia Britannica. 1965. 25 V.
 - 2 World book encyclopaedia. 1962. 20 V.
 - 3 International encyclopaedia of science, 1965. 4 V.
 - 4 McGraw-Hill encyclopaedia of science and technology. 1960. 15 V.
 - Mechanical engineers' handbook. Ed 6. 1958.
 - 6 S A E handbook. 1962.
 - SAE J687. Standard on commercial motor vehicle nomenclature. 1953.
 - Heldt (P M). Automotive chassis without power plant. 1952.
 - Crouse (W H). Automotive transmissions and power trains. Ed 2. 1959.
 - 10 Review articles in the SAE journal and other periodicals on Motor Vehicle.

212 PROFORMA

A proforma that has been found convenient for recording the results of the consultation of the documents is given below:

- Meaning of the term (up to three differentones)
 - 11
 - 12
 - 13
- Terminology (with remarks, if any).
- Scope of the subject (general).
- Main divisions and subdivisions with their meanings and scope.

- 5 Special classification, if any.
- 6 Penumbral subjects.
- 7 Remarks on special points.
- 8 Important reference books in the subject.
- 9 List of documents from which information was collected, with indication of location (library, etc) against each document.

22 RESULT

221 DEFINITION

Vehicle.—A single conveyance on wheels.

Motor vehicle.—A vehicle that is self-propelled or drawn by mechanical power. It is used for passenger transportation (motor car, bus, motor cycle, motor scooter) or for hauling freight (truck). It is designed for operation on highways or natural terrain.

Motor truck.—A single self-propelled motor vehicle carrying its load on its own wheels. It is primarily designed for the transportation of goods.

Truck trailer.—A commercial motor vehicle with or without auxiliary motive power. It is designed to be drawn by a truck or by a tractor.

Truck tractor.—A motor vehicle designed primarily for drawing truck-trailer and constructed to carry part of the weight of the load of a semi-trailer.

The above definitions are from the SAE standard (29).

222 DEVELOPMENTAL HISTORY

It is estimated that today some eighty-five million passenger cars travel on the world's roads. In the United States alone, the road mileage covered by the passenger cars in a day equals a distance of nine round trips to the sun. The advent of the motor vehicle has greatly changed the mode of living of the people in many countries. For example, it has influenced town planning, location of houses, the kinds of houses built, the construction of highways, the way people earn a living, the way leisure time is spent, and even the food habits of the people. It has helped more people to see more of the world comfortably and easily.

Many men in many countries have contributed to the development of the motor vehicle. The earliest types of motor vehicles were steam-powered, slow-moving, cumbersome, jolting, and noisy, frightening people and animals off the road. In 1836, the electric-powered vehicle was introduced. By 1900, it became quite popular; for, it used silent motors and did not give off poisonous fumes. One particular disadvantage of the electric car was that it could travel only about a hundred miles before

its battery had to be re-charged. The 'electric car' soon gave way to the petrol engine-powered car. The petrol engine used in the modern car was developed in Europe. Although the petrol engine-powered car had been introduced as early as 1863, it was only after Daimler and Benz in 1885 built motor vehicles powered by naptha, the production of modern type of motor cars came to be established.

In the last quarter of a century the trend has been to produce cars with greater speed, and designed for greater safety, better controls, and comfortable motoring.

Some of the landmarks in the development of the production of Motor Vehicles are listed below (1 and 30):

Year	Person or Organisation	Contribution
c1678	Ferdinand Verbiest (Jesuit missionary in China)	Working model of a steam- powered car
1769	Nicolas Joseph Cugnot (French army officer)	One of the first full-size, self- powered road vehicle; speed 2 mph
1801	Richard Trevithick (Great Britain)	Crude steam-powered carriage; average speed of 15 mph
1805	Oliver Evans (United States)	First American motor vehicle; operated on land and water.
1829	Goldworthy Gurney (Great Britain)	Steam-powered carriage; average speed of 15 mph
1836	Thomas Davenport (United States)	Working model of an electricity- powered vehicle
1850s		Opposition to the steam-powered vehicle named 'snorting mon- sters', from people as well as from railway and stage-coach services
1864	England	Red Flag Law
1864	Jean Joseph Etienne Lenoir (France)	Single-cylinder engine powered by street lighting gas
1879- 1911	George B Selden (US Attorney)	Patent for a road vehicle design
1885	Gottlieb Daimler (German)	Two-wheeled motor cycle powered by a light 4-cycle petrol engine
1893	Charles E Duryea and J Frank Duryea	First successful petrol-powered car in the USA
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Year	Person or Organisation	Contribution
1896	Charles Brady King Henry Ford Alexander Winton Ransom Eli Olds	Detroit becomes the "Automobile capital" of the USA. Assembly-line production begins. Trend: Precision manufacturing: interchangeable parts; mass production
c1898	Louis Renault (French motor vehicle manufacturer)	Introduced shaft drive
1911	Charles F Kettering	Electric self-starter
1914 (World War I)	Joseph Simon Gillieni (Military Governor of Paris)	Formed the famous "Taxicab army" to stop the German advance, and changed the course of war
1920s		Essex car with closed body
1920–40	USA	Balloon tyres; safety glass; lacquer finish; sealed-beam headlight; no-draft ventila- tion; independent wheel sus- pension; automatic transmis- sion
1945	USA	Longer, wider, and lower cars; wrap-around wind shield; rear windows of one-piece glass curving around the sides of the car. High horse power engine. Comfort: Air conditioning, power-adjustable seats, pushbutton window
1950s		Gas-turbine-powered car
1959	Curtiss-Wright Corp	Car without wheels, riding on a cusion of air
1960		Compact-car becomes popular

3 STEP 3

30 OBJECTIVE

To choose the Basic Class or Basic Classes with which the subjects in Motor Vehicle Production may be deemed to go.

31 BACKGROUND KNOWLEDGE AND PREPARATION

The Postulate of Basic Facet [14] requires that each subject should have a (BC). In Sec 112, it has been pointed out that a subject in Motor Vehicle Production may require only the (BC)

to represent it, while another in the same subject-field may require the attachment of several isolate facets to the (BC) to represent it. A Freely Faceted Scheme for Classification may give a scheme of (BC). A depth schedule may be developed for the subjects going with any one or group of (BC). If the (BC) for the subjects in Motor Vehicle Production has not already been enumerated, it is to be derived from the appropriate Main Class or (BC). There are very few guiding principles [3] available for the derivation of a (BC). A study of the documents mentioned in Sec 21 will be of help in such derivation of the (BC). A knowledge of the application of the Principles for Filiatory Sequence is necessary for the interpolation of new (BC) in the filiatory sequence in the schedule of (BC).

32 RESULT

321 BASIC CLASS IN "D ENGINEERING"

The first few (BC) in the revised schedule of (BC) for "D

Engineering" occurring in (A1) in CC are as follows:

D Engineering

D6 Power production

D7 Service production

D7Z Commodity production

D91 Vehicle production

Tel (A2) into (A1) begins
D92 Land vehicle production

Tel (A3) into (A2) begins

D93 Power-drawn vehicle production

D936 Mechanical-power-drawn vehicle production

Tel (A3) into (A2) ends Tel (A2) into (A1) ends

322 BASIC CLASS FOR "MOTOR VEHICLE PRODUCTION".

The (BC) "D96 Mechanical-power-drawn vehicle production" is subdivided into the following (BC):

D936 Mechanical-power-drawn vehicle production

Tel (A4) into (A3) begins
D93B Motor vehicle production

Tel (A5) into (A3) begins

D93C Passenger-carrier-motor vehicle production

D93C1 Motor car (automobile) production

D93C2 Motor-bus production

D93C5 Motor-cycle production

D39C6 Motor-scooter production

D93C8 Moped production

D93D Freight-carrier-motor vehicle production

D93D1 Motor truck production

D93D3 Truck-trailer production

Tel (A5) into (A3) ends Tel (A4) into (A3) ends

323 VERIFICATION

The divisions of the (BC) "Motor Vehicle Production" are in conformity with the primary classification of vehicles generally adopted by the majority of Motor Vehicle Production engineers,

The sequence of the (BC) under each of the (BC) "Passengercarrier-motor vehicle production" and "Freight-carriermotor vehicle production" conform to the Principle of Laterin-Evolution (13).

The schedule worked out in this paper is generally applicable for the classification of subjects going with each of the (BC) enumerated above, except

> D93C5 Motor cycle production

D93C6 Motor scooter production

D93C8 Moped production

STEP 4

40 OBJECTIVE

To ascertain the oft-recurring First Characteristics for use as (OI) in [IPI], in the majority of the documents of optimum intention on the subjects going with the (B5) Motor Vehicle Production. (This step belongs to the Idea Plane).

41 BACKGROUND KNOWLEDGE AND PREPARATION

1 Some prior knowledge of the subject is necessary to begin with. In particular, a knowledge of the state-of-art and of the highways and byways of the subjects going with the (BS) Motor Vehicle Production is to be obtained.

2 In the a priori approach, to begin with, such knowledge of the history, the development, the state-of-art, and the trend in the subject, was obtained from a study of the doc: ments mentioned in Sec 211.

3 In the pragmatic approach, the First Characteristics were ascertained by perusing as many assorted recent micro documents on the subject as possible. About five hundred micro documents, including the specifications on the subject of Motor Vehicle published during the period 1963 to 1966, were examined. Of these, about two hundred were found helpful to pick out the First Characteristics to be used as (OI) in [1P1].

- 4 In order to make the design work as productive as possible, particularly in the later stages, the following records were also made at this stage:
- 41 A main entry was prepared on a 75 × 125 mm slip according to an accepted cataloguing code such as the Classified catalogue code for each of the micro documents on Motor Vehicle Production, selected as relevant for our purpose.
- 42 In each entry, the Kernal Terms taken from the document concerned were also noted, together with an indication against each the (FC) of which the idea represented by it was deemed to be a manifestation.
- 43 An abstract was added to the entry, wherever necessary.
 44 The isolates picked up while perusing the documents —
 macro as well as micro documents were each noted on a separate
 75×125 mm slip. The following items of information were also
 noted on each of the slips in the sequence mentioned:
- 1 The context in which the isolate occurs in the documents deemed to be relevant to the subject Motor Vehicle Production;
 - 2 The standard term;
 - 3 The definition(s) of the term;
 - 4 The source-document from which the definition was taken;
- 5 A reference to the main entry for the document from which the term was picked up; and
- 6 The name of the (QI) on the basis of which the isolate may be derived in the context of the subject Motor Vehicle Production.
- 45 A specimen of the entry in the slip for the record of information about an isolate is given below:

DRAY BODY

- I Type of construction of the body of a truck/trailer
 - 2 Camel back
- 3 Body of a truck/trailer with the floor curving down to the rear.
 - 4 SAE J687 Standard
 - 5 35
 - 6 By Type of body
- 5 The First Characteristics for use as (QI) in [IPI] for the subjects going with the (BS) Motor Vehicle Production were selected by blending the *a priori* and the pragmatic approaches mentioned above.

6 Each of the relevant (QI) was noted on a separate slip. Under each (QI), a few of the isolates that may be derived on its basis were also noted. This was found helpful in the subsequent step of arrangement of the (QI) in a helpful sequence. For, the isolates served as a sort of "definition by enumeration" for the (QI).

42 RESULT

Some of the possible (QI) for use as the basis for the classification of the subjects going with the (BS) Motor Vehicle Production and its sub-classes in [1P1] are given in Table 1 in Sec 421.

Note.—To save space, the list of unverified and unarranged (QI) is not given in this paper.

421 Table 1. List of quasi isolates

SN	Sector (S -)	Quasi Isolate	SN	Sector (S -)	Quasi Isolate
a	b	С	a	ь	С
1-3 1	(A)	By Brand By Company	18		By Physio- graphy
1 2 3 4		By Model By Year	19 20		By Altitude By Latitude
4	(1)	By Make (Country)	21		By Gradient climb
5-21 5 6	ZA	By Purpose By Service By Service area	22-31		By Design para- meter for whole vehicle
5 6 7 8		By Portability By Mass com- munication use	22-23 22	Za	By Weight By Vehicle weight
9 10		By Funeral use By Medical/	23		By Weight distribution
11		Hospital use By recrea- tional use	24–27 24		By Dimension By Overall length
12-13		By Cargo transport	25 26		By Overhang By Overall
12 13		By Cargo By Weight	27		width By Ground
14		By Animal	28-29		clearance By Speed
15-16		transport By Passenger transport	28		By Mean maximum
15 16 17–21	Zi to Zzi	By Passenger By Number By Environment	29		speed By Maximum speed in each
17	LLI	adapted to By Weather	30-31		gear By Acceleration

SN	Sector (S —)	Quasi Isolate	SN	Sector (S -)	Quasi Isolate
a	b	c	a	ъ	С
30		By Accelera-	58		By Brand
		tion from	59		By Kind
		standing to	60-61		By Oil filter
		_{ mile	60		By Brand
31		By Accelera-	61		By Kind
		tion through	62		By Combus-
22 .25		gears	62		tion chamber
32-137		By Design para-	63		By Valve gear
22.24		meter of organs	64 65		By Ignition
32-34		By Power system	66-70	9ZA	By Cooling By Frame
32 33		By Equipment By Voltage	66	720	By Construction
34		By Current	67		By Profile
35-65		By Engine	68		By Kind
35	^	By Kind	69		By Articulation
36		By Brand	70		By Material
37		By Mounting	71-91		By Cargo body
38		By Super-	71-73		By Truck trailer
		charging	71		By Kind
39		By Power	72		By Axlc
40		By Thrust			assembly
41		By Maximum	73	9Z1	By Number
		_torque			of axles
42		By Compres-	74	9A	By Construc-
		sion ratio			tional type
43		By Cycle	75-84		By Purpose
44-46		By Cylinder	75		By Special
44 45		By Number			purpose body
46		By Bore By Arrange-	76		By Body for
40		ment			miscellaneous
47		By Displacement	77		freight
48		By Stroke	"		By Body for
49		By Fuel			carrying
50-61		By Fuel injec-	78		passengers By Body for
		tion system			food
50-56		By Carburetor	79		By Body for
50		By Number			liquids
51		By Brand	80		By Body for
52		By Draught			livestock
53		By Number	81		By Body for
54		of barrels			garbage
34		By Number	82		By Body for
		of venturi tubes	83		vehicles
55-56		By Choke	0.5		By Body for
55		By Brand			construction
56		By operation			and repair
57		By Method	84		equipment
		of injection			By Body for building
58-59		By Fuel pump			equipment
		-			edmburent

SN	Sector (S -)	Quasi Isolate	SN	Sector (S -)	Quasi Isolate
a	ь	с	a	ь	С
85	91	By Material	122		By Number
86	9zA	By Length	•		of revolutions
87	72.1.	By Width	123-12	5	By Rim
88		By Height	123	•	By Material
89		By Floor area	124		By Width
90		By Capacity	125	z91 to	
91	9z1	By Number		z9a	_,
	,	of decks	126-13		By Tyrc
92-96		By Seat	126	21	By Brand
92	9a	By Number	127	zzA	By Kind
93		By Position	128		By Material
94		By Kind	129		By Fabrica-
95		By Cover			tion
96		By Cover of	130		By Maximum
		head lining			load
97-99		By Door	131		By Overall
97		By Number			diameter
98		By Position	132		By Static load
99		By Operation			radius
100-104	1	By Window	133	2Z l	By Size
100		By Number	134	27a	By Weight
101		By Position			of casing
102		By Material			By Inflation
103		By Curvature			pressure
104		By Operation			(alternative
105-100	5	By Roof			to 219-221)
105		By Kind	135-13	6	By Traction
106		By Material			charac-
107-108	3 1	By Suspension			teristic
107		By Position	135		Ву Аіг
108		By Kind			resistance
109-114		By Spring	136		By Total
109	2ZA	By Material			air-and-
110-11	2 zA	By Shape			rolling
110		By axial load	137-21	_	resistance
111		By torsion	137-21	О	By Operation-
112		By bending			associated
113		By Length By Rate of	137-15		characteristic
114			137-13		By Transmission
115		spring	137~14.	Z	By Gear box
115 116–137	,	By Control By Wheel	137		By Drive
116-137		By Position	139		By Type By Number
117		By Number	139		of speeds
118		By Number	140		By Number
110		of driving	140		of auxiliary
		wheels			speeds
119		By Wheel base	141		By Gear ratio
120		By Alignment	142-144	ı	By Final drive
121		By Track	142	•	By Kind of
		DJ IIUCK	1-72-		gearing
					E-aims

_					
SN	Sector (S -)	Quasi Isolate	sn	Sector	Quasi Isolate
a	ь	c	a	ь	c
143		By Arm	174		By Electrical
144		By Gear ratio			power
145		By Rear axle	175		By Fuel
146		By Kind of shift	176		By Tempera-
147		By Method of			ture
	_	transmission	177		By Speed
148-15	2	By_Clutch	178	_	By Time
148	_	By Brand	179-18	7	By_Light
149-15	2	By Disc	179		By Number
149		By Number	180		By Brand
150		By State	181		By Purpose
151		By Diameter	182		By Position
152		By Engage-	183		By Power
167 16		ment	184		By Shape
153-16	0 a	By Steering system	185		By Con-
153 154		By Brand			tour of
155		By System			reflector
156		By Steering gear	186		By Filament
157		By Linkage	187		By Operation
158		By Gear ratio	188		By Safety
130		By Rotation of	100 30		device
159		steering wheel	189-20	5	By Facility
139		By Number			and comfort
		of turning	100 10		accessory
		circles, lock-	189-19	4	By Baggage
160		to-lock			accommo-
100		By Diameter	189		dation By Position
		of turning circles	190		By Fixity
161-17	3	By Brake system	191		By Length
161	,		192		By Width
162		By Brand	193		By Height
163		By Purpose	194		By Capacity
164		By Assistance By Relation to	195-19	0	By Ventila-
107		wheel	175-17	,	tion and
165		By Construction			heating
166-16	R	By Shoe	195-19	7	By Purpose
166		By Number	195	•	By Climatic
167		By Kind	.,,		control
168		By Width	196		By Heating
169		By Brake-	197		By Ventilation
		pedal pres-	198		By Equipment
		sure	199		By Operation
170			200		By Telecom-
171		By Swept area By Lining	200		munication
172		By Cooling	102		By Audiovisual
173-18	8	By Safety	202		By Interior
173-178			202		trimming
	-	By Indicator/	203		By Sanitation
		Measuring device	203		By House
173			204		keeping
		By Oil			wee brief

SN	Sector (S -)	Quasi Isolate	SN	Sector (S -)	Quasi Isolate
a	ь	c	a	ь	c
205		By Executive	213		By Change
		facility			of filter
20621	8	By Mainte-			element
		nance factor	214		By Final drive
20 6		By Overali			_oil
		fuel con-	215		By Slip
		sumption			differential
207		By Fuel con-			change of oil
		sumption at	216		By Over-
		constant			drive oil
		speed	217		By Gearbox oil
208		By Fuel tank	218		By Grease
		capacity			_ application
209		By Distance	219-22	i	By Tyre
	_	per tank full			pressure
210-21:	3	By Engine	219		By Normal
210		By Cooling			driving
		system	220		By Fast driving
211		By Engine	221		By Full load
		sump oil			driving
212		By Change			
		of oil			

43 VERIFICATION

- I It was ensured that the division on the basis of a Train of Characteristics yielded only a sub-universe of whole entities in [1P1] and not of organs or constituents of a typical entity.
- Il When a division on the basis of a characteristic yielded a non-whole of typical entity, the resulting isolates were placed in the later levels. In the subjects going with a (BS) in Commodity Production Engineering, such isolates usually represent Organs of the commodity concerned (See Sec 92).
- 2 Each of the Canons of Characteristics (19) was applied to each of the (OI). Each (OI) was found to satisfy the canons.
- 21 Wherever there existed a good schedule for the classification of a subject associated with the subject Motor Vehicle Production, then those (QI), their sequence, and the isolates based on those (QI), were used in the construction of the present schedule. An example of such adaptation is the set of (QI) and the isolates from the schedule for the classification of the subjects going with the (BS) 'Reciprocating Internal Combustion Engine' (27).
- 22 The Canon of Relevance, The Canon of Concomitance, and the Canon of Permanence gave some difficulty in their application to the (QI) chosen. The relevance of the characteristic

chosen depends on a careful selection of the documents for formulating the (QI). For example, it was, in certain cases, a little difficult to decide whether a subject goes with the (BS) Motor Vehicle Production or some other (BS) the subjects going with which contain information about Motor Vehicle - such as the use of motor vehicle in transportation, and traffic engineering. In some cases, a re-checking of the original documents on the basis of which the (QI) was formulated, clarified the situation. In a few cases, the help of a subject specialist was sought.

23 A checking of the isolates derived on the basis of the (OI) helps in conforming to the Canon of Concomitance. Where it is found that the use of isolates derived on the basis of different (QI) would lead to cross-classification, a note regarding the proper use of the schedule of isolates based on the different (Ol) should be given.

24 In respect of the application of the Canon of Permanence, in some cases it was necessary to seek the help of the subject specialist — that is, Motor Vehicle Production Engineer.

STEP 5

50 OBJECTIVE

To derive a helpful sequence among the (QI) selected in Step 4. (This step belongs to the Idea Plane).

BACKGROUND KNOWLEDGE AND PREPARATION

1 The sequence derived among the (QI) should satisfy the approach of the majority of the specialists in the subject that is, Motor Vehicle Production Engineers.

2 A careful study of the macro and micro documents in the subject was of help. Where the ideas were not clear, the

help of a subject specialist was sought.

3 A knowledge of the Principles for Helpful Sequence (22) and experience in their application to facets and to (QI) are necessary. In the earlier work on the design of depth schedules, the Wall-Picture Principle has been found most helpful in the arrangement of the (QI). Experience has also shown that the Wall-Picture Principle generally gives a sequence among the (QI), that satisfies the approach of the majority of the specialists in the subject concerned (8, 17).

4 However, the application of the Wall-Picture Principle may be time-consuming if there are a large number of (QI). In order to increase the productivity in deriving a helpful sequence among the (QI), the technique of Group Strategy may be used

with advantage (6).

5 In the case under consideration, there are 221 (QI) among which a helpful sequence was to be derived (See Table 1 in Sec 421). Therefore, following the Group Strategy, the (QI) were first sorted out into (QI) of Order 1, (QI) of Order 2 associated with each of the (QI) of Order 1, (QI) of Order 3 associated with each of the (QI) of Order 2, and so on. Specimen lists of the (QI) sorted out according to this procedure are given in Tables 2 to 4 below.

511 TABLE 2. QUASI ISOLATES OF ORDER 1

SN	Quasi Isolate	SN in Table 1	
1	By Brand	1–3	
2	By Make	4	
3	By Purpose	5–21	
4	By Design parameter		
4	of motor vehicle as a whole	22-31	
42	of organs of motor vehicle	32-137	
5	By Operation-associated characteristics	138-221	

512 TABLE 3 QUASI ISOLATES OF ORDER 2 ASSOCIATED WITH THE (QI) OF ORDER 1 'By PURPONE'

SN	Quasi Isolate	SN in Table 1
1	By Service	5
2	By Portability	7
3	By Mass communication use	8
4	By Funeral use	9
5	By Medical/Hospital use	10
6	By Recreational use	H
7	By Cargo transport	12-13
8	By Animal transport	14
9	By Passenger transport	15-16
10	By Environment adapted to	17-21

513 TABLE 4. QUASI ISOLATES OF ORDER 3 ASSOCIATED WITH THE (QI) OF ORDER 2 'ENVIRONMENT ADAPTED TO'

SN	Quasi Isolate	SN in Table I
1	By Weather condition	17
2	By Physiography	18
3	By Altitude	19
4	By Latitude	20
5	By Gradient climb	21

6 Grouping of (Q1).—The totality of the (Q1) of Order 1 were grouped and the groups named as follows:

514 TABLE V. GROUPS OF QUASI ISOLATES

SN	Group of (QI)	SN in Table I
1	Name-associated	1-4
2	Purpose-associated	5-21
3	Whole-machine-design-associated	22-31
4	Organ-design-associated	32-137
5	Operation-associated	138-221

⁶¹ Arrangement of (QI) of Order 1.—The Wall-Picture Principle was applied to the group of 5 (QI) of Order I, taking a pair of them at a time, to derive a helpful sequence among them.

63 Similarly, by applying the Wall-Picture Principle a helpful sequence was derived among each of the groups of (QI) of Order 2 associated with each of the (QI) of Order 1.

⁶² Arrangement of (QI) of Order 2.—The groups of (QI) of Order 2 associated with each of the (QI) of Order 1 were taken up successively for arrangement. For example, there are 3 (QI) of Order 2—"By Company", "By Model", and "By Year"—associated with the (QI) of Order 1 "By Brand". The Wall-Picture Principle was applied to these (QI) of Order 2, taking a pair of them at a time, to derive a helpful sequence among them.

64 Arrangement of (Q1) of Order 3.—The groups of (Q1) of Order 3, associated with each of the (Q1) of Order 2, were taken up successively for arrangement. For example, there are 3 (Q1) of Order 3—"By Equipment", "By Voltage", "By Current"—associated with the (Q1) of Order 2 "By Power generation system", the latter being associated with the (Q1) of Order 1 "By Design parameter of organs of vehicle". The Wall-Picture Principle was applied to these (Q1) of Order 3, taking a pair of them at a time, to derive a helpful sequence.

65 Similarly, by applying the Wall-Picture Principle, a helpful sequence was derived among each of the groups of (QI) of Order 3 associated with each of the (QI) of Order 2.

66 This procedure was followed with each of the groups of (QI) of Order 4, Order 5 etc.

for In the case of a few groups of (QI), the application of the Wall-Picture Principle was found a little difficult — that is, an unequivocal sequence of the (QI) could not be determined easily. In such cases, some of the more general Principles for Helpful Sequence and the Principles for Sequence of Isolates in an Array were found helpful. They could be applied with comparatively greater facility. The Principle of Increasing Concreteness, the Principle of Later-in-Time, the Principle of Later-in-Evolution, and the Principle of Spatial Contiguity have been found particularly helpful in such cases. It will be remembered that all the Principles for Helpful Sequence are derivable from the Wall-Picture Principle.

52 RESULT

The Sequence of the (QI) derived according to the procedure described in Sec 51 and its sub-sections is given in Table I column c. The second and later order (QI) are indicated by appropriate indentions.

53 VERIFICATION

It has been shown that the sequence of (QI) derived by the application of the Wall-Picture Principle conforms to the sequence of the (QI) derived as follows: Correlate each of the (QI) in each of the Groups of (QI) of different orders with one or the other of the (FC) P, M, E, S, T and arrange them in that sequence in each of the groups of (QI) (6). The P, M, E, S, T sequence of the (QI) so derived may be used for verifying the sequence of the (QI) derived by applying the Group Strategy and the Wall-Picture Principle. If among a group of (QI) of one and the same order, two or more of the (QI) get correlated with one and the same (FC), then the sequence among them may be determined by applying the Wall-Picture Principle (6). Some examples are given in the following tables.

531 TABLE 6. SEQUENCE OF QUASI ISOLATES OF ORDER 1

SN	Quasi Isolate Group	Correlated with	SN in Table I
1	By Brand	Personality	1-3
2	By Make	Personality	4
3	By Purpose By Property of	Personality	5–21
4	Motor vehicle as a whole	Matter (Property)	22-31
5	Organs of vehicle	Matter (Property)	32-137
6	By Operation-associated characteristics	Energy	138-221

532 TABLE 7. SEQUENCE OF QUASI ISOLATES OF ORDER 2 ASSOCIATED WITH THE (QI) OF ORDER 1 "BY BRAND"

SN	Quasi Isolate	Correlated with	SN in Table 1
1	By Company	Personality	1
2	By Model (Design)	Matter (Property)	2
3	By Year	Time	3

533. Table 8. Sequence of Quasi Isolates of Order 3 associated with the (Q1) of Order 2 "By CArgo body"

SN	Quasi Isolate	Correlated with	SN in Table 1
1	By Purpose	Personality	75-84
2	By Material	Matter (Material)	85
3	By Length	Matter (Property)	86
4	By Width	Matter (Property)	87
5	By Height	Matter (Property)	88
6	By Floor area	Matter (Property)	89
7	By Capacity	Matter (Property)	90

534 TABLE 9. SEQUENCE OF QUASI ISOLATES OF ORDER 4 ASSOCIATED WITH THE (QI) OF ORDER 3 "By Tyre"

SN	Quasi Isolate	Correlated with	SN in Table 1
1	By Brand	Personality	126
2	By Kind	Personality	127
2	By Material	Matter (Material)	128
4	By Fabrication (Structure)	Matter (Property)	129
4 5 6 7	By Maximum load	Matter (Property)	130
6	By Overall diameter	Matter (Property)	131
7	By Static load radius	Matter (Property)	132
8	By Size	Matter (Property)	133
9	By Weight of casing	Matter (Property)	134
10	By Inflation pressure	Matter (Property)	135
11	By Traction characteristics	Matter (Property)	136

6 STEP 6

60 OBJECTIVE

To allocate notation to the (Ql). (This step belongs to the Notational Plane.)

61 BACKGROUND KNOWLEDGE AND PREPARATION

I A choice is to be made from the different notational systems used in the design of schemes for classification. The Mixed Notation of the Colon Classification together with its Sector Notation has been found convenient in the earlier work on the design of depth schedules.

2 The sequence of the (QI) arrived at in the Idea Plane in Step 4 (Sec 42) should be retained in the Notational Plane.
3 In the Facet Structure, the greater the concreteness of the (QI) the nearer is its position to the (BS). In the arrangement of the documents on the shelf and in the arrangement of the entries for them in a documentation list, the less specific treatment of a subject will be placed earlier to the more specific one. To secure this arrangement, the Principle of Inversion as applicable to the (QI) (25) may be used. This means the allocation of the sectors in such a way that the ordinal value of the digits in the sector increases according as the (QI) is nearer in position to the (BS) in the Facet Structure.

4 Provision has to be made for the interpolation and extrapolation of any new (Ol) that may arise in the future.

5 The majority of the isolates should each get (IN) of not more than 3 digits. This is a comfort to the eye and to the memory.

6 If each of the (QI) is to be allocated a separate sector, then a minimum of 221 sectors will be required for our purpose, as there are 221 (QI). Depending upon the boundary condition as to the number of (AIN) in (AI), we have the following data regarding the number of sectors and the number of (AIN) (24).

611 TABLE 10. CENSUS OF SECTORS AND (AIN)

Note.—The 'Starter' and 'Arrester' are each counted as a digit.

GN.	N of digits in	N	of
SN	an (AIN) to be	Sectors	(IN) available
<u> </u>	1	3	31
2	2 3	12 51	212 923
		66	1,166

61 The data indicates that one and the same sector has to be allocated to two or more consecutive (QI) to extend the notation to all the 221 (QI), without raising the boundary condition of having not more than 3 digits in the majority of the (IN) and also to make full use of each of the sectors.

62 Care has also to be taken not to jeopardise the future interpolation or extrapolation, in the filiatory sequence, of any isolate(s) derived on the basis of any of the (QI) enumerated or any other (QI) that may have to be accommodated in future.

7 In the allocation of a specific sector to a (QI), the following

factors should be kept in view:

71 The Law of Parsimony is to be conformed to so long as such conformity does not violate the more important principles

applicable to the case.

72 Frequently occurring (QI) should, as far as possible, get a notation shorter than those occurring comparatively less frequently. An idea of the approximate frequency of occurrence of the (QI) may be obtained even while reading the documents, and picking up the Kernal Terms (See Sec 41).

73 If the number of isolates derived on the basis of a (QI) is comparatively large — say more than 16—then a sector with a broader base should be allocated to that (QI). Alternatively, two or more sectors may be allocated to that (QI), if possible.

74 To facilitate the use of mnemonics, some of the (Q1) should preferably be allocated sectors in which the first significant digit is an Hindu-Arabic numeral.

75 To facilitate the use of (AD) or the addition of figures in Hindu-Arabic numerals in deriving isolates or to take advantage of scheduled mnemonics, some of the (QI) should preferably be allocated sectors in which the first significant digit is a Roman capital or small letter. For using (AD), only Roman capital letter is possible.

8 In the earlier work on the design of depth schedules for subjects going with the (BS) Commodity Production Engineering the following pattern of allocation of sectors for the (Q1) in [1P1],

has been found convenient.

612 TABLE 11. ALLOCATION OF SECTORS Note.—The 'Starter' and 'Arrester' in each of the digits in the sectors in Zones 4 to 6 are each counted as a digit.

SN	Sector	Schedule of	N of (IN) available
1	(S—a) to (S—za)	General-purpose Machine Element (= ME)	44
	(S—zza)	Common Organ Isolates (Other than (ME)	22
	(S-zzl) to (S-zzA)	Organ of remove 5	31 61
	(S—z1) to (S—z9A) (S—zA) to (S—zZA)	Organ of remove 4 Organ of remove 3	76
	(S—I) to (S—9ZA)	Organ of remove 2	220
7 8	(S—A) to (S—ZZA) (S—a) to (S—ZZA),	Organ of remove 1 Isolates in [1P1]	235
	(S—(a), (S—(1)), (S—(A))		1,166

62 RESULT

The sectors allocated to the (OI) are given in Table 1 column b in Sec 421.

63 VERIFICATION

I The sequence of the (OI) arrived at in the Idea Plane has been retained in the Notational Plane.

2 The pattern of allocation of sectors to the (QI) in [1P1], suggested in Table 11 in Sec 612, has been conformed to (See Schedule in Sec 991).

3 Interpolation and extrapolation of new (QI) are provided for by leaving some sectors unassigned, as indicated in Tables 12 and 13.

631 TABLE 12. EFFICIENCY TABLE

Note.—(1) Boundary condition of not more than 3 digits in (1N) of Order 1.

(2) The 'starter' and 'arrester' are each counted as a digit.

SN	7			Number	
21/	Zone and Sector	or T	Available	Used	Not used
а	ь		c	d	e
	(Z—0)		·		
	1-digited sector		; 12		3 12
	3		12		12
2	(Z—a) I-digited sector				
	2		1 3 12	1 3 6	
			12	6	6
3	(Z1) 1-digited sector		ı		
	2		3 12	3	
			12	4	8
4	(Z—A) 1-digited sector		1	1	
	2 " "		; 12	3	
_			12	ı	11
5	(Z—(a)) l-digited sector				
	2 ,			::	• • •
6	3 (Z—(1))		1	• •	1
О	1-digited sector				
	3 " "		·i	• • • • • • • • • • • • • • • • • • • •	
,	3 ,, ,. (Z(A))		•	'	• •
•	1-digited sector				
	2		`i	ï	
		Total	66	25	

632 TABLE 13. SUMMARY OF THE DATA GIVEN IN TABLE 12

			Number		d×100
SN	Kind of Sector	Available	Used	Not used	c
a	ь	c	d	e	f
1	I-digited	3	3		100
2	2 ,,	12	9	3	7 5
3	3 ,,	51	13	38	25
	Total	. 66	25	41	38

31 The tables indicate that out of the 66 sectors available only 25 have been allocated, leaving 41 sectors for interpolation purposes. It should, however, be noted that the 15 sectors of Zone 0 are not to be used. For, it may give rise to homonym with the (CN) derived according to the rule mentioned in Sec 941 category 2. Table 13 also indicates that the 1-digited sectors have been fully used, the 2-digited sectors to the extent of 75 per cent, and the 3-digited sectors only to the extent of 25 per cent. This is in conformity with the Law of Parsimony.

7 STEP 7

70 OBJECTIVE

To construct the schedule of isolates derived on the basis of each of the (QI) enumerated in Table 1 column c in Sec 421. (This step belongs to the Idea Plane and also to the Verbal Plane.)

71 BACKGROUND KNOWLEDGE AND PREPARATION

1 The isolates already picked up (See Sec 41, category 45), may now be grouped according to the (Q1) noted on each of the slips.

2 A (QI) and the isolates derived on its basis are to be kept together in the sequence of increasing ordinal value of the sectors allocated to each of the (QI).

72 RESULT

The number of the array of a co-ordinate group of isolates. derived on the basis of a (QI), will correspond to the number of the order of that (QI).

The result obtained at this stage is to be worked upon further in the next step.

8 STEP 8

80 OBJECTIVE

To derive a helpful sequence among the isolates derived on the basis of each of the (QI). (This step belongs to the Idea Plane).

81 BACKGROUND KNOWLEDGE AND FREPARATION

- 1 Each cultivated mind may think out a different sequence for the arrangement of the isolates. However, certain patterns in the sequence scan be recognised. One has to be aware of the sequence helpful to the majority of the specialists in the subject concerned. In the earlier work on the design of depth schedules, it has been found convenient to use the Principles for Isolate Sequence in an Array (21).
- 2 If a preferred sequence of the isolates is recognised in relation to the approach of the majority of the specialists in the subject, then that sequence may be derived on the basis of one of the above Principles for Isolate Sequence.
- 3 The arrangement of the isolates in a helpful sequence may be conveniently done in sub-steps as follows:
- 31 The isolates in (A1) derived on the basis of the first (Q1) are arranged using the appropriate Principle of Isolate Sequence.
- 32 The isolates in (A2), if any, associated with each of the isolates of (A1), mentioned in sub-step I, are then arranged using the appropriate Principle of Isolate Sequence.
- 33 The isolates in (A3) associated with each of the isolates of (A2) mentioned in Sub-step 2 are then arranged using the appropriate Principle of Isolate Sequence.
- 34 Similarly, the isolates in (A4), (A5) etc, if any, are arranged, until all the isolates derived on the basis of the (QI) get arranged in a helpful sequence.
- 35 Each of the four sub-steps mentioned above is to be carried out for the isolates of different orders, derived on the basis of each of the (QI).
- 4 At this stage, it will be convenient to write out the schedule. For, it is then easier to show the coordinate and subordinate status of the isolates, and the number of isolates present in each array. This information is helpful in Step 9 for the allocation of notation to the isolates. A specimen of a part of the written schedule is given below:

Note.—(1) L =	Letter-space.	(2) The (Q1)	are underlined	
10L	5L	SL	5L	

By Steering system By Diameter of turning circles Between Walls

In meters In feet

Between curbs

In meters

In feet By Number of turning circles lock-to-lock

82 RESULT

The sequence of the isolates derived according to the above procedure is given in the Schedule in Sec 991.

83 VERIFICATION

I The sequence of each of the groups of coordinate isolates in most of the arrays has been found to conform to one or the other of the Principles for Isolate Sequence in an Array, Here are a few examples:

11 Example 1

The following isolates are arranged according to the Principle of Increasing Quantity, the entity concerned being the increase of the Lumens per watt (lwp) of the material of the filament of the lamp.

By Light

By Filament

Carbon

Tantalum

Osmium

Tungsten

12 Example 2

In all the cases where the isolates are formed by the addition of the figures given in the document to the (IN) allocated to the (QI), the Principle of Increasing Quantity is automatically conformed to.

13 Example 3

The following isolates are arranged according to the Principle of Decreasing Quantity, the entity concerned being the decrease in the tension (E) of the material of the spring.

By Material of Spring

Steel

Hard drawn
Oil-tempered
Annealed high carbon
Chromium-vanadium

Silicon manganese Flat CR strip Stainless 18-8 Chromium stainless

14 Example 4

The following isolates are arranged according to the Principle of Later-in-Time.

By Climatic control

Thermostatic control Air-conditioning Pressurisation

15 Example 5

By Curvature of window glass

Flat

Curved

Compound Curved Wrap over

...p c.c.

16 Example 6

The following (QI) are arranged in the sequence of Spatial Contiguity, left-to-right.

By Clutch

By Transmission

By Rear axle By Final drive

_ _

17 Example 7

The Principle of Alphabetical Arrangement has been conformed to in the formation of isolates by the (AD).

2 In the schedule in Sec 991, the isolates derivable by the use of a device such as (AD), Geographical Device, Subject Device, etc, are not enumerated. But a note on how to derive the isolate is given in the appropriate places.

91 STEP 9

910 OBJECTIVE

To assign notation to each of the isolates. (This step belongs to the Notational Plane.)

911 BACKGROUND KNOWLEDGE AND PREPARATION

1 Suitable sectors have already been allocated to the (QI) (See Sec 61), keeping in view the approximate number and the kind of isolates derivable on the basis of each of the (QI).

- 2 The digits available in each sector are to be assigned to each of the isolates keeping in view the following factors:
- 21 The sequence of the isolates derived in the Idea Plane should be retained in the Notational Plane.
- 22 Provision should be made for the interpolation and the extrapolation of isolates in the filiatory sequence when they arise in future, without greatly changing the structure of the scheme.
- 23 The co-ordinate and subordinate status of the isolates among themselves should be indicated either by an expressive notation or by some other means.
- 24 The Canons for Mnemonics (23) should be conformed to, so long as such conformity does not violate other more important principle(s) applicable to the case.
- 25 The Law of Parsimony should be conformed to without violating any other more important principle(s) applicable to the case.
- 3 The (IN) is to be noted against each Isolate Term (on the right side) in the slip, and in the written out schedule (on the left side).

912 RESULT

The (IN) together with the isolate terms, arranged according to the increasing ordinal value of the digits in the (IN) are given in Sec 991.

913 VERIFICATION

- I The sequence of the isolates arrived at in the Idea Plane has been retained in the Notational Plane.
- 2 Provision for the interpolation and extrapolation of isolates has been made by leaving gaps among the (IN), at such positions where new developments are likely to take place. Interpolation can also be done by the use of the Interpolation Device (See Sec 9132, Note 2).
- 3 The co-ordinate and subordinate status among the isolates is indicated by expressive (IN). Where a subordinate isolate appears as if it is coordinate to the immediately preceding isolate, because of the use of the Telescoping Device, the beginning and the end of the telescoping points are indicated in the schedule in the appropriate places. Here is an example:

31 Example 1 19a By Shape of light

Tel 1 (A4) into (A2) begins

f9b Rectangular

f9bl Horizontal

f9b3 Vertical

- 4 The Canons of Mnemonics have been conformed to, as far as possible. Here are some examples.
 - 41 Example for Scheduled Mnemonics **Z**2 By Environment **Z**5 By Physiography (Terrain) **Z51** By Latitude Flat **Z2 Z53** Z.21 Tropical Undulating Z25 Subtropical Z54 Rough **Z28** Polar **Z**56 Hilly **Z**57 Mountainous
 - By Altitude **Z**3 **Z31** Sea level 7.37 Mountain

Z38 Snow level

In the construction of the above schedule, the (IN) have been derived according to a schedule for "Environment" already available. To facilitate the use of Mnemonics the letters of the Roman alphabet (capitals) have been equated with the digits in the Hindu-Arabic numerals according to the following scheme:

42 Example for Systematic Mnemonics

Tardana nama	(IN) for the position of					
Isolate term	Wheel	Window	Door	Seat	Engine	
Front	zQl	9j1	9n1	9wl	Vı	
Centre	zQ2		9n2	9w2	V2	
Side		9 j5	9n5	••		
Rear	zQ7	9j7	9n7	9w7	V 7	

43 Example for Sentinal Minemonics

Seminally equi-	· <u>i</u>		Isolate		Isolate		Isolate	_	Isolate
vaient ideas for the digit	S :=	z	Term	z	Term	z.	Term	z	Тетш
Heat		% 	Heating facility	7.	Temperature gauge	9NE	Heated carrier		
Damage	5.	9F4	Wreck trans- porter	ZH34	Perishable food carrier				
Interlink		4	Linked steering						
5 Light/Colour		53	Lighting facility 9c45	9c45	Tinted glass roof 9h5	9h5	Tinted glass window		
Water	-	k15	Water-cooled brake	X	Hydraulic steering	Ş	Wer disc clutch	9L15	9L15 Water carries body
Aesthetics	بع	54	Interior trimming						

44 Example for Verbal Mnemonics

The (AD) has been prescribed for the derivation of the Isolates on the basis of the (QI) "By Brand". The sector (S-(A)) has been allocated for this purpose. Thus,

- (B) Buick (CH) Chevrolet (H) Hudson
- (C) Cadillac (F) Ford (P) Pontiac

Other Examples of the mnemonic use of digits may be seen in the index in Sec 98. For example, under the terms "Fiberglass", "Front", "Manual", "Plastics", "Pvc", "Rear".

5 In Sec 61, category 74, it has been mentioned that the sectors for allocation to the (Q1) should be so chosen as to facilitate the addition of Hindu-Arabic numerals with a view to conform to the Canons of Mnemonics without giving rise to a homonym, and to give autonomy to the classifier. Such provisions have been made in the schedule wherever the isolates are to be derived on the basis of (Q1) such as "By Number" and "By Dimension".

6 The Law of Parsimony has been conformed to, as far as possible, by giving shorter notation to the (Q1) which were approximately estimated to occur more frequently and by the use of Telescoping Device. The data given in Tables 14 and 15 illustrate the extent of conformity to the Law of Parsimony. A more detailed study of the conformity to parsimony is to be done after classifying an adequate sample of assorted documents with the schedule (See also Sec 96).

9131 TABLE 14. SAVING OF DIGITS THROUGH TELESCOPING

1 1				
	N of digits	N of Isolates	Approx N o	f digits saved
SN Telescoping of	saved in an (AIN)	Telescoped	In each Telescoping	Progressive Total
1 (A2) into (A1)	1	60	60	60
1	1	21	21	81
3	1	50	50	131
4	1	29	29	160
5	1	60	60	220
6	ı	9 5	9	229
7	1	5	5 28	234
8	1	28	28	262
9	1	14	14	276
10	1	35	35	311
11	1	75	75	386
12	1	16	16	402
13	1	110	110	512
14	1	24	24	536
15	1	60	60	596
16	1	50	50	646
17	1	32	32	678
18	1	2	2	680

_					
SN	Telescoping of	N of digits saved in an (AIN)	N of Isolates Telescoped	Approx N of digits saved	
				In each Telescoping	Progressive Total
2	(A3) into (A1)				
_	1	2	12 14	24 28	704 732
	3	2	14	10 10	732 742
	4	2	5 9 10	18	760 780
	2 3 4 5 6 7 8	2	10 30	20 60	840
	ž	2	4	8	848
	8	2	9 9	18 18	866 884
	10	2	53	106	990
	11 12	2	18 17	16 34	1006 1040
	13	2	5	10	1050
	14 15	2	30 20	60 40	1110 1150
	16	2	270	540	1690
	17	222222222222222222222222222222222222222	72	144	1834 1900
				1700	
3	(A3) into (A2)	ı	00	80	1980
	2	i	80 50	50	2030
	2 3 4 5 6 7 8	1	10	10	2040 2050
	4	1	10 10	10 10	2060
	6	ī	15	15	2075 21 00
	7	1	25 8	25 8	2108
	ğ	1	10	10	2118
	1 0 11	1	10 3	10 3	2128 2131
	12	i	4	4	2135
	13	1	15	15	2150
4	(A4) into (A1)				2105
	1 2	3	15 6	45 18	2195 2213
	3	3	40	120	2333
	4	3.	10	30 6	2363 2369
	6	3	10 2 2 10	6	2375
	2 3 4 5 6 7 8 9	3	10 10	30 30	2405 2435
	s 9	3	10	30	2465
	10 11	3	10	30 21	2495 2516
	12	3	5	15	2531
	13	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	10 7 5 7 10	21 30	2552 2582
	14	۵	10	30	2002

130

		N of digits	N of	Approx N of digits saved	
SN	Telescoping of	saved in an (AIN)	Isolates Telescoped	In each Telescoping	Progressive Total
	15		3	9	2591
	16	3	20	60	2651
	17	3	27	81	2732
	18	3	2	6	2738
	19	3	25	75	2813
	20	3	50	150	2963
	21	3	18	54	3017
5 (A4) into (A2)				
	1	2	15	30	3047
	2	2	5	10	3057
	3	2 2	6	12	3067
	4	2	23	46	3113
	5	2	6	12	3125
6 (,	A4) into (A3)			٥	2122
	1	!	8	8	3133
	2	1	5	5	3138
7 (A5) into (A1)				2140
	1	4	10	40	3148
	2	4	10	40	3188
	3	4	10	40	3228
	4	4	10	40	3268
	5	4	5	20	3288
	6	4	8	32	3320
	7	4	8	32	3352
	8	4	30	120	3472
8 (/	A5) into (A3)				
	ì	2	2	4	3476
	2	2	3	6	3482
9 (/	A6) into (A2)				
	1	4	4	16	3498
	2	4	5	20	3518
	3	4	10	40	3558
0 Т	el (A6) into (A3)			
	1	3	2	6	3564
	2	3	5	15	357

H9132 NEELAMEGHAN, GOPINATH, AND DENTON

9132 TABLE 15. NUMBER OF DIGITS IN THE (1N) IN THE SCHEDULE

SN (IN) with	N of (IN)	% of
I I digit	43	2.0
2 2 ,,	305	15.0
3 3 ,,	758	37.8
4 4	510	26.0
5 5 ,,	340	17.0
6 6 ,,	45	2.2
	2,001	100-0

Note.—(1) An average number of 10 (IN) is taken as the approximate number of (IN) that may be derived by the addition of the figures for the units of measure as indicated in different parts of the schedule, in counting the isolates in schedule.

(2) The digits T to Y are taken as significant digits and not as Emptying Digits. Interpolation of (IN) may be done by the use of the digit "i" as suggested in Paper B in this volume of this periodical.

- 7 Only about 1,000 isolates have been enumerated in the schedule. Of these 221 are (Q1). About 1,000 (IN) are to be derived by Devices for the formation of array—for example (AD), and the addition of the given figure to a digit in the sector allocated to a (Q1) to form an (IN). The schedule is thus slimmed by about 50 per cent.
- 8 The isolate terms used were checked for conformity to the Canon of Currency. Current glossaries, subject heading authority lists, thesaurii, and handbooks on the subject were helpful for the purpose. For example, the term 'Camel back' is preferred to "Dray body" and "Diesel engine" for "Compression ignition engine".

92 STEP 10

920 OBJECTIVE

132

To construct the schedule of Organs of motor vehicle.

921 BACKGROUND KNOWLEDGE AND PREPARATION

In Sec 43 it has been mentioned that the division on the basis of a Train of Characteristics should yield only a sub-universe of whole-entities of typical entity. If a sub-universe of non-whole entity results, it is placed in a schedule of later levels. In the subjects going with the (BS) Commodity Production Engineering, such non-whole entities are usually organs of different removes.

LIB SC

2 The isolates deemed to represent Organs of remove 1 in the context of the commodity concerned may conveniently be arranged in a sequence conforming to one of the Principles of

Spatial Contiguity (20).

3 In the earlier work on the design of depth schedules for subjects going with (BS) in Commodity Production Engineering, it has been found convenient to group the Organs of remove 2 according to the general function of each of them (28).

4 Organs of remove 3, if any, may also be similarly

grouped by the general function of each of them.

5 The sectors that may be allocated to the schedule of Organs of remove 1, Organs of remove 2, etc, are given in Table 11 in Sec 612.

6 It has also been found convenient to telescope the levels later than [1P2] into [1P2]. But [1P2] is not telescoped into [1P1] [10].

7 In most of the schedules for the depth classification of subjects going with a (BS) in Commodity Production Engineering, the procedure mentioned in catagories 3 to 6 above has been followed for the construction of the schedule of Organ Isolates. In the present schedule, however, another method has been tried.

- 71 It has been found that almost all the Organ Isolates that may occur in [1P2] occur also as qualifiers in [1P1]. Examination of a large number of micro documents on Motor Vehicle Production and also on other subjects in Commodity Production Engineering, it has been noted that the General Purpose Machine Elements, such as screws, nuts, and bolts very rarely occur as Organ Isolates in such subjects. In fact, in none of the documents examined so far we have come across such an isolate in these subjects.
- 72 It may also be noted that the Organ Isolates occurring as qualifiers in [1P1] have been arranged according to the Principles for Helpful Sequence, particularly the Principle of Bottom-upwards and the Principle of Clock-wise Direction.
- 8 It has therefore been found convenient to use in the schedule of Organ Isolates the same (IN) for each of the Organs occurring as a qualifier in [1P1].

922 RESULT

A note on the method of deriving the Organ Isolates is given in Sec 991.

923 VERIFICATION

1 The sequence of the isolates in the schedule of organs conforms to the Principle of Bottom-upwards and the Principle of Clock-wise Direction.

2 The Canon of Scheduled Mnemonics and the Canon

of Systematic Mnemonics have been conformed to.

3 In a (CN) the Organ Isolate will immediately be preceded by a "Comma". Therefore, there will be no homonym between an (IN) for an organ and the same (IN) occurring in [1P1] as qualifier (See also Sec 941, category 2).

4 The schedule has been slimmed to the extent that the Organ Isolates are not enumerated in the schedule of Organs.

5 The advantages and disadvantages of the preparation of the schedule of Organ Isolates according to the two methods mentioned above in subjects going with the (BS) in Commodity Production Engineering should be examined in detail.

93 STEP 11

930 OBJECTIVE

To prepare an index to the schedule.

31 BACKGROUND KNOWLEDGE AND PREPARATION

I It has been found convenient to prepare the index according to the model of the "Index to the schedules" given in Part 2 of Colon classification, Ed 6, 1960.

2 The slips containing the (IN) with the corresponding Isolate Terms (See Sec 911, category 3) may be arranged in the alphabetical sequence of the terms.

21 Alternative terms and the cross-reference entries, if any.

are to be interpolated in the appropriate sequence.

22 The ISI Standard, IS: 1275-1958 Rules for making

alphabetical index is of help.

23 A standard procedure was worked out for the manipulation of the slips, the consolidation of the entries, writing out the index indicating the coordinate and subordinate terms with appropriate indentions etc (2).

24 Indexes to schedules previously published were exa-

mined and the pattern conformed to.

932 RESULT

An index to the schedule is given in Sec 98.

933 VERIFICATION

l Homonymous terms were avoided by supplying appropriate individualising elements.

2 Consecutive entries paralleling the arrangement of the

isolates in the schedule were deleted.

3 (1N) not conforming to the Canons of Mnemonies were corrected wherever possible.

94 STEP 12

940 OBJECTIVE

To classify the assorted documents already selected (See Sec 41, category 41).

941 BACKGROUND KNOWLEDGE AND PREPARATION

1 Wherever warranted by a document two or more isolates derived on the basis of different (QI) may be combined. The resulting isolate will be a Superimposed Isolate (12).

- 2 If in classifying a subject, an isolate from the schedule of Organs is to be directly attached to the (BC) without the occurrence of an isolate from the schedule of [IPI], then a "0" (zero) should be added immediately before the (IN) taken from the schedule of Organs (9).
 - 3 The symbol "=" may be used to connect
- 31 The digits derived by the application of the (AD) to each of the members of a multinominal such as that may occur in the name of a brand;
- 32 The parts of an (IN) representing the members of a unit of measure such as foot and inch; and
 - 33 The integral and the decimal part in a number (4).
- 4 Array Division by Packet Notation may be used wherever convenient (11). In the Idea Plane, it consists of a recurring use of a sequence of characteristics for the subdivision of two or more isolates going with the same (BS) which are capable of such subdivision. In the Notational Plane, it consists in the use of the appropriate (IN), including Superimposed (IN), enclosed in circular brackets, with a "0" (zero) preceding it, for the purpose of such subdivision of an (IN). For example,

kR0(kP2)-kQ0(kNJ-kG20=9) represents Rear brake of double caliper disc type, Front brake of multiple disc type with 20.9 cm wide shoe.

41 In most cases it is found convenient to omit the common first digit occurring in the (IN) enclosed within the circular brackets. If the notation has been carefully assigned to the (IN) the omission of such a first digit will not create any homonym in the (CN). Thus, the number given in category 4 above will become

kR0(P2)-kO0(NJ-G20=9)

5 In the schedule, the formation of the (IN) according to the two systems of units of measure—cgs and fps—is provided for. However, a library may use one system as the favoured system. For instarce, in the examples given in Sec 992 the fps system is taken as the favoured system. For the favoured system, the last digit—usually 'A' or 'B'—of the (IN) given in the schedule may be omitted and the figure for the measure given

in the document directly added. Thus, a saving of digits is effected without creating any homonym in the (CN).

6 A co-extensive (IN) is to be assigned to each of the documents and the (CN) written on top of each Main Entry (See Sec 41, category 41).

7 The entries should be arranged in the classified sequence.

942 RESULT

A sample list of 9 examples classified according to the present schedule, arranged, and featured as described in Sec 95, is given in Sec 992.

943 VERIFICATION

The (CN) for each of the documents was found to be generally co-extensive with the specific subject of the document concerned.

95 STEP 13

950 OBJECTIVE

To prepare Feature Headings on the basis of the (CN) assigned to each of the documents.

951 BACKGROUND KNOWLEDGE AND PREPARATION

1 A knowledge of the use of the Chain Procedure as applicable to the preparation of Feature Headings is helpful.

2 A Fea are Heading may be rendered according to the pattern used in the list of examples given in the article on the construction of a depth schedule for Locomotive Production (5).

3 Such a pattern of rendering of Feature Headings may not be helpful in a documentation list when the number of Feature Headings derived is large.

4 Therefore, a different method of rendering the Feature Headings has been tried in the examples given in Sec 992.

5 Homonyms in Feature Headings, if any, may be resolved by the use of auxiliary word or individualising term.

952 RESULT

In the sample list of 9 examples given in Sec 992, the Feature Headings have been prepared according to the new method.

953 VERIFICATION

1 It was ensured that there were no homonyms in the Feature Headings.

2 The helpfulness of the new method of rendering the Feature Headings has to be evaluated by the actual use of the

method in documentation lists (See also the Note in Sec 992).

96 STEP 14 960 OBJECTIVE

To examine the possibility of effecting economy in notation on the basis of a study of the (CN) assigned to an assorted set of documents.

961 BACKGROUND KNOWLEDGE AND PREPARATION

- I In the earlier studies on the design of schemes for classification, a study of the frequency of the occurrence of each (QI) and their combination in the (CN) for each of the assorted documents has been found helpful (7).
- 11 Each (IN) occurring in a (CN) (in the Main Entry) is marked off as derived on the basis of the appropriate (OI).
- 12 A table indicating the frequency of occurrence of each of the (QI) and the sector allocated to each of them may be prepared.
- 13 A table indicating the frequency of combination of (QI) in the (CN) may be prepared.
- 14 A frequency curve visualising the data may also be
- 2 The frequency of occurrence of the different (IN) themselves in the (CN) for the assorted documents may be studied and a frequency table prepared.

962 RESULT

- 1 Nearly 500 micro documents on Motor Vehicle Production have been scanned. About 150 have been selected for detailed study. Seventy of these micro documents have each been assigned a (CN) according to the schedule.
- 2 In 56 of the (CN) the number of the (Q1) combined ranged from 98 to 105. In 14 of the (CN) it ranged from 10 to 35.
- 3 There was no document the (CN) for which required the combination of more than 105 (QI). However, each of the 221 (QI) occurs in some document or the other dealing with the subjects going with the (BS) Motor Vehicle Production. Therefore, schedules have been provided for all the 221 (QI).
- 4 The number of digits in each of the component isolates in each of the (CN) for the seventy micro documents was counted. The resulting data is presented in Table 16.
- 5 The average number of digits in a (CN), excluding the connecting digits, is 61.

9621 TABLE 16. NUMBER OF DIGITS IN (CN)

SN	N of digits in a component (IN)	N of (IN)	% of 6,139
1 2 3 4 5 6 7 8	1-digit 2-digits 3 4 5 6 7 8	55 639 2520 1228 1055 294 344 4	0·9 10·6 41·0 20·0 17·2 4·8 5·6 0·1
		6,139	100.0

963 VERIFICATION

- I The data in Table 15 (Sec 9132) shows that about 55% of the isolates in the schedule have been assigned an (IN) having three or less than three digits.
- 2 The data in Table 16 (Sec 9621) shows that 52% of the component isolates in a (CN) get an (IN) having three or less than three digits. Only 48% of the component isolates in a (CN) get an (IN) having four or more than four digits. This is in fair conformity with the Law of Parsimony.
- 3 There was no need for the change of any of the sectors allocated to the (OI).
- 4 It may be remembered that the studies made here are mainly for the purpose of demonstration of the different studies that may have to be done for the purpose of effecting economy in the notational plane as a step before the finalisation of the schedule.
- 5 It is necessary that at least 500 assorted nascent micro documents in the subject field Motor Vehicle Production, be each co-extensively classified according to the provisional schedule now constructed and the kind of studies described above be carried out with a view to finalising the sector allocation.

97 HOLISTIC APPROACH

The steps in the design have been described as if they were independent, well defined pieces of work. However, in the actual

practice of the design and development of a depth schedule, it may be necessary to work simultaneously on two or more steps. For instance, it was pointed in Sec 41 that concurrently with the work in Step 4, a record of the isolate term was prepared in order to increase the productivity of the design work at the later stages. Again, it may be necessary to simultaneously work in the Idea and Verbal Planes, and sometimes even in the Notational Plane.

98 INDEX TO SCHEDULE

Note.—1 The (1N) given against an entry is the (1N) assigned to that isolate in the schedule given in Sec 991.

2 Abbreviations used: irt = in relation to

```
Acceleration (QI) Zc
                                      Asphalt transport ZH27
  Standing to 1 mile (Q1) Zg
                                      Assistance iri Brake kV
  through gears (QI) Zf
                                      Audio-visual
                                        accessory b6
Adjustable seat
                                        purpose vehicle ZP3
Advertising Zp6
Аіг
                                      Automatic operation irt
  assisted brake kV8
                                        Height control irt Suspension zSI
  cell combust chamber BS8
                                        Shift of transmission zk6
  conditioning facility c83
                                        Ventilation c16
  cooled
                                      Automobile
    brake k18
                                        production D93C1
    engine B8
                                        transporter 9F1
  droppable vehicle ZR8
                                        Auxiliary speed ztZ
  ducting c38
  resistance irt Tyre zzf
                                        assembly (QI) 9ZB to 9ZF
  suspended brake kV81
                                        irt
  suspension 58
                                          Suspension 25
Alcohol as
                                           Weight distribution Zs
  cargo ZHF1
fuel EB95
                                          Number of (Q1) 9Z08
Swinging 253
Alloy irt
  Rim of wheel ZD
                                      Baggage accommodation (QI)
  Spring 7ZM
                                      Ball joint suspension 24
Alternator
                                      Barrels, Number of (QI) CF
Altitude (Q1) Z3
                                         facility b35
Aliminium
  cargo body 92
                                        tub head combus chamber BJ
  frame 9ZJ2
                                      Battery iri
  roof 9b2
                                         Ignition system BAB
Ambulance ZL1
                                         Power supply Zc1
Ampere gauge h61
Amphibian ZVP
                                       Bench seat 9v1
                                       Benzene fuel EB94
Animal carrier (QI) ZE
                                       Better vision facility f1M
Annealed high carbon spring zZE
                                      Beverage carrier ZHG8
Bhp of engine S
Anti-burst door lock f15
Antifreeze fuel E01
                                      Bituminous material distributor 988
Antiroll bar zS6
                                       Blood mobile ZL5
Armoured car 9T3
                                       Blower irt Ventilation c25
Articulated body 9ZM2
Articulation (QI) 9ZM
                                      Body for carrying
                                        building equipment 9B
Arm irt Final drive (QI) znZ
                                        construction equipment 9D
```

food material 9N	Castalloy rim zD2
garbage 9H	Caster zKC
liquids 9L	Cattle carrier ZE1
livestock 9J	Central tube with fork ends
miscellaneous freight 9S	frame 9ZV
passengers 9Q	Centre
refuse 9H	axle ZsC
repair equipment 9D	hub z9C
vehicles 9F	position irt
Body welded to frame 9ZX	Engine V2
	Seat 9w2
Book mobile 9TD	Change of
Bore diameter (QI) K. Bottles, Body for carrying 9N4	
	filter element (QI) aJ
Box-shaped frame 9ZT	oil (QI) aK
Brake	Chemicals carrier ZHB
iri Wheel kQ	Choke (QI) CD
pedal pressure kDZ	Chromium
system k	stainless spring 2ZK
Brand irt	vanadium spring zZF
Brake (QI) kZ	Circular shape irt
Carburetor (Q1) CH	Light f9d
Choke (QI) CDA	Reflector 983
Clutch (QI) zh	City transport ZT2
Engine (O1) W	Civil use ZVJ
Light (QI) 19A	Cloth irt
Motor vehicle (QI) (A)	Roof 9c7
Oil filter (QI) C9	Seat 9t1
Pump (Q1) CBA	headlining 9s1
Steering system (QI) y	Climatic control c8
Tyre (QI) zi	Clock h11
Bross int Spring 27V	Clutch (QI) zOY
Brass irt Spring zZV Brewers body 9L7	
Bushes sees Ou?	Coiled spring zWM
Bucket seat 9v2	engagement zaD
Building material carrier ZH	Combustion chamber (QI) BE
Built-im bumper f1K5	Comet combus chamber BR
Bumper flK	Commercial transport ZVF
Bus body 9Z1	Company name (QI) (A)
	Compound
Cab	curved window 9g5
beside-engine V6	leaf laminate spring zWB
forward-of-engine V3	Compressed air kVB
over-engine V5	Compression
Caliper brake kP	ignition BAC
Cam and level steering w6	ratio (QI) N
Camber zKB	swirl combus chamber BP2
Camel body 9X	Compressor irt
Camping ZK3	Supercharging U2
Canopy body 9W5	Ventilation c27
Capacity iri	Concrete
Baggage accommodation dC	carrier ZH26
Cargo body 9zC	mixer body 9B6
Caravan ZK53	Conical helix spring of
Carbon filament lamp 171	circular cross sect zY3
Carburetor (QI) CCZ	rectangular cross sect 213
Cargo (OI) 7G7	Construction
Cargo (QI) ZGZ	
body (QI) 9zB	equipment carrier ZH3 of body 9ZX to 9ZY
transport (QI) ZF	of brake kLZ
Carpet b54	OF DIRECT REAL

Type of body 9U Constant mesh transmission zjD Continuous drive zyT injection CC8 Contour of reflector (QI) f8 Control lever on steering column zx5	Dip beam light fH13 Direct fuel injection CC2 Disc brake kN type transmission zb Displacement (QI) H Distance per tank full (QI) aP Divided chamber combus chamber BS
mechanism of suspension zS Convertible 9D Convict carrier ZD4	Dodecane fuel EB92 Door Air ducting c382
Cooking facility b23	(Q1) 9kZ
Cooling (QI) irt Brake k1	Double acting cycle M22
Engine Bl	caliper brake kP2
Cooling system oil (Q1) aN	deck 9z2
Cornering light fHB	disc clutch zf2
Counter shaft transmission zj8 Country of make (QI) (I)	leading arm transmission zP2 leaf flat spring zW2
Cover of headlining (QI) 9s	trailing arm transmission zq2 venturi tube carburetor CE2
scat (QI) 91	Downward draught carburetor CGI
Current (QI) Za	Draught direction of cerburetor
Curvature of window (QI) 9g	(QI) CG
Curved window 9g3	Dray body 9X
Cut pile carpet b541 Cycle of engine (QI) M	Drive (QI) zy Dirving wheels zN
Cylinder	Drop frame trailer 9ZG6
arrangement (QI) J	Drum brake kM
bore diameter (QI) K	Dry
Cylindrical helix of	building material carrier ZH
Spring subjected to	disc clutch ze4
axial loading zYl	weather Z64 weight in
bending zWR	cwt Zu
rectangular cross section iri	Kg Zt
Spring subjected to	Dual fuel E2
axial loading zY2 bending zWT	Dump carrier body 9D1
Decane fuel EB91	Earth mover ZH12 Educational purpose ZP1
Defrosting c41	Educational purpose ZPI Electrical
Dental van ZL8	engine X6
Desert environment adaptation Z5B	fuel pump CB6
Detachable baggage carrier dM6	power measure h6
Diameter of	selection gear box zx6
disc zc tyre (Q1) zzCZ	wind shield washer flXG Electronic
Diameter of	fuel pump CB5
turning circle (QI) p	ignition BAF
Diaphragm	Elliptical
engagement zaB	reflector f86
Dictaphone facility b18	spring suspension zWG
Dicsel engine X2	Engagement of clutch (QI) za Engine
Differential case mounted axle zml	Maintenance of (QI) aH
Differentially charged engine U3	(QI) A
Dimension (QI) ZjZ	sump oil (QI) aM

Environment (QI) ZzY	Fresh air admittance c31
Epicyclic gearbox zxC	Front
Equipment for	and rear
power generation (Q1) Zc	suspension 78
ventilation (Q1) c2	track zJ
Executive facility (Q1) b1	axlc ZsB
Express body 9W1	baggage accommodation dR1
Express oddy 5111	
F-1	brake bR
Fabrication of tyre zzGZ	bumper fIKB
Facility (QI) b	door 9n1
Fan c23	engine VI
Fast	facing seat 9wB
back 9M	light fD1
driving (Ql) a3	overhang Zp
Felt underlay b53	safety belt f121
Eibaralass	seat 9w1
Fiborglass	
body 94	suspension 71
reinforced panel 9ZJ4	track zG
roof 9c44	tyre pressure iri
Filament f7	Fast driving z3B
Filter, Oil C1 to C9Y	Full load driving a7B
Final drive	Normal driving a1B
iri Transmission (QI) zmZ	wheel zQ1
oil (QI) aG	
	drive zyl
Fire fighter 9T2	window 9j1
First gear	Fuel
ratio	consumption at constant
Forward zsB	speed (QI) aT
Reverse ztB	gauge h5l
speed Zhi	injection system (QI) C
Fixed	maccine h
	measure h5
baggage carrier dM1	pump (QI) CB
light f61	(QI) E
Fixity of baggage carrier (QI) dM	tank capacity (QI) aR
Flammable material carrier ZHF	Full
Flat	floating rear axle zm7
CR strip spring zZH	flow oil filter C8
roof 9g1	load
terrain ZSI	
Floatable vehicle ZR5	driving (QI) a7
	inflation pressure zzg
Floating caliper brake kPB	pressurisation c872
Floor area of cargo body (QI) 9zG	trailer 9ZG2
Fluid coupling zjJ	Funeral
Fog light fHE	car ZM3
Folding seat 9v5	use ZM
Food carrier ZHJ	Furniture body 9S52
Foot brake kVP	ruiditule body 3332
	C 1
Forest area ZSE	Garbage
Forward .	and refuse carrier ZH5
gear ratio zs	carrier body 9H5
transmission speed zn	Gas turbine X5
Four	Gaseous fuel ES
ply tyre zzJ4	Gasoline EE
stroke engine M4	engine XI
wheel drive and	Gouge strainer C4
wheel drive zy4 Fowl carrier ZE6	Gauge strainer C4
FOWI CATTIET ALSO	Gear
Frame (Q1) 9ZH	box (Q1) zrZ
Freight-carrier D93D	oil (QI) aC

ratio (QI) irt	water facility c45
Final drive (QI) zn	Housekeeping facility b2
Gear box (QI) zs to zt	Hydraulic
Steering syst (QI) t	brake kV5
Generator Zc6	steering x5
Glass	suspension 35
body 9B4	Hydrodynamic transmission zk3
roof 9c4	Hydroelastic suspension 52
Glazier body 9B4	Hydropneumatic suspension 56
Globe trotting ZK57	Hydrostatic transmission zk1
Gradient climb (QI) Zz1	Hypoid bevel gear zrl
Grain carrier ZHJ1	Hypoid ocver gear 211
Grease application (QI) aB	Y
	Ice
Ground clearance (QI) Zm	carrier body 9N2
*** * * * * * * * * * * * * * * * * * *	cream carrier 9N3
H type cylinder arragnement JH	Ignition system (QI) BA
Half bucket seat 9v24	Inconel spring zZN
Hand brake kVR	Independent suspension 2
Hard	Indicator device h
drawn spring zZC	Induction swirl combustion
ton body 9F	chamber BPI
top body 9F Headlight 1H1	
Hearse ZM1	Inflation pressure zzk
	Infinitely variable transmission
eated food carrier 9NE	speed zw
Heating facility (QI) e4	In-line cylinder arrangement 31
Heavy	Integral linkage v1
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irt Dry Weight	Inter-district service ZT6
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Kerb weight	Internal light fHM
of car Zv, Zw	Insulated food carrier 9NB
of truck Zv, Zw	Interrupted drive zyE
Laden weight	Isolation van ZLB
Laden weight	Iso-octane fuel EB81
of car Zx, Zy	
of truck Zx, Zy	Jeep 9P
Height irt	Jungle area Z5D
Baggage accommodation dE	vango area area
Cargo body 9zL	K monel spring zZR
Vehicle Zk	Kerb weight
Heptane fuel EB7	
Hexane fuel EB6	In cwt Zv
	In Kg Zw
High	Kerosene
profile frame 9ZW8	as fuel EF
strength aluminium	carrier ZHF5
frame 9ZJ3	Kind of
Hilly terrain Z56	brake (QI) kK
Hood	engine (Q1) X
Air ducting c381	
Hopper 9D2	frame (Q1) 9ZP
	gearing (QI) zt
Horizontal	roof (Q1) 9d
cylinder arrangement J11	seat (QI) 9v
light f9b1	shift (Q1) zk
Horse	suspension (QI) 1
carrier ZE2	trailer (QI) 9ZG
van 9J2	tube (QI) zzP
Hot	Kingpin
air facility c48	between double wishbones 23
an .aviity -10	Control dodole willionies 23

suspension 22	Manual
Knit-weave vinyl cover b5F	choke CD2
	operated
Ladder frame 9ZR	door 9m2
Laden weight	heating system c12
In cwt Zy In Kg Zx	ventilation system c12
In Kg Zx	window 9f2
Laminated	plunger windshield washer f1X2
rect plate with tapered leaf	shift transmission zkL
end zWD	steering x2
trapezoidal plate with tapered	Marshy terrain Z5F
leaf end zWF	Mass communication (QI) ZP
triangular plate zWC	Material of
Latitude (QI) Z2	frame (QI) 9ZJ
Lay shaft zji	rim of wheel (QI) zBJ
Leading	roof (QI) 9a
arm zp	spring (Q1) zZA
shoe kKI	lyre zzM
Leather	window 9h
covered	Maximum
interior b54	load on tyre zzEZ
seat 9t2	speed in each gear (QI) zh
headlining 9s2	torque (QI) P
Left door 9n25	Mean maximum speed (QI) Zj
Length of	Meat carrier ZGJ3
baggage accommodation dJ	Mechanical
	door 9m6
cargo body 9zR	
spring zTZ	linkage brake kV6
vehicle Zr	window 9f6
Librachine 9TD	windshield washer f1X6
Light f5	Mechanism of operation (Q1) irt
diesel oil EG	Heating cl
Limousine 9H	Light f6
Lining area k9Z	Ventilation cl
Linkage iri Steering v	Medical use (QI) ZL
Liquid	Medium
carrier ZHE	diesel oil EH
cooled engine B5	profile frame 9ZW5
mixture fuel ED Live axle 251	weight irl
	Dry weight ZtB, ZuB
Livestock ZE	Kerb weight ZvB, ZwB
Log	Laden weight ZxB, ZyB
body 9B1	Metal
carrier ZHII	carrier ZH18
Looped pile carpet b543	roof 9B
Low	Metered fuel infection CC6
bed trailer 9ZGH	Method of
pressure tyre zzR	injection of fuel (QI) CC
profile frame 9ZW1	operation (Q1) irt
speed indicator h34	Door 9m
lumber body 9B3	Window 9f
iumovi oody 703	
M type combus chamber BM	transmission zj
	Middle wheel zQ2
Magneto ignition BAH	Military
Mail carrier 9T8	personnel carrier ZD8
Main beam light fH12	purpose ZVM
Maintenance factor (QI) a	Milk carrier ZHG7
Manganese bronze spring zZU	Mobile post office 9TB

Model of vehicle (A)	tyre zzM6
Monel spring zZP	1,10 22.1120
Moped production D93C8	Observation roof 9d5
Mortuary use ZL3	Octane fuel EB8
Motor	Octene fuel EB93
bus production D93C2	Oil
car production D93C1	carrier ZHF6
cycle production D93C5	body 9L
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ventilator c253	brake k16
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Mountain environment Z37	presence gauge h71
Mountainous terrain Z57	quantity gauge h76
Mounting of engine (QI) V	tempered spring zZD
Muddy terrain Z5H	Open box body 9W
Multifuel E8	Opposed cylinder arrangement J111
Multiple	Osmium filament f73
cylinders L1Z	Oval reflector f9g
disc	Overall
brake kN8	diameter of tyre (QI) zzCZ
clutch zf8	fuel consumption (QI) aV
Multipurpose vehicle ZVS	length of vehicle (QI) Zr
Multistop freight body 9\$8	width of vehicle (Q1) Zn
Nine influence blatteria	Overdrive
Non-inflammable liquid	oil (QI) aE
carrier ZHG Non-metal roof 9c	second gear Zh21 third gear Zh31
	third gear Zh31
Non-shifting transmission zkM Normal	top gear Zh41
driving (QI) al	Overhang (QI) ZnZ
length of spring zU	Overhead valve combust chamber BH
load irt Inflation pressure zzm	gear BCB
Nuclear engine X7	geat BCB
Number of	Padded instrum panel f17
animals carried (QI) ZC	Panel body 9S1
auxiliary transmission speed ztZ	Parabolic reflector f83
axles 9Z08	Paracyl reflector 188
barrels (QI) CF	Parking brake kWI
carburetors (Q1) CJ	Passenger
decks (Q1) 9z1 to 9z2	carrier motor vehicle D93C
discs of clutch (QI) zf	category (QI) ZD
doors (QI) 9p	transport (QI) ZB
driving wheels (QI) zN	Number of ZC
lights (QI) I'M	Patrol service ZV23
passengers (QI) ZC	Pentane fuel EB5
revolutions (QI) zF	Perishable food carrier ZHJ4
seats (QI) 9x	Petrol
shoes (QI) kL studs (QI) z8Z	carrier ZHF4 engine XI
transmission speeds (QI) zu to zv2	fuel EE
turning circles (QI) r	Phosphor bronze spring zZT
venturi tubes (QI) CE	Physiography of terrain (QI) Z5
windows (Q1) 9k	Pickup body 9W2
Nylon	Pig transport ZE3
headlining 9s6	Pinion and ring gear on axle zj5

Planetary transmission ZJK	Racing car ZKI
Plastic 05	Rack and pinion steering w8
cargo body 95	body 9J2
roof 9c5 window 9hF	Radar facility b88
Platform body 9V	Radial tyre zzJ8
Plunger type fuel pump CB2	Radiator temp gauge h45
Ply irt tyre zzJ	Radio b63
Plywood cargo body 93	Rain, Adaptation to Z65
Pneumatic 23	Rallying ZK2
steering gear X8	Rate of spring zT
tube zzT	Rear
Polar region Z28	axle irt
Polarised glass window 9h6	Transmission zm
Pole body 9ZG8	Weight distribution ZsH
Police	baggage accommodation dR7
personnel transport ZD5	brake kR
service vehicle ZV5	bumper fIKH
Portability (QI) ZR	door 9n7
Position of	engine V7
baggage accommodation dR	facing seat 9wH
door 9n	light fD7
light fD	overhang Zq
scat 9w	safety belt f127
suspension 7	seat 9w7
wheel zQ	suspension 77
window 9j	track zH
Power	tyre pressure irt
assisted	Fast driving a3H
door 9m8	Full load driving a7H
shift zk8	Normal driving al H
steering x3	view mirror fIR
window 918	wheel zQ7
generation system (QI) Za	drive zv7
iri engine (QI) S	window 9j
light fB	Recirculating ball and nut w5
operated carburator CD6	Reclining seat 9v8
shift zkD	to make bed 9vC
Pre-combustion chamber BSI	Recreational use (QI) ZK
Pressed steel disc rim zC	Rectangular
Pressurisation of vehicle c87	light f9b
Prison service ZV6	plate
Profile frame (QI) 9ZW	with tapered end spring zW5
Projecting light [1K]	Refrigerated food carrier 9NC
Pulpwood body 9B2	Refuse carrier 9H8
Pure liquid fuel EB	
Purpose (QI) ZsX	Reinforced steel body 941
iri Body of truck 9A	Relaxation facility b21
Brake kW	Renewable oil filter CI
Light fH	Retractable light 163
	Reverse gear irt
Vehicle ZA	Ratio zt
Ventilation c3	Speed Zh6
Push-button radio b632	Transmission speed zv
Push-rod and rocker BC1	Reversing light fH2
Pvc	Revolution
covered seat 9t5	operator h36
headlining 9s5	per mile zF

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Right door 9n15 Right door 9n15 Rim of wheel (QI) 2sZ Roof (QI) 9a Ross-Gemmer steering wheel (QI) s Rough terrain 254 Rover cylinder head combus chamber BN Rubber mat 55b suspension zZX tyre zzM1 Safety belt f12 with anchorage f12C console f11 device f1 glass 9h1 provision f Saginau geering w3 Sanitary facility b3 School children carrier ZD1 Screw and ballnut steering w3 Screen side body 9w52 Sea level Z31 Seat 9r Second gear iri Gear ratio 2sC Maximum speed Zb2 Sedan car 9B delivery truck 9S12 Selective sliding gear zjB Self-parking windshield wiper f1T Semi- automatic transmission zk62 elliptical spring zWG2 floating rear axlc zm2 solid material carrier ZH2 trailer 9ZG12 Service area (QI) ZT brake kW3 category (QI) ZV Servo brake kW3 category (QI) ZV Servo brake kW3 Shock absorber iri Safety device f1H Suspension system zs.5 shookort substrained f1L Suspension system zs.5 shoorting f1L Suspension system zs.5 shoorting f1 steep of leght f1 suspension system zs.5 shoorting f1 steep of leght f1 suspension system zs.5 shoorting f1 steep of leght f1 suspension system zs.5 shoorting f1 steep of leght f1 sight f1 suspension system zs.5 shoorting f1 steep of leght f1 suspension system zs.5 shoorting f1 suspension system zs.5 shoorting f1 steep of leght f1 suspension system zs.5 shoorting f1 suspension data and suspension data arburetor CG5 light fDS sador gare arburetor CG5 light fDS saleved engine E1 leading arm zpl leaf spring zW1 slicen manganese spring zZG Single acting engine M21 fucl engine E1 leading arm zpl leaf spring zW1 slicen manganese spring zZG Single acting spring zW1 slicen manganese spring zZG S		
Rim of wheel (QI) szZ Roof (QI) 9a Ross-Genmer steering year wl Rotation of steering wheel (QI) s Rough terrain Z54 Rover cylinder head combus chamber BN Rubber mat 55b suspension zZX tyre zzM1 Safety belt f12 with anchorage f12C console f11 device f1 glass 9h1 provision f Saginau geering w3 Sanitary facility b3 School children carrier ZD1 Screen aide body 9W52 Sea level Z31 Seat 9r Second gear irr Gear ratio zsC Maximum speed Zh2 Sedan car 9B delivery truck 9S12 Selective sliding gear zjB Self-parking windshield wiper f1T Semiautomatic transmission celliptical spring zWG2 floating rear axle zm2 solid material carrier ZH2 trailer 9ZG12 Service area (QI) ZT brake kW3 Sane of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irr Safety device f1H Suspension system zs.i	Rigger 9D8	Shoe irt Brake kF
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Ross-Gemmer steering year will Rotation of steering wheel (QI) s Rough terrain Z54 Rover cylinder head combus chamber BN Rubber mat 55b suspension zZX tyre zzM1 Safety belt f12 with anchorage f12C console f11 device f1 glass 9h1 provision f Saginau geering w3 Sanitary facility b3 School children carrier ZD1 Screw and ballnut steering w3 Screen side body 9W52 Sea level Z31 Seat 9r Second gear irr Gear ratio z5C Maximum speed Zh2 Selective sliding gear zjB Self-parking windshield wiper f1T Semi-automatic transmission act gelliptical spring zWG2 floating rear axle zm2 solid material carrier ZH2 trailer 9ZG12 Service area (QI) ZT brake kW3 category (QI) ZV Servo brake kW3 shoorber irr Safety device f1H Suspension system zs.5 Sprung rear axle zmB Stainless 18-8-pring zZJ strong zzJ Sprung rear axle zmB Stainless 18-8-pring zZJ sprung rear axle zmB Stainless 18-8-pring zZJ		
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Self-parking windshield wiper f1T Semi- automatic transmission zk62 elliptical spring zWG2 floating rear axlc zm2 solid material carrier ZH2 trailer 9ZG12 Service area (QI) ZT brake kW3 category (QI) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system Suspension system Suspension (QI) zZS Sprung rear axle zr3 coil spring zwP Spot light if H Spread tandem 9ZC Spring Length of (QI) zTZ loaded axially (QI) zY Material of (QI) zZA Rate of (QI) zZY subjected to bending (QI) zW suspension (QI) zXS suspension (QI) zZS Sprung rear axle zmB Stainless 18-8-spring zZJ		
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automatic transmission zk62 elliptical spring zWG2 floating rear axle zm2 solid material carrier ZH2 trailer 9ZG12 Service area (QI) ZT brake kW3 category (QI) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system Suspension (QI) zX Suspension (QI) zZ Sprung rear axle zmB Stainless 18-8-spring zZJ	wiper ITT	Spark ignition engine X1
automatic transmission zk62 elliptical spring zWG2 floating rear axle zm2 solid material carrier zH2 trailer 9ZG12 Service area (QI) ZT brake kW3 category (QI) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system zs.5 Speed measure (QI) h3 Spiral bevel gear zr3 coil spring zwP Spot light fHJ Spread tandem 9ZC Spring Length of (QI) zTZ loaded axially (QI) zY Material of (QI) zZA Rate of (QI) zZA Rate of (QI) zZV subjected to bending (QI) zWz suspension (QI) zWz suspension (QI) zXS Sprung rear axle zmB Stainless 18-8-pring zZJ	Semi-	Special purpose body (O1) 9T
elliptical spring zWG2 floating rear axlc zm2 solid material carrier ZH2 trailer 9ZG12 Service area (Q1) ZT brake kW3 category (Q1) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Spring Length of (Q1) zTZ loaded axially (Q1) zY Material of (Q1) zZA Rate of (Q1) zZA Rate of (Q1) zZA Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system Suspension (Q1) zXS Sprung rear axle zmb Stainless 18-8-pring zZJ	automatic transmission zk62	Speed measure (OI) h3
floating rear axlc zm2 solid material carrier ZH2 trailer 9ZG12 Service area (QI) ZT brake kW3 category (QI) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Spring Length of (QI) zTZ loaded axially (QI) zY Material of (QI) zTZ Shape of (QI) zY Shape of (QI) zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system zs.5 Sprung rear axle zmB Stainless 18-8-pring zZJ		
solid material carrier ZH2 trailer 9ZG12 Service area (QI) ZT brake kW3 category (QI) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system Suspension (QI) zZX suspension (ZI) zZS Sprung rear axle zmB Stainless 18-8-pring zZJ		
trailer 9ZG12 Service area (QI) ZT brake kW3 Spread tandem 9ZC Spring Category (QI) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock Absorber irt Safety device f1H Suspension system Suspension (QI) zXS Spring Length of (QI) zTZ loaded axially (QI) zY Material of (QI) zZA Rate of (QI) zZ Subjected to bending (QI) zVZ Suspension (QI) zXS Suspension (QI) zXS Spring rear axle zyros Spring rarea xxle zyros Spring rarea xxle zyros Spring rarea xxle zyros Spring rarea xxle zyros Spring zwp		
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Service area (QI) ZT brake kW3 category (QI) ZV Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Suspension system Suspension (QI) zX suspension (QI) zVZ subjected to bending (QI) zVZ subjected to bending (QI) zVZ suspension (QI) zX suspension (QI) zX suspension (QI) zZX suspension (QI) zZZ Sprung rear axle zmB Stainless 18 -8 pring zZJ	trailer 9ZG12	coil spring zwP
area (QI) ZT brake kW3 category (QI) ZV Servo brake kWJ Shape of light f9a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system Suspension (QI) zy Spring Length of (QI) zTZ loaded axially (QI) zY Material of (QI) zZA Rate of (QI) zT Shape of (QI) zVZ subjected to bending (QI) zVZ suspension (QI) zX suspension (QI) zX Suspension (QI) zX Spring rear axile zmB Stainless 18-8-pring zZJ	Service	
brake kW3 category (QI) ZV Servo brake kWJ Shape of light 19a suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system zs.5 Spring Length of (QI) zTZ loaded axially (QI) zY Material of (QI) zZA Rate of (QI) zTZ Shape of (QI) zVZ subjected to bending (QI) zWZ suspension (QI) zWZ suspension (QI) zZS Sprung rear axle zmB Stainless 18-8-pring zZJ		
category (Q1) ZV Shape of Suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber irt Safety device f1H Suspension system zs.5 Stainless 18-8-spring zZJ Length of (Q1) zTZ Length of (Q1) zTZ Length of (Q1) zT Length of (Q		
Servo brake kWJ Shape of light 19a suspension spring 2VZ Shatter proof glass 11F Sheep carrier ZE5 Shock absorber irt Safety device 11H Suspension system zs.5 Shape of (QI) zYZ Shatter proof glass 11F Sheep carrier ZE5 Shock torsion (QI) zXZ Suspension (QI) zZX Suspension (QI) zZX Suspension (QI) zZX Sprung rear axle zmB Stainless 18-8-pring 2ZJ		
Shape of light 19a Suspension spring zVZ Shatter proof glass f1F Shock to bending (Q1) zVZ Shock absorber iri Suspension system zs.4 Stainless 18.8 spring zZJ	category (Q1) Zv	
light 19a suspension spring zVZ Shatter proof glass 11F Sheep carrier ZE5 Shock absorber irt Suspension (QI) zVZ subjected to bending (QI) zVZ subjected to bending (QI) zVZ suspension (QI) zX suspension (QI) zXZ suspension (QI) zZZ Sprung rear axle zmB Stainless 18-8-pring zZJ	Servo brake KWJ	loaded axially (QI) zY
light 19a suspension spring zVZ Shatter proof glass 11F Sheep carrier ZE5 Shock absorber irt Suspension (QI) zVZ subjected to bending (QI) zVZ subjected to bending (QI) zVZ suspension (QI) zX suspension (QI) zXZ suspension (QI) zZZ Sprung rear axle zmB Stainless 18-8-pring zZJ	Shape of	Material of (Q1) zZA
suspension spring zVZ Shatter proof glass f1F Sheep carrier ZE5 Shock absorber iri Safety device f1H Suspension system zs.3 Shape of QI) zVZ subjected to bending QI) zW torsion (QI) zX suspension (QI) zSZ Spring rear axle zmB Stainless 18 -8 pring zZJ		
Shatter proof glass f IF Sheep carrier ZES Shock torsion (Q1) zW torsion (Q1) zX absorber iri suspension (Q1) zSZ Sprung rear axle zmB Suspension system zs.4 Stainless 18 -8 pring zZJ		
Sheep carrier ZE5 Shock absorber iri Safety device f1H Suspension system zs. Stainless 18-8 pring zZJ		
Shock torsion (Q1) 2X suspension (Q1) 2Z Safety device f1H Sprung rear axle zmB Suspension system zs.3 Stainless 18-8 pring zZJ		
absorber iri suspension (QI) zSZ Safety device film Sprung rear axle zmB Suspension system zs.4 Stainless 18 -8 - pring zZJ		
Safety device fill Sprung rear axle zmB Suspension system zs.3 Stainless 18-8 spring zZJ		
Safety device fill Sprung rear axle zmB Suspension system zs. Stainless 18-8 spring zZJ	absorber iri	suspension (Q1) zSZ
Suspension system zs.i Stainless 18-8 spring zZJ	Safety device f1H	Sprung rear axle zmB
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	austription from TIE	Giant Cour 711

State of disc of clutch ze	Three
Static load radius zzA	ply tyre zzJ3
Station wagon 9K	quarters floating axle zm3
Steel	Thrust (QI) R
cargo body 91	Tilt bed trailer 9ZG7
roof 9b1	Time measure (QI) h1
spring zZB	Tinted glass
Steering (OI)	roof 9c45
gear mechanism (QI) w	window 9h5
system (Q1) n	Toe-in wheel alignment zKD
Stereosonic tape syst b64	Toilet facility b33
Stock carrier body 9J21 Stone carrier ZH14	Top
	baggage accommodation dR2
Stop light fH6	gear Zh4
Straight	Toroidal combus chamber BK
bar of	Torque converter zjM
circular cross sect zX1	coupling zjP
rectangular cross sect zX3	Total
truck frame 9ZM1	air-and-roll resistance (Q1) zzB
Street fluster body 9L5	number of wheels (QI) zP
Stroke distance (QI) G	Touring purpose ZK5
Structure of tyre (QI) zzGZ	Track (QI) zFZ
Subtropical latitude Z25	Traction characteristic of
Suburban service ZT3	tyre (QI) zzb to zzh
Sun	Trailer
roof 9d3	body 9A to 9ZG8
visor fIP	converter dolly 9ZG3
Supercharging (QI) U	Trailing
Suspension system (QI) zR	arm gear drive zq
Swept	shoe brake kK7
area (QI) kB	Trans-continental service ZT8
hip frame 9ZS	Transfer case (QI) ztZ
volume H	Transistorised
Swinging axle Z53	fuel pump CB53
Swirl combus chamber BP	ignition system BAF3
Swivel seat 9vD_	Transmission (QI) z0X
Synchromesh zxF.	specd (QI) zTZ
Synchronised transmission zjG	Transverse
Synthetic tyre zzM15	cylinder V8
	leaf spring zW8
Tachometer h37	Triangular plate spring zw4
Tandem axle truck 9ZB	Tropical vehicle Z21
Tank 9L1	Truck
Tantalum filament 172	body 9A to 9ZG8
Tar carrier ZH28	trailer (QI) 9Z07
Taxi cab ZV8	production D93D3
Tecalamite oil filter C5	Truncated conical spring zY8
Telecommunication accessory (QI) bs	Tubeless tyre zzU
Telephone b81	Tubular shaft with
Telescopic damper zsZ	ball and trunnion zj3
Television b65	Tungsten filament f75
Temperature measure (QI) h4	Turbo-charging U5
Thermometer h41	Turbulent head combus
Thermostatic control c82	chamber BG
Third gear irt	Turning circles
Gear ratio zsD	Diameter of (QI) p
Maximum speed Zh3	Number of (QI) r

Twin-speed wiper fIV	Water
Two	carrier ZHG5
ply tyre zzJ2 way radio b82	cooled brake k15
Type of	engine B55
body of car (QI) 9B to 9F	tank 9L15
gear box (QI) zx Tyre (QI) zzaZ	Watt
pressure (Q1) al to a7	hour meter h66 meter h65
size (QI) zzl	of light fB
Typewriter facility b16	Weather condition (QI) Z6 Weight
Underneath vehicle,	distribution (OI) 7s
Accommodation of baggage dR6	of cargo (QI) ZG
Undulating terrain Z53 Unitised body 9ZY	casing zziZ
Unsprung rear axle zmG	(QI) ZrZ Welded steel frame 9ZJI
Utility	Wei clutch ze5
body 9DC	Wheel
carrier ZVI	alignment (QI) zk
V autinder arrangement 1V	base (Q1) zL
V cylinder arrangement JV Vacuum brake kVG	(QI) zza
Valve gear (QI) BC	Whirlpool combus chamber BP5 Wide front vision IIN
Van body 985	Width of
Vegetable carrier ZHJ2	baggage accommodation (QI) [dG
Vehicle	cargo body (QI) 9zP
carrier ZH4	shoe (QI) kFZ
weight (QI) ZsZ Ventilated	vehicle (QI) Zn
body truck 9S3	Windshield washer f1X
wheel rim z9D	wiper f1S
Ventilation	Window (QI) 9e
and heating (QI) c	Worm and
system c3 Venturi tube	roller steering gear wl
Number of (QI) CE	sector steering gear w2 Wrap over window 9g8
Vertical	Wreck transporter 9F4
cylinder arrangement J13	Writing table b12
shaped light 19b3	-
Vigilance vehicle ZV2	X-frame 9ZQ
Village service ZT1 Voltage (Q1) Zb	X-ray vehicle ZL6
Voltage (Q1) 2.0 Voltameter b64	Year (QI) (A)
Web as a self-bette	
Walnut panel b5M Washing facility b31	Z-nickel spring zZS Zone toughened windscreen f1D
Washing facility 031	Zone loughened whitescreen 112
991 SCHEDULE	
Basic Classes	
D93B Motor Vehicle Pro	eduction Engineering
T (A5) into (A3) hegins
D93C Passenger-carrier-me	otor vehicle production
D93C1 Motor car (Automo	obile) production
D93C2 Motor bus product	ion
D93C5 Motor cycle produ	ction

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Motor-scooter production D93C6 D93C8 Moped production D93D Freight-carrier-motor vehicle production Motor truck production

Truck trailer production

T (A5) into (A3) ends D93D1 D93D3

Foci in [1P]

Organ of Motor Vehicle
Note.—The (IN) for the organ isolates occurring as qualifiers in [1P1] is to be used.

(Illustrative) Head light

fHI zza Wheel Engine

(Example)
D93C1, (F)-X1-L6, (H1 Headlight of the six cylindered petrol engine

Ford motor car D93D1,(D),zza:7 Mounting the wheels of the Dodge motor truck.

Isolates in	Earlier level	a3HB26	26 psi rear tyre pressure, fast driving
Isolales III	first	a7BB24	24 psi front tyre pressure,
a	By Maintenance factor		full load driving
	By Tyre pressure	aB	By Grease application
al	By Normal driving		Note(1) Add the
alB.	Front tyre		given figure for the num-
alBA	In Kg/sq cm		ber of points to aB and
alBB	In psi		read it as an integer.
alH	Rear tyre		(2) Divide the given
alHA	In Kg/sq cm		figure for the distance by
aiHB	In psi		1,000, prefix A to it if
			Km and B if miles and
a3	By Fast driving		add the result to the (IN)
a3B	Front tyre		derived according to
a3BA	In Kg/sq cm		Note 1.
a3BB	In psi		(Illustrative)
a3H	Rear tyre	aB4A2	
a3HA	In Kg/sq cm	aB4B4	4 points every 2,000 km
a3HB	In psi	3B4B4	4 points every 4,000 miles
401112	por		miles
a7	By Full load driving	aC	By Gear box oil
a7B	Front tyre	aCA	In litre
a7BA	In Kg/sq cm	aCB	In pint
a7BB	In psi		Note.—Add the given
a7H	Rear tyre		figure to the appropriate
a7HA	In Kg/sq cm		(IN) and read it as an
a7HB	In psi		integer.
	Note.—Add the given		(Illustrative)
	figure to the appropriate	aCA8≠5	8.5 litres
	(IN) and read it as an	aCB17	17 pints
	integer.		- · F
	(Illustrative)	аE	By Overdrive oil
a1BB20	20 psi front tyre pres-	aEA	in litre
	sure, normal driving	aEB	In pint
	,		P

	Note.—Add the given		By Engine sump oil
	figure to the appropriate	aMA	In litres
	(IN) and read it as an	aMB	In pints
	integer,		Note.—Add the given
	(Illustrative)		figure to the appropriate
aEA6=5	6·5 litres		(IN) and read it as an
aEB14=5	14 · 5 litres		integer.
			(Illustrative)
aF	By Slip differential change	aMA4=7	4 · 7 litres
	of oil (Distance run)	aMB8 = 5	8 · 5 pints
aFA	In Km		o
aFB	In miles	aN	By Cooling system
	NoteDivide the given		In litres
	figure for distance by	aNR	In pints
	1000, add it to the appro-	41.15	Note.—Add the given
	priate (IN) and read it		figure to the appropriate
	us an integer.		(IN) and read it as an
	(Illustrative)		
aFA7			integer.
	7,000 Km		(Illustrative)
aFB12	12,000 miles	aNA18=2	18 · 2 litres
_		aNB32	32 pints
aG	By Final drive oil	_	
aGA	In litres	aP	By Distance per tank full
aGB	In pints	aPA	In km
	Note.—Add the given	aPB	In miles
	figure to the appropriate	,	Note.—Add the given
	(IN) and read it as an	ı	figure to the appropriate
	Integer.		(IN) and read it as an
	(Illustrative)		integer.
aGA2	2 litres		(Illustrative)
aGB5	5 pints	aPA 140	140 km
adb	5 pints	aPB225	
-17	D. C1	ar DZZJ	225 miles
аН	By Engine maintenance	- D	0 0 1 1 1
	T1 (12) (aR	By Fuel tank capacity
. 1	T 1 (A3) into (A2) begins	Saka	In litres
аJ	By Change of filter clement	akb	In Imperial gallons
aJA	In km		Note.—Add the given
аJВ	In miles		figure to the appropriate
	NoteDivide the given	7	(IN) and read it as an
	figure by 100, add the	?	integer.
	result to the appropriate	2	(Illustrative)
	(IN) and read it as at	aRA75	75 litres
	integer.	aRB16	16 Imperial gallons
	(Illustrative)	22010	10 Imperiar ganons
aJA40		aТ	D. E. A
aJB85	4,000 km		By Fuel consumption at con-
87 E 62	8,500 miles		stant speed
		aTA	In km/litre at km/hr
a K	By Change of oil (Distance) aTB	In mpg at mph
aKA	In km		Note 1.—Add the given
aKB	In miles		figure for speed to aTA or
	NoteDivide the given	2	aTB as the case may be
	figure by 100, add it to		and read it as an integer.
	the appropriate (IN) and	í	2.—Add the given
	read it as an integer	•	figure for kmilitre or
	read it as an integer.		man at the coop week
017 4 36	(Illustrative)		mpg as the case may be to "A", add the result-
aKA25	2,500 km		to A, add the result-
aKB40	4,000 miles		ing (IN) to the appropri-

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	ate (IN) derived accord		Telephore
	ing to Note 1, and read		Two-way radio
	it as an integer.	ხ88	Radar
	(Illustrative)		M 1 (1 %) 1 (1 1) 1
aTA25A5	5 Km/litre at 25 km per		T1 (A2) into (A1) begins
	hour	c.	By Ventilation and heating
aTB30A25	25 mpg at 30 mph	cl	By Mechanism of operation
		c12	Manual Automatic
aV	By Overall fuel consump-	c16	Automatic
	tion	c2	By Equipment
aVA	In Km/litre	c23	Fan
aVB	In mpg	c25	Blower
	Note Add the given	c253	Motor driven
	figure to the appropriate	c27	Compressor
	(IN) and read it as an	c27F	Freon
	integer.		
	(Illustrative)		By Purpose
aVA6	6 Km/litre		
aVB25	25 mpg		T 1 (A4) into (A2) begins
	T 1 (A3) into (A2) ends		By Ventilation
	De Cartina and a conferen	c31	Fresh air admittance
ь	By Facility and comfort	c34	Smog control
	accessory	c38	Air ducting
bl	By Executive facility	c381	Hood
b12 b16	Writing table	c382	Door
b18	Typewriter Distantian	-4	On Hand
010	Dictaphone	c4	By Heating
		c41	Defrosting
b2	By Housekeeping facility	c44	Heating
b21	Relaxation		TI (A 6) into (A 2) tooling
b22	Sleeping	-46	T 1 (A5) into (A3) begins
b23	Cooking	c45	Hot water Hot air
	D. C. de de la constante	c48	
b3	By Sanitary facility		Tel 1 (A5) into (A3) ends
b31	Washing	c8	Pu Climatic control
b33 b35	Toilet Path	c82	By Climatic control Thermostatic control
033	Eam	c83	Air-conditioning
Le	Por fortunities telementes		Pressurisation
b5 b52	By Interior trimming Sound deadening sheet	c87 c871	Slight
b53	Felt underlay	c872	Full
b54	Carpet	C872	Tel 1 (A4) into (A2) ends
b541	Cut pile		181 1 (A4) INIO (A2) ENZ
b543	Looped pile	d	By Buggage accommodation
b55	Rubber mat	qC	By Capacity
b5F	Knit-weave vinyl	dCA	In cc
b5H	Leather cover	dCB	In cu inch
b5M	Walnut panel	ucb	Note.—Add the given
03.11	Walling paller		figure to the appropriate
b6	By Audio-visual accessory		(IN) and read it as an
b63	Radio		integer.
b632	Pushbutton		(Illustrative)
b64	Stercosonic tape system	dCA262	262 cc
b65	Television	dCB16	16 cu in
b8	By Telecommunication	dE	By Height
	acc>ssory	dEA	In cm

LIB SC

dEB	In inch Note.—Add the give figure to the appropriat (IN) and read it as a integer, (Illustrative) 50 cm 21"	efiki	Shock absorber Bumper Projecting Built in Front bumper Rear bumper Shock absorption front Better vision facility
dG dGA dGB	By Width In cm In inches Note.—Add the give figure to the appropriat (IN) and read it as a	e fIS	T 1 (A4) into (A3) begins Wide front vision Sun visor Rear view mirror Windshield wiper
dGA75 dGB30 dJ	integer. (Illustrative) 75 cm 30° By length	fIT fIU fIV	T 2 (A5) into (A3) begins Self parking Single speed Twin speed Tel 2 (A5) into (A3) ends
dJA dJA	In cm In inch Note.— Add the give, figure to the appropriat (N) and read it as a	elixu	Windshield washer Manual plunger Mechanical Electrical Tel 1 (A4) into (A3) end
dJA135 dJB54	integer. (Illustrative) 135 cm 54"	f5 f 6	By Light T 2 (A3) into (A2) begins By Mechanism of operation
dM dM1 dM6	By Fixity Fixed Detachable	f61 f63	F.xed Retractable
dR dR1 dR2 dR5 dR6 dR7	By Position Front Top Side Underneath Rear Tel 1 (A2) into (A1) end.	f7 f71 f72 f73 f75 f8 f83 f83	By Filament Carbon Tantalum Osmium Tungsten By Contour of reflector Circular Source at focus
f f1 f11 f12 f121	By Safety provision By Sufety device Safety console Safety belt Front	1836 185 186 188	Source out of focus Parabolic Eliptical Paracyl By Shape
f127 f12C f15	Rear Safety belt with floor anchorage Anti-burst door lock	f9b f9b1	T 2 (A4) into (A2) begins Rectangular Horizontal
f1B f1D	Padded instrument panel Padded steering wheel Zone toughened wind-	f9b3 f9d f9g	Vertical Circular Oval Tel 2 (A4) into (A2) ends
f1F	screen Shatter proof glass	(B	By Power (walts)

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	,	,	
f B275 fB350	Note.—Add the given figure and read it as an integer. (Illustrative) 275 watts 350 watts	h61 h64 h65 h66	By Electrical power measure Ampere gauge Voltameter Wattmeter Watt-hour meter
fD fD1 fD3 fD7	By Position Front Side Rear	h7 h71 h76	By Oil measure Oil presence gauge Oil quantity gauge Tel 2 (A2) into (A1) ends
CH CH1 CH12 CH13 CH2 CH6 CHB CHB CHB	By Purpose Headlight Main beam Sealed beam Reversing Stop Cornering Fog Spot Internal	k k1 k15 k16 k18 k9Y	By Brake system By Cooling Water Oil Air By Lining area T 3 (A3) into (A2) begins In sq cm
rk.	By Brand Note.—To be derived. by (AD) (Illustrative) Lucas	kВ	In sq inch Note.—Add the given figure to the appropriate (IN) and read it as an integer.
ſM	By Number Note.—Add the given	kA162 kB25=5	(Illustrative) 162 sq cm 25 · 5 sq inch T 3 (A3) into (A2) ends
fM2 fM8 fM12	figure and read it as an integer. (Illustrative) 2 lights 8 lights 12 lights T 2 (A3) into (A2) ends	kBZ kC kD	By Swept area T4 (A3) into (A2) begins In sq cm in sq inch Note.—Add the given figure to the appropriate
h hi hii	T 2 (A2) into (A1) begins By Indicator Measuring device By Time Measure Clock	kC548 kD85	(IN) and read it as an integer. (Illustrative) 548 sq inch 85 sq cm T 4 (A3) into (A2) ends
h3 h31 h34 h36 h37	By Speed measure Speedometer Low speed indicator Revolution operator Tachometer	kDZ kE kF	By Brake-pedal pressure T 5 (A3) into (A2) begins In Kg In Ib
h4 h41 h45	By Temperature measure Thermometer Radiator temperature gauge	kE45	Note.—Add the given figure to the appropriate (1N) and read it as an integer. (Illustrative) 45 Kg
h5 h51	By Fuel measure Fuel gauge	kF95	95 lb T 5 (A3) into (A2) ends
154			LIB SC

		_	
kFZ		kQ.	Front
	T 6 (A 3) (may (A 3) hand-	kQ1	One
kG	T 6 (A3) into (A2) begins in By Width		Two Rear
kGA		kR kR1	One
kGB		kR2	Two
NOD	Note.—Add the given		On all wheels
	figure to the appropriate	• •	T 8 (A3) into (A2) ends
	(IN) and read it as an		1 0 (713) 11110 (112) 01140
	intoner	kV	By Assistance
	(Illustration)	kV5	Hydraulic
kGA20=9		kV6	Mechanical linkage
kGB7 = 25		kV8	Air
	i	kV81	Air suspended (Booster)
kK		kVB	Compressed air
kKI	Leading shoe	kvő	Vacuum (Power)
kK7		kBG1	Vacuum suspended
	i	kVJ	Servo
kL	By Number	kVP	Foot
kLl	One	kVP5	Fluid fly wheel
kL2	Iwo	kVR	Hand
kL3			
	T 6 (A3) into (A2) ends	kW	By Purpose
	•	kW1	Parking
kLZ		kW3	Service
	T 7 (A3) into (A2) begins	·7 A	By Brand (Name)
kM	2.4	LEA	Note.—To be derived
kMA	Diameter in cm		by (AD).
kMB	Diameter in inch		(Illustrative)
	Note.—Add the given	17G	Girling
	figure to the appropriate	NZ.G	Olima
	(IN) and read it as an		By Steering system
	integer.	•	Dy Sitting System
L 3 4 4 2 0 - 4	(Illustrative)		T 3 (A2) into (A1) begins
kMA39 = 4		p	By Diameter of turning
kMB15=5	13 3 11161)	,	circles
kN kNA	Disc	ρA	Between walls
kNB	Diameter in em	<i>,</i> , , , , , , , , , , , , , , , , , ,	Detirous rights
KNB	Diameter in inch		T 9 (A3) into (A2) begins
	Note.—Add the given	οB	In metres
	figure to the appropriates (IN) and read it as an	bC	In ft
			T 9 (A3) into (A2) ends
	integer.		(,
LNIA 34 - O	(Illustrative)	ρG	Between curbs
kNA24=9 kNB9=8		PG	Between curbs
kNJ	9·8 inch		T 10 (A3) into (A2) begins
kP	Multiple disc	рΗ	In metres
kPi		pJ	In ft
kP2	One (single) Double	po	T 10 (A3) into (A2) ends
kPB			Note.—Add the given
	Floating T 7 (A3) into (A2) ends		figure to the appropriate
	1 (M3) Into (M2) ends		(IN) and read it as an
kPZ	By Brake in relation to		integer.
	wheel		(Illustrative)
		DB12	12 meters between walls
	T8 (A3) into (A2) begins		36' 5" between walls
	- ~ (m) imo (m) begins	-230-3	20 1. October Walls

H291	NEELAMEGHAN, GOPINATH	, AND DENTON
pH10— 5	10.5 meters between x3 curbs x5	Power-assisted Hydraulic
pJ24	24' between curbs x8	Pneumatic
r	By Number of turning y circles, lock-to-lock Note.—Add the given figure and read it as an integer. (Illustrative)	By Brand Note.—To be derived by (AD). (Illustrative) Toyota Tel 3 (A2) into (A1) ends
r2=4 r3	2.4 turning circles 3 turning circles z0X	By Transmission
s	By Rotation of the steering wheel (in deg) 20Y Note.—Add the given figure and read it as an integer. 2a	T 4 (A2) into (A1) begins By Clutch T 1 (A3) into (A1) begins By_Engagement
s15	(Illustrative) zaB 15° zaBA	Diaphragm Diameter in cm
s30	30° zaBB	Diameter in inch
t	By Gear ratio Note.—Add the given figure and read it as an integer.	Note.—Add the given figure to the appropriate (IN) and read it as an integer. (Illustrative)
t18=1	(Illustrative) zaBA23 18·1: 1 zaBB9	3 23 cm
124	24: i zaD	Coiled spring
uA uB uA38 uB15	By Steering wheel diameter zb In cm In inch Note.—Add the given zc figure to the appropriate zcA (IN) and read it as an zcB integer. (Illustrative) 38 cm 15°	By Disc T 1 (A4) into (A1) begins By Diameter In cm In inch Note.—Add the given figure to the appropriate (IN) and read it as an integer. (Illustrative)
v .	By Linkage zcA14=	
v1 v5	Integral zcB6=:	25 6 · 25 inches
	ze	By_State of disc
wı wı	By Steering gearmechanism ze4 Worm and roller (Ross- ze5 Gemner)	Dry Wet
w2	Worm and sector zf	By Number of discs
w3 w5	Screw and ballnut zf1 (Saginau) zf2 Recirculating ball and zf8	Single Double Multiple
w6	nut (Burman) Cam and lever (Ross)	T 1 (A4) into (A1) ends
w8	Rack and pinion zh	By Brand of clutch Note.—To be derived
x x2	By System Manuai	by (AD). (Illustrative)

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zhJ	Jaeger	zr	By Kind of gearing
	T 1 (A3) into (A1) ends		Hypoid bevel
zj	By Method of transmission	Zr3	Power lock Spiral bevel
zjl	Lay snart	213	T 2 (A3) into (A1) ends
zj3	Tubular shaft with ball	_	2 2 (12) 1110 (121) 1113
-i5	and trunnion Pinion and ring gear on	zrZ	By Gear box
zj5	axle		By Gear ratio
zj8	Counter shaft		T 3 (A4) into (A1) begins
•	T 11(A3) into(A2) begins	ZS	Forward
zjB	Selective sliding gear	23.0	First gear
zjD	Constant mesh	zsC	Second gear
zjG	Synchronised	zsD	Third gear
•	T 11 (A3) into (A2) ends	Z	Reverse
zjJ	Fluid coupling		Note.—Add the given
zjM	Torque-converter		figure for the ratio to the appropriate (IN) and read
zjP	Torque-converter		it as an integer.
-3-	coupling		(Illustrative)
zjR	Planetary	zsB1 = 6	Forward first gear ratio
zk	By Kind of shift		1.6:1
zkl	Hydrostatic	zsD3=2	Foward third gear
zk3	Hydrodynamic		ratio 3·2:1
zk6	Automatic		T 3 (A4) into (A1) ends
zk62	Semi-automatic		T 3 (A3) into (A1) begins
zk8	Power-assisted shift	ztZ	By Number of auxiliary
zkD	Power shift		transmission speeds
zkL zkP	Manual shift		(Transfer case)
	Non-shifting		Note.—Add the given
zm	By Rear axle		figure and read it as an
zmi	Differential case		integer.
zm2	mounted		(Illustrative)
zm3	Semi-floating Three quarters floating	ztZ1 ztZ2	One auxiliary speed
zm7	Full floating	2122	Two auxiliary speeds
2mB	Sprung		T 3 (A3) into (A1) ends
zmG	Unsprung		By Number of transmission
zmZ	By Final drive		speed
	· · · · · · · · · · · · · · · · · · ·		TAIAN into (A1) begins
	T2 (A3) into (A1) begins	zu	T 4 (A4) into (A1) begins Forward
ZD	By Gear ratio Note.—Add the given		Reverse
	figure and read it as an	7.W	Infinitely variable
	integer.		Note.—Add the given
	(Illustrative)		figure to the appropriate
zn4 = 11	4-11		(IN) and read it as an
zn6 =2	6.2		integer.
znZ	By Arm		(Illustrative)
	T 2 (A4) into (A1) begins	zu6	Six forward speeds Two reverse speeds
zp	Leading		T 4 (A4) into (A1) ends
zpl	Single		
zp2	Double		T4 (A3) into (A1) begins
2q	Trailing	7X	By Type of gearbox
zq1 zq2	Single	zxS	Control lever on steer-
-4-	Double T 2 (A4) into (A1) ends	786	ing column Electrical selection
	2 (NA) (MI) (NI) (MI)	~~	Siverifeat Scientifoti

H991	NEELAMEGHAN, GOP	INATH, AN	D DENTON
zxC zxE	Synchromesh	zzh I A60	1% at 60 mph T 2 (A5) into (A1) ends T 5 (A4) into (A1) ends
zy zyi zy4 zy7 zyE zyJ	By Drive Front wheel Four wheel Rear wheel Interrupted Continuous T 4 (A3) into (A1) ends T 4 (A2) into (A1) ends	zzk	T 5 (A3) into (A1) begins Note.—For Inflation pressure it is preferable to use the (IN) derived on the basis of the (QI) By Tyre pressure (S - a). By Inflation pressure
zza	By Wheel		T 6 (A4) into (A1) begins
zzaZ	T 5 (A2) into (A1) begins z By Tyre By Traction characteristics		Normal load T 3 (A5) into (A1) begins
zzb	T5 (A4) into (A1) begins 2 By Total air-and-rolling resistance	zzn zzp	In Kg sq cm In psi T 3 (A5) into (A1) ends
	T 1 (A5) into (A1) hegins 2	zzq	Full load
zzc zzd	in Kg atter Km	zzr	T 4 (A5) into (A1) begins In Kgisq cm In psi T 4 (A5) into (A1) ends
	and read it as an integer. Add to the resulting (1N) the figure for km or miles as the case may be,		Note.—Add the given figure to the appropriate (1N) and read it as an integer.
	with 'A' interpolated hetween the two sets of 2 numbers. Read the	zzn16	(Illustrative) 16 Kg/sq cm at normal load T 6 (A4) into (A1) ends
zzc43A15	added digits as integers. (Illustrative)	zzt	By Weight of casing
zzd92A18	92 lb after 18 miles T 1 (A5) into (A1) ends	zzu	T7 (A4) into (A1) hegins In Kg
zzf	By Air resistance Z	ZZV	In 1b Note.—Add the given
zzg zzh	T 2 (A5) into (A1) begins In % at Km/hr In % at mph Note.—Add the given figure for the percentage z	zzu12 = 5	figure to the appropriate (IN) and read it as an integer. (Illustrative) 12-5 Kg
	to the appropriate (IN) z and read it as an integer. Add to the resulting (IN)	zzv27 = 1	27 · 1 lb T 7 (A4) into (A1) ends
	the figure for kmihr or z mph as the case may be, with "A" interpolated between the two sets of numbers, Read the	.21	By Tyre size Note.—Add the given figure to zz, replacing the hyphen (-) in the given figure by "A".
mal - 54 40		z6=5A16	(Illustrative) 6·5 16
zzgl = 5A40	1.5% at 40 km/hr z	z9 = 5A14	9.50 - 14

zzA	By Static load radius	zzP	By Kind of tube
	T8 (A4) into (A1) begins		T12 (A4) into (A1) begins
zzB	In cm	zzR	Low pressure
zzC	In inch	zzS	Solid
	Note.—Add the given	zzT	Pneumatic
	figure to the appropriate	zzU	Tubeless
	(IN) and read it as an	7.7.V	Snow
	integer.		T12 (A5) into (A1) ends
127 6	(Illustrative)		D. Board of tons
zzB27 = 5 zzC13 = 9	27 · 5 cm	z1	By Brand of tyre
22013=9	13.9"		Note To be derived
	T 8 (A4) into (A1) ends		by (AD).
-07	P. O	135	(Illustrative)
zzCZ	By Overall diameter	zID	Dunlop
	200 (A 4) I-4- (A 1) I I	zIF	Firestone
	T 9 (A4) into (A1) begins	5	T 5 (A3) into (A1) ends
zzD	In cm	-07	Bu Din of wheel
zzE	In inches	z8Z	By Rim of wheel
	Note.—Add the given	!	By Number of studs (fixing)
	figure to the appropriate	,	T12 (A4) into (A1) begins
	(IN) and read it as an	!	T 13 (A4) into (A1) begins
	integer.		Note,—Add the given
7376	(Illustrative)		figure to 29 and read it as
22D75	75 cm.		an integer.
zzE27	27 inches	. 0.0	(Illustrative)
	T 9 (A4) into (A1) ends		5 studs
		z96	6 studs Centre hub
zzEZ	By Maximum load	z9C	Ventilated
	5	7.9D	T 13 (A4) into (A1) ends
zzF	T 11(A4) into(A1) begins		1 13 (A4) Into (A1) thas
22G	In Kg	29 \ *	By Width
240	In lb		23) WALLIA
	Note.—Add the given		T14(A4) into(A1) begins
	figure to the appropriate		In cm
	(IN) and read it as an		In inch
	integer.	zB	Note, Add the given
zzF520	(Illustrative)		figure to the appropriate
zzG1350	520 Kg		(IN) and read it as an
2201330	1350 lb		integer.
	T 10 (A4) into (A1) ends		(Illustrative)
zzGZ	D. Falainetian (Stanton	~ 4 11 . 7	11 · 5 cm
2202	By Fabrication (Structure)		4.5"
	TT 1 (A 4) (-1-(A 1) 11-	zB4	T 14 (A4) into (A1) ends
zzJ	T1 (A4) into (A1) begins		1 14 (/44) //// (111) chas
zzJi	Ply		By Material of rim
22J2	Single	×BZ	by material by the
zzJ3	Two		T 15(A4)into (A1) begins
zzJ3 zzJ4	Threc		Pressed steel disc
zzJ4 zzJ5	Four	zC	Other alloys
2233 22J8	Cross	zD	Castalloy
2230	Radial	zD2	T 15 (A4) into (A1) ends
	T11 (A4) into (A1) ends		
zzM	By Material of tyre	zF	By Number of revolutions
zzMI	Rubber (favoured)		per mile or Km
zzM15	Synthetic		(at 35 mph or 22 km
zzM6	Nylon		ber pr)
	,		

	Note,—Add the given		figure and read it as an
	figure and read it as an		integer
	integer		(Illustrative)
-F-721	(Illustrative)	zP6	6 wheels
zF731 zF745	731 745	zP12	12 wheels
ZF /43	743		B B St 7.1.1
		zQ	By Position of wheel
zFZ	By Track	zQ1	Front Middle
	77 (4 3) ((4 1) (zQ2	
zG	T 6 (A3) Into (A1) begins	ZQ/	Rear
zGA	Front		T 5 (A2) into (A1) ends
zGB	in m in fi	zR	By Suspension system
20B 2H	Rear	/ N	by Suspension system
zHA	ln m		T 6 (A2) into (A1) begins
zHB	In ft	zS	By Control mechanism
2110	Front and rear	žŠ1	Automatic height control
zJA	In m	2S2	Telescopic damper
zJB	ໄດ ມີ	zS3	Shock absorber
2011	Note.—Add the given		Panhard rod
	figure to the appropriate	z\$6	Antiroll bar
	(IN) and read it as an	zS8	Radius arm
	integer.		
	(Illustrative)	zSZ	By Spring
zGA56=5	56.5 cm front track		
zGB27	27 inch front track		T7 (A3) into (A1) begins
zHA58	58 cm rear track	zT	By Rate of spring
zHB28	28 inch rear track	zTA	In Kg
	T 6 (A3) into (A1) ends	zTB	in ib
	(1-12) time (7-12) chair		NoteAdd the given
zK	By Wheel alignmens		figure to the appropriate
zKB	Chamber		(IN) and read it as an
2KC	Caster		integer.
2KD	Toe-in		(Illustrative)
200	100-111	zTA45 = 5	45 5 Kg
	n. utharttara	zTB130	130 lb
zL	By Wheel base		
zLA	In cm	2TZ	By Length of spring
zLB	In ft		
	Note,—Add the given		T 16 (A4) into(A1) begins
	figure to the appropriate	zU	Normal
	(IN) and read it as an	2.071	In cm
	integer	zUB	In inch
-1 4206	(Illustrative)	7 V	Under load
zLA206	206 cm	zVA	In m
zLB9=2	9′ 2″	zVB	In feet
			Note.— Add the given
zN	Ey Number of driving		figure to the appropriate
	wheels		(IN) and read it as an
	Note.—Add the given		integer,
	figure and read it as an		(Illustrative)
	integer.	zUAi = 5	1.5 m normal length
	(Illustrative)	zUB4	4 ft normal length
zN2	2 driving wheels	2VAI = 8	1.8 m length underload
zN6	6 driving wheels	zVB6	6 ft length underload
-			T 16 (A4) into (A1) ends
2P	By Total number of wheels		
	Note.—Add the given	zVZ	By Shape

	T17(A4) into (A1) begins	-7G	Silicon managages
zW	By Spring subjected to	zZH	Silicon manganese Flat CR strip
2 44	bending	2ZJ	Stainless 18-8
zWl	Single leaf flat spring	2ZK	Chromium stainless
2W2	Double leaf flat spring		T 6 (A5) into (A1) ends
zW3	Rectangular plate		
zW4	Triangular plate	7ZM	Other alloys
zW5	Rectangular plate with		
	tapered end		T 7 (A5) into (A1) begins
zW8	Transverse leaf	≀ZN	Inconel
zWB	Compound leaf laminate	zZP	Monel
	spring	zZR	K-monel
zWC	Laminated triangular	z ZS	Z-nickel
	plate	∠ZT	Phosphor bronze
zWD	Laminated rectangular		Manganese bronze
	plate with tapered leaf		Brass
-33/5	end	zZX	Rubber
2WF	Laminated trapezoidal		T 7 (A5) into (A1) ends
	plate with tapered leaf		T 18 (A4) into (A1) ends
-W.C	end		T 7 (A3) into (A1) ends
2WG	Elliptical		Do Kind of management
zWG2	Semi-elliptical	1	By Kind of suspension
zWM	Coiled spring		T 8 (A3) into (A1) begins
zWP	Spiral coil of rectangular		Independent
2WR	cross section	2	Kingpin
2 W IX	Cylindrical helix of cir-	22	Kingpin between double
zWT	cular cross section	23	wish bones
2 W I	Cylindrical helix of rec-	2.	Ball joint
	tangular cross section	24	Axie
zX	Bu Cautan a Linear day and	25	Live axle on cantilever
24	By Spring subjected to tor-		Swinging axle
zXI	sion	253	Hydroelastic
271	Straight bar of circular	52	Hydraulic
zX3	cross section	55	Hydropneumatic
2.2.3	Straight bar of rec-		Air
	tungular cross section	58	T 8 (A3) into (A1) ends
zΥ	By Spring loaded uxially		1 0 (110) mio (111) chas
zŸl	Cylindrical helix of cir-	_	By Position
	cular cross section	,	Front suspension
zY2	Cylindrical helix of rec-	71	Rear suspension
	tangular cross section	77 78	Front and rear suspen-
zY3	Conical helix of circular	/8	Sion
	cross section		T 6 (A2) into (A1) ends
zY5	Conical helix of rec-) ((11) thus
	tangular cross section	Δ.	By Roof
zY8	Truncated conical spring		2) 1.00)
	T 17 (A4) into (A1) ends	,	T7 (A2) into (A1) begins
	1 17 (714) 11110 (711) (711)	0.7	By Mat.rial of make
2ZA	By Material of spring	9aZ	by mus.rias of make
			T9 (A3) into (A1) begins
~~	T18 (A4) into (A1) begins	9ь	Metal Metal
2ZB	Steci	9b1	Steel
	T 6 (A5) into (A1) bearing		Aluminium
2ZC	T 6 (A5) into (A1) begins		Non-metal
zZD	Hard drawn	9c	Glass
zZE	Oil-tempered	9c4 9c44	Fiber glass
zZE zZF	Annealed high carbon		Tinted glass
LLF	Chromium vanadium	9c45	varied Riggs

H991	NEELAMEGHAN, GOE	INATH, A	ND DENTON
9c5	Plastics	9n7	Rear
9c7	Cloth T 9 (A3) into (A1) ends	9p	By Number Note.—Add the given
9d	By Kind		figure and read it as an
9d3	Sun roof		integer,
9d5	Observation	0-3	(Illustrative)
9dB	Sliding	9p2	Two doors Four doors
	T 7 (A2) into (A1) ends	эр4	T 9 (A2) into (A1) ends
9e	By Window	9r	By Seat
	T 8 (A2)into (A1) begins	71	Dy Stai
9f	By Method of operation		T 10 (A2) into (A1) begins
9f2	Manual	9s	By Cover of headlining
966	Mechanical (roll-type)	9s1	Cloth
918	Power-assisted	9s2	Leather
	_	9s5	Pvc
9g	By Curvature	9s6	Nylon
9g1	Flat	0.	By Cover of seat
9g3	Curved	9t 9t1	Cloth
9g5	Compound curved Wrap over	912	Leather
9g8	Wiap Over	915	Pvc
9h	By Material of make	,,,	
9hl		9v	By Kind of seat
9h5	Safety glass Tinted glass	9vI	Bench
9h6	Polarised glass	9v2	Bucket
9hF	Plastics	9v24	Half bucket
	B B 111	9v3	Adjustable
9j	By Position	9v5	Folding Reclining
9]1	Front (Windshield) Side	9vB	Reclining to make a bed
9j5 9j7	Rear	9vC	Swivel
731	Real	9vD	0
9k	By Number	9w	By Position
	Note.—Add the given	Qw1	Front
	figure and read it as an	9w2	Centre
	integer.	9w7	Rear
	(Illustrative)	9wB	Front facing
9k4	Four windows	9wH	Rear facing
9k6	Six windows T 8 (A2) into (A1) ends	9x	By Number Note.—Add the given
9kZ	By Door		figure and read it as an integer.
	T 9 (A2)into (A1) begins		(Illustrative)
9m	By Method of operation	9x4	Four seats
9m1	Sliding	9x6	Six seats
9m2	Manual		T 10 (A2) into (A1) ends
9m6	Mechanical		By Number of decks
9m8	Power-assisted	9z1	Single (favoured)
9n	By Position	9z2	Double
9n1	Front	0-D	Pu Cargo hadu
9n5	Side	9zB	By Cargo body
9n51	Right		T 11 (A2) into (A1) begins
9n55	Left	9zC	By Capacity

9zCA	In cu m	94	Fiberglass
92CB	In cu ft	941	Reinforced with steel
	Note.—Add the given		Plastics
	figure to the appropriate		
	(1N) and read it as an		By Type of body
	integer.		(for car)
	(Illustrative)	9 B	Sedan
9zCA7 = 5	7 · 5 cu m	9D	Convertible
9zCB255	255 cu ft	9F	Hardtop
		9H	Limousine
9zG	By Floor area	9 K	Station wagon
9zGA	In sq m	9 M	Fast back
9zGB	In sq ft	9 P	Jeep
	Note.—Add the given		•
	figure to the appropriate		(For truck trailer)
	(IN) and read it as an	9A	By Purpose
	integer.		
	(Illustrative)		T 10(A3) into(A1) begins
9zGA3 = 7	3 · 7 sq m		, , , , ,
9zGB37	37 sq ft	9 B	By Body for carrying build-
			ing equipment
9z1.	By Height	9 B 1	Log body
9zLA	In cm	9B2	Pulpwood body
9zLB	In ft	9B3	Lumber body
,	Note.—Add the given		Glass (Glazier) body
	figure to the appropriate		Concrete mixer
	(1N) and read it as an	088	Bituminous material dis-
	integer.	700	tributor
	(Illustrative)		tributor
9zLA120	120 cm	9D	O D d C
9zLB5 = 3	5′ 3″	90	By Body for carrying con-
921.03 = 3	2. 2		struction and repair
0- n	5 404		equipment
9zP	By Width	9D1	Dump
9zPA	In cm	9D2	Hopper
92PB	In ft	9D6	Oil field body
	Note.— Add the given	9D8	Rigger
	figure to the appropriate	9DC	Utility body
	(IN) and read it as an	!	· -
	integer.	9 F	By Body for carrying
	(Illustrative)		vehicles
9zPA80 = 5	80 · 5 cm	9FI	Automobile transporter
9zPB3 = 6	3′ 6″	9F4	Wreck transporter
	•		
9zR	By Length	9 H	By Body for carrying gar-
92RA	Incm	,	bage
9zRB	in ft	9H5	Garbage
7210	Note.—Add the given		Refuse
	figure to the appropriate	7 7110	Neiuse
	(IN) and read it as an	01	Pu Padu for comming line
		193	By Body for carrying live-
	integer.	9J1	stock Rack
9zRA50	(Illustrative)		
	150 cm	9J11	Stock
9zRB15 = 6	15' 6"	9J2	Horsevan
	D. Marriel I. of	^*	
01	By Material of make	9L	By Body for carrying
91	Steel (favoured)		liquids
92	Aluminium	9L1	Tank
93	Plywood	9L15	Water

H991	NEELAMEGHAN, GOI	PINATH, AN	D DENTON
9L16	Oil	9ZC	Spread tandem
9L5	Street flusher	9ZD	Sliding tandem
9L7	Brewers body	9ZF	Sliding fifth wheel
			onang mm meet
9N	By Body for carrying food	9ZG	By Kind of trailer
9NI	Grain	9ZG12	Semi-trailer
9N2	Ice	9ZG1	Full trailer
9N3	Ice-cream	9ZG3	Trailer converter dolly
9N4 9NB	Bottles Insulated	9ZG4 9GZ6	Low bed
9NC	Refrigerated	9ZG7	Drop frame
9NE	Heated	9ZG8	Tilt bed Pole
JI'L	Heated	/200	T 12 (A3) into (A1) ends
9Q	By Body for carrying passengers		T11 (A2) into (A1) ends
921	B ₁ s body	9ZH	By Frame
922	Coach		-) 1.4
			T 12(A2) into(A1) begins
9S	By Body for miscellaneous	9ZJ	By Material
	freight	9ZJ1	Welded steel (favoured)
9 SI	Panel	9ZJ2	Aluminium
9S12	Sedan delivery	9 Z J3	High strength and
9S 3	Ventilated	0714	aluminium
9S5	Van body	9ZJ4	Fiberglass reinforced
9S52	Furniture		panel
958	Multistop	9ZM	By Articulation
9T	By Special purpose body	9ZM1	Straight truck
9172	Fire fighter	9ZM2	Articulated
9T3	Armoured car		rittediated
9T8	Mail carrier	9ZP	By Kind of frame
9TB	Mobile post office		-,,, -, -, -, -, -, -, -, -, -, -,
9TD	Bor k mobile (Librachine	,	T 13(A3) into(A1) begins
	T 10 (A3) into (A1) ends	9ZQ	X-frame
		9ZR	Ladder frame
9U	By Constructional type	9ZS	Swept hip
	-	9ZT	Box-shaped cross section
	T 11 (A3) into (A1) begins	5 9 Z U	Central tube with fork
9V	Platform		ends
9V1	Stake	9ZV	Double backbone
9W	Open box		T 13 (A3) into (A1) ends
9W1	Exp.ess	0711/	B B 64
9W2	Pick up	9ZW	By Profile
9W5	Сапору	9ZW 9ZW5	Low
9W52	Screen side		Medium
9X	Camel back (Dray body) T 11 (A3) into (A1) ends		High
	1 11 (A3) 1110 (A1) 1110		By Construction
92.07	By Truck trailer	9ZX	Body welded to frame
,20,	Dy Truck trainer	, 2.13	(Conventional)
	T12(A3) into(A1) begin.	5 9 ZY	Unitised
9208	By Number of axles		T 12 (A2) into (A1) ends
9 Z 1	Single		• • • • • • • • • • • • • • • • • • • •
9 Z 2	Two	A	By Engine
9 Z 3	Three		
	5 4 4 44	B1	By Cooling
000	By Axle assembly		T12(A2) : (A2) : :
9ZB	Tandem		T 12 (A3) into (A2) begins
164			LIB SC

B5 B55 B56 B8	Liquid Water Oil Air	C9A	By Brand T 2 (A6) into (A2) begins Note.—To be derived
BA	T 12 (A3) into (A2) ends By Ignition system	C9D	by (AD). (Illustrative) Derad
BAB	Battery Note.—Add the given figure for the voltage to	,	Fram T2 (A6) into (A2) ends
	BA and read it as an integer. (Illustrative)	CB CB1 CB2	T3 (A4) into (A2) begins By Kind of fuel pump Diaphragm type Plunger type
BAB2=5 BAB6 BAC	2·5 V 6 V Compression ignition	CB3 CB4 CB5	Solenoid Jerk type Electronic
BAF BAF3 BAH	Electronic Transistorised Magneto	CB53 CB6	Transistorised Electrical T 3 (A4) into (A2) ends
BC BCI BCB	By Valve gear Push rod and rocker Overhead	СВА	T2 (A4) into (A3) begins By Brand of pump
BE	By Combustion chamber	CDV	Note.—To be derived by (AD). (Illustrative) Kyosan-Denki
BF BG	T 13 (A3) into (A2)begins Side valve Turbulent head		T 2 (A4) into (A3) ends By Method of injection
BH BJ BK	Overhead valve Bath-tub head Toroidal	CC CC2 CC6	Direct Metered Continuous
BM BN BP	M-type Rover cylinder head Swirl type	CC2	By Carburetor
BP1 BP2 BP5	Induction swirl Compression swirl Whirlpool	CD CD1	T 4 (A4) Into (A2) begins By Choke By Method of operation
BR BS BS!	Comet Divided chamber Pre-combustion chamber		T 1 (A6) into (A3) begins Manual
BS8	Air cell T 13 (A3) into (A2) ends	CD6	Power T 1 (A6) into (A3) ends
С	T 13(A2) into(A1) begins By Fuel injection system By Fuel pump By Oil filter	CDA	By Brand of choke T2 (A6) into (A3) begins Note.—To be derived
CI	By Kind T1 (A6) into (A2) begins Renewable	CDA	by (AD). (Illustrative) Aisan T 2 (A6) into (A3) ends
C4 C5 C8	Gauge strainer in sump Tecalamite Full flow T 1 (A6) into (A2) ends	CE CE1 CE2	By Number of venturi tubes Single Double

H991	NEELAMEGHAN, GO	PINATH, AN	D DENTON
CF	By Number of barrels Note.—Add the given figure and read it as an integer.	GA75	figure to the appropriate (IN) and read it as an integer. (Illustrative)
CF2 CF4	(Illustrative) 2 barrels 4 barrels	GB2=4	75 mm/sec 2 · 4 inch/sec
CG CG1 CG5	By Draught direction Downward Side	H HA HB	By Displacement In cu cm In cu in Note.—Add the given
СН	By Brand of carburetor Note.—To be derived by (AD).		figure to the appropriate (IN) and read it as an integer, (Illustrative)
CHF	(Illustrative) Ford	HA5363 HB450	5363 cu cm 450 cu in
Cl	By Number of carburetors Note,—Add the given		By Cylinder
	figure and read it as an integer, (Illustrative).	J J1	T 14 (A3) into (A1) begins By Cylinder arrangement In line (favoured)
CJ2 CJ4	2 carburetors 4 carburetors T 4 (A4) into (A2) ends	J111 J111 J13 JH	Horizontal Opposed Vertical H type
E E01 E1 E2	By Fuel With antifreeze Single fuel Dual fuel	JA 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	V type 60° 90°
E8 EB EB5 EB6 EB7 EB8 EB81	Multifuel Pure liquid Pentane Hexane Heptane Octane Iso-octane	K KA KB	By Cylinder bore diameter In cm In inch Note.—Add the given figure to the appropriate (IN) and read it as an integer.
EB91 EB92 EB93 EB94	Decane Dodecane Octene Benzene	KA40 KB 17	(Illustrative) 40 cm 17"
EB95 ED	Alcohol Liquid mixture	L LI LIZ	By Number of cylinders Single Multiple
EE EF EG EH EJ ES	T 5 (A4) into (A2) begin. Gasoline (favoured) Kerosene Light diesel oil Medium diesel oil Heavy diesel oil Gaseous fuel	L8 L16	Note.—Add the given figure to L and read it as an integer. (Illustrative) 8 cylinders 16 cylinders T 14 (A3) into (A1) ends
G GA GB	T 5 (A4) into (A2) ends By Stroke distance In mm/sec In inch/sec Note,—Add the given	M M2 M21 M22 M4	By Cycle Two stroke Single acting Double acting Four stroke

LIB SC

N	Note.—Add the given figure.		Ford Rolls Royce
$ \begin{array}{l} N1 = 2 \\ N6 = 35 \end{array} $	1·2 6·35	X X1 X2 X5	By Kind of engine Petrol (gasoline) engine Diesel engine
P PA PB		X6 X7	Gas turbine Electrical Nuclear T 13 (A2) into (A1) ends
	figure to the appropriate (IN) and read it as an integer.		By Power generation system
PA14 PB102	(Illustrative) 14 Kg-m per sec	Za	By Current (amperes) Note.—Add the given
R	102 lb-ft per sec By Thrust		figure and read it as an integer. (Illustrative)
RA RB	In Kg In lb Note.—Add the given	Za40 Za45	40 amperes 45 amperes
	figure to the appropriate (IN) and read it as an integer.	Zb	By Voltage (Volts) Note.—Add the given figure and read it as an
RA1300 RB3000	(Illustrative) 1300 Kg 3000 lb	Zb12	integer. (Illustrative) 12 volts
S.	By Power	Ab25	25 volts
SA SB	In metric horse power In horse power Note.—Add the given figure to the appropriate		By Equipment Battery Alternator Generator
	(IN) and read it as an integer. (Illustrative)		T 14 (A2) into (A1) ends By Speed
SA325 SB328	325 metric HP 328 Horse Power		T 15 (A2) into (A1) begins
U	By Supercharging	Ze	By Acceleration
U2 U3 U5	Compressor only Differential charging Turbo-charging	Zf	T15 (A3) into (A1) begins By Acceleration through gears
V VI	By Mounting of engine Front	ZfA ZfB	Km per hr in sec Mph in sec Note.—Add the given
V2 V3	Centre Cab-forward-of-engine		figure to the appropriate (1N) and read it as an
V5 V6 V7	Cab-over-engine Cab-beside-engine Rear		integer. Add to the resulting (IN) the figure for time (in sec) with 'A'
V8	Transverse		interpolated between the two sets of numbers.
W	By Brand of engine Note.—To be derived	ZfA12A2=	(Illustrative) 6 2.6 sec from 0-12 km per hr
	by (AD). (Illustrative)	ZfB25A3=	

H991	NEELAMEGHAN,	GOPINATH,	AND	DENTON
	,			

Zg	By Acceleration from stand-	ZnZ	By Overhang
	ing to 1 mile (in sec) Note.—Add the given	Zp	Front
	forms and mad it as	ZPA	In meter In feet
	figure and read it as an		
	integer.	Zq	Rear
G-10 - 4	(Illustrative)	ZqA	In cm
Zg18=4	18 · 4 sec	ZqB	In feet
Zg32	32 sec	_	B B H I
	T 15 (A3) into (A1) ends		By Overall length
		ZrA	In meter
Zh	By Maxi speed in each gear	ZrB	In feet
Zhl	First gear		Note.—For a specific
Zh2	Second gear		dimension add the given
Zh2l	Overdrive second gear		figure to the appropriate
Zh3	Third gear		(1N) and read it as an
Zh31	Overdrive third gear		integer,
Zh4	Top gear		(Illustrative)
Zh41	Overdrive top gear	ZmA12=5	12.5 cm ground clear-
Zh6	Reverse		ance
	Note, - Add the given	ZmB5 = 5	5.5" ground clearance
	Note.—Add the given figure for the speed to' A'	ZnA2 = 37	2:37 m width
	if in km per hour or to	ZnB7=11	7' 11" width
	'B' if in mph and read it	ZrB13=1	13' 11" length
	as an integer. Add the		T 16 (A2) into (A1) ends
	result to the appropriate		B 11/4 1
	(IN) for the gear.	ZrZ	By Weight
	(Illustrative)		m.m. 1 4 5 1 - 1 4 1 3 1 - 1 - 1
Zh1A7	7 Km per hr in first gear	_	T17 (A2) into (A1) begins
ZhIB16	16 mph in first gsar	Zs_	By Weight distribution (%)
Zb4A55	55 Km per hr in top gear	· ZsB	On front axle
Zh4B110	110 mph in top gear	ZsC	On centre axle
	-	ZsH	On rear axle
Zj	By Mean maximum speed		Note.—Add the given
ZjA	In km per hr		figure to the appropriate
ZiB	In mph		(IN) and read it as an
,	Note - Add the given		integer.
	figure to the appropriate		(Illustrative)
	(IN) and read it as an	ZsB56	56% on front axle
	integer.	ZsH65	65% on rear axle
	(Illustrative)		
ZjA25	25 km per hour	ZšZ	By Vehicle weight
ZjB76	76 mph		
حرح د	T 15 (A2) into (A1) ends		T16 (A3) into (A1) begins
	, 15 (112) time (111) time		(for car)
7:7	Bu Dimension	Zt	Dry weight in Kg
ZjZ Zk	By Dimension	ZtA	Light (less than 500 Kg)
ZkA	By Overall height	ZtB	Medium (500-1,500 Kg)
ZKA	In cm	ZtC	Heavy (over 1500 Kg)
ZkB	to took	Zu	Dry weight in cwt
ZKD	In inch	ZuA	Light (less than 19 cwt)
7	T16 (A2) into (A1)begins		Medium (10–27 cwt)
Zm	By Ground clearance	ZuC	Heavy (over 27 cwt)
ZmA	In cm	Zv	Kerb weight in Kg
Zm B	In inch	ZVA	Light (less than 600 Kg)
_		ZvB	Medium (600-2,000 Kg)
Zn	By Overall width	ZvC	Heavy (over 2,000 Kg)
ZnA	In meter	Zw	Kerb weight in cwt
ZnB	In feet	ZwA	Light (less than 12 cwt)

ZwB	Medium (12-30 cwt)		Note.—Add the given
ZwC	Heavy (over 30 cwt)		figure to the appropriate
Zx	Laden weight in Kg		(IN) and read it as an
ZxA	Light (less than 800 Kg)		integer.
ZxB	Medium (800-2,500 Kg)	7. 4.4300	(Illustrative)
ZxC	Heavy (over 2,500 Kg) 2		4,200 Kg dry weight
Zy	Laden weight in cwt 2	ZyD320	320 cwt laden weight
ZyA	Light (less than 15 cwt)		T 16 (A3) into (A1) ends
ZyB	Medium (15-35 cwt)		T 17 (A2) into (A1) ends
ZyC	Heavy (over 35 cwt)		() (/ 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 /
ZyC	Moto Add the given		
	Note.—Add the given	ZzX I	By Purpose
	figure to the appropriate		
	(IN) and read it as an		T 18 (A2) into (A1) begins
	integer.	ZzY I	By Environment
	(Illustrative)	LL. I	by Environment
ZtB600	600 Kg dry weight		m + 1 (4 3)) . (4 1) (
	770 Ke hash suclaha		T 17 (A3) into (A1) begins
Zv778	778 Kg kerb weight	Zzl /	By Gradient climb (%)
ZyA14=25	14 5 cwt laden weight		NoteAdd the given
			figure to 'Zz' and read
	(for Truck and Bus)		
Zt			it as an integer.
	Dry weight in Kg		(Illustrative)
ZtA	Light (less than 4,500Kg)	Zz3	3% gradient
ZtB	Medium(4,500-8,000 Kg)	7.755	55% gradient
ZtC	Light heavy (8,000-		55 /U S.Maio
	12,000 Kg)		
ZtD	##: ' / . I 14 000 I/ - \ /	Z2 I	By Latitude
	Heavy (over 12,000 Kg)	Z 21	Tropical
Zu	Diy weight in owe .	Z2 5	Subtropical
ZuA			Polar
ZuB	Medium (80~150 cwt) 4	Z28	i biat
ZuC	Light hanny (150 220		
240	cwt)	Z3 <i>I</i>	By_Altitude
7D		Z 31	Sea level
ZuD	Ticary (Over 220 cwt) .	Z37	Mountain
Zv			Snow level
ZvA	Light (less than 5,000Kg)	2.10	Oliow level
ZvB			D. D
	Ka)		By Physiography (Terrain)
ZvC	Light heavy (10,000-	Z 51	Flat
ZVC	Light heavy (10,000-	Z53	Undulating
	(2,000 Kg) .	Z54	Rough
ZvD		Z 56	Hilly
Zw	Kerb weight in cwt - 1		
ZwA	Light (lose than 90 cut)	Z 57	Mountainous
ZwB	Medium (90-180 cwt)	Z5B	Desert
		Z5D	Jungle
ZwC	Light heavy (100-400)	Z5E	Forest
ZwD	Heavy (over 250 cwt) 4	Z5F	Marshy
Zx	Laden weight in Kg	Z5H	Muddy
ZxA	Light (less than 6,000Kg)		
ZxB	Madison (6.000 12.000)	76	By Weather condition
ZXD	Medium (6,000-12,000	Z64	
			Dry
ZxC	Light heavy (12,000-	Z03	Rain
	18,000 Kg)	Z651	Sleet
ZxD	Heavy (over 18,000 Kg)	Z68	Snow
Zy	110013 (0111 10,000 128)		T 17 (A3) into (A1) ends
	Laden weight in cwt		, , , , , ,
ZyA	Light (less than 100 cwt)		
ZyB	Medium (100-200 cwt) 2	ZA I	By Transport
ZyC	Light heavy (200-300		
	cwt)		T 18 (A3) into (A1) begins
ZyD		ZB I	By Passenger transport
_,	(D.D. DODOWI)	'	.,
T7 4 37 5	10/5 1		169
v 4, N 2;	1967 June		100

H991	NEELAMEGHAN, GOI	PINATH, AND	DENTON
ZC3	T 19 (A4)into (A1)begins By Number of passengers animals Note.—Add the given figure and read it as an integer. (Illustrative) 3 passengers	ZH28 ZH3	Asphalt Tar Construction and repair equipment Vehicle Garbage and refuse Chemicals Liquid
ZC45 ZD ZD1 ZD4 ZD5 ZD8	45 passengers By Passenger category School children Convict Police Military personnel T19 (A4) into (A1) ends	ZHF ZHF1 ZHF4 ZHF5 ZHF6 ZHG ZHG5	T 3 (A6) into (A2) begins Flammable Alcohol Petrol Kerosene Oil and fat Non-inflammable Water
ZE ZE1 ZE2 ZE3 ZE5 ZE6	By Animal transport Cattle Horse Pig Sheep Fowl	ZHG7 ZHG8 ZHJ	Milk Beverage T3 (A6) into (A2) ends Food Grain
ZF	By Cargo transport	ZHJ2 ZHJ3 ZHJ4	Vegetable Meat
ZG ZGA ZGB		ZK ZK1 ZK2 ZK3 ZK5 ZK5	Perishable T8 (A5) into (A1) ends T20 (A4) into (A1) ends By Recreational use Racing Rallying Camping Touring Caravan Globe-trotting
ZGA54 ZGB104	(Illustrative) 5,400 Kg 10,400 lb	ZL ZLI	By Medical Hospital use Ambulance
ZGZ	By Cargo category	ZL3 ZL5 ZL6	Mortuary Blood mobile X-ray unit
ZH ZH1 ZH11 ZH12 ZH13 ZH14 ZH15 ZH18 ZH16)	T8 (A5) into (A1) begins Building material Dry Log Earth Brick Stone Cement Metal Other Note.—To be derived by (SD)	ZLB ZM ZM1 ZM3 ZP ZP1	Dental Isolation By Funeral use Hearse Funeral car By Mass communication purpose Educational Audio-visual Advertising
ZH1(D291) ZH2 ZH26	(Illustrative) Plywood Semi-solid Concrete	ZR ZR5 ZR8	By Portability Floatable Air-droppable

ZS	By Service		Note.—(1) For twen- tieth century: Use the last
ZT ZTI ZT2 ZT3 ZT5 ZT6 ZT8	T 21 (A4) into (A1) begin By Service area Village City Suburban Inter-city Inter-district Trans-continental	m96 65	two digits of the year. (2) For nincteenth century: Use the last two digits of the year with "m" prefixed to them. (Illustrative) 1896
ZV ZV1 ZV5 ZV53 ZV6 ZV8	By Service category Utility Police Patrol Prison Taxi cab	E225 F	By Model Note.—To be derived by (AD). (Illustrative) Electra 225 Fleetwood
ZVF ZVJ ZVM ZVP ZVS	Commercial Civil Military Amphibian Multipurpose	A	By Company name Note.—To be derived by (AD). (Illustrative)
243	T 21 (A4) into (A1) ends T 18 (A3) into (A1) ends T 18 (A3) into (A1) ends	B C	Buick Cadillac Note.—The (IN) for the Brand is to be got by combining the (IN) for
(1)	By make Note.—To he derive by (GD). (Illustrative)	d	the Company name, for the Model, and Year, in that sequence, the com- ponent (1N) being con-
(42)	Japan make		nected by "=".
(73)	US make		(Illustrative) ·
(A)	By Brand	(B = E225 = 66)	Buick Electra 225, 1966
•	By Year	(C = F = 65)	Cadillac Fleetwood, 1965

992 EXAMPLES

1 The examples given in this section have been selected to demonstrate the capacity of the design methodology to provide co-extensive (CN) for very specialised micro subjects going with the (BS) Motor Vehicle Production. It will be seen that the combination of (QI) may be as high as 102 (QI) in a document. Every document may not, however, present that many number of (QI). It has been mentioned in Sec 112 that at one extreme a document may require only the (BC) Number for its classification while at the other extreme another document may require the attachment to the (BC) Number a large number of (IN).

2 Due to the incidence of a large number of isolate ideas in the documents on Motor Vehicle Production selected as examples, the (CN) may appear to be inordinately long. This does not mean that the (CN) constructed according to the depth version of the Colon Classification will be inordinately long for every document. The new methodology provides for the construction of expressive co-extensive (CN) for macro as well as micro subjects. This facilitates the rapid, pinpointed retrieval of the entries.

3 As mentioned in Sec 951, a new method of rendering the Feature Headings has been adopted in the examples. This is only an experiment.

Its helpfulness for use in a periodical documentation list has to be examined. It may be noted that the Feature Heading for a document derived on the basis of a co-extensive (CN) by the use of the Chain Procedure exposes almost all the relevant isolate ideas incident in the document classified. Such a Feature Heading may serve the purpose of an informative abstract. An abstract may be needed only to give such information as to the status of the author or the standard of the work, — that is ideas that are not represented in the (CN) and therefore omitted in the Feature Heading.

```
1 D93C1.(B=W=C)-ZK1Z7B11=4-ZuB11=4-Zr13-Zn5=4-Zm5=5-Zk2
        =9-X1-S170A68-L6-B8-95-zL90
                                                        where
    D93C1,
                              MOTOR CAR,
                              BRAND: Borg Warner Cycolac.
    (B = W = C)-
    ZKI-
                              PURPOSE: Racing,
                              WEIGHT: Dry weight 11-4 cwt,
DIMENSION: Overall length 13', Overall
width 5' 4', Ground clearance 5' 5', Overall
height 2' 9',
     27B11 = 4
    Zr13-Zn5=4-Zm5=5-
      Zk2 = 9-
                              ENGINE: Petrol engine, Maximum power
    X1-S170A68-L6-B8-
                                 170 bhp at 6,800 rpm, Cylinders 6, Air-cooled,
                              BODY: Plastics,
WHEEL: Wheel base 90"
    zL90
   PLASTICS BODY for racing sports car. (Atom world. 28, 6: 1965;
       28).
2 D93C1,(F = M)-ZC4-X1-L6-H170-9ZJ1-9F-9D-9B-9w70(v1)-9w10(v2)
       -7k6
    D93C1,
                              MOTOR CAR.
                              BRAND: Ford Mustang,
    (F = M)
    ZC4
                              PURPOSE: Passenger transport, Number of
                                passengers 4.
    X1-L6-H170-
                              ENGINE: Petrol engine, Cylinders 6, Dis-
                                placement 170 cu in,
    9ZJI-9F-9D-9R-
                              BODY: Frame: Welded steel; Hardtop.
                                Convertible, Sedan,
    9w70(v1)-9w10(v2)-
                              SEAT: Rear seat: Bench type; Front seat:
                              Bucket type,
TRANSMISSION: Automatic
   FORD TAILORS SPORTY Mustang to meet driver specs. (SAE j. 72,
       5; 1965; 36-46).
3 D93C1, (F=Z=66) – ZwB26 – ZsH42=5 – ZsB57=5 – Zr15=5 – Zr05=1 – Zm6=
       5-Zk4 = 1-X1-S112A48-P137A30-N9 = 1-L6-JVGO-H211-G2 = 33-
       CHZ = 381VT - CD9B1 = 1 - CB66 - BK - BCB - BC1 - 770 (2 - zWR - z52) - 710
       (zWR-zS6-zS2) --zL9=7-zH4=1-zG4=9-zC-zB4=5-z95-zz6=71A13
-zxE-zv-zu4-z13=346-zsE1-zsD1=412-zsC2=414-zsB3=163-zq2-
       zmB-zkF-zki-zhB=B-zaB9-w5-u16=5-t20=6-r4=75-pJ36-kZG-
       kVR-kVJ-kVG-kV5-kR0(N9=91-D139)-kO0(N9=63-D214)-aR15
       -a1H24-a1B24
    D93C1,
                              MOTOR CAR.
    (F=Z=66) BRAND: Ford Zephyr 1966,
ZwB26-ZsH42=5-ZsB57 WEIGHT: Kerb weight 26 cwt, Weight distri-
       = 5-
                                bution on rear axle 42.5%, Weight distribu-
                                tion front axle 57.5%
    Zr15 = 5 - Zn5 = 1 - Zm6 =
                              DIMENSION: Overall length 15' 5", Overall
       5-Zk4 = 1-
                                width 5' 1", Ground clearance 6.5", Overall height 4' 1",
```

X1-S112A48-P137A30-VT-CD9B1 = 1-CB66-BK-BCB-BCI-

770(2-zWR-zS2)-710 (zWR-zS6-zS25)-

zL9 = 7 - zH4 = 1 - zG4 = 9 zC-zB4 = 5-z95-zz6 =7A13-

zxE-zv-zu4-zt3 = 346zsE1-zsD1 = 412-zsC2=414-zsB3=163-zq2 $zmB-zkF\cdot zk1-zhB=B$ zaB9-

w5-u16=5-t20=6-r4=75-pJ36-

kZG-kVR-kVJ-kVGkV5-kR0(N9=91-D139)-kO0(N9 = 63-D214)-

aR15-a1H24-a1B24

I-S112A48-P137A30- ENGINE: Petrol engine, Maximum power-N9=I-L6-JV60- I12 bhp at 4,800 rpm, Maximum torque H211-G2=33-CH2=381 137 lb-ft per sec at 3,000 rpm, Compression ratio 9·1, Cylinders 6, Cylinder arrangement V-type 60°, Displacement 211 cu in, Stroke distance 2·33° per sec; Carboretor: Zenith 381 VT brand, Choke diameter 1'1"; Fuel pump: AC operated; Combustion chamber: Toroidal; Valve gear: Overhead pushrod and rocker.

SUSPENSION: Rear: Independent, Cylindrical helical spring, Telescopic damper; Front: Cylindrical helical spring, Anti-roll bar, Coaxial telescopic damper.

WHEEL: Wheel base 9' 7", Track: Rear 4' I"; Front 4' 9"; Rim: Pressed steel disc, Width 4' 5", 5-stud fixing; Size 6.70-13 TRANSMISSION: Gearbox: Synchromesb type, Reverse speed, Forward speed 4; Gear ratio: Reverse 3.346 to 1, Top 1 to 1, Third 1.412 to 1. Second 2.144 to 1, First 3-163 to 1; Final drive: Double arm: Rear axle: Sprung; Shift: Manual, Hydrostatic; Clutch: Borg and Beck; Engagement: Diaphragm, Diameter 9"

STEERING: Recirculating ball and nut, Steering wheel diameter 16.5", Gear ratio 20.6 to 1; Number of turning circles lock-to-lock 4.75, Diameter of turning circles

between kerbs 36'. BRAKE: Girling, Hand assistance, Servo, Vacuum, Hydraulic; Rear brake: diameter 9.91", Swept area 139 sq in; Front brake: Disc diameter 9.63°, Swept area 214 sq in,

MAINTENANCE FACTOR: Fuel tank capacity 15 Imp gallons; Tyre pressure: Normal driving: Rear 24 psi, Front 24 psi.

FORD V-six models: Analysis of the design of the largest of the British Ford range. (Autom eng. 1966 May; 164-72).

4 D93C1.(GT = B)-ZyB18 = 3-ZwB15 = 3-ZsH43 = 7-ZsB56 = 3-Zr13 = 1-Zn5-Zm6 = 7-Zk4 = 5-Zh4B15 = 8-Zc10(b12-a38)-X1-S63A58-P67A35-N9-L4-K2 = 73 - H70-G3-CH2S-CB66 - C8-C1-BCB-BC1-9ZV-9ZJ6-9s5-770(25-zW6-zS2)-710(23-zWM-zS6-zS2)-zJ4-zC-zB3 = 5z94-z1D = C41-zzU-zz5 = 2A13-zxE-zu4-zt15 = 4-zsE4 = 11-zsD5 =73-zsC8 = 87-zsB15 = 4-zvI-zn4 = 11-zL7 = 7 = 5-zf1-ze4-zc6 = 25-w8u15-r3 = 5-pJ25-pC28-kZG-kR0(M7-G1 = 25-D55)-kQ0(N9-G1 =25-D144) - fH10-B50-f1X1-f1U-f1T-f12C-c44-c31-c231-b54 - aR10aN9 = 5-aM7-aK60-aJ60-aG1-aF12-aC1 = 5-aB4B6-a7H26-a7B24a3H26-a3B24-a1H22-a1B20 whore

D93C1.

(GT = B)-ZyB18 = 3-ZwB15 = 3- $Z_sH43 = 7 - Z_sB56 = 3 -$ MOTOR CAR, BRAND: GT Bond,

WEIGHT: Laden weight 18-3 cwt, Kerb weight 15.3 cwt, Weight distribution on rear axle 43.7%, Weight distribution on front axle 56 3%.

Zr13 = 1-Zn5-Zm6 = 7-Zk4 = 5

Zh4B15=8-Zc10\b12-a38\-X1-S63A58-P67A35-N9-L4-K2=73-H70-G3-CH2S-CB66-C8-C1-BCB-BC1-

9ZV-92J6-

9s5-770(25-zW6-z\$2)-710 (23-zWM-z\$6-z\$2)

zL7 = 7 = 5-zJ4-zC-zB 3 = 5-z94-z1D = C41zzU-zz5-2A13-

zxE-zu4-zt15 = 4-zsE4 = 11-zsD5 = 73-zsC8 = 87zsB15 = 4-zr1-zn4 = 11-zf1-ze4-zc6 = 25

w8-u15-r3 = 5-pJ25pC28-

kZG-kR0(M7-G1 = 25-D55)-kQ0(N9-G1 = 25-D144)-

fH10(B50)-f1X2-f1Uf1T-f12C-c44-c31c231-b54-

c44-c31-c231-b54-

aR10-aN9=5-aM7aK60-aJ60-aG1-aF12aC1=5-aB4B6-a7H26a7B24-a3H26-a3B24a1H22-a1B20 DIMENSION: Overall length 13' 1", Overall width 5', Ground clearance 6' 7", Overall height 4' 5",

SPEED: Maximum on top gear 15-8 mph, POWER SUPPLY: Battery 12 v. 38 amp, ENGINE: Petrol engine, Maximum power 63 bhp at 5,800 rpm, Maximum torque 67 lb-fit at 3,500 rpm, Compression ratio 9 to 1. Cylinders 4, Bore diameter 2-73° Displacement 70 cu in, Stroke distance 3° per sec, Carburetor: 2SU brand; Fuel Pump AC operated; Oil filter: Full Flow renewable; Valve gear: Overhead pushrod and rocker,

BODY: Double backbone frame, Fibreglass reinforced panel,

SEAT: Pvc headlining,

SUSPENSION: Rear: Independent, Swinging axle, Transverse leaf spring, Telescopic damper; Front: Independent, Kingpin between double wishbones, Coiled spring, Antiroll bar Telescopic damper.

Antiroll bar, Telescopic damper,
WHEEL: Wheel base 7'7.5"; Front and rear
track 4'; Rim: Pressed steel disc, Diameter
3'5", 4-stud fixing; Tyre: Dunlop C41,
Tubeless, Size 5'2-13,

TRANSMISSION: Gearbox: Synchromesh type; Forward speed 4; Gear ratio: Reverse 15.4 to 1, Top 4.11 to 1, Third 5.73 to 1, Second 8.87 to 1, First 15.4 to 1, Hypoid bevel gear, Final drive gear ratio 4.11 to 1; Clutch: Disc type, Single, Dry, Diameter 6.25".

STEERING: Rack and pinion, Steering wheel diameter 15°; Number of turning circles lock-to-lock 3-5, Diameter of turning circles between kerbs 25°. Diameter of turning circles between walls 28°,

BRAKE: Girling; Rear brake: Drum diameter 7°, Shoe width 1.25°, Swept area 55 sq in; Front brake: Disc diameter 9°, Shoe width 1.25°, Swept area 144 sq in.

SAFETY PROVISION: Head light 40 watts; Windshield washer: Plunger type; Windshield wiper; Self-parking; Seat belt with anchorage.

COMFORT: Heating facility, Fresh air ventilation, Single speed fan, Interior carpet trimming.

MAINTENANCE FACTOR: Fuel tank capacity 10 Imp gallons, Cooling system oil 9:5 pints, Engine sump oil 7 pints, Oil change every 6,000 miles. Final drive oil 1 pint, Slip differential oil change every 12,000 miles, Gearbox oil 1:5 pints. Grease application 4 points every 6,000 miles; Tyre pressure: Full load driving: Rear 26 psis, Front 24 psi;

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Fast driving: Rear 26 psi, Front 24 psi;
                                  Normal driving: Rear 22 psi, Front 22 psi
     BOND EQUIPE GT 1,147 CC. (Autocar., 1964 Jan 3; 12-6).
5 D93C1, (P = T = 64)-Zn6 = 1-X1-S140A20-L6-JV-CJ1-9ZS-9B-9p4-zL9 =
        7-zz6 = 5A14-zb14
    D93C1,
                               MOTOR CAR,
BRAND: Pontiac Tempest 1964,
    (P = T = 64)-
    Žn6 = 1-
                               DIMENSION: Overall width 6'
    -S140A20-L6-JV-
                                            Petrol
                                                      engine,
                                                                  Maximum
                            ENGINE:
      CJ1-
                                  power 140 bhp at 2,000 rpm, Cylinders 6,
                                  Cylinder arrangement V-type, Carburetor 1,
   S-9B-
                            BODY: Swept hip frame, Sedan,
                             DOOR: 4
    z9=9-zB14-zz6=5A14 WHEEL: Wheel base 9' 9"; Rim width 14",
                                  Tyre size 6:50-13.
   LAGERGREN (J H). Redesigned tempest uses separate frame.
       (SAE i. 72, 4; 1964 April: 48-52).
6 D93C1 (V = V = 66)-ZwB14 = 5-Zr13 = 5 = 6-Zn5 = 3-X1-S47A52-P62A28-
        L6-K3-H110-9ZY-9t5-zL7=8-zJ4=3-z1V-zz5=5A14-w8-t15=1-r3
        =2-kZG-kR0 (M8-K7-K1-G1=25-D35)-kQ0 (M8-L2-K7-G1=25-
        D65)-fH1-f9L-f9b
    D93C1,
(V = V = 66)-
                               MOTOR CAR.
                               BRAND: Vauxhall Viva 1966
                                WEIGHT: Kerb weight 14.5 cwt,
    ZwB14 = 5-
    Zr13 = 5 = 6 - Zn5 = 3 -
                               DIMENSION: Overall length 13' 5.6", Overall
    width 5' 3"
X1-S47A52-P62A28-L6- ENGINE: Petrol engine, Maximum power
                                  47 bhp at 5,200 rpm, Maximum torque 62 lb-ft at 2,800 rpm, Cylinders 6, Bore diameter 3", Displacement 110 cu in,
       K3-H110-
    9ZY-
                               BODY: Unitized construction, SEAT: Pvc cover,
    915-
                               WHEEL: Wheel base 7' 8", Track: Front and
Rear 4' 3", Tyre: Viva brand size 5:50-14,
STEERING: Rack and pinion, Gear ratio
    zL7 = 8-zJ4 = 3-z1V-zz5
       = 5A14 -
    w8-t15=1-r3=2-
                                  15.1 to 1 Number of turning circles lock-to-
                               lock 3-2,
BRAKE: Girling, Rear brake: Drum dia-
meter 8", Trailing shoe, Leading shoe, Shoe
meter 8", Trailing shoe, Leading shoe, Shoe
    kZG-kR0/M8-K7-K1 ·
      G1 = 25 - D35 \cdot kQ0
       (M8-L2-K7-G1=25-
                                  width 1.25", Swept area 35 sq in; Front brake: Drum diameter 8", Number of shoes
       D65)-
                                  2, Trailing shoe, Shoe width 1-25', Swept
                                  area 65 sq in.
                               SAFETY PROVISION: Head light, Lucas,
    fH1-f9L-f9b
                                    Rectangular.
   VAUXHALL NEW body structure and front and rear suspensions and
        larger 1159 cm2 engine for the Viva model. (Automobile engineer,
        1966 Nov: 479-83).
7 D93C1,(V = D)-ZVP-Z5F-Z57-Zz60-ZuB10-Zr2=6-Zk2=6-Zj25-X1-M4-
        L2-H43-BAH-B8-zk6-zf8
                                                            where
    D93C1,
                               MOTOR CAR,
    (V = D)
                               BRAND: Van Doome's DAF,
                               PURPOSE: Amphibian, Marshy mountain-
    ZVP-Z5F-Z57-Z260-
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ous terrain, 60% gradient climb,

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ZuB10-
                             WEIGHT: Dry weight 10 cwt,
                             DIMENSION: Overall length 2' 6", Overall
    Zr2=6-Zk2=6-
                               height 2' 6",
                             SPEED: Mean maximum speed 25 mph
    X1-M4-L2-H43-BAH-
                             ENGINE: Petrol engine, Four stroke, Cylinders 2, Displacement 43 cu in, Magneto
      B8-
                                ignition, Air-cooked.
                             TRANSMISSION: Automatic shift, Multiple
    zk6-zf8
                               disc clutch,
   "PONY" GALLOPS on land and water. (Autom world, 28, 4; 1965; 31).
8 D93D1.(F = B)-ZVS-ZuA38-ZsH53-ZsB47-Zr12=8-Zm6=6-X1-S105A63-
       P146A38-L6-H170-9zR4 = 1-9zP5 = 1-9zC33-770(zW1)-710(zWM)-
       zJ4 = 9 - zy4 - ztZ2 - zu3 - zsD1 - zsC1 = 9 - zsB3 = 4 - zkF - zjG - pJ34
    D93D1,
                             MOTOR TRUCK,
    (F=B)-
                             BRAND: Ford Bronco,
                             PURPOSE:
    ŽVS-
                                            Multipurpose,
    ZuA38-ZsH53-ZsB47-
                             WEIGHT: Dry weight 38 cwt, Weight distri-
                               bution on rear axle 53%, Weight distribution
                               on front axle 47%
                             DIMENSION: Overall length 12' 8", Ground
    Zr12 = 8-Zm6 = 6-
                               clearance 6' 6",
                             ENGINE: Petrol engine, Maximum power 105 bhp at 6,300 rpm, Maximum torque 146 lb-ft per sec at 3,800 rpm, Cylinders
    XI-S105A63-P146A38~
      L6-H170-
                               6, Displacement 170 cu in,
                             CARGO BODY: Length 4' 1", Width 5' 1".
    9zR4 == 1-9zP5 ==
      1-9zC33-
                               Capacity 33 cu ft,
                             SUSPENSION: Rear: Leaf spring; Front:
    770(zW1)-710(zWM)-
                               Coiled spring,
    7 \stackrel{?}{4} = 9 -
                             WHEEL: Front and rear track 4' 9'
                             TRANSMISSION: Gearbox: 4-wheel drive, 3 forward speed, 2 transfer case; Gear ratio:
    zz4-zu3-ztZ2-zsD1-zsC1
       =9-zsB3=4-zkF-
                               Third I to I, Second I.9 to I, First 3.4 to 1;
      zjG-
                               Manual shift, Synchronised counter shaft,
     pJ34
                             STEERING: Diameter of turning circles
                               between kerbs 34'.
    GESCHELIN (J). Fords versatile Broneo, 4-wheel drive, utility has 3
        models. (Autom industr. 1965 July 15; 45).
9 D93D3, (F=705)-Zz3-ZyD1518-Zn8-Zk13-Zi70-X5-S600A50-9ZJ6-9ZB-
       92R40-C871-c83-c41-c31-c25
                             TRUCK TRAILER
    D93D3.
    (F = 705) -
                             BRAND: Ford 705.
                             PURPOSE: Gradient climb 3%,
    Zz3-
                             WEIGHT: Laden weight 1,518 cwt.
    ZyD1518-
    Zn8-Zk13-
                             DIMENSION: Overall width 8'. Overal
                               height 13',
    Zi70-
                             SPEED: Mean maximum speed 70 mph,
    X5-S600A50-
                             ENGINE: Gas turbine, Maximum power
                               600 bhp at 5,000 rpm,
    9ZJ6-9ZB-
                             TRAILER BODY: Frame: Fibreglass rein-
                               forced panel, Tandem axle assembly,
    9ZR40-
                             CARGO BODY: Length 40'.
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c871-c83-c4-c31-c25 COMFORT: Slight pressurisation, Air-conditioning, Defroster, Fresh air ventilation, Blower equipment.

MADDOX (C F). Super transport turck to match a super highway system. (SAE j. 73, 7; 1965 July; 58-61).

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 2 Sec 931
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 3 Sec 31
                tion engineering'. (DRTC seminar (4) (1966). [Papers and
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                and . Locomotive production engineering: Depth classification. (Lib sc. 3; 1966; Paper P, Sec 52).
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                7 Sec 961
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                Paper C).
 8 Sec 51
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                for depth classification. (DRTC seminar (3) (1965). [Papers
                and proceedings]. Paper C, Sec 8).
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10 Sec 921
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16 Sec 111
                ccedings]. Paper G).

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17 Sec 51
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                A, Sec 8).
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              —. Prolegomena to library classification. Ed 3. (In press).
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                     Ibid. (Part K).
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STATEMENT OF MAN HOURS

sn	Particulars			Man Hours	
	eading of reference books on the sul	oject			18
21 Sc	Scanning 500 articles Formulation of kernal terms (for 75 a Preparation of schedule	rticles)			66
					210
4 C	lassification of 75 articles				25
5 F	eature Heading work				20
	reparation of the index to schedule				30
7 W	riting of the text of the article				60
	yping work				60
9 R	evision work			• •	16
					505