

STOLEN

motorcycle information booklet



Don't get burnt with bad Numbers!



MOTORCYCLE THEFT

The problem

With the increasing popularity among the American people of "motorcycling", and the subsequent increase in the number of motorcycles registered throughout this country, law enforcement is faced with an ever-increasing and disproportionate problem in the theft of motorcycles. While theft rates increase at an alarming rate, the recovery ratio of these vehicles tends to operate in reverse. Conversely, the automobile recovery rate is consistently much higher than the recovery rate for motorcycles. These facts should indicate to law enforcement that this problem is one which will require special training and constant attention.

There are numerous reasons for the rise in the theft rate of motorcycles and the seeming laxity on the part of law enforcement agencies in their ability to recover a higher percentage of these vehicles. A general lack of knowledge of the magnitude of the total problem is probably the single most contributing factor.

Officers generally neglect to make themselves aware of the various numbering systems used by motorcycle manufacturers to identify and register vehicles in the United States and Canada.

A recent study conducted by the STATE Highway Patrol indicates that approximately one out of every ten motorcycles registered in the STATE is incorrectly registered. The predominant errors indicated involved motorcycles, other than Harley-Davidson, being registered by engine numbers rather than frame numbers as required in that state, also motorcycles being registered by partial numbers including both engine and frame numbers. In many instances the model designator prefix was left off when the vehicle was originally registered which, in some cases, will result in several motorcycles being registered by the same V.I.N.

On the surface this appears to be strictly a problem of the selling motorcycle dealer and the motor vehicle registration clerks; however, the study further indicated that approximately 10% of all motorcycles reported stolen in the STATE are incorrectly registered. Unfortunately, this fact went unnoticed by the law enforcement officers who obtained the original vehicle theft reports from the victims.

Many officers may be aware of the numbering systems and still be unable to determine whether a number is a "factory stamp" or a "restamp" done by an individual in order to conceal the true identity. Considerable training and constant observation is required to develop this talent. Familiarization with the characteristic dies of several manufacturers is necessary in order to become proficient at altered number detection.

The general appearance of a motorcycle can easily be altered by the addition or removal of interchangeable parts, thus making visual recognition of a stolen vehicle extremely difficult. The changing of such items as gas tanks, seats,

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exhaust pipes, fenders and other interchangeable component parts is easily accomplished and can often completely change the appearance of a motorcycle.

Many motorcycles cannot be locked. In certain other instances the owners of motorcycles remove the locks, considering them of relatively little value and "more trouble than they are worth".

Motorcycles are easily concealed and are often stolen by driving or rolling the vehicle into the rear of a van-type truck or trailer.

The so called "outlaw" motorcycle groups are normally quite active in the theft of motorcycles. Few of them work or have any other visible means of support, however, most will be seen operating motorcycles, which if legitimately obtained would have cost many hundreds of dollars. Often these vehicles contain numerous stolen parts or are stolen vehicles from which the factory stamped numbers have been removed and replaced by numbers stamped by the thief. The extensive knowledge possessed by some "outlaws" demands that law enforcement officers become extremely proficient in the detection of altered numbers and the processes used to destroy the original numbers assigned and stamped by the manufacturers.

Outlaw groups have, in the past, generally limited their activities to the larger machines, most noticeably Harley-Davidson. However, with many of the foreign motorcycle manufacturers marketing larger and more powerful machines, it is not unreasonable to anticipate outlaw groups and individuals will take an interest in them also.

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One of the problems presented to law enforcement when dealing with outlaw motorcycle groups is our inability to effectively communicate with them or to gain informants willing to disclose their dealings. The groups, normally comprised of social misfits or outcasts, demand loyalty under threat of personal injury or even death.

Another facet of the problem is that motorcycles, once stolen, are easily "cannabalized". The identifiable parts are quite often disposed of by burial or are cast into a body of water. The unidentifiable parts are then sold or utilized by the thief or members of his groups.

Numbering Systems

Generally, each motorcycle manufacturer uses a different numbering system for its products. However, as a general rule, all motorcycles will bear both an engine number and a frame number. In the vast majority of states, motorcycles are registered by the complete frame number which is considered to be the true V.I.N.

Law enforcement officers should familiarize themselves with the types of numbering systems used by motorcycle manufacturers and attempt to remain abreast of any changes on a year-to-year model basis. This can best be accomplished by developing a close working relationship with manufacturers, importers, distributors, and dealers who are best suited to provide this type of information. The information provided herein is designed to provide all law enforcement officers with the most common basic location where motorcycle identification numbers may be located. It is not all inclusive due to the wide range of manufacturers and the models which they produce. Only the vehicles which account for the greatest portion of the motorcycle theft problem will be covered. Any additional information needed should be obtained from the manufacturer or dealer handling the type of vehicle under investigation.

BMW Motorcycle

This motorcycle is produced in Germany and is presently being distributed on the West Coast by Earl Flander Motorcycle Co., 200 West Walnut St., Pasadena, California, phone (213) 681-6451. BMW Motorcycle makes three major models as follows: The R50 displacement of 500 cc, the R60 and R69S, both of which are 600 cc displacement. The frame number will be found on a thin metal plate riveted to the frame head between the fork clamps in the front. The number is also stamped into the frame head on the right hand side. The motor number is found stamped above the right hand cylinder in an aluminum casting. Engine number and frame number should be the same. From 1954 to 1960, BMW produced an R26 single cylinder model and from 1961 to 1967 the R27 single cylinder model. Number appears in the same location on the frame, the motor number appears on the right side below the cylinder on the models.

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BSA Motorcycles (British Small Arms Corp.)

The BSA Motorcycle is manufactured in England and distributed throughout the United States and Canada.

Prior to June, 1966, there was no correlation between frame and engine numbers. Beginning in June 1966, the frame and engine numbers are identical. Although these motorcycles are registered in most jurisdictions by the frame number, an officer should carefully check both numbers through registration and stolen vehicle files, since a dealer may have improperly registered the motorcycle or may have mistakenly obtained a new certificate of ownership through an engine change.

The engine number is stamped directly into the sandcasted metal on the left side of the crankcase below the cylinder (left side when seated in normal position on the motorcycle). When authentic, it is never found on a smooth surface. Alterations become apparent when the front corner loses its beveled edge, or a portion of the cylinder has a smooth appearance in contrast to the surrounding area. Usually the file or grinding marks will indicate the area of alteration.

Frame numbers are stamped on the left side of the frame below the steering head on a diagonal bar. On the 1965 and earlier models, this number was located on the frame near the front of the gas tank. On the 1966 and later models, the frame number was stamped much lower on the frame. It will be found almost directly in front of the engine number.

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Alterations to the frame numbers can normally be detected by close inspection of the area in which the numbers are stamped. Numbers that are illegible due to heavylayers of paint over frame number locations can often be a good indication of an attempt to obscure a restamped number or to prevent officers from being able to read the true frame number on a stolen vehicle. Actual experience in the observation of BSA numbers is needed to determine if the numbers are factory stamped or restamped by an individual to prevent detection of a stolen vehicle or frame. Grind marks in the area of the frame number are a good indication of a possible restamped number. Bear in mind that BSA frames are produced from round tubular metal. A flat spot on the frame in the area of the frame number should also be suspect. On late model BSA motorcycles, manufactured since 1966, the engine and frame numbers should be the same and any deviation from this fact should be investigated.

BSA Inc. in the United States maintains two distributorships. The distributorships have proven to be invaluable sources of information by providing law enforcement with identification and assembly data.

BSA Motorcycle Western, 2745 East Huntington Dr., Duarte, California, P. O. Box 337, telephone (213) 359-9271 is the BSA distributor for the nineteen Western States. Mr. Cates is the Service Manager and will, upon request, provide all available information to law enforcement agencies.

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BSA Motorcycle Corp. 639 Passaic Avenue, Nutley, New Jersey, services the remainder of the United States. Requests for information may be directed to Mr. Don Brown at that location.

The following annex provides information and examples of the BSA numbering system in effect since 1955. Any deviation from this information should be investigated.



1-69, January 9, 1969 ENGINE/FRAKE NUMBERING. All Models

A new system of engine/frame identification has been adopted for all BSA motorcycles.

EXAMPLE: NC 06543 A65L

- The first letter indicates the MONTH of manufacture--the second letter indicates the YEAR of manufacture.
- The next five numbers indicate the production number.
- The last digits indicate the model and will vary from three to five, according to model.

DATE OF MANUFACTURE

1ST LETTER A - Janwary B - February C - March D - April E - May G - June H - July J - August K - September N - October P - Wovember X - December

2ND LETTER

. . . .

C	600	indicates	1393	model
D	-	indicates	1970	model
E	-	indicates	1971	model
G	-	indicates	1972	model
H	-	indicates	1973	model
J		indicates	1974	model
K	-	indicates	1975	model
N	-	indicates	1976	model
P	-	indicates	1977	model
X		indicates	1978	model
A	-	indicates	1979	model
B	-	indicates	1980	model

To avoid confusion, the letters F, I, O and L have not been used.

BSA ANNEX

1-69, January 9, 1969. ENGINE/FRAME NUMBERING All Models (Page 2)

PRODUCTION NUMBER

Each season is to start at 00100--leaving the first 99 for experimental use. At the start of each season the numbering should start again at this figure, the numbers being taken consecutively within a range of models--therefore, any unit within the range will take the next number, regardless of model.

The zero figures must be inserted to avoid confusion, ie., the first 'B' group will adopt number 00100, regardless of whether it is a B25 or B44. When the next build of models within that range takes place, it will use the next number.

MODEL NUMBER CODE

Rocket 3	-	A75R	Royal Star	-	ASOR
Lightning		A65L	Starfire		B255
Firebird	-	A65F	Victor Special	-	B44VS
Thunderbolt	-	A65T	Shooting Star	-	B44SS

EXAMPLE: NC 06543 A65L (October 1969 Model A65 Lightning #06543)

ENGINE/FRAME NUMBERS

1966 MODEL BSA MOTORCYCLES		
A65-2SP SPITFIRE MK11	A655-4087	A65S-4087
A65-IT THUNDERBOLT	*A65T-3327 A65T-1076	*A50C-3327 A65T-1076
B44-VE VICTOR ENDURO	*B44E-101 B44E-5166	*C15C-3119 B44E-5166
* Early 1966 production		
1967 MODEL BSA MOTORCYCLES		
A65-2H HORNET	А65НА-5116	A65HA-511
A65-2L LIGHTNING	A65LA-5116	A65LA-511
A50-IR ROYAL STAR	A50RA-5116	A50RA-511
B44-SS SHOOTING STAR	B44R-5116	B44R-5116
A65-2SP SPITFIRE MK111	A65SA-5116	A655A-511
B25 STARFIRE	BC25-5116	BC25-5116
A65-IT THUNDERBOLT	A65TA-5116	A65TA-511
B44-VE VICTOR ENDURO	B44EA-5116	B44EA-511
1968 MODEL BSA MOTORCYCLES		
A65-2L LIGHTNING	A65LB-5116	A65LB-511
A50-IR ROYAL STAR	A50RB-5116	A50RB-511
B44-SS SHOOTING STAR	B44B-5116SS	B44B-5116
A65-2SP SPITFIRE MKIV	A65SB-5116	A65SB-511
B25 STARFIRE	B25B-5116	B25B-5116
A65-IT THUNDERBOLT	A65TB-5116	A65TB-511
B44-VS VICTOR SPECIAL	B44B-5116VS	8448-5116

ENGINE/FRAME NUMBERS

1969 MODEL BSA MOTORCYCLES

Early	1969 production:		
	A65-FS FIREBIRD SCRAMBLER	A65FC-5116	A65FC-5116
	A65-2L LIGHTNING	A65LC-5116	A65LC-5116
	A75 ROCKET 3	A75R-5116	A75R-5116
	A50-IR ROYAL STAR	A50RC-5116	A50RC-5116
	B25 STARFIRE	B25C-5116S	B25C-5116S
	A65-IT THUNDERBOLT	A65TC-5116	A65TC-5116
	B44-VS VICTOR SPECIAL	B44C-5116VS	B44C-5116VS

Later 1969 production: See BSA Bulletin #1-69

Bultaco Motorcycle

This motorcycle is of Spanish origin and is of the twostroke design. Primarily this machine is used for off street riding in competition. Only two models come equipped with lights for street riding that are found in any number in this country. The frame number on all models will be started by the code letter B and then the number. The engine number is the same as the frame number with the exception that the letter M preceeds the sequential motor number. These numbers are found on the right fork head area of the frame between the front fork clamp. The motor number is located on the top center of the engine casing. The 100 cc Lobito has the engine number under the carburetor on the left case at the rear. The motorcycles are primarily found in the following displacements: 100 cc, 125 cc, 175 cc, 200 cc, and 360 cc. For further information on this motorcycle, investigators should contact Bultaco Western, 10929 Chandler Blvd., North Hollywood, Calif. phone (213) 877-2400.

HARLEY-DAVIDSON MOTOR COMPANY

Harley-Davidson Motorcycles are but one of the higher priced motorcycles on this nations highways. The theft of these cycles represents a large economic loss to their owners. At the present time, many of these motorcycles and their component parts are outstanding stolen vehicles. It is, therefore, incumbent that law enforcement officers know what to look for and what action to take when a vehicle of this type is stopped

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or inspected. When an officer has released a motorcycle and its operator because he does not know how to properly inspect it for alterations or improper registration, it is probable that the vehicle will be dismantled. The remains would then be cannabalized and sold as separate items or accessories. The rider then becomes immune from prosecution.

A large number of disreputable motorcycle clubs ride Harley-Davidson motorcycles. This is generally the members most prized possession. In the majority of cases, the method by which they came into possession of the motorcycle and/or the component parts is a questionable matter.

Harley-Davidson motorcycles manufactured prior to the 1970 year model are registered in most jurisdictions by the <u>engine</u> number. This is referred to as the V.I.N. (vehicle identification number). Harley-Davidson is the only motorcycle that has been consistently registered by the engine number. All other motorcycles, including the 1970 model Harley-Davidson motorcycles, are most generally registered by the frame number. When attempting to secure stolen and/or registration information, officers are advised to try both the engine and frame number. In this manner, both possibilities are best covered.

A. The Harley-Davidson Motorcycle manufactured prior to the 1970 year model has several sets of numbers stamped on it during the factory assembly process. All of the assigned numbers have a specific purpose and meaning.

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- 1. Vehicle Identification Number (engine number):
 - a. Located on the left engine case, between, and slightly below, the cylinders on the engine boss (raised flat surface).
 - b. Consists of two numeric characters followed by one or more alpha characters and ending in four or more numeric characters.
 - The first two numbers indicate the year model of the motorcycle engine.
 - (2) The letters indicate engine type and/or cubic displacement at the time of manufacture. The most common models found

on the road are:

(a)	W-WL-WLD	45 cubic inch side valve
(b)	K-KRM	45 cubic inch side valve
		1952-1953
(c)	G-GA	45 cubic inch, 3 wheel servi-car
(d)	KH-KHK-KHRM	55 cubic inch side valve 1954-1956
(e)	XL-XLH-XLCH	55 cubic inch overhead valve, Sportster from 1957
(f)	E-EL	61 cubic inch overhead valve
(g)	U-UL	74 cubic inch side valve
(h)	F-FL	74 cubic inch overhead valve from 194
(i)	FLH	74 cubic inch overhead valve from 1955

(j)	UH-ULH	80 cubic inch	side valve
(k)	S	125 cc single 1948-1952	cylinder
(1)	ST	165 cc single since 1953	cylinder
(m)	В	125 cc single since 1955	cylinder

- (3) The last four numbers are the sequential production numbers.
- (4) EXAMPLE: 54FL3100
 - (a) 54 is the year model
 - (b) FL indicates the engine is a 74 cubic inch overhead valve engine manufactured since 194\$.
 - (c) 3100 is the sequential production number.
- B. Starting with the 1970 year model, Harley-Davidson has changed their identification system in an effort to reach uniformity with the majority of the motorcycle industry.
 - The frame and engine numbers are the same and vehicles will be registered by frame number in most states.
 - 2. V.I.N. (frame) and engine numbers shall consist of:
 - (a) The first two digits will indicate the model:

(1)	FLP,	FLPF	14	
(2)	FLH,	FLHF	2A	
(3)	XLH		3A	

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(4)	XLCH	4A
(5)	GE	5A
(6)	Sprint SS	6A
(7)	MLS-125	7A
(8)	M-65S	8A
(9)	ERS	7B
(10)	MSR	8B

- The next 5 numbers comprise the sequential production number. (All models will start at 10000).
- The second to the last digit indicates manufacturer. (Harley-Davidson)
- The last digit indicates the model year.
 Example 0 (1970), 1 (1971) 2 (1972) Ect.
- C. In addition to the vehicle identification number, there is a series of numbers located on the bottom of both halves of the engine crankcase. These numbers are commonly referred to as the lower case numbers. A complete engine crankcase consists of two matched halves, one right and one left, which are bolted together. These are referred to as right cases and left cases.
 - Lower case numbers are located on the bottom outside edge near the front of the case.

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 These numbers normally consist of three numeric characters, a dash, and four more numeric characters.

(a) The first number is a code number

- (b) The next two numbers indicate the year in which the engine case was produced at the Harley-Davidson factory.
 - (1) The number may be one year earlier than the number stamped on the engine boss. The opposite is not true and indicates further investigation is in order. This situation exists due to the fact that Harley-Davidson pre-stamps a supply of crankcases based on anticipated needs. If the entire supply is not used before the termination of the model year, these cases will be utilized in the next successive year model.
- (c) A dash follows the code and year model numbers.
- (d) The last four numbers are the sequential production numbers for the engine crankcase.

- (1) This number will normally NOT correspond with the engine number.(first digit) number.
- (a) 1-61 cubic inch E or EL model and 74 cubic inch FL and FLH models.
- (b) 2-125 cc S model and 165 cc ST and STU models.
- (c) 3-45 cubic inch W, WL, WLD, G and GA models.
- (d) 4-75 cubic inch and 80 cubic inch V,UL, VH, and VLH models.
- (e) 5-45 cubic inch and 55 cubic inch K, KRM, KH, KHK, KHRM models.
- (f) 6-125125 cc B model
- (g) 7-55 cubic inch "Sportster" XL, XLH, XLC, and XLCH models.
- 4. Thieves quite often overlook the lower crankcase area when altering or removing numbers on a stolen motorcycle. This affords law enforcement an excellent investigative lead as, generally speaking, lower crankcase numbers can be used to determine the true vehicle identification number. (This is accomplished through the cooperation and assistance of the National Automobile Theft Bureau).
 - (a) Assembly records for Harley-Davidson motorcycles manufactured in 1957 or prior years have been destroyed.

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- (b) 1958 Harley-Davidson assembly records are presently filed at NATB Chicago. These are filed by the engine and crankcase number only. There were no frame, fork, or transmission numbers placed on these motorcycles.
- (c) 1959, 1960, and 1961 Harley-Davidson assembly records are available through the Harley-Davidson factory in Milwaukee, Wisconsin. Requests for information from this source should be directed to NATB, Western Division, Chicago, Illinois.
- (d) 1962 through present records are maintained by the NATB, Western Division at Chicago.
- 5. Beginning with the 1962 model year, all of the larger, (two cylinder), Harley-Davidson motorcycles were assigned supplemental identifying numbers. These numbers are stamped on the frame, front forks, and with the exception of the "Sportster" models, on the transmission.
 - (a) The numbers will normally consist of an alpha character followed by three or four numeric digits.

- (b) By supplying these numbers to the NATB in Chicago, factory assembly information can most generally be obtained.
- (c) Requests for identification by frame, fork, and transmission numbers on 1962 and later models require a hand search of the records at NATB. In those instances where component parts numbers are found on a motorcycle, these numbers should be submitted as a group and not separated and submitted under columns: frame, fork, and transmission.
- (d) On all models where identification is requested by submission of the frame number or fork number, indicate the model under observation.
 Example: EL ELW, YLU, YLCU, etc.

Example: FL, FLH, XLH, XLCH, etc.

(e) As a general rule on the FL and XL series, the alpha prefixes listed below will apply. Be aware, however, that there are many deviations from this general rule. This list should be used only as a guide, not as an inflexible rule.
(1) 1962-1963 A and B
(2) 1964 B, C, and D

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(3)	1965	C and D
(4)	1966 and 1967	D,E,F, and G
(5)	1969	J,K, and L
(6)	1970	K and L

6. In past years, Harley-Davidson Motorcycle Co. has, through its dealers, sold replacement engine cases and complete replacement engines. This, of course, has posed an enforcement problem. A thief would often steal a Harley-Davidson motorcycle, purchase a set of replacement engine cases, substitute these cases for the ones bearing the numbers of the stolen cycle and have a motorcycle which gave the appearance of being legitimate:

Beginning late in 1969, Harley-Davidson further cooperated with law enforcement by refusing to sell replacement engines or engine cases unless the old cases, or at least that portion containing the V.I.N. were first turned into the company. Under this new system, Harley-Davidson will restamp the old engine number onto the new case or engine, and the vehicle will retain the original identification number.

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Any known or reported deviations to this policy should be reported to the parent company.

Another investigative aid which can be 7. quite helpful in determining the authenticity of a Harley-Davidson engine number is found in coding. Beginning in the model year 1962 and continuing to the present, the first numeric digit of the sequential production number, (the first number following the model designator), will be an even number for even number years and an odd number for odd number years. To carry this a step further, if the sequential production number contains five rather than four numbers, the first tow numbers will be an even number for even number years and odd if for an odd numbered year.

a. Examples:

- (1) 62FLH2439
- (2) 65XLCH1692
- (3) 66FL10562
- (4) 63XLH11923

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b. A pERSON inspecting a 1964 Harley-Davidson motorcycle engine number were to find it to be 64FL1234 he would automatically know that this is an irregularity requiring further investigation.

- D. Alterations--There are numerous methods of altering the identification numbers on motorcycle engines. This is primarily true because the cases are molded from rather soft aluminum alloys. Some of the clues which suggest an alteration has taken place would be any one or all of the following:
 - An obvious removal of the identification numbers by grinding or filing.
 - An overstamp which gives the appearance of superimposed numbers. This is normally obvious as the numbers are difficult to distinguish and are not clear cut.
 - 3. A ground surface, which had contained original identification numbers and now has a substitute number stamped thereon.
 - a. Normally the grinding process is carried over to:
 - The protrusions surrounding the engine boss, such as the ridge above the boss

surrounding the engine bolt.

- (2) The dogs, on older model engines, which protrude out from the engine boss.
- (3) The spoke like ridges extending from the center of the case to the outer extremeties.
- (4) The cooling fins on the engine cylinders, if the cylinders were installed at the time of grinding.
- b. The bottom portion of the engine boss would have a flat, horizontal line instead of one which follows the contour and rounded surface of the case surrounding the flywheel.
- 4. The raised engine boss is completely removed by grinding, is sandblasted to give the surface an even textured appearance and is then restamped with a spurious number.
- 5. The engine boss is ground off and an attempt is made to build up the surface area by heliarc welding, (an electric welding process). This process is used extensively as it defeats all attempts to successfully restore the original numbers by chemical processing. Several things to look for when a heliarc welding job is suspected are:

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- a. Weld marks on the sides of the raised engine boss.
- A merging or partial merging of the engine boss with the upper horizontal ridge (Sportster engine only). This indicates that a welding process may have been illegally applied.
 - (1) A distinct space of approximately one-eighth inch between the boss and the ridge is the normal factory production process.
- c. Pits (holes) on the flat surface which are caused by air bubbles forming at the time of welding.
- 6. An improper numbering process being used at the time of restamping a case. This might be the use of the letters normally found on the lower crankcase.
- A distinct difference in the texture of the surface where the number is located, compared with the areas adjacent thereto.
 - a. The texture should be the same, as the engine cases are cast in a mold.
 - Many times the entire engine will appear to have a uniform texture. This is produced by having the engine sandblasted after a number alteration has occurred.
 LOOK FOR OTHER INCONSISTENCIES

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Honda Motorcycles

Honda Motorcycles are manufactured in Japan. The only distributor for the United States is the American Honda Motor Company Inc., Gardena, California. This agency maintains records of all motorcycles imported into the United States. In most instances, assembly information is available from American Honda by submitting either the frame or engine number. The National Automobile Theft Bureau can provide information only by frame number.

Honda is by far the largest selling motorcycle in the country today. Consequently, more Hondas are stolen than are any other motorcycle.

Replacement frames do not have frame numbers assigned or stamped thereon. Complete replacement engines do have factory assigned and stamped numbers. This is done primarily for warranty purposes. Honda motorcycles are generally registered in most jurisdictions by the frame number. In the past, numerous Hondas have been registered by an incomplete frame number, (model number has been omitted) an engine number, or an incomplete engine number. All Honda engine numbers have an "E stamped after the model designation prefix. Honda frame numbers do not contain the letter 'E' which is an engine number designator. It should be noted however, that Honda models CA102, CM91, CA105T, CL125, SS125, PC50Y, SS65, and Cl00R may all have an alpha designator in the frame number. These are

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the only known exceptions in Hondas imported into the United States.

- A. Alteration of Honda Identifying Numbers
 - 1. A Honda engine number is one of the most difficult to alter without detection. The single cylinder engines have a recessed area into which the engine number is stamped. Surrounding this recessed area is a raised border. The larger two-cylinder engines have a distinctive engine number that is stamped into a raised, knurled area which is surrounded by a raised lip. Any attempt to alter this number would necessitate the removal of the knurled surface and probably disturb the surrounding lip, thus making the alteration apparent to even the untrained eye.
 - 2. Honda frame numbers are frequently removed entirely or altered. Grind marks, uneven and irregular surface, evidence of welding, unusually heavy paint, or unevenly stamped letters and numbers are indications of alteration. If the engine number appears unaltered and the frame number appears to have been altered, compare the two. They should be similar in size and style. Several of the Honda numbers are distinctive and difficult to duplicate. The numbers "9" and "4" are probably the most distinctive. Once these

authentic numbers are seen, imitations immediately become readily apparent. You are encouraged to make yourself familiar with them.

- B. Data pertaining to Honda frame and engine numbers.
 - There are two types of frames, pressed and tubular. Pressed frames are used for models S-65, S-90, CT-90, CT200, CM91, CA95, CA72, CA100, CA102, C110, and CA200. All other models, (the larger models), use the tubular frame.
 - The chart below lists the various models and number of digits used.

MODEL	NUMBER OF DIGITS
CA-100 CA-102 CA-105 C-110	l letter and 6 digits l letter and 6 digits l letter and 6 digits 6 digits beginning with 3 or 4
C-200	6 digits beginning with 1 or 2 or 7 digits beginning with 3
61-200	o digits beginning with i
S-65	1 or 2 letters and 6 digits
S-90 CM-91 CT-90 CA-95	<pre>6 digits beginning with 1 or 5 1 letter (A) and 6 digits beginning with 6 digits beginning with 1 6 digits beginning with 2 or 3 or 7 digits beginning with 4 or 5</pre>
CB-160 CL-160	7 digits beginning with 1 or 9 7 digits beginning with 1
CA-72	6 digits beginning with 1, 3, or 4 or
CB-72	6 digits beginning with 3 or 4 or
CL-72	6 digits beginning with 3 or 7 digits beginning with 3 or
CA-77	6 digits beginning with 1, 3, or 4 or 7 digits beginning with 1
CB-77	6 digits beginning with 1, 3, or 4 or 7 digits beginning with 1

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CL-77	7	digits	beginning	with	1
CB-450	7	digits	beginning	with	1
EXAMPLES:	000	CL160-10 CA77-302 CB450-10	010823 2251 000432		

Kawasaki Motorcycles

Kawasaki Motorcycle Corporation of 1062 McGraw, Santa Ana, California, is the importer for Kawasaki Motorcycles in the United States. Kawasaki Motorcycle Corporation has imported and distributed forty-one different models at one time or another. The company is in the process of automating their records. They anticipate that this project will be completed between January and March of 1970. Upon completion, Kawasaki Motorcycle Corporation will make its files available to law enforcement. They will be able to provide complete assembly information from an engine or a frame number.

- A. All Kawasaki Motorcycles manufactured prior to the 1968 year model have the engine number stamped into a smooth metal boss on the top right-hand side of the engine case. 1968 to present models have the number stamped on a smooth metal boss located on top of the left engine case.
- B. All models of Kawasaki motorcycle have a frame number stamped on the steering head of the frame in front of the gas tank.
- C. Replacement frames and engines will have no identifying numbers placed thereon at the factory.

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D. The following annex indicates year models, model designators, cubic centimeters, frame number prefixes, and engine number prefixes.

Norton Motorcycle

The Norton Motorcycle is presently producing four models of the 750 cc twin and one 650 cc twin. On these motorcycles the engine and frame numbers are the same. The frame number on these machines may be found in three locations, depending on the model. In all cases, on the left side of the machine. The engine number is stamped into the aluminum crank case halves on the left forward portion immediately below the cylinder. This number is placed in a 90 degree angle in the aluminum casting and is very hard to alter without leaving some indication of the grinding or changing. The frame number appears on the left side of the frame head between the front fork clamps, on the down tube between the fork head, and the bottom of the front portion of the engine, or on the metal webbing surrounding the swinging pivot bolt.

On the Scrambler model motorcycle the letter M followed by the number 15 or G followed by the number 15 may be found. This will differ from the frame number but designates model only. Investigators should contact Bob Blair, 527 W. Windsor Road, Glendale, phone (213) 245-8695, for further information on this motorcycle.

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	Name	Model Designation	cc	Fran	ne Prefix	Engi	ne Prefix
65	50	B53	52.5	В	(5 digits)	lU	(5 digits)
65	50	B55K	52.5	F	(5 digits)	4U	(5 digits)
66	50	M10	50	M10	(5 digits)		(6 digits)
66	55	Mll	52.5	M11	(5 digits)	7U	(5 digits)
65	85	J1	81.5	Jl	(5 digits)	FE	(4 digits)
65	85	JIT	81.5	JIT	(5 digits)	FF	(4 digits)
66	85	JlL	81.5	JlL	(5 digits)	LFE	(5 digits)
66	85	JITL	81.5	JITL	(5 digits)	LFE	(5 digits)
65	85	JITR	81.5	JlR	(5 digits)	FE	(4 digits)
66	85	JITRL	81.5	J1RL	(5 digits)	LFE	(5 digits)
65	90	JIM	88	MF	(5 digits)	ME	(4 digits)
69	90	G3SS	89	GA	(6 digits)	FGAE	(6 digits)
69	90	G3TR	89	GA	(6 digits)	FGAE	(6 digits)
69	100 scrambler	G31M	99	G31	(6 digits)	G31E	(6 digits)
66	100	Dl	99	Dl	(7 digits)		(6 digits)
67	120 Road Runner	C2SS	115	C2	(7 digits)	F	(6 digits)
67	120 Trail	C2TR	115	C2	(7 digits)	F	(6 digits)
64	125	B8	123.5	В	(5 digits)	FE	(4 digits)
64	125	B8T	123.5	B8T	(5 digits)	TE	(4 digits)
65	125	B8M	124	MF	(5 digits)	ME	(4 digits)
65	125	BlL	124	Bl	(7 digits)	F	(6 digits)
65	150	B8S	148	BF	(6 digits)	BE8S	(5 digits)
65	175	Fl	169	Fl	(5 digits)	Fl	(5 digits)

KAWASAKI ANNEX

N	Iamo	Dec	Model		Engen	Duchin		D
1	ame	Des	Ignacion	<u>ee</u>	Frame	e Pretix	Engine	Prefix
65	175		FITR	169	Fl	(5 digits)	F2 (5 digits)
67	175		F2	169	F2	(5 digits)	(6 dígits)
67	175		F2TR	169	F2	(5 digits)	(6 digits)
68	175	Bushwacker	F3	169	F3	(6 digits)	F3E (5 digits)
68	250	Scrambler	F21M	238	F2	(5 digits)	(6 digits)
69	250	Sidewinder	F4	238	F4	(6 digits)	F4E (5 digits)
65	250		SG-SGT	248	SG	(4 digits)	SGE (4 digits)
					SGT	(4 digits)	SGE (4 digits)
67-69	250	Samurai	Al	247	Al	(5 digits)	Ale (5 digits)
67-69	250	Samurai SS	Alss	247	Al	(5 digits)	Ale (5 digits)
67	250	Road Racer	Alr	247	Al	(5 digits)	Ale (5 digits)
67-69	350	Avenger	A7	338	A7	(5 digits)	A7E (5 digits)
68-69	350	Avenger SS	A7SS	338	A7	(5 digits)	A7E (5 digits)
69	500		Hl	499	KAF	(5 digits)	KAE (5 digits)
66	650	Wl Commander	Wl	624	WlF	(5 digīts)	WIE (5 digits)
66	650	Police	WlP	624	WlF	(5 digits)	WIE (5 digits)
67-68	650	WISS Commander	WISS	624	WlF	(5 digits)	WIE (5 digits)
67-69	650	W2SS Commander	W2SS	624	WlF	(5 digits)	WIE (5 digits)
68-69	650	W2TT Commander	W2TT	624	WlF	(5 digits)	WIE (5 digits)

Royal Enfield Motorcycle

Royal Enfield Motorcycles are currently being manufactured only in the 750 cc displacement range. Investigators will find, however, there are two 250 cc models available for sale in this country. Very few are sold, however. The Royal Enfield Company has recently discontinued a 500 cc single cylinder model. These are to be found in some quantity. From 1960 and later, the frame and engine number on these machines are not the same. Warranty indexing is available for engine to frame number and frame to engine number. This information can be obtained by calling Frank Cooper, 2815 West Olive, Burbank, phone (213) 849-6066. The number locations on the twin cylinder motorcycle will be found on the left side of the frame between the front fork clamps. On the engine, it will be located immediately below the left cylinder by the crank case breather. The single cylinder model is the same as the twin with the exception that the engine number will be located forward of the cylinder on the left side portion of the crank case half.

Suzuki Motorcycles

All Suzuki Motorcycles imported into the United States to be sold by authorized dealers are distributed by the U. S. Suzuki Corporation, Los Angeles, California. U. S. Suzuki maintains an automated record system which is available to all law enforcement agencies upon request. Contact should be made with the Order Desk, (213) 921-4461. The files contain

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records from 1964 to the present and can produce assembly information, along with the dealer to whom the vehicle was originally shipped. If the vehicle was registered with the company for warranty purposes, the original owners name and address can also be provided.

As of September of 1968, Suzuki had marketed 28 models in the United States.

Prior to the 1968 year model, it was possible to have five Suzuki motorcycles each bearing the same frame number. This apparently was a result of the fact that the parent factory in Japan used the same pre-stamped frames for five different models of motorcycles. The same situation occurred regarding motor numbers due to the fact that an engine prefix designated a model line. This situation was corrected starting with the model year 1968.

Engine and frame numbers on earlier model Suzuki motorcycles were seldom the same. On more recent models, since 1968, the engine and frame numbers on the larger Suzuki motorcycles, such as the T305, TC305, T350, T500, T502, and T505, are the same.

In addition to an engine and frame number, Suzuki rivets an identification plate on its motorcycles. This plate indicates the following type of information:

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EXAMPLE	Manufacturer:	Suzvki.
	Capacity:	50cc
	Model:	M12
	Engine No:	M10-152361
	Frame No:	M10-143791
	Weight:	60KG

Due to the relative ease of removing this I.D. plate and installing it on another vehicle, this information should not be used for the true identification of the vehicle.

Suzuki replacement engines and frames do not bear an identifying number.

It should be noted by all law enforcement officials and motor vehicle bureaus, that Suzuki motorcycles are quite frequently registered using incorrect procedures. A recent study conducted by the California Highway Patrol showed that of 506 Suzuki Motorcycles currently reported stolen in that state, 335 were incorrectly registered.

The State of California requires all motorcycles, with the exception of Harley-Davidson Motorcycles manufactured prior to 1970, to be registered by the frame number. Numerous Suzuki dealers are found to have registered these vehicles by partial engine numbers or partial frame numbers, most frequently neglecting to include the model prefix designator. This poses additional problems when a Suzuki Motorcycle is stolen in that it allows a possibility of six different motorcycles all with the same VIN to be on the highway. If one is reported as stolen, there is an extremely good chance that one of the other five motorcycles bearing the same VIN could be stopped and the driver detained or even arrested. Suzuki Motorcycle Company is now aware of this problem and is attempting to contact each of its dealers with specific information on how to properly register its motorcycles.

The following Annex indicates possible frame and engine numbers, cubic centimeter displacement, and locations of identifying numbers by model for Suzuki Motorcycles.

Triumph Motorcycles

The Triumph Motorcycle is manufactured in England. The distributor for the Western half of the United States is Johnson Motors, 2765 East Huntington Drive, Duarte, California. The distributor for the Eastern half of the Unites States is the Triumph Corporation of Baltimore, Towson, Baltimore, Maryland.

Commencing with the 1965 models, the engine and frame numbers are identical. Prior to 1965, the engine and frame numbers are different, however, factory assembly information is available through the distributors on either number.

The frame number is located on the left side of the motorcycle frame either on the gooseneck or on an attached frame rail running from the gooseneck to the engine. The number is always found near the top or outer side of the frame and is usually readily visible.

In earlier models, the frame number may not include the model number, such as T12OR, T10OR, or TR6, etc. A frame number may include one letter with the entire series of numbers following (Example: Engine #TR6RDU12345 may appear as frame #D12345). The number stamps used by the factory

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are approximately one-quarter to five-sixteenths inch in size. The alpha stamps may appear larger or smaller than the numeric stamps. There appears to be a lack of uniformity in this regard.

The engine number will include the model number, such as T120TT12345, and may appear on two different planes, such as:

T120TT	or	TRCR		
12345		DU12345		

The engine number is stamped into the metal, on the left side of the engine block, immediately below the barrels of the piston chambers.

A. Alterations to Triumph Identifying Numbers

- 1. Alterations are most commonly directed against the engine number. Since the engine is cast in one piece, the consistency of the metal in the area of the engine number.will be the same as elsewhere on the casing. Look closely for file marks and sharp corners of metal at either end of the engine number. The sides of the engine casing at either end of the numbers should present a beveled edge. When filing or grinding off the number, in most cases, a sharply defined edge will be left. The bevel has disappeared.
- 2. To alter the frame number, it would be necessary to grind down deeply into the frame. This would require that the depression left by grinding be filled with a substance to mask the action taken.

•	IDENTIFICA	TION PLA	TE		ENGINE NUMBER	FRAME NUMBER		
MODEL	LOCATION	WEIGHT	CAPACITY	LOCATION	PREFIX-NUMBER OF DIGITS	LOCATION	PREFIX-NUMBER OF DIC	
M31	A	60KG	55cc	G	M30-6	F	M30-6	
M31-2	A	60KG	55cc	G	M30-6	F	M30-6	
M12	B	60KG	50cc	G	M10-6	F	M10-6	
M12-2	B	66KG	50cc	G	M10-6	F	M10-6	
M15	B	60KG	50cc	G	M10-6	F	M10-6	
M15-2	B	66KG	50cc	G i	M10-6	F	M10-6	
MISD	B	60KG	50cc	G	M10-6	F	M10-6	
AS 50	C	73KG	50cc	G	A50-5	F	A50-5	
A100	C	80KG	98cc	G	A100-5	F	A100-5	
AS100	C	80KG	98cc	G	A100-5	F	A100-5	
BLOOP	C	86KG	118cc	н	B100-5	F	B100-5	
B105P	C	92KG	118cc	Н	B100-5	F	B100-5	
KT120	C	91KG	118cc	Н	B100-5	F	B100-5	
K10	В	70KG	79cc	G	K10-6	F	K10-6	
X11	B	70KG	79cc	G	K10-6	F	K10-6	
K15	B	74KG	79cc	G	K10-6	F	K10-6	
K10P	B	76KG	79cc	G	K10-6	F	K10-6	
X11P	B	76KG	79cc	G	K10-6	F	K10-6	
KISP	B	76KG	79cc	G	K10-6	F	K10-6	
\$32-2	B	115KG	149cc	G	\$32-5	F	\$32-5	
T10	B	136KG	246cc	G	T10-5	F	T10-5	
T20	D	135KG	247cc	G	T20-5	E	T20-5	
T200	E	122KG	196cc	G	T200-5	E	T200-5	
T305	E	144KG	305cc	G	T305-5	E	T305-5	
T500	E	183KG	492cc	L	T500-5	E	T500-5	
TC250	D	140KG	247cc	G	T20-5	F	T20-5	
TC200	E	125KG	196cc	G	T200-5	E	T200-5	
TC305	E	146KG	305cc	G	T305-5	E	T305-5	
TOIDA	(* . * . * . * . * . * . * . * . * . * .	- 1010			TIZO		TC. 120	
NOTE:	A11 1969	twin-cyl	inder model	s will have	the frame serial number a	nd identific	ation plate at	
	location	Ε.	1.43.2		and the second sec	1	· · · ·	

(c) C -

All 1969 single cylinder models will have the frame serial number at location F, and identification plate at location C.









SAMPLE IDENTIFICATION PLATES





Bondo, body putty, or similar substances are frequently used. When hardened, the filled area is sanded and repainted. Close observation of the entire area is required to detect an alteration or removal of numbers. Judicious scraping of the area with a pocket knife is a recommended method of detecting an alteration or removal job.

Yamaha Motorcycles

The Yamaha Motorcycle is a product of Japan. It is manufactured by the Nipon Gakki Ltd., a company which has been manufacturing musical instruments since 1887. The first Yamaha Motorcycle was manufactured in 1955. The main production plant is located at Hamamatsu, Japan.

The popularity of the Yamaha Motorcycle in the United States dates to 1958 when their importation was first experienced. The popularity of the motorcycle is primarily due to the fact that it is an inexpensive and well manufactured machine.

There is but one distributorship for the Yamaha Motorcycle in the United States. That company and its branches are located at:

Yamaha International Corporation

Main Office

7733 Telegraph Road, Montebello, California P. O. Box 54540, Los Angeles, California Telephone: (213) 685-5135

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Branches: Portland, Oregon Melrose Park, Illinois Cherry Hill, New Jersey Downington, Pennsylvania

The Yamaha Motorcycle is completely assembled at the factory. It is given a test run prior to being shipped to a distributor. Prior to shipment, the wheels, handlebars, lights, and certain other small parts are disassembled and the motorcycle is crated. The dealer purchasing the motorcycle from the distributor is responsible for re-assembly.

All Yamaha Motorcycle engines and frames are stamped with identifying numbers at the factory. Each engine has a corrugated boss on which the number is stamped. This boss is located on the left top side of the engine. Generally, frames are stamped on the left side of the gooseneck. The exception to this is the Yamaha 100. The V.I.N. is stamped on the right side of the gooseneck. This location was selected because of a wire hold-down bracket which is welded to the frame on the left side of the gooseneck.

One of the unique features of the engine boss is that the surface is corrugated. It is on this boss that the engine number is stamped. The absence of these corrugations would suggest an alteration. Further examination and investigation should be conducted when this condition is observed.

All Yamaha models with the exception of the 125cc and the racing TDl will have terminal numbers on the frame and engine that are identical. The prefix numbers or letters

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preceeding the terminal number will vary.

Example: Frame Number Y31-303404 Engine Number G2-303404

Neither the frame nor engine prefix by themselves designates anything that could be used for positive identification.

Yamaha Motorcycles are designated by a model name and a number, such as 'Big Bear Scrambler 250". The 250 is related to the cubic centimeter displacement. This numerical designator may not be the true cubic centimeter displacement for the engine. The true cubic centimeter displacement will be found on the exhaust port. It is a raised number followed by "cc". On those models having two exhaust ports, look on the right port for motorcycles manufactured during or since the 1967 year model. On earlier year models it could be located on either port. The 'Big Bear Scrambler 250" has an engine with the designation of 246 cc, meaning the engine has a 246 cubic centimeter displacement, not 250 cc.

The following chart lists the Yamaha Motorcycle prefixes in use today.

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YAMAHA MOTORCYCLE PREFIXES

MODEL	ENGINE	FRAME	c.c.	H.P.	WT.	#CYL.	YR. MODEL	DESCRIPTION
U5 U5E MJ2TH MJ2TA MJ2SH MJ2SA YJ1 YJ1 YJ1 YJ1 YJ1 YJ1 YJ1 YJ1 YJ1 YJ1	F5 F5 J2B J2A J2A J2A J3 J3 J5 G1 G1 G1 G1 G1 G1 G1 G1 G1 G1 G1 G1 G1	M5 M3 M3 M3 M3 Y22 Y22 Y22 Y22 Y28 M3 Y20 Y20 Y20 Y20 Y20 Y20 Y20 Y20 Y20 Y20	50 50 55 55 55 55 55 55 55 55	4.4 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5	190 190 190 190 190 190 190 190 190 190	1 1 1 1 1 1 1 1 1 1 1 1 1 1	65-6-7 62-3-4-5-6 62-3-4 62-3-4 62-3-4 65 65-1/2 651/2-66 641/2-5-6-7 65-6-7 65-6-7 65-6-7 66-7 66-7 66	S-ST-OI S-ST-NO T-ST-NO S-ST-NO S-ST-NO S-CT-OI S-CT-OI S-CT-OI-HE T-ST-NO T-CT-OI S-CT-OI T-CT-OI-HE S-CT-OI-HE S-CT-OI-HE S-CT-OI-E T-CT-OI-E T-CT-OI-E S-NO-E S-OI-E SC-OI-HE Dirt SR Road SR S-OI SC-OI S-OI-E
S	= STREET M	ODEL		0I =	OIL I	NJECTI	ON	

T = TRAIL MODEL CT = CENTER TANK MODEL

ST = STEP THRU SC = STREET SCRAMBLER

NO = NON-OIL INJECTION HE = HIGH EXHAUST PIPES

- E = ELECTRIC STARTER SR = STRICTLY RACING (No lighting equip.)

Glossary of motorcycle terminology

- 1. Ape-Hangers High rise handlebars.
- 2. Beezer BSA Motorcycle.
- 3. Chopper Motorcycle with alterations to frame which change the appearance of the vehicle. Normally lower to roadway than stock.
- Citizen A square, an outsider, or anyone not associated with an outlaw motorcycle group.
- Class To do something out of the ordinary, spectacular; to show class.
- Colors The outlaw motorcycle emblem worn normally on the back of members jacket.
- 7. Crash To get so drunk you pass out at a party.
- Drage bars A type of motorcycle handlebars, normally with little or no curvature.
- 9. Flash When a person drinks too much and vomits.
- 10. Flathead A type of engine in which the valves are not activated by overhead rocker arm system.
- 11. Garbage wagon A full dress Harley-Davidson Motorcycle.
- 12. Hassle To give someone a hard time, or to fight.
- 13. Hog A Harley-Davidson Motorcycle.
- 14. Knucklehead A Harley-Davidson Motorcycle manufactured prior to 1948 which was characterized by large nuts on the right side of the engine above the cylinders. Appearance is somewhat similar to knuckles.

- 15. Mama Term used to describe females who ride with outlaw motorcycle groups and are normally sexual community property.
- 16. Old Lady Term normally used to describe female who is either the wife or exclusive girl friend of an outlaw motorcycle club member.
- 17. Outlaw a "one percenter", looked down upon by the police, citizens, and other legitimate motorcyclists. Derived from the American Motorcycle Association contention that 99% of all motorcyclists are decent law abiding citizens.
- 19. Participate To gang up on an opponent during a fight; to be included.
- 20. Righteous honest, the truth. Such as a "righteous" statement, or "righteous" numbers.
- 21. Run An all day or weekend ride of most or all members of an outlaw club or clubs.
- 22. Scooter Motorcycle.

23. Sled - Motorcycle.

- 24. Sissy bar A high bar or bars placed on the rear of the motorcycle which a passenger can use as a backrest.
- 25. 4-Square Ariel 4 square model motorcycle.