

CITY COUNCIL MEETING
OCTOBER 2, 1985

SPECIFICATIONS FOR
POLICE MOTORCYCLES FOR
TRAFFIC UNIT
APPROVED

On motion of Council Member Snider, Olson second, Council approved specifications for three police motorcycle units to be used by the traffic enforcement unit, and authorized the advertising for bids thereon.

COUNCIL COMMUNICATION

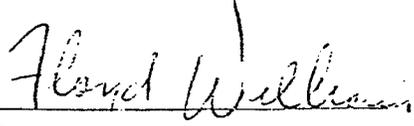
TO: THE CITY COUNCIL
FROM: THE CITY MANAGER'S OFFICE

DATE: September 24, 1985
NO.:

SUBJECT: BID SPECIFICATIONS FOR POLICE MOTORCYCLES

Attached is a copy of bid specifications adapted from the California Highway Patrol Specifications for three police motorcycle units to be used by the traffic enforcement unit.

We request the specifications be adopted and the bid request be put out. The deadline for delivery should be December 15, 1985.

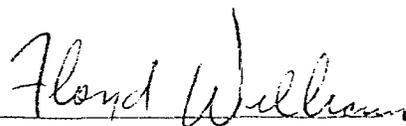

Floyd A. Williams
Chief of Police

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LODI POLICE DEPARTMENT

SPECIFICATION FOR SOLO TYPE ENFORCEMENT MOTORCYCLE

September 24, 1985

SCOPE

- A. It is the intent of this specification to describe a police motorcycle to be used in high-speed highway traffic and law enforcement work. The motorcycle should have the capability to be operated at speeds above 100 MPH for both short and long distances. It will be driven on all types of roads and road surfaces and must possess outstanding handling characteristics, maneuverability and stability.
- B. It is intended that the manufacturer in the selection of components will use materials and design practices that are the best available in the industry for the type of operating conditions to which the vehicle will be subjected. Frame, engine, transmission, drive train, brake, suspension, wheel tire and other component parts of the vehicle shall be selected to give maximum performance, service life and safety and not merely meet the minimum requirements of this specification.
- C. The term "heavy duty" as used in this specification shall mean that the item to which the term is applied shall exceed the usual quantity, quality, or capacity supplied with standard production vehicles; and it shall be able to withstand unusual strain, exposure, temperature, wear and use.
- D. Motorcycles offered in compliance with this specification must be manufacturer's police models. Police accessories must be engineered and designed, or certified, by the manufacturer of the motorcycle to be compatible with all other components, give dependable service and not degrade its handling characteristics or appearance.

MODEL

Shall be 1986 or later production model two-wheel motorcycle equipped for police service and having a wheelbase of not less than 57-1/4 inches nor more than 65 inches.

ENGINE

- A. Not less than 850 cubic centimeters displacement.
- B. Minimum of 4 cylinders.
- C. Air or liquid cooled.
- D. Shall be four cycle.
- E. Shall produce not less than 70 hp.
- F. Crankshaft to be balanced at factory and engine shall be free from vibration during service life of motorcycle.
- G. Shall be equipped with all standard accessories including carburetor air cleaner, oil filter and latest type carburetor.

POWER TRAIN

May be chain, shaft or belt driven.

CLUTCH

- A. To be latest type, multiple disc, wet or dry type, hand operated.
- B. Hand lever shall be located on left handlebar.

TRANSMISSION

- A. Shall be minimum of 5 speeds.
- B. Gears shall be constant mesh design.
- C. Shift pattern shall be as follows: Neutral located between first and second gears; shall shift down from neutral to first gear and up from neutral to second, third, fourth, fifth, etc.
- D. Shall have foot shift lever of rocker type and designed to be operated by toe and heel and shall not interfere with normal foot position on foot board.
- E. Foot shift lever shall be located on left side.
- F. An indicator light, readily visible to the rider, shall be provided to indicate when the transmission is in neutral position.

BRAKES

Front and rear brakes shall be separately controlled hydraulic systems.

- A. Front brakes shall be dual disc type, hand operated from the right handlebar. Shall not lock front wheel upon normal full application.
- B. Rear brake shall be disc type, foot operated with pedal located on right side. Linkage shall be close fitting to eliminate any lost motion and designed to give trouble-free service for the lift of the motorcycle. Rubber pad on rear brake pedal shall be 2" X 3" minimum in size and flat to permit safe application and minimize the possibility of the foot slipping off the brake pedal. Foot pedal and linkage shall be designed and located so that full travel of pedal or rider's foot shall not be hampered or impaired by any other part of the motorcycle. Lever design shall be such that brake can be applied without lifting heel from footboard.
- C. Hydraulic hoses and metal lines mounted and protected in such a manner so as to prevent them from becoming damaged due to chafing, rubbing or vibration. Brake lines and calipers shall be located away from exhaust heat.

FRAME

- A. Shall be seamless carbon steel tubing and of such a design, construction and material to enhance stability and handling characteristics and eliminate any possibility, with enforcement equipment installed, of cracking when subjected to vibration and police type service.
- B. Rear forks shall be swinging arm type with integral coil springs and hydraulic/gas shock absorbers.
 1. Frame, springs and shock absorbers shall be adequate to handle rider plus the added weight of a Motorola Model MCX100 transistorized radio transmitter and receiver, carrier and equipment boxes mounted on each side of rear fender.
 2. Rear shock absorbers shall have provision for adjustment to accommodate rider's height and weight.

- C. Front forks to be hydraulic design and adjusted to permit the shortest possible turning radius and designed for best handling characteristics in police service considering weight and weight distribution. Air or air assisted front forks are not acceptable.

LOAD CAPACITY

The minimum load-carrying capacity of the motorcycle as delivered shall be no less than 350 pounds, including rider and equipment added by the Lodi Police Department.

ELECTRICAL SYSTEM

- A. Shall be 12 volt system with circuit breakers or fused for protection of all circuits from overload or short circuits.
- B. Heavy duty alternator (250 watts minimum) with voltage regulator incorporating transient voltage protection.
- C. Heavy duty battery with adequate ampere hour capacity (14 amp hr. min.) to operate proficiently under the following conditions:
1. All running lights, emergency lights, radio and electronic siren operating simultaneously with the engine running.
 2. Tail light, blue ID lights, rear flashers and radio operating simultaneously for a minimum of 1-1/2 hours with engine off; permit restart of engine with electric starter.

Battery to be dry charged and sealed to prevent deterioration from moisture entering cells while in storage. Adequate supply of electrolyte to activate battery shall be supplied with each motorcycle in suitable storage container(s).

- D. Starter shall be latest type 12 volt starting motor with solenoid engagement.
1. Starter button shall be located on right handlebar.
 2. Wiring to be such that the engine can be started with the transmission in any gear when the clutch is disengaged.

ELECTRICAL SYSTEM (cont)

- E. Headlight to be dual element, quartz halogen with a high beam indicator light mounted so that it is readily visible to the rider. High and low beams to be controlled by a switch on the handlebar.
- F. Turn signals designed and/or installed in such a manner as to be visible from the front, rear and sides, two (2) on the front, two (2) on the rear and two (2) on the side rear above the utility boxes with indicator lights on dash panel. Rear and side rear turn signal lights are to be wired to a heavy duty switch with indicator light to permit the rear and side rear signal lights to flash together, independent of the front signal lights and to operate with ignition switch in either the "On" or "Off" position. Turn signal switch for both left and right signals shall be located on the handlebars and shall be the push to lock on type with indicator lights which will operate when the turn signals are in operation. Flasher shall be a heavy duty variable load type rated for 4-lamp operation. Rear and side rear lamps shall be 3 inches in diameter minimum.
- G. Two (2) blue identification lights (Truck-Lite #10A) shall be installed on a plate with the license plate. The lights shall be mounted, one on each side of the license plate, and connected with the tail light circuit.
- H. Two forward facing red sealed beam pursuit lamps shall be installed and wired so that the left lamp will burn continuously and the right lamp will flash when turned on.
 - 1. Lamps shall be approved emergency warning lamps, chrome plated, mounted in the fairing adjustable vertically slightly above or below the horizontal centerline of the headlight and approximately 2 to 3 inches from the headlight.
 - 2. Lenses to be ruby in color and approved by the Department. Lens diameter shall not be less than 4-1/4 inches nor greater than 5 inches.
 - 3. To operate with ignition switch in either the "On" or "Off" position, or lockable accessory position.
 - 4. Indicator light on dash panel to indicate when lights are "On".

ELECTRICAL SYSTEM (cont)

- I. Horn, when mounted on motorcycle, must have a minimum of 82.5 audio decibels output measured at a distance of 50 feet directly ahead of motorcycle. Electrical wiring to be such that the horn can be operated with the ignition switch "Off" or "On" or lockable accessory position. Horn button to be located on the left handlebar.
- J. Switches for control of all emergency equipment, siren, red pursuit lights shall be located on the handlebar and accessible without removing hands from the grips.
- K. Ignition switch, headlight switch, rear flashing amber light switch and all other switches not specifically located in this specification shall be mounted on the dash panel or on the handlebar and be conveniently accessible by the rider.
- L. The ignition, headlight and running light switches shall be designed and wired to permit the engine to run without the headlight or running lights on.
- M. Dash panel and instrument lights shall be hooded or otherwise designed to prevent glare onto the windshield.

RADIO SHIELDING & GROUNDING

The entire electrical system shall be shielded and grounded so that not more than 2.5 microvolts input to the receiver will be required to produce at least 20 dB quieting at the receiver output, when tested in accordance with attached Figures 1 and 2, for all engine speeds from idle to full throttle and with the radio and antenna mounted and connected as on current police motorcycles in service.

With the engine stopped, the radio receiver used in the test shall require not more than 0.35 microvolt for 20 dB quieting, measured as shown on Figure 1, step 1.

HANDLEBARS

Chrome plated or stainless steel, of the latest approved type suitable for police work and allows the officer to sit in an upright vertical position with both hands on handlebar grips.

HANDLEBARS (Cont)

- A. All exposed wiring to switches shall be enclosed in plastic loom and clamped to bars. All wiring subject to friction to be adequately protected to prevent wear and eventual grounding.
- B. Handlebar grips to be of firm black plastic and/or rubber which will not discolor hands.
- C. Throttle control, to be located on right handlebar, shall have no lost motion or play and adjustable drag to permit setting throttle at any position without returning to idle when hand is released from grip.
- D. Handlebar control levers shall contain ball type knobs on their outer ends to minimize the possibility of the hand slipping off the lever.
- E. Provision shall be made for mounting a Motorola radio control head speaker with microphone on the center of the handlebars or gas tank console or fairing.
 - 1. Mounting of the radio control head and speaker shall not obstruct visibility of indicators or accessibility of controls and switches and shall be readily accessible when seated on the motorcycle.

TIRES

To be minimum four ply rating, first quality bead retention tubeless tires designed to give best performance for Lodi Police service.

- A. Each tire and wheel assembly shall be balanced; lateral and radial runout shall be within the factory recommended tolerances.
- B. Tires supplied must be of a type and manufacturer tested and approved by the Lodi Police for use on the make motorcycle bid.
- C. Tires supplied must be readily available in the aftermarket through tire warehouse distributors at time of delivery of the first motorcycles supplied in compliance with these specifications.

WHEELS

Front and rear wheels shall be cast alloy type. Front and rear wheel shall be designed to prevent tire separation from rim if tire becomes flat. Rim must be equipped with an interior shoulder that does not permit dismounting of the sidewall bead from the shoulder and prevents subsequent movement of the sidewall into center recess of the rim or to the outside of the rim when tire is run flat. Front and rear wheels of the same size are preferred.

Rim locks are not acceptable as an alternate to this specification.

MIRRORS

Right and left side rear view mirrors are to be installed in such a manner to minimize vibration and shall be:

- A. Rectangular in shape. No less than 3-1/2" X 5" or 17 square inches.
- B. Short shank, mounted on the handlebars.
- C. True image.

SPEEDOMETER

Shall be designed for police work. Shall be accurate within ± 2 MPH throughout its entire speed range.

- A. Shall indicate 0 to 120 MPH minimum, with trip odometer.
- B. Shall be graduated into single mile increments with bold face increment markers every five miles. Each ten mile increment shall be denoted by appropriate numeral.
- C. Speedometer indicator needle tip shall extend to increment markers.
- D. Shall be constructed and shock mounted so that the effects of motorcycle vibration does not affect accuracy or service life of the speedometer.
- E. Shall be illuminated when headlight is turned on.
- F. Tachometer shall be supplied.

SAFETY BARS

Front and rear and shall be no wider than the handlebars.

- A. Chrome plated front and rear.
- B. Rigidly attached to motorcycle frame.
- C. To provide clearance and protect the rider's legs when the motorcycle is in the down position.

FAIRING

Shall be equipped with a frame-mounted fairing and windshield of a type and design approved by the Lodi Police Department.

- A. Windshield shall be of clear polycarbonate, approved glazing material (Lexan MR-400 or equal).
- B. To provide full vision.
- C. Windshield and fairing shall not cause imbalance of the motorcycle at any speed.
- D. Windshield shall be attached to fairing with break-away screws (plastic).
- E. Windshield shall be the tallest optional available windshield to permit the rider to customize height to individual needs without replacing shield.
- F. Fairing shall incorporate headlight and pursuit lamps and be approved by the motorcycle manufacturer for police service.

SEAT

Shall be special police type sponge rubber saddle covered with black leather or vinyl plastic of a type that will breathe, or be a waffle pattern in the seating area. Shall be capable of being adjusted forward and rearward and vertically, to give maximum comfort for the rider. Seat shall be designed to provide lumbar support and is subject to LPD approval.

JIFFY STAND

Shall be of steel construction and having a minimum of one and one-half square inches of surface on the ground when extended.

- A. Shall be mounted on left side.
- B. Shall be designed so that the stand can be lowered and retracted with foot when seated on the motorcycle.
- C. So designed that it will not strike ground during hard left turns when retracted.
- D. Amount of lean of motorcycle shall not exceed 13 degrees from vertical when stand is extended and front wheel is in a straight-ahead position.
- E. So constructed that with the weight of the machine on the stand, the stand cannot be folded or retracted.
- F. Ride off and/or service stands are to be included where they are supplied as standard equipment.

FOOTBOARDS

Shall be equipped with footboards (pegs are not acceptable) so constructed that they will fold upward in the event of contact with the ground and equipped with skid plates on the bottom sides to reduce rapid wearing from frequent pavement contact.

SIREN

An electronic motorcycle siren, Whelen WS 610, shall be supplied and installed by the vendor prior to delivery when required by the Invitation for Bid and included on the Purchase Order. A handlebar control switch(s) designed to permit operation of the siren through the motorcycle horn button when manual mode is selected shall be supplied. Control switch(s) shall have three operating modes: (1) off position--horn button operates horn; (2) manual position--operate siren through motorcycle horn button; (3) automatic position--siren operated automatically with "yelp override" capability through the horn button. Relay and wiring to permit operation as described shall be installed as needed. Siren must meet the California Administrative Code requirements for motorcycle sirens. Reference: Whelen Engineering Company, Inc., 3 Winter Avenue, Deep River, CT 06417, (203) 526-9504. Switch, amplifier and speaker mounting locations are subject to LPD approval.

SIREN (Cont)

When the siren is not required by the Purchase Order, the switch, wiring, relay and provision for mounting the amplifier and speaker must be included and are subject to approval by the LPD.

MUFFLERS

- A. To meet legal sound restrictions.
- B. Positioned to permit installation of utility boxes on each side of the rear wheel and the electronic siren amplifier under one of the boxes.
- C. Shall not extend beyond rear wheel.
- D. Not more than two mufflers permitted and not more than two header pipes into a single muffler.
- E. Muffler(s) to be chrome plated.

KEYS

To have three sets of keys provided for each machine at time of delivery.

COLOR

Motorcycle finish and color to be combination, black Ditzler #DQE-9000 or comparable and white, Ditzler #DQE-8000 or comparable as follows:

- A. Frame - black.
- B. Fairing and fenders - front and rear, all white.
- C. Gas tank(s) black, with white side panels contoured to shape of tank(s) with a 1/8 inch black border stripe around the white panel. Panel shall be large enough to permit installation of the LPD 5-inch shield insignia within the white panels without touching the border stripe. Paint scheme is subject to approval by the Lodi Police Department.
- D. All repainted components shall be equal in quality to factory paint. Refinished components shall be properly prepared and finished with a minimum of two coats of primer paint and two coats of finish paint equal to factory-applied paint.

RADIO & UTILITY BOX BRACKETS

To be equipped with brackets for mounting of departmental radio over the rear fender, radio antenna on back of rear fender behind radio and utility boxes on each side of rear fender. A minimum of two inches clearance between seat and front of radio cover, when installed, must be provided. Utility box brackets shall incorporate chrome plated rear safety bars and have horizontal bar located approximately midway between the top and bottom of the boxes to protect boxes from damage. Utility boxes and safety bars shall not extend any wider than the motorcycle handlebars.

UTILITY BOXES

Two (2) law enforcement type utility boxes shall be installed, one on each side of rear wheel. Boxes shall be fiberglass or ABS plastic construction. Minimum dimensions, 7 inches wide, 10 inches high, 17.5 inches long (rectangular shape) with dual chrome locks and piano type hinge. Boxes shall be sealed against moisture and dirt. The right side box shall have a divider forming a partition approximately 2 inches wide the full length of the box. Finish shall be high gloss black or textured finish.

EMERGENCY TOOL KIT

An emergency tool kit shall be supplied with each motorcycle in a plastic/vinyl pouch and at a minimum shall include a pliers, phillips and blade screwdrivers, spark plug wrench, axle nut wrench and an adjustable wrench or open end wrenches.

ELIMINATIONS

Name plates, medallions or insignia shall not be installed on fuel tank(s) or front fender. No holes are to be left as a result of these deletions. Insignia installed in locations which could come in contact with rider's clothing shall be flush to the surface attached.

LEGAL REQUIREMENTS

The motorcycle shall in all respects meet or exceed all requirements of the Federal government safety standards, the California Administrative Code, the Health and Safety Code, Vehicle Code, and the California Air Resources Board for the year model motorcycle bid. Motorcycles purchased to this specification are exempt from compliance with California emission standards.

PRE-DELIVERY SERVICE

All motorcycles must be completely serviced, inspected, properly adjusted and road tested before delivery, including the proper fill of all fluids and lubricants except gasoline and battery electrolyte. Battery shall be dry and the electrolyte shipped in bulk containers.

WARRANTY

The standard manufacturer's warranty shall apply to all motorcycles purchased under this specification. The starting date of the warranty shall be the date the motorcycle is actually placed in service and not the delivery date.

MANUALS

Each motorcycle shall be delivered with a rider's manual together with any other printed matter or literature a person using one of the motorcycles might need to properly operate and maintain the vehicle.

TECHNICAL INFORMATION

The successful bidder shall supply the Lodi Police Department with the following technical information at the time the first motorcycle is delivered to the Department.

- A. Service Manuals covering all components of the motorcycle purchased - 1 copy.
- B. Parts List giving service part numbers complete in every detail covering the vehicle purchased - 1 copy.
- C. Dealer's Service Bulletins - 1 copy of each bulletin already published applicable to the model year motorcycle being purchased. The Lodi Police Department shall be placed on the mailing list to receive a like number of Dealer's Service Bulletins each time they are published.
- D. Flat Rate or Suggested time Schedule - 1 copy.

PERFORMANCE REQUIREMENTS

Motorcycles purchased against this specification shall possess outstanding stability, maneuverability, cornering and other handling characteristics necessary for a motorcycle engaged in high-speed traffic law enforcement which included operation over various types of road surfaces and operating conditions.

Performance minimum shall be:

A. Acceleration

1. 85 miles per hour in 1/4 mile from a standing start and elapsed time not to exceed 15 seconds for an average of five trials.
2. 90 miles per hour in 1/4 mile from a flying start of 50 MPH.
3. 90 miles per hour minimum in a distance of 1/2 mile from a standing start.
4. Maximum speed of no less than 100 MPH.

B. Braking

1. Four stops from 70 MPH at approximately 22 ft. per second per second deceleration rate with two minute intervals between stops followed by a rear wheel lock stop from 60 miles per hour. The ability of the motorcycle to stop in a straight line will be evaluated.
2. Approximately 5 minutes after test (1) has been completed, it will be repeated. The ability of the motorcycle to stop in a straight line will again be evaluated.

C. Maneuverability

1. Shall be capable of being operated, without tire spin, through a 180 degree turn with a radius of 13 feet without dragging or scraping any portion of the motorcycle.
2. Shall be capable of being operated through a 360 degree turn with a radius of 15 feet under the same condition as test (1) above.

D. Flat Tire

When operated with front or rear tire flat for a minimum distance of one-half mile at 55 miles per hour, tire shall remain on rim as described on page 7, wheels, and motorcycle shall not exhibit any undue movement as determined by the test rider. Tests will be conducted per Annex A, "Stop-Flat Motorcycle Tire Performance Test."

E. Mechanical Functions and Assessability of Controls

Motorcycles will be evaluated for functional layout of controls and accessibility and mechanical operation for the motorcycle in general.

GUARANTEE

The vendor delivering motorcycles against this specification shall guarantee that the motorcycle meets the minimum requirements set forth herein. If it is found that the motorcycles delivered do not meet the minimum requirements of this specification, the vendor will be required to correct the same at his expense.

DELIVERY LOCATION

All motorcycles shall be delivered to the following location in accordance with the "Delivery Schedule," as noted on the invitation for bid. The first delivery shall be within 60 days after bid award.

Lodi Police Department
230 W. Elm Street
Lodi, CA 95240

STOP-FLAT PERFORMANCE TEST MOTORCYCLE TIRE

GENERAL

This motorcycle tire "stop-flat performance" test is intended to describe a method of selecting a motorcycle tire and/or tire rim combination to assure a safe stop should a sudden and total air loss occur at high speed (55 MPH).

This procedure uses a run-flat technique, but it is not intended to describe or require a run-flat capability as some automobile tires are designed.

SAFETY

Test to be conducted by skilled rider(s) wearing protective equipment; leathers, boots, helmets, etc. For test rider safety, an observer should follow at a safe distance and/or test rider should be under observation at all times.

This test outlines certain maneuvers and desired speeds; however, the test is to be terminated at any time at the discretion of the rider to minimize the possibility of personal injury.

PRE-TEST BREAK-IN

Tires to be inflated to recommended pressure and run for at least 10 miles at varying freeway and pursuit speeds.

TEST SEQUENCE

The 20# psi, 10# psi and 5# psi runs to be made prior to the zero pressure run to familiarize the rider with the handling characteristics of the motorcycle and to alert the rider to any uncontrollable movements that may be developing.

PASS/FAIL CRITERIA

To be acceptable tire must remain on rim bead seat section and rider to feel comfortable and to feel he has control of motorcycle at all times during tests.

Deemed unacceptable when tire bead(s) travel to drop center portion of rim or comes off the rim; or motorcycle control requires utmost skill of the rider to avoid upset; or rider feels uncomfortable or feels he is not in control of motorcycle during tests; or when it is expected the average skilled rider would lose control.

TEST DESCRIPTION

Start and straight run.
Distance - one mile.
Attainable speed - 55 MPH.
Moderate and steady acceleration attainable.
Ability to place feet on floorboards within 15 feet after start-up.
Rider's feet to remain on floorboards at all times.
Slightly more than normal power to start up acceptable.
Slight rear end sway acceptable.

LANE CHANGE

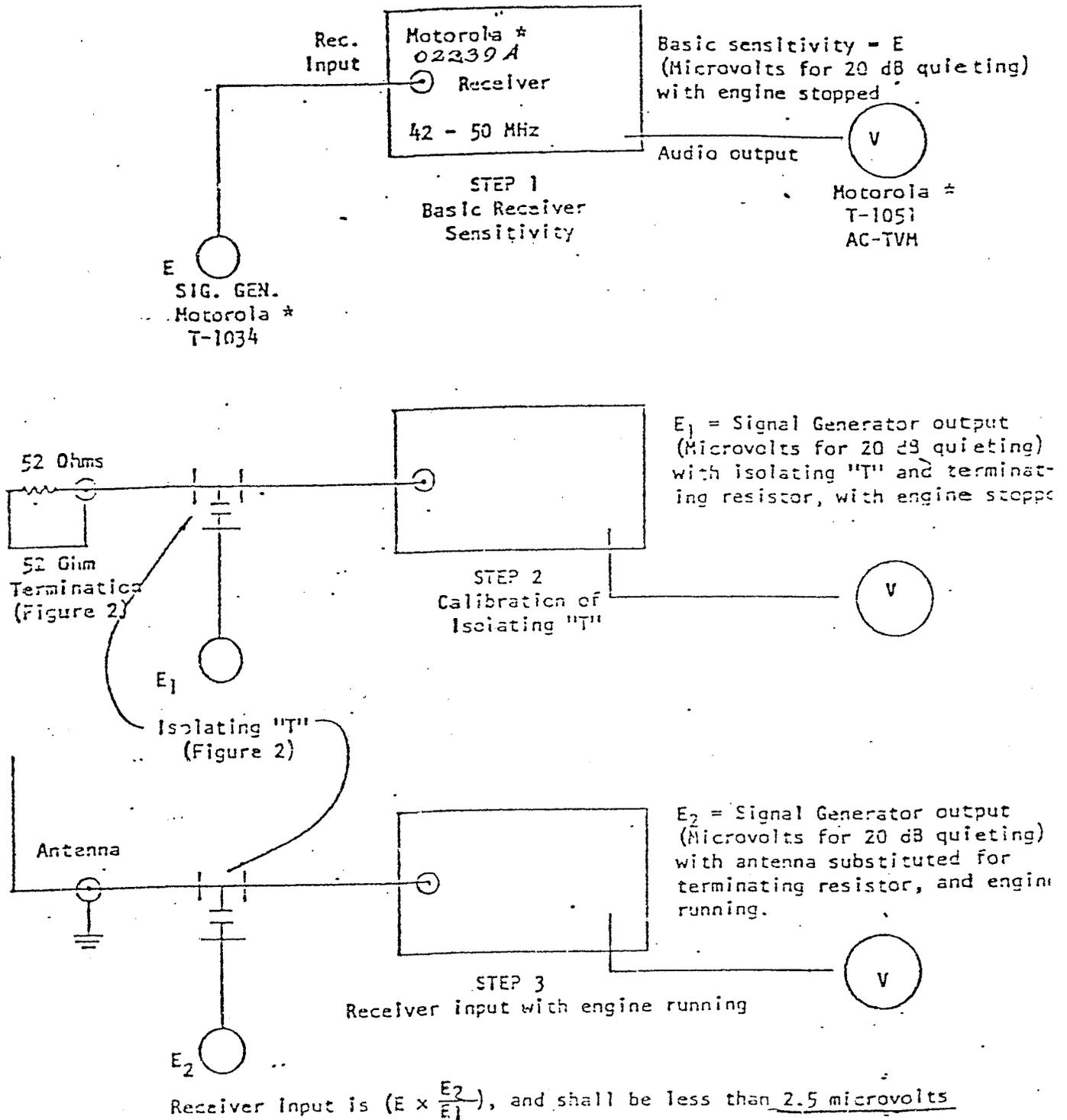
Normal lane change at 55 MPH within 5 seconds and 60 feet.
Slight sway acceptable - good recovery expected.

U-TURNS

Approximate speed 5-10 MPH, 30 foot radius. Slight tire flop acceptable if recovery good. Feet to remain on floorboards.

FIGURE 1

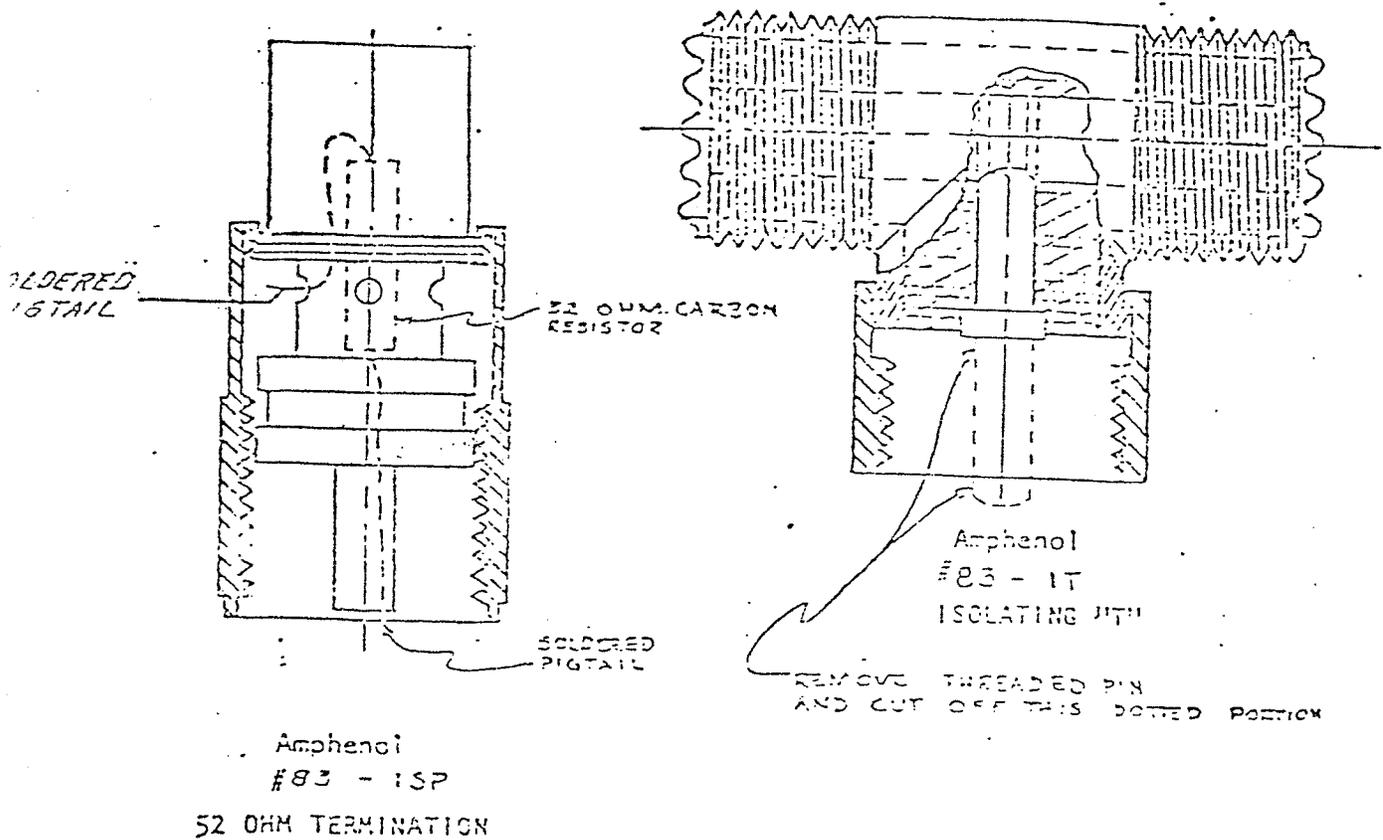
TEST FOR ELECTRICAL SYSTEM NOISE



*The manufacturer's name and model numbers are typical only; any similar equipment may be used.

FIGURE 2

TEST FOR ELECTRICAL SYSTEM NOISE



RADIO SHIELDING AND GROUNDING: The entire electrical system shall be shielded and grounded so that not more than 2.5 microvolts input to the receiver will be required to produce at least 20 dB quieting at the receiver output, when tested in accordance with attached Figures 1 and 2, for all engine speeds from idle to full throttle and with the radio and antenna mounted and connected as on current CHP automobiles in service. This requirement shall be met without the use of any receiver extender, noise blanker or impulse noise suppressor type circuitry.

With the engine stopped, the radio receiver used in the test shall require not more than 0.35 microvolt for 20 dB quieting, measured as shown on Figure 1, Step 1.