

Consider awarding, rejecting or extending bid for Sheriff's Department radar units.

The County Auditor's Department recommended awarding bid for rental of radar units to Applied Concepts, Inc. for 4 years (48 months). Purchase price and rental price are same (\$39,675.00) with no maintenance or up-keep responsibility to Williamson County with replacement at the end of the 4 years.

Moved: Commissioner Boatright  
Seconded: Commissioner Hays  
Motion: To award bid for rental of Sheriff's Department radar units to Applied Concepts, Inc. for 4 years, beginning September 30, 1997.  
Vote: Motion carried 4 - 0  
< Clerk copy here >

Radars

Applied Concepts, Inc.

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty (maintenance), complete set of operating instructions and specifications manual, and operator/instructor training and certification.

144

DESCRIPTION	QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	36 MONTH RENTAL INCLUDES WARRANTY	48 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	11 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	Additional purchase any quantity from 1 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
WATERPROOF RADAR	1 - 10	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	11 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	Additional purchase any quantity from 1 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10

NOTE: The Rental figures are based upon a per unit price.

48 month rental for  
15 units  
approved 9.23.97  
John C. Daefler

RADARS  
Page 9 of 9

VENDOR NAME: APPLIED CONCEPTS, INC.

Radars

Decatur Electronics, Inc.

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty (maintenance), complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	36 MONTH RENTAL INCLUDES WARRANTY	48 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$2295.00	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	11 - 20	\$2100.00	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	Additional purchase any quantity from 1 - 20	\$2100.00	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
WATERPROOF RADAR	1 - 10	NO BID	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	11 - 20	NO BID	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	Additional purchase any quantity from 1 - 20	NO BID	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH

## Radars

## MPH Industries, Inc.

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty (maintenance), complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	36 MONTH RENTAL INCLUDES WARRANTY	48 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$1,853.00	TOTAL \$2110.68	TOTAL \$2390.88
			PER YEAR \$703.56	PER YEAR \$597.72
			PER MONTH \$ 58.63	PER MONTH \$ 49.81
	11 - 20	\$1,853.00	TOTAL \$2110.68	TOTAL \$2390.88
			PER YEAR \$703.56	PER YEAR \$597.72
			PER MONTH \$ 58.63	PER MONTH \$ 49.81
	Additional purchase any quantity from 1 - 20	\$1,853.00	TOTAL \$2110.68	TOTAL \$2390.88
			PER YEAR \$703.56	PER YEAR \$597.72
			PER MONTH \$ 58.63	PER MONTH \$ 58.63
WATERPROOF RADAR	1 - 10	\$2,100.00	TOTAL \$2391.84	TOTAL \$2709.60
			PER YEAR \$797.28	PER YEAR \$677.40
			PER MONTH \$ 66.44	PER MONTH \$ 56.45
	11 - 20	\$2,100.00	TOTAL \$2391.84	TOTAL \$2709.60
			PER YEAR \$797.28	PER YEAR \$677.40
			PER MONTH \$ 66.44	PER MONTH \$ 56.45
	Additional purchase any quantity from 1 - 20	\$2,100.00	TOTAL \$2391.84	TOTAL \$2709.60
			PER YEAR \$797.28	PER YEAR \$677.40
			PER MONTH \$ 66.44	PER MONTH \$ 56.45

PLEASE NOTE: The "rental" quoted qualifies as an "Operating Lease" for income tax purposes.

146

**WILLIAMSON COUNTY BID FORM**

The undersigned, by his/her signature, represents that he/she is authorized to bind the bidder to fully comply with the terms and conditions of the attached Bid Invitation, Specifications, and Special Provisions for the amount(s) shown on the accompanying bid sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

**NAME OF BIDDER:** APPLIED CONCEPTS, INC.

**Mailing Address:** 730 F AVENUE

**City:** PLANO **State:** TX **Zip:** 75074-6752

**Telephone:** ( 800 ) STALKER or 972-578-5110 **Fax:** ( 972 ) 578-5117

  
Signature of Person Authorized to Sign Bid

**Date of Bid:** 9/15/97

**Name and Title of Signer:** KEN MCCOY, DIRECTOR OF MARKETING  
(Please Print or Type)

**PLEASE COMPLETE THE FOLLOWING:**

Prompt Payment Discount: \_\_\_\_\_% \_\_\_\_\_days. (If no discount is offered, Net 30 will apply.)  
☐ Bidding on "all or none" basis. (Will accept award of "all" items only. If left blank, low item will apply.)  
☐ Bidding on low item basis. (Will accept award on "any or all" low bid items.)  
List Additional Limitations if applicable: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DO NOT SIGN OR SUBMIT THIS FORM**  
**WITHOUT READING ENTIRE DOCUMENT**

147

## WILLIAMSON COUNTY

## BID SPECIFICATIONS/BID SHEETS

## 15 OR MORE Ka BAND RADAR UNITS

DELIVERY OF THE INITIAL ORDER OF FIFTEEN (15) RADARS TWO (2) OF WHICH WILL BE TOTALLY WATERPROOF MUST BE NO LATER THAN SEPTEMBER 30, 1997. INSTALLATION, TRAINING, AND INVOICING CAN BE ACCOMPLISHED AFTER OCTOBER 1, 1997.

ALL radars will conform to the National Highway Traffic Safety Administration (NHTSA) "Model Minimum Performance Specifications for Police Traffic Radar Devices", will be on the latest published Consumer Products List (CPL) of the International Association of Chiefs of Police (IACP), and will operate on a frequency of 33.4 to 36.0 GHz, Ka band.

The design of the radar unit will use state-of-the-art technology including Ka-band operation with all signal processing performed by a Digital Signal Processing microprocessor allowing future software upgrades by replacing a plug-in memory module.

The specifications provide for a Doppler radar that will operate either in stationary or moving mode.

In stationary mode, the radar will measure, compute, and display the speed of either an approaching or receding target vehicle from a stationary position.

In opposite lane moving mode, the radar will measure, compute, and display the speed of either an opposite lane approaching target or an opposite lane receding target.

In same lane moving mode, the radar will measure, compute, and display the speed of

1. A rearward same lane approaching target,
2. A rearward same lane receding target,
3. A forward same lane approaching target, or
4. A forward same lane receding target.

The basic design of all equipment offered will have been in full commercial production. No "brand new" or prototype models will be considered.

Upon request by Williamson County bidder will furnish a complete sample unit for examination and testing within ten (10) calendar days.

The radar may be field and laboratory tested to determine it's level of performance and conformity to specifications. Emphasis will be given to the radar's ability to maintain a stable target speed reading, without displaying extraneous false readings while subjected to interference from the following: high powered television stations, other radio frequency interference sources including UHF, VHF, and HF transmitters, automobile alternators, ignition and electrical systems, automobile air conditioners, fan motors, high voltage power lines, traffic signals, neon lights, etc.

All radar units furnished under any resulting contract will be factory certified as to their accuracy with test procedures in conformance with the National Bureau of Standards.

148

## RADAR SPECIFICATIONS

BRAND AND MODEL BEING BID: STALKER Dual SL by Applied Concepts, Inc.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Will have a front antenna and a 4-foot antenna cable with connectors at both ends	X	
2	Will have a rear antenna and a 16-foot antenna cable with connectors at both ends	X	
3	Display/Counting unit with a removable cigarette power cord	X	
4	Cordless hand controller	X	
5	Two (2) tuning forks	X	
6	Required mounting hardware	X	
7	Upon operator demand, the display will have the ability to display installed software version and transmitter frequency in the LED windows.	X	
8	Upon operator demand, the display will indicate power input voltage and internal operating temperature in the LED windows.	X	
9	The radar will provide a minimum range of 1 mile on a straight open lane road with an average sized car.	X	
10	The radar will operate within the Ka band at a frequency between 33.4 and 36.0 GHz.	X	
11	The antenna type will be a circular polarized conical horn.	X	
12	To minimize noise and maximize reliability, the antenna mixer will be of the double balanced type using beamlead diodes. Waveguide cartridge diodes are not acceptable.	X	
13	The maximum antenna beam width will not exceed 15 degrees between the -3 dB power points of the main lobe of the microwave beam, relative to maximum power at the center of the beam. The minimum beam width will be approximately 11 degrees. The side lobes will be approximately -25 dB below the main beam.	X	
14	Maximum dimensions for the antenna are: 2.5" diameter x 4.60" length	X	
15	The antenna will be designed to be waterproof by using O-ring seals at all external joints such as lens/housing, connector/housing, or cable/housing. Silicone rubber sealing is not acceptable due to aging break down.	X	

16	The antenna will be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
17	For ease of installation and repair, the antenna cable will have a removable locking connector at both ends.	X	
18	The antenna will receive the reflected radar signal and convert the radar signal to a Doppler analog signal. The antenna will then convert the Doppler analog signal to a Doppler digital signal prior to sending it to the counting unit for processing. The transmission of a digital Doppler signal is not as susceptible to noise induced by the auto ignition and 2-way radio transmission.	X	
19	Each antenna will independently perform its own Doppler analog-to-digital-conversion prior to sending the digital Doppler signal to the counting unit.	X	
20	The display will include a three-color digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed, using three different colors.	X	
21	All legends on the waterproof display/control unit must be backlit to allow night viewing of the switch function in the absence of ambient light	X	
22	The display LED brightness must be adjustable by an accessible operator control. Because operator tastes vary, automatic LED brightness controls are not acceptable.	X	
23	The display unit will be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
24	Maximum dimensions for the display/counting unit are: 2.3" height x 5" depth x 7" width.	X	
25	For ease of installation and repair, the display/counting unit will have removable locking connectors at all cable entry points.	X	
26	The speaker for the Doppler audio should be located in the display unit and will have an adjustable level control located in the hand controller.	X	
27	Operator validation of target Doppler audio versus noise will be by square wave audio whose pitch does not vary with patrol speed. Since audio tones do not vary with patrol speed, the operator learns to correlate this true Doppler audio with target speed, eliminating the need of constantly watching the display to determine target speed.	X	
28	The operator should be able to easily determine that the target is approaching or retreating by listening to the Doppler audio increase or decrease in loudness. The Doppler audio loudness will be directly proportional to the target size and the target range.	X	
29	To verify all displays are in working order, the display unit will momentarily light all LED segments upon power-up.	X	

30	An operator initiated self-test will perform accuracy verification of all counting unit internal time bases used for speed computation. Any detected malfunction will result in a "FAIL" indication.	X	
31	An operator initiated self-test will perform a diagnostic self test of the digital signal processor (DSP), random access memory (RAM), and associated processor logic. Any detected malfunction will result in a "FAIL" indication.	X	
32	An operator initiated self-test will perform a comprehensive test on the selected antenna by the counting unit to ensure the integrity of the antenna cable and antenna electronics. Any detected malfunction will result in a "FAIL" indication.	X	
33	An automatic self-test should be performed not less than every 3 minutes and not more than every 15 minutes with either a visual or audible indication of successful completion of the test. However, it is not acceptable for a visual self-test operation to replace or to interfere with a target speed on the readout.	X	
34	To prevent obsolescence, the display/counting unit will have a replaceable plug-in memory module to allow future model improvements to be incorporated into existing units.	X	
35	The display/counting unit uses Fast Fourier Transforms to process the digital Doppler signal to determine speed and acceptable signal-to-noise ratio before digitally displaying the target speed and/or patrol speed and/or lock speed on the LED's of the display unit.	X	
36	The radar will be accurate through its range within $\pm 1$ mph in stationary mode and $\pm 2$ mph in moving mode. The system will truncate or round down the target speed to the nearest whole number.	X	
37	The radar must have sufficient processing ability to track and display speeds to at least 200 mph.	X	
38	In stationary mode, the display unit will normally read from 12 mph to 200 mph. A stationary mode display from 2 mph to 200 mph is optional and field selectable.	X	
39	In opposite lane moving mode, the display unit will have the capability of acquiring patrol speed from 5 mph to 70 mph. For 5 mph patrol speed, target speed may be displayed from 20 mph to 195 mph. For 70 mph patrol speed, target speed may be displayed from 35 mph to 130 mph.	X	
40	In same lane moving mode, the display unit will have the capability of acquiring patrol speed from 5 mph to 70 mph. The same lane target speed is $\pm 70\%$ of patrol speed to within 5 mph of patrol speed, i.e., for a patrol speed 50 mph, a target between 15 mph and 45 mph and 55 mph to 85 mph can be measured.	X	
41	Once the patrol speed is acquired, the radar will have the ability to track patrol speed up to 200 mph.	X	

42	The radar will come standard with the ability to display a fastest target in addition to the conventional strongest target. Operation where the fastest display replaces the strongest display is not acceptable. Both the strongest and the fastest targets must be displayed simultaneously. Locking of the fastest target cannot be accomplished until it becomes the strongest target. The fastest feature can be field enabled/disabled.	X	
43	The fastest control will consist of a momentary switch on the hand controller that allows the operator to alternately toggle fastest on or off by momentarily pressing the FASTEST switch. A FASTEST switch that must be constantly held depressed is not acceptable.	X	
44	The radar will come standard with a patrol speed harmonic LED indicator. The harmonic LED indicator can be field enabled/disabled.	X	
45	The radar will come standard with the ability to display speeds in either English or Metric units. This feature can be easily changed in the field.	X	
46	To eliminate hand controller cable breakdown, the radar will come standard with a hand controller that is cordless and uses infra-red light for transmission of switch closures to the display/counting unit.	X	
47	The following controls will be located in the cordless hand controller:	X	
	REQUIRED	X	
	Lock/Release	X	
	Antenna select	X	
	Fastest target on/off	X	
	Test	X	
	Same/opposite select	X	
	PREFERRED	X	
	xmit/hold select	X	
	moving/stationary select	X	
	range adjust	X	
	squelch open/close	X	
	low end patrol speed select	X	
	speaker volume adjust	X	
	Patrol speed blanking - the hand controller and/or the switched display will incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.	X	
	Display brightness adjust	X	
	Slower target select - the target slower control will consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	X	

48	All radar components will be designed to operate and maintain calibration when operated in ambient temperatures from -30 degrees C to +70 degrees C and in conditions of 0 to 90% relative humidity.	X	
49	The power cord will be completely flexible neoprene and will not be more than 1/4" in diameter. It will be terminated in a suitable plug whereby the power input is made by means of plugging into the conventional cigarette lighter receptacle of a vehicle. The end of the cord terminating at the display/counting unit will be a removable locking connector.	X	
50	All electrical connections will be completely enclosed to prevent shocks and reduce shock hazard.	X	
51	Each radar unit will be provided with two (2) tuning forks that are permanently marked with a serial number, the radar transmitter frequency, the associated radar speed in mph, and the corresponding radar speed in kph. The tuning forks will have factory certification as to accuracy and be accurate to within $\pm 1$ mph of the calibrated frequency.	X	
52	Each radar unit provided will respond to the signal from the tuning fork within $\pm 1$ mph.	X	
53	Each radar unit must be capable of interfacing with all major brands of in-car video systems. Interfacing to the video system will not effect or void radar warranty. Radar manufacturer must be willing to provide all required data to the purchasing agency and/or video manufacturer to accomplish proper interfacing.	X	

A full set of operating instructions and specifications manual with case law history in the use of traffic radar will be furnished by the contractor at no additional cost with each unit.

Operator/instructor training and certification will be furnished by the contractor at no additional cost with each unit.

The manufacturer agrees to repair or replace (at its discretion) each unit that fails due to defective materials or workmanship for a period of three (3) years from the date of purchase. Bid will include routine maintenance and repair services for each unit provided for thirty-six (36) months. Indicate name, address, phone number, and the name of a contact person of the nearest repair facility for the radar unit being offered below:

APPLIED CONCEPTS, INC.

730 F AVENUE

PLANO, TX 75074-6752

BRUCE COATS, SERVICE MANAGER 1-800-STALKER

Indicate the average number of days required to perform repairs: 1 - 2 DAYS

VOL 0092 PAGE 154

## ADDITIONAL SPECIFICATIONS FOR TOTALLY WATERPROOF RADARS

BRAND AND MODEL BEING BID: STALKER Dual SL Waterproof by Applied Concepts, Inc.

In addition to ALL of the above stated specifications the following apply to the waterproof radars.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Display/counting unit must be totally waterproof.	X	
2	Waterproof Display/counting unit will have front mounted switches.	X	
3	The waterproof radar must have either or both:	X	
	cordless hand controller	X	
	sealed remote control	X	
4	The waterproof display/counting unit will include a digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	X	
5	The front of the waterproof display/counting unit will contain waterproof switches used for radar set up and operation.	X	
6	The display/counting unit must be waterproof and will allow operation in direct rain. The controls will be waterproof and will be located on the front panel. These controls should include the following functions:		
	lock/release	X	
	xmit/hold select	X	
	antenna select	X	
	moving/stationary select	X	
	range adjust	X	
	squelch open/close	X	
	low end patrol speed select	X	
	test	X	
	speaker volume	X	
	patrol speed blanking	X	
	display brightness adjust	X	

7	The following controls will be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release	X	
	Antenna select	X	
	Fastest target on/off	X	
	Test	X	
	Same/opposite select	X	
	PREFERRED	X	
	xmit/hold select	X	
	moving/stationary select	X	
	range adjust	X	
	squelch open/close	X	
	low end patrol speed select	X	
	speaker volume adjust	X	
	Patrol speed blanking - the hand controller and/or the switched display will incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.	X	
	display brightness adjust	X	
	Slower target select - the target slower control will consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	X	
8	The following controls will be located on the waterproof sealed remote:		
	lock/release	X	
	xmit/hold select	X	
	antenna select	X	
	fastest target on/off	X	
	same/opposite select	X	
	slower target select	X	

VOL 0092 PAGE 156

These bid specifications are non-restrictive and do not include any proprietary items, components, circuits, or devices which would preclude any radar manufacturer from producing radar to meet these specifications. All technical tolerances and other specified criteria contained within these specifications are considered to be state-of-the-art and are currently being met by commercially available radar components. The fact that a manufacturer chooses not to produce radar meeting these specifications should not be sufficient cause to adjudge these specifications restrictive.

**Bid Evaluation:** To insure that this department is able to maintain a speed enforcement program using traffic radar of the highest quality that is supported by a reputable company and to guarantee that this department will get the best value for it's money, bids will be evaluated according to the grading scale below. The categories and percentages assigned to each category are as follows:

1.	Cost	45%
2.	Meets required specifications	25%
3.	Meets preferred specifications	20%
4.	Technical support, Service, Repair response time, and upgradeability	5%
5.	Warranty Coverage	5%

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty, complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	36 MONTH RENTAL INCLUDES WARRANTY	48 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	11 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	Additional purchase any quantity from 1 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
WATERPROOF RADAR	1 - 10	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	11 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10
	Additional purchase any quantity from 1 - 20	\$2645.00 each	TOTAL 2645.00	TOTAL 2645.00
			PER YEAR 881.66	PER YEAR 661.25
			PER MONTH 73.47	PER MONTH 55.10

NOTE: The Rental figures are based upon a per unit price.

156

RADARS  
Page 9 of 9

VENDOR NAME: APPLIED CONCEPTS, INC.

## WILLIAMSON COUNTY BID FORM

The undersigned, by his/her signature, represents that he/she is authorized to bind the bidder to fully comply with the terms and conditions of the attached Bid Invitation, Specifications, and Special Provisions for the amount(s) shown on the accompanying bid sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

NAME OF BIDDER: DECATUR ELECTRONICS, INC

Mailing Address: 715 BRIGHT STREET

City: DECATUR State: IL Zip: 62522

Telephone: ( 217 ) 428-4315 Fax: ( 217 ) 428-5302

Craig Jaschob Date of Bid: 9-16-97  
Signature of Person Authorized to Sign Bid

Name and Title of Signer: CRAIG JASCHOB REGIONAL SALES MANAGER  
(Please Print or Type)

## PLEASE COMPLETE THE FOLLOWING:

Prompt Payment Discount:      %      days. (If no discount is offered, Net 30 will apply )  
☐ Bidding on "all or none" basis. (Will accept award of "all" items only. If left blank, low item will apply.)  
☒ Bidding on low item basis. (Will accept award on "any or all" low bid items.)  
 List Additional Limitations if applicable:

EXCEPTIONS TO BID ARE EXPLAINED ON ATTACHMENTS A & B

**DO NOT SIGN OR SUBMIT THIS FORM**  
**WITHOUT READING ENTIRE DOCUMENT**

## RADAR SPECIFICATIONS

BRAND AND MODEL BEING BID: DECATUR ELECTRONICS - GENESIS II

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Will have a front antenna and a 4-foot antenna cable with connectors at both ends	✓	
2	Will have a rear antenna and a 16-foot antenna cable with connectors at both ends	✓	
3	Display/Counting unit with a removable cigarette power cord	✓	
4	Cordless hand controller		SEE ATTACHMENT A
5	Two (2) tuning forks	✓	
6	Required mounting hardware	✓	
7	Upon operator demand, the display will have the ability to display installed software version and transmitter frequency in the LED windows.		SEE ATTACHMENT A
8	Upon operator demand, the display will indicate power input voltage and internal operating temperature in the LED windows.		✓
9	The radar will provide a minimum range of 1 mile on a straight open lane road with an average sized car.	✓	
10	The radar will operate within the Ka band at a frequency between 33.4 and 36.0 GHz.	✓	
11	The antenna type will be a circular polarized conical horn.	✓	
12	To minimize noise and maximize reliability, the antenna mixer will be of the double balanced type using beamlead diodes. Waveguide cartridge diodes are not acceptable.		✓
13	The maximum antenna beam width will not exceed 15 degrees between the -3 dB power points of the main lobe of the microwave beam, relative to maximum power at the center of the beam. The minimum beam width will be approximately 11 degrees. The side lobes will be approximately -25 dB below the main beam.	✓	
14	Maximum dimensions for the antenna are: 2.5" diameter x 4.60" length	✓	
15	The antenna will be designed to be waterproof by using O-ring seals at all external joints such as lens/housing, connector/housing, or cable/housing. Silicone rubber sealing is not acceptable due to aging break down.		SEE ATTACHMENT A & B

16	The antenna will be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	✓	
17	For ease of installation and repair, the antenna cable will have a removable locking connector at both ends.	✓	
18	The antenna will receive the reflected radar signal and convert the radar signal to a Doppler analog signal. The antenna will then convert the Doppler analog signal to a Doppler digital signal prior to sending it to the counting unit for processing. The transmission of a digital Doppler signal is not as susceptible to noise induced by the auto ignition and 2-way radio transmission.	✓	
19	Each antenna will independently perform its own Doppler analog-to-digital-conversion prior to sending the digital Doppler signal to the counting unit.	✓	
20	The display will include a three-color digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed, using three different colors.		SEE ATTACHMENT A
21	All legends on the waterproof display/control unit must be backlit to allow night viewing of the switch function in the absence of ambient light	✓	
22	The display LED brightness must be adjustable by an accessible operator control. Because operator tastes vary, automatic LED brightness controls are not acceptable.		✓
23	The display unit will be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	✓	
24	Maximum dimensions for the display/counting unit are: 2.3" height x 5" depth x 7" width.	✓	
25	For ease of installation and repair, the display/counting unit will have removable locking connectors at all cable entry points.	✓	
26	The speaker for the Doppler audio should be located in the display unit and will have an adjustable level control located in the hand controller.		SEE ATTACHMENT A
27	Operator validation of target Doppler audio versus noise will be by square wave audio whose pitch does not vary with patrol speed. Since audio tones do not vary with patrol speed, the operator learns to correlate this true Doppler audio with target speed, eliminating the need of constantly watching the display to determine target speed.	✓	
28	The operator should be able to easily determine that the target is approaching or retreating by listening to the Doppler audio increase or decrease in loudness. The Doppler audio loudness will be directly proportional to the target size and the target range.		✓
29	To verify all displays are in working order, the display unit will momentarily light all LED segments upon power-up.	✓	

30	An operator initiated self-test will perform accuracy verification of all counting unit internal time bases used for speed computation. Any detected malfunction will result in a "FAIL" indication.	✓	
31	An operator initiated self-test will perform a diagnostic self test of the digital signal processor (DSP), random access memory (RAM), and associated processor logic. Any detected malfunction will result in a "FAIL" indication.	✓	
32	An operator initiated self-test will perform a comprehensive test on the selected antenna by the counting unit to ensure the integrity of the antenna cable and antenna electronics. Any detected malfunction will result in a "FAIL" indication.	✓	
33	An automatic self-test should be performed not less than every 3 minutes and not more than every 15 minutes with either a visual or audible indication of successful completion of the test. However, it is not acceptable for a visual self-test operation to replace or to interfere with a target speed on the readout.	✓	
34	To prevent obsolescence, the display/counting unit will have a replaceable plug-in memory module to allow future model improvements to be incorporated into existing units.	✓	
35	The display/counting unit uses Fast Fourier Transforms to process the digital Doppler signal to determine speed and acceptable signal-to-noise ratio before digitally displaying the target speed and/or patrol speed and/or lock speed on the LED's of the display unit.	✓	
36	The radar will be accurate through its range within $\pm 1$ mph in stationary mode and $\pm 2$ mph in moving mode. The system will truncate or round down the target speed to the nearest whole number.	✓	
37	The radar must have sufficient processing ability to track and display speeds to at least 200 mph.	✓	
38	In stationary mode, the display unit will normally read from 12 mph to 200 mph. A stationary mode display from 2 mph to 200 mph is optional and field selectable.	✓	
39	In opposite lane moving mode, the display unit will have the capability of acquiring patrol speed from 5 mph to 70 mph. For 5 mph patrol speed, target speed may be displayed from 20 mph to 195 mph. For 70 mph patrol speed, target speed may be displayed from 35 mph to 130 mph.	✓	
40	In same lane moving mode, the display unit will have the capability of acquiring patrol speed from 5 mph to 70 mph. The same lane target speed is $\pm 70\%$ of patrol speed to within 5 mph of patrol speed, i.e., for a patrol speed 50 mph, a target between 15 mph and 45 mph and 55 mph to 85 mph can be measured.	✓	
41	Once the patrol speed is acquired, the radar will have the ability to track patrol speed up to 200 mph.	✓	

42	The radar will come standard with the ability to display a fastest target in addition to the conventional strongest target. Operation where the fastest display replaces the strongest display is not acceptable. Both the strongest and the fastest targets must be displayed simultaneously. Locking of the fastest target cannot be accomplished until it becomes the strongest target. The fastest feature can be field enabled/disabled.	✓	
43	The fastest control will consist of a momentary switch on the hand controller that allows the operator to alternately toggle fastest on or off by momentarily pressing the FASTEST switch. A FASTEST switch that must be constantly held depressed is not acceptable.	✓	
44	The radar will come standard with a patrol speed harmonic LED indicator. The harmonic LED indicator can be field enabled/disabled.		✓
45	The radar will come standard with the ability to display speeds in either English or Metric units. This feature can be easily changed in the field.		SEE ATTACHMENT A
46	To eliminate hand controller cable breakdown, the radar will come standard with a hand controller that is cordless and uses infra-red light for transmission of switch closures to the display/counting unit.		SEE ATTACHMENT A
47	The following controls will be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release		SEE ATTACHMENT A
	Antenna select		
	Fastest target on/off		
	Test		
	Same/opposite select		
	PREFERRED		
	xmit/hold select		
	moving/stationary select		
	range adjust		
	squelch open/close		
	low end patrol speed select		
	speaker volume adjust		
	Patrol speed blanking - the hand controller and/or the switched display will incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.		✓
	Display brightness adjust		✓
	Slower target select - the target slower control will consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.		SEE ATTACHMENT A

48	All radar components will be designed to operate and maintain calibration when operated in ambient temperatures from -30 degrees C to + 70 degrees C and in conditions of 0 to 90% relative humidity.	✓	
49	The power cord will be completely flexible neoprene and will not be more than 1/4" in diameter. It will be terminated in a suitable plug whereby the power input is made by means of plugging into the conventional cigarette lighter receptacle of a vehicle. The end of the cord terminating at the display/counting unit will be a removable locking connector.	✓	
50	All electrical connections will be completely enclosed to prevent shocks and reduce shock hazard.	✓	
51	Each radar unit will be provided with two (2) tuning forks that are permanently marked with a serial number, the radar transmitter frequency, the associated radar speed in mph, and the corresponding radar speed in kph. The tuning forks will have factory certification as to accuracy and be accurate to within $\pm 1$ mph of the calibrated frequency.	✓	
52	Each radar unit provided will respond to the signal from the tuning fork within $\pm 1$ mph.	✓	
53	Each radar unit must be capable of interfacing with all major brands of in-car video systems. Interfacing to the video system will not effect or void radar warranty. Radar manufacturer must be willing to provide all required data to the purchasing agency and/or video manufacturer to accomplish proper interfacing.	✓	

A full set of operating instructions and specifications manual with case law history in the use of traffic radar will be furnished by the contractor at no additional cost with each unit.

Operator/Instructor training and certification will be furnished by the contractor at no additional cost with each unit.

The manufacturer agrees to repair or replace (at its discretion) each unit that fails due to defective materials or workmanship for a period of three (3) years from the date of purchase. Bid will include routine maintenance and repair services for each unit provided for thirty-six (36) months. Indicate name, address, phone number, and the name of a contact person of the nearest repair facility for the radar unit being offered below:

ONE DAY RADAR	CONTACT: DAVE HORNE
16241 MAGELLAN LANE	PHONE: (714) 848-2776
HUNTINGTON BEACH, CA 92647	

Indicate the average number of days required to perform repairs: 48 HOURS TURNAROUND FROM DATE REC'D

## ADDITIONAL SPECIFICATIONS FOR TOTALLY WATERPROOF RADARS

BRAND AND MODEL-BEING BID: DECATUR ELECTRONICS SUBMITS A NO BID ON THIS PRODUCT

In addition to ALL of the above stated specifications the following apply to the waterproof radars.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Display/counting unit must be totally waterproof.		
2	Waterproof Display/counting unit will have front mounted switches.		
3	The waterproof radar must have either or both:		
	cordless hand controller		
	sealed remote control		
4	The waterproof display/counting unit will include a digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.		
5	The front of the waterproof display/counting unit will contain waterproof switches used for radar set up and operation.		
6	The display/counting unit must be waterproof and will allow operation in direct rain. The controls will be waterproof and will be located on the front panel. These controls should include the following functions:		
	lock/release		
	xmit/hold select		
	antenna select		
	moving/stationary select		
	range adjust		
	squelch open/close		
	low end patrol speed select		
	test		
	speaker volume		
	patrol speed blanking		
	display brightness adjust		

7	The following controls will be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release		
	Antenna select		
	Fastest target on/off		
	Test		
	Same/opposite select		
	PREFERRED		
	xmit/hold select		
	moving/stationary select		
	range adjust		
	squelch open/close		
	low end patrol speed select		
	speaker volume adjust		
	Patrol speed blanking - the hand controller and/or the switched display will incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.		
	display brightness adjust		
	Slower target select - the target slower control will consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.		
8	The following controls will be located on the waterproof sealed remote:		
	lock/release		
	xmit/hold select		
	antenna select		
	fastest target on/off		
	same/opposite select		
	slower target select		

These bid specifications are non-restrictive and do not include any proprietary items, components, circuits, or devices which would preclude any radar manufacturer from producing radar to meet these specifications. All technical tolerances and other specified criteria contained within these specifications are considered to be state-of-the-art and are currently being met by commercially available radar components. The fact that a manufacturer chooses not to produce radar meeting these specifications should not be sufficient cause to adjudge these specifications restrictive.

Bid Evaluation: To insure that this department is able to maintain a speed enforcement program using traffic radar of the highest quality that is supported by a reputable company and to guarantee that this department will get the best value for it's money, bids will be evaluated according to the grading scale below. The categories and percentages assigned to each category are as follows:

1.

Cost

45%
2.

Meets required specifications

25%
3.

Meets preferred specifications

20%
4.

Technical support, Service, Repair response time, and upgradeability

5%
5.

Warranty Coverage

5%

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty, complete set of operating instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	36 MONTH RENTAL INCLUDES WARRANTY	48 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$2295.00	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	11 - 20	\$2100.00	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	Additional purchase any quantity from 1 - 20	\$2100.00	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
WATERPROOF RADAR	1 - 10	NO BID	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	11 - 20	NO BID	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH
	Additional purchase any quantity from 1 - 20	NO BID	TOTAL	TOTAL
			PER YEAR	PER YEAR
			PER MONTH	PER MONTH

**Estimated Product Life-Span & Test Methods:** Since silicone rubber is so resistant to degradation by UV rays and weathering that the life-span of a silicone in an application is generally very long.

VOL 0092 PAGE 166


The most common test method for determining the life-span of a silicone in a sealant application is the weatherometer. The weatherometer is a device that simulates weather extremes by a controlled variation of temperature, UV exposure, and humidity. Generally it is the accepted assumption that 900 hours in the weatherometer simulates one whole year of normal weathering in Florida.

Silicone sealants have currently lasted longer than 50,000 hours in the weatherometer, or a simulated time of 45 years in the Florida sun and humidity. Over this extremely long test period the silicone rubber was seen to only increase in durometer 1 or 2 points, an almost unmeasurable amount. Although the weatherometer is an excellent indicator of expected product life-span, each individual application must be tested separately for exact life-span determination.

One example of extreme life-span/weathering ability is the use of silicone adhesives to seal the windows of the United Nations Building in New York City. The silicone was applied in 1965 and is still working today. In fact, samples of the silicone that were taken from the building seventeen years after installation exhibited only a one point increase in hardness.

I hope you find this information useful and please feel free to contact me with any further questions or concerns at the number listed below. Thank you for your continued interest in GE Silicones.

Sincerely,

  
Michael S. Haugen  
Regional Applications Engineer  
GE Silicones - Midwest Region  
(630)505-2562, Fax - (630)505-2561

**Decatur Electronics, Inc.****GENESIS REFERENCE LIST**

Oklahoma Highway Safety  
Department of Public Safety  
3223 N. Lincoln Blvd.  
Oklahoma city, OK 73105

Contact: Jerry Weyrich / Director of Communications  
(405)425-2178 or (405)425-2182

Brand/Model: Decatur Electronics, Inc. / Genesis I Remote Display

Quantity: 96 Units

Delivery: 5/96

Mississippi Department of Public Safety  
1900 E. Woodrow Wilson Ave.  
Jackson, MS 39205

Contact: Captain Shelbourn  
(601)264-3529

Brand/Model: Decatur Electronics, Inc. / Genesis I

Quantity: 32 Units

Delivery: 10/96

City of Lubbock  
302 Municipal Drive  
Lubbock, TX 79457

Contact: Paul Thomas  
(806)767-2167

Brand/Model: Decatur Electronics, Inc. / Genesis I Remote Display

Quantity: 20 Units

Delivery: 8/94 - 7/95

**WILLIAMSON COUNTY BID FORM**

The undersigned, by his/her signature, represents that he/she is authorized to bind the bidder to fully comply with the terms and conditions of the attached Bid Invitation, Specifications, and Special Provisions for the amount(s) shown on the accompanying bid sheet(s). By signing below, you have read the entire document and agreed to the terms therein.

NAME OF BIDDER: MPH Industries, Inc.

Mailing Address: 316 East Ninth Street

City: Owensboro State: KY Zip: 42303

Telephone: ( 502 ) 685-6421 Fax: ( 502 ) 685-6341

Frederick S. Perry Date of Bid: September 15, 1997  
Signature of Person Authorized to Sign Bid

Name and Title of Signer: Frederick S. Perry, President  
(Please Print or Type)

**PLEASE COMPLETE THE FOLLOWING:**

Prompt Payment Discount: N/A % 30 days. (If no discount is offered, Net 30 will apply.)  
[ ] Bidding on "all or none" basis. (Will accept award of "all" items only. If left blank, low item will apply.)  
[X] Bidding on low item basis. (Will accept award on "any or all" low bid items.)  
List Additional Limitations if applicable: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DO NOT SIGN OR SUBMIT THIS FORM**  
**WITHOUT READING ENTIRE DOCUMENT**

## WILLIAMSON COUNTY

## BID SPECIFICATIONS/BID SHEETS

## 15 OR MORE Ka BAND RADAR UNITS

DELIVERY OF THE INITIAL ORDER OF FIFTEEN (15) RADARS TWO (2) OF WHICH WILL BE TOTALLY WATERPROOF MUST BE NO LATER THAN SEPTEMBER 30, 1997. INSTALLATION, TRAINING, AND INVOICING CAN BE ACCOMPLISHED AFTER OCTOBER 1, 1997.

ALL radars will conform to the National Highway Traffic Safety Administration (NHTSA) "Model Minimum Performance Specifications for Police Traffic Radar Devices", will be on the latest published Consumer Products List (CPL) of the International Association of Chiefs of Police (IACP), and will operate on a frequency of 33.4 to 36.0 GHz, Ka band.

The design of the radar unit will use state-of-the-art technology including Ka-band operation with all signal processing performed by a Digital Signal Processing microprocessor allowing future software upgrades by replacing a plug-in memory module.

The specifications provide for a Doppler radar that will operate either in stationary or moving mode.

In stationary mode, the radar will measure, compute, and display the speed of either an approaching or receding target vehicle from a stationary position.

In opposite lane moving mode, the radar will measure, compute, and display the speed of either an opposite lane approaching target or an opposite lane receding target.

In same lane moving mode, the radar will measure, compute, and display the speed of

1. A rearward same lane approaching target,
2. A rearward same lane receding target,
3. A forward same lane approaching target, or
4. A forward same lane receding target.

The basic design of all equipment offered will have been in full commercial production. No "brand new" or prototype models will be considered.

Upon request by Williamson County bidder will furnish a complete sample unit for examination and testing within ten (10) calendar days.

The radar may be field and laboratory tested to determine it's level of performance and conformity to specifications. Emphasis will be given to the radar's ability to maintain a stable target speed reading, without displaying extraneous false readings while subjected to interference from the following: high powered television stations, other radio frequency interference sources including UHF, VHF, and HF transmitters, automobile alternators, ignition and electrical systems, automobile air conditioners, fan motors, high voltage power lines, traffic signals, neon lights, etc.

All radar units furnished under any resulting contract will be factory certified as to their accuracy with test procedures in conformance with the National Bureau of Standards.

VOL 0092 PAGE 170

## RADAR SPECIFICATIONS

BRAND AND MODEL BEING BID: MPH PYTHON Series II

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Will have a front antenna and a 4-foot antenna cable with connectors at both ends	X	
2	Will have a rear antenna and a 16-foot antenna cable with connectors at both ends	X	
3	Display/Counting unit with a removable cigarette power cord		X
4	Cordless hand controller		X
5	Two (2) tuning forks	X	
6	Required mounting hardware	X	
7	Upon operator demand, the display will have the ability to display installed software version and transmitter frequency in the LED windows.		X
8	Upon operator demand, the display will indicate power input voltage and internal operating temperature in the LED windows.		X
9	The radar will provide a minimum range of 1 mile on a straight open lane road with an average sized car.		X
10	The radar will operate within the Ka band at a frequency between 33.4 and 36.0 GHz.	X	
11	The antenna type will be a circular polarized conical horn.	X	
12	To minimize noise and maximize reliability, the antenna mixer will be of the double balanced type using beamlead diodes. Waveguide cartridge diodes are not acceptable.		X
13	The maximum antenna beam width will not exceed 15 degrees between the -3 dB power points of the main lobe of the microwave beam, relative to maximum power at the center of the beam. The minimum beam width will be approximately 11 degrees. The side lobes will be approximately -25 dB below the main beam.	X	
14	Maximum dimensions for the antenna are: 2.5" diameter x 4.60" length	X	
15	The antenna will be designed to be waterproof by using O-ring seals at all external joints such as lens/housing, connector/housing, or cable/housing. Silicone rubber sealing is not acceptable due to aging break down.	X	

RADARS  
Page 2 of 9

VENDOR NAME: MPH Industries, Inc.

170

16	The antenna will be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
17	For ease of installation and repair, the antenna cable will have a removable locking connector at both ends.	X	
18	The antenna will receive the reflected radar signal and convert the radar signal to a Doppler analog signal. The antenna will then convert the Doppler analog signal to a Doppler digital signal prior to sending it to the counting unit for processing. The transmission of a digital Doppler signal is not as susceptible to noise induced by the auto ignition and 2-way radio transmission.		X
19	Each antenna will independently perform its own Doppler analog-to-digital-conversion prior to sending the digital Doppler signal to the counting unit.		X
20	The display will include a three-color digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed, using three different colors.		X
21	All legends on the waterproof display/control unit must be backlit to allow night viewing of the switch function in the absence of ambient light	X	
22	The display LED brightness must be adjustable by an accessible operator control. Because operator tastes vary, automatic LED brightness controls are not acceptable.		X
23	The display unit will be of modular construction to facilitate repair of the integrated circuits and transistors mounted on circuit boards.	X	
24	Maximum dimensions for the display/counting unit are: 2.3" height x 5" depth x 7" width.	X	
25	For ease of installation and repair, the display/counting unit will have removable locking connectors at all cable entry points.		X
26	The speaker for the Doppler audio should be located in the display unit and will have an adjustable level control located in the hand controller.		X
27	Operator validation of target Doppler audio versus noise will be by square wave audio whose pitch does not vary with patrol speed. Since audio tones do not vary with patrol speed, the operator learns to correlate this true Doppler audio with target speed, eliminating the need of constantly watching the display to determine target speed.		X
28	The operator should be able to easily determine that the target is approaching or retreating by listening to the Doppler audio increase or decrease in loudness. The Doppler audio loudness will be directly proportional to the target size and the target range.	X	
29	To verify all displays are in working order, the display unit will momentarily light all LED segments upon power-up.	X	

VOL 0092 PAGE 172

30	An operator initiated self-test will perform accuracy verification of all counting unit internal time bases used for speed computation. Any detected malfunction will result in a "FAIL" indication.	X	
31	An operator initiated self-test will perform a diagnostic self test of the digital signal processor (DSP), random access memory (RAM), and associated processor logic. Any detected malfunction will result in a "FAIL" indication.	X	
32	An operator initiated self-test will perform a comprehensive test on the selected antenna by the counting unit to ensure the integrity of the antenna cable and antenna electronics. Any detected malfunction will result in a "FAIL" indication.		X
33	An automatic self-test should be performed not less than every 3 minutes and not more than every 15 minutes with either a visual or audible indication of successful completion of the test. However, it is not acceptable for a visual self-test operation to replace or to interfere with a target speed on the readout.		X
34	To prevent obsolescence, the display/counting unit will have a replaceable plug-in memory module to allow future model improvements to be incorporated into existing units.	X	
35	The display/counting unit uses Fast Fourier Transforms to process the digital Doppler signal to determine speed and acceptable signal-to-noise ratio before digitally displaying the target speed and/or patrol speed and/or lock speed on the LED's of the display unit.	X	
36	The radar will be accurate through its range within $\pm 1$ mph in stationary mode and $\pm 2$ mph in moving mode. The system will truncate or round down the target speed to the nearest whole number.	X	
37	The radar must have sufficient processing ability to track and display speeds to at least 200 mph.	X	
38	In stationary mode, the display unit will normally read from 12 mph to 200 mph. A stationary mode display from 2 mph to 200 mph is optional and field selectable.		X
39	In opposite lane moving mode, the display unit will have the capability of acquiring patrol speed from 5 mph to 70 mph. For 5 mph patrol speed, target speed may be displayed from 20 mph to 195 mph. For 70 mph patrol speed, target speed may be displayed from 35 mph to 130 mph.		X
40	In same lane moving mode, the display unit will have the capability of acquiring patrol speed from 5 mph to 70 mph. The same lane target speed is $\pm 70\%$ of patrol speed to within 5 mph of patrol speed, i.e., for a patrol speed 50 mph, a target between 15 mph and 45 mph and 55 mph to 85 mph can be measured.		X
41	Once the patrol speed is acquired, the radar will have the ability to track patrol speed up to 200 mph.		X

42	The radar will come standard with the ability to display a fastest target in addition to the conventional strongest target. Operation where the fastest display replaces the strongest display is not acceptable. Both the strongest and the fastest targets must be displayed simultaneously. Locking of the fastest target cannot be accomplished until it becomes the strongest target. The fastest feature can be field enabled/disabled.	X	
43	The fastest control will consist of a momentary switch on the hand controller that allows the operator to alternately toggle fastest on or off by momentarily pressing the FASTEST switch. A FASTEST switch that must be constantly held depressed is not acceptable.		X
44	The radar will come standard with a patrol speed harmonic LED indicator. The harmonic LED indicator can be field enabled/disabled.		X
45	The radar will come standard with the ability to display speeds in either English or Metric units. This feature can be easily changed in the field.	X	
46	To eliminate hand controller cable breakdown, the radar will come standard with a hand controller that is cordless and uses infra-red light for transmission of switch closures to the display/counting unit.		X
47	The following controls will be located in the cordless hand controller:		
	REQUIRED		
	Lock/Release	X	
	Antenna select	X	
	Fastest target on/off	X	
	Test		X
	Same/opposite select	X	
	PREFERRED		
	xmit/hold select	X	
	moving/stationary select		X
	range adjust		X
	squelch open/close		X
	low end patrol speed select		X
	speaker volume adjust		X
	Patrol speed blanking - the hand controller and/or the switched display will incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.		X
	Display brightness adjust		X
	Slower target select - the target slower control will consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.	X	

VOL 0092 PAGE 174

48	All radar components will be designed to operate and maintain calibration when operated in ambient temperatures from -30 degrees C to + 70 degrees C and in conditions of 0 to 90% relative humidity.	X	
49	The power cord will be completely flexible neoprene and will not be more than 1/4" in diameter. It will be terminated in a suitable plug whereby the power input is made by means of plugging into the conventional cigarette lighter receptacle of a vehicle. The end of the cord terminating at the display/counting unit will be a removable locking connector.		X
50	All electrical connections will be completely enclosed to prevent shocks and reduce shock hazard.	X	
51	Each radar unit will be provided with two (2) tuning forks that are permanently marked with a serial number, the radar transmitter frequency, the associated radar speed in mph, and the corresponding radar speed in kph. The tuning forks will have factory certification as to accuracy and be accurate to within $\pm 1$ mph of the calibrated frequency.	X	
52	Each radar unit provided will respond to the signal from the tuning fork within $\pm 1$ mph.	X	
53	Each radar unit must be capable of interfacing with all major brands of in-car video systems. Interfacing to the video system will not effect or void radar warranty. Radar manufacturer must be willing to provide all required data to the purchasing agency and/or video manufacturer to accomplish proper interfacing.	X	

A full set of operating instructions and specifications manual with case law history in the use of traffic radar will be furnished by the contractor at no additional cost with each unit.

Operator/Instructor training and certification will be furnished by the contractor at no additional cost with each unit.

The manufacturer agrees to repair or replace (at its discretion) each unit that fails due to defective materials or workmanship for a period of three (3) years from the date of purchase. Bid will include routine maintenance and repair services for each unit provided for thirty-six (36) months. Indicate name, address, phone number, and the name of a contact person of the nearest repair facility for the radar unit being offered below:

Joe Curry and Son

6910 Bellaire Blvd., Suite 14

Houston, TX 77074

(713) 988-6122

Indicate the average number of days required to perform repairs: 5 - 7 Working Days

RADARS  
Page 6 of 9

VENDOR NAME: MPH Industries, Inc.

174

## ADDITIONAL SPECIFICATIONS FOR TOTALLY WATERPROOF RADARS

BRAND AND MODEL BEING BID: MPH PYTHON Series II Dual Ka-Band w/ Weatherproof Pouches

In addition to ALL of the above stated specifications the following apply to the waterproof radars.

SPEC #	RADAR SPECIFICATION DESCRIPTION	CHECK APPROPRIATE BOX	
		YES ON RADAR	NO NOT ON RADAR
1	Display/counting unit must be totally waterproof.	x	
2	Waterproof Display/counting unit will have front mounted switches.	x	
3	The waterproof radar must have either or both:		
	cordless hand controller		x
	sealed remote control	x	
4	The waterproof display/counting unit will include a digital readout system of the LED type. The digital readout will have the capability of simultaneously displaying patrol speed, target speed, and locked target (or fastest target) speed.	x	
5	The front of the waterproof display/counting unit will contain waterproof switches used for radar set up and operation.	x	
6	The display/counting unit must be waterproof and will allow operation in direct rain. The controls will be waterproof and will be located on the front panel. These controls should include the following functions:		
	lock/release		x
	xmit/hold select		x
	antenna select		x
	moving/stationary select	x	
	range adjust	x	
	squelch open/close	x	
	low end patrol speed select		x
	test	x	
	speaker volume	x	
	patrol speed blanking	x	
	display brightness adjust		x

VOL 0092 PAGE 176

7	The following controls will be located in the cordless hand controller: NOT APPLICABLE		
	REQUIRED		
	Lock/Release		
	Antenna select		
	Fastest target on/off		
	Test		
	Same/opposite select		
	PREFERRED		
	xmit/hold select		
	moving/stationary select		
	range adjust		
	squelch open/close		
	low end patrol speed select		
	speaker volume adjust		
	Patrol speed blanking - the hand controller and/or the switched display will incorporate a dual purpose P.S. Blank key. The P.S. Blank key can be used to blank a locked patrol speed or blank the patrol speed window to acquire a new patrol speed.		
	display brightness adjust		
	Slower target select - the target slower control will consist of a momentary switch on the hand control that allows the operator to alternately toggle target slower on or off by momentarily pressing the SLOWER switch. A SLOWER switch that must be constantly held depressed is not acceptable.		
8	The following controls will be located on the waterproof sealed remote:		
	lock/release	x	
	xmit/hold select	x	
	antenna select	x	
	fastest target on/off	x	
	same/opposite select	x	
	slower target select	x	

These bid specifications are non-restrictive and do not include any proprietary items, components, circuits, or devices which would preclude any radar manufacturer from producing radar to meet these specifications. All technical tolerances and other specified criteria contained within these specifications are considered to be state-of-the-art and are currently being met by commercially available radar components. The fact that a manufacturer chooses not to produce radar meeting these specifications should not be sufficient cause to adjudge these specifications restrictive.

**Bid Evaluation:** To insure that this department is able to maintain a speed enforcement program using traffic radar of the highest quality that is supported by a reputable company and to guarantee that this department will get the best value for it's money, bids will be evaluated according to the grading scale below. The categories and percentages assigned to each category are as follows:

- |    |  |     |
|----|--|-----|
| 1. | Cost   | 45% |
| 2. | Meets required specifications  | 25% |
| 3. | Meets preferred specifications                                       | 20% |
| 4. | Technical support, Service, Repair response time, and upgradeability | 5%  |
| 5. | Warranty Coverage  | 5%  |

Price quoted is to include delivery to Sheriff's Department in Williamson County, installation, minimum three (3) year full parts and labor warranty, complete set of operating Instructions and specifications manual, and operator/instructor training and certification.

DESCRIPTION	QUANTITY	PURCHASE PRICE INCLUDES WARRANTY	36 MONTH RENTAL INCLUDES WARRANTY	48 MONTH RENTAL INCLUDES WARRANTY
RADAR	1 - 10	\$1,853.00	TOTAL \$2110.68	TOTAL \$2390.88
			PER YEAR \$703.56	PER YEAR \$597.72
			PER MONTH \$ 58.63	PER MONTH \$ 49.81
	11 - 20	\$1,853.00	TOTAL \$2110.68	TOTAL \$2390.88
			PER YEAR \$703.56	PER YEAR \$597.72
			PER MONTH \$ 58.63	PER MONTH \$ 49.81
	Additional purchase any quantity from 1 - 20	\$1,853.00	TOTAL \$2110.68	TOTAL \$2390.88
			PER YEAR \$703.56	PER YEAR \$597.72
			PER MONTH \$ 58.63	PER MONTH \$58.63
WATERPROOF RADAR	1 - 10	\$2,100.00	TOTAL \$2391.84	TOTAL \$2709.60
			PER YEAR \$797.28	PER YEAR \$677.40
			PER MONTH \$ 66.44	PER MONTH \$ 56.45
	11 - 20	\$2,100.00	TOTAL \$2391.84	TOTAL \$2709.60
			PER YEAR \$797.28	PER YEAR \$677.40
			PER MONTH \$ 66.44	PER MONTH \$ 56.45
	Additional purchase any quantity from 1 - 20	\$2,100.00	TOTAL \$2391.84	TOTAL \$2709.60
			PER YEAR \$797.28	PER YEAR \$677.40
			PER MONTH \$ 66.44	PER MONTH \$ 56.45

PLEASE NOTE: The "rental" quoted qualifies as an "Operating Lease" for income tax purposes.

AGENDA ITEM # 20

September 23, 1997

\*

Consider awarding, rejecting or extending property and casualty insurance proposal.

No action was taken on this agenda item.

AGENDA ITEM # 21

September 23, 1997

\*

Consider awarding, rejecting or extending vehicle insurance proposal.

No action was taken on this agenda item.

AGENDA ITEM # 22

September 23, 1997

\*

Consider authorizing advertising and setting date to open bids for ambulances.

Moved: Commissioner Hays

Seconded: Judge Doerfler

Motion: To authorize the County Auditor to advertise 10:30 a.m. on October 28, 1997, to open bids for ambulances.

Vote: Motion carried 4 - 0

AGENDA ITEM # 23

September 23, 1997

\*

Consider approving members for the Williamson County Child Welfare Board for the term of October 1, 1997, to September 30, 1998.

Moved: Judge Doerfler

Seconded: Commissioner Mehevec

Motion: To approve members for the Williamson County Child Welfare Board for the term of October 1, 1997, to September 30, 1997.

Vote: Motion carried 4 - 0

< Clerk copy here >