

PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a **PROVISIONAL APPLICATION** under 37 CFR 1.53(b)(2)

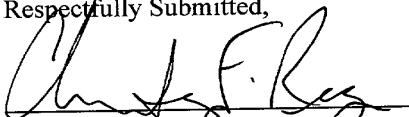
Docket No.		58076		Type (+) --- [+]	
INVENTOR(s)/APPLICANT(s)					
LAST NAME	FIRST NAME	MID. INIT.	RESIDENCE (CITY/STATE OR COUNTRY)		
FLICK	Kenneth	E.	Douglasville, GA		
TITLE OF THE INVENTION (280 Characters Max)					
VEHICLE TRACKING SYSTEM WITH THEFT NOTIFICATION					
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ENCLOSED APPLICATION PARTS (check all that apply)					
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☒	Drawing(s)	Number of Sheets	5	☐ Other (specify) _____	
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[] Additional inventors are being named on separately numbered sheets attached hereto.

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

[✓] No. [] Yes

Respectfully Submitted,


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Date: September 29, 2000

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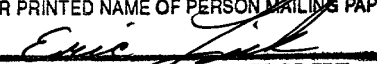
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kenneth E. FLICK
Serial: Not Yet Assigned
Attorney's Docket No.: 58076
Filed: Herewith
For: **VEHICLE TRACKING SYSTEM WITH THEFT NOTIFICATION**

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled: **VEHICLE TRACKING SYSTEM WITH THEFT NOTIFICATION** described in:

- ☒ (x) the specification filed herewith
☐ () application serial no. _____ filed _____
☐ () patent no. _____ issued _____

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FULL NAME

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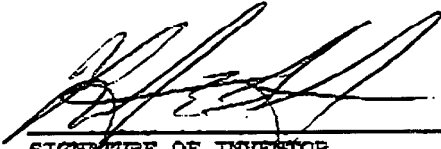
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

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NAME OF INVENTOR


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VEHICLE TRACKING SYSTEM WITH THEFT NOTIFICATION

Field of the Invention

The present invention relates to the field of vehicle devices, and, more particularly, to a tracking and alerting system for a vehicle.

5

Description of the Invention

The invention includes a unit to be mounted in the vehicle and a monitoring station. The unit in the vehicle includes a GPS receiver, and a transmitter which may transmit on the control band of the cellular telephone network, or, via a voice or other data channel of the cellular network, or other wireless communications network. For example, the transmitter could also be a satellite transmitter.

15 The GPS receiver determines the vehicle location. In addition, the GPS receiver may be connected to a controller which controls and/or performs a number of vehicle tracking and/or security functions. Wireless vehicle location determining devices and approaches other than GPS may also be used in some embodiments of the invention. For example, vehicle location systems based upon multiple receptions from adjacent cellular receivers can also be used.

20 The monitoring station is interfaced to the cellular telephone network, or other communications

network, to thereby communicate with the vehicle unit.
In addition, the monitoring station is also connected
to the Internet to provide a number of advantageous
features including updating the user or other authority
5 when away from the vehicle of the vehicle's position.
These features and advantages are described in further
detail below. The monitoring station may also be
connected to the telephone network in order to provide
various preprogrammed communications, such as to the
10 user or other authority.

The system preferably implements one or more
of the following features:

1. Detects the vehicle being stolen and
15 transmits a signal to the monitoring station
to contact up to 3 people, for example,
predetermined by the user, of theft of the
vehicle and starts tracking the vehicle. The
contact may be by one or more of the
20 following: an e-mail message, a pager alert,
a cellular telephone call, or other telephone
call.
2. Detects an optional vehicle alarm system
25 activation and transmits a signal to the
monitoring station to contact up to 3
predetermined people to inform them the
vehicle's alarm is being activated.
- 30 3. Detects an optional vehicle alarm systems
remote PANIC activation and transmits a
signal to the monitoring station to contact
up to 3 predetermined people to inform them
of the vehicle's PANIC being activated.

35

4. Detects a vehicle being programmed to operate from an unauthorized remote transmitter, key transponder, other transponder, or other device that has a unique coding, and the vehicle unit transmits a signal to the monitoring station to contact up to 3 predetermined people to inform them of this occurrence. The system can also make available information relating to a number of such coded devices, or a change therein, or when a change occurred. A message can be sent to the user or the information can be available to the user on the WEB site. The vehicle would be equipped with a security system as disclosed in U.S. Patent No. 5,654,688, for example, which determines an unauthorized transmitter and provides an alert feature. This patent is incorporated herein in its entirety by reference.
5. Detects the vehicle traveling over a predetermined speed, such as for a predetermined time, and transmits a signal to the monitoring station to send a message, such as an e-mail informing the user (and/or others) of this occurrence. Of course, the message could also be sent via a telephone call or page, should additional urgency be required. The vehicle's predetermined max speed limit and duration thereof can be selected by the user.
6. Detects a low battery voltage such as for a predetermined time and transmits a signal to the monitoring station to contact up to 3

predetermined people to inform them of vehicle's low battery voltage. This is especially advantageous during winter so that the vehicle could be started, for example, to prevent a problem before it happens). The time setting is selectable by the user.

7. Detects vehicle not moving for a predetermined time and transmits a signal to the monitoring station to send, for example, a nightly e-mail informing the user of all the vehicle's location and stationary time occurrences. The stationary time length is also selectable. This may be advantageous to encourage patrolling personnel not to remain for a long time in a same location.

8. The vehicle unit preferably includes a back-up battery system making it more reliable.

The vehicle unit may be relatively inexpensive. In addition, the monitoring fee that includes sending up to 60 e-mails and making up to 6 phone calls per month, may also be relatively low. The relatively low monitoring fee is based, at least in part, on the current relatively low rates charged for use of the control channel of the cellular telephone network. It is also noted that access to the control channel provides coverage for almost the entire U.S., for example.

The user also preferably has access to a WEB or Internet site that will display a map and silently contact the vehicle to acquire it's current location, speed, direction of travel, and previous multiple

locations with speeds, for example, the user's personal identification number (PIN) can be instantly activated by just a phone call. No additional installation is required.

5 Certain annual pre-pay package arrangement may be available. For example, up to 10 access entries per month can be provided on a low monthly billing of \$4.90. Up to 30 access entries could be provided for \$8.25 per month.

10 The present invention provides a number of other significant advantages including optional access from any phone or from any computer to access the WEB site. The user may control various vehicle functions remotely via the telephone or WEB site. The only
15 charge may be for additional equipment and installation.

 Additional features can also be included with the system and subscribed to by the user in accordance with the invention. For example, these include Hijack,
20 Car Finding, Unlock Doors and Unauthorized Transmitter Alert Features. The equipment & installation is relatively inexpensive, and is on the order of about \$190.00. For the hijack feature: from any phone or computer, the user may activate vehicle starter
25 interrupt and sound the horn until the vehicle is retrieved (Command 4). For the Car Finding feature: from any phone or computer, the user may activate the vehicle's horn, or siren and sound same for 30 seconds. This allows the user to find his vehicle in a crowded
30 parking lot (Command 5). For the Lock/Unlock vehicle doors feature: from any phone or computer user a predetermined command (Command 7) activates unlocking of vehicle doors to retrieve keys, for example, that may have been accidentally locked inside the vehicle.
35 Of course, the system can also be used to lock vehicle

doors if this was forgotten (Command 6). The unauthorized transmitter alert feature is similarly selected as described above.

In addition, a remote vehicle start feature may also be provided, such as to start the vehicle's engine to heat or cool the vehicle prior to entry. The equipment and installation for remote starting may be relatively low.

Some further details of an embodiment of the vehicle unit are provided below as relating to use of red and green LED indicators operated by the system controller.

Red LED verification of GPS receiving signal, using the LED built into the system controller:

With yellow wire having positive 12 volts:

Blinking = when searching GPS location.

Constant = found location.

Off = no GPS signal found.

With yellow wire not having positive 12 volts:

Off = LED not functioning.

Green LED verification of receiving the cell tower signal, using the LED built into the system controller:

With yellow wire having positive 12 volts:

Blinking = Cell control channel signal is detected.

Constant = sending micro burst signal. Stays on 5-seconds after each time system is transmitting.

Off = no cell tower signal received.

With yellow wire not having positive 12 volts:

Off = LED not functioning.

An example of representative DIP switch feature selection is as follows. Switch 1 may be used for adding orange wire for controlling arm/disarming of system. When On, the orange wire controls arm/disarm as follows: to arm, Orange wire is grounded and Yellow wire does not have 12 volts positive. To disarm, the Orange wire is not grounded. When switch 1 is Off, then only the Yellow wire controls arm /disarm as follows: to arm, the Yellow wire is without 12 volts positive, and 30 seconds after continued arm mode then orange wire activates a constant 500 ma grounded output to operate an external starter interrupt relay until system is disarmed. To disarm the Yellow wire is connected to 12 volts positive.

A main 5-pin plug may be provided on the vehicle unit and connected as follows:

The Red Wire is connected to 12 vdc Power. An alert warning "E" is given if the system is armed and the battery voltage becomes lower than 11-volts for longer than ## minutes. This alert feature "E" will not operate again until the voltage is above 12 volts to re-set this feature.

The Black Wire is connected to Ground.

The Yellow Wire is connected to the ignition 12 volts so that if the key is on, 12 volts is supplied thereto and if the key is off, the yellow wire is connected to ground. Further:

1. If the system is in an armed mode and Lat/Long changes, then Alert "A" is given.

- 5 2. If the system is disarmed and
 within 2.5 seconds after the yellow
 wire receives 12 volts and the gray
 wire detects 3 or more positive
 pulses the system activates Alert
 "D".
- 10 3. If the DIP switch 1 is in the Off
 position then:
 a. if 12 volts is on yellow wire,
 the system is disarmed and the
 orange wire discontinues the 500 ma
 ground.
- 15 b. if the yellow wire sees grounded
 or neutral, then the system is
 armed and 30 seconds after the
 continued arm mode the orange wire
 activates a constant 500 ma
- 20 grounded output to operate an
 external starter interrupt relay
 until system is disarmed

25 The Gray Wire is for Input and Output, and
 can be connected to an alarm siren or horn positive
 terminal. In addition:

- 30 1. With system armed and if the Gray
 wire detects +12 v pulsing on/off
 or on constant for more than 10
 seconds from an alarm siren or horn
 honking activation, then alert
 warning "B" alarm activation is
 given.

- 5 2. With system disarmed and if the
 Gray wire detects +12 v pulsing
 on/off or on constant for more than
 10 seconds from an alarm siren or
 horn honking activation, then alert
 warning "C" panic activation is
 given.
- 10 3. With system disarmed and if the
 Gray wire detects 3 or more 12 volt
 positive pulses within 2.5 seconds
 of yellow wire receiving 12 v+ and
 the gray wire by-pass not being
 activated, then alert warning "D"
15 is given.
4. The Gray wire bypass operates as
 follows:
 a. After Alert warning "B" bypass
20 all future Alert "B" until system
 is disarmed.
 b. After Alert warning "C" bypass
 all future Alert "C" until system
 is armed.
25 c. After Alert warning "D" bypass
 all future Alert "D" until no 12
 volt pulses are detected on the
 gray wire within 3 seconds of
 yellow wire having 12 volts.
30
5. With system armed or disarmed. The
 Output: Internal + 12v, 1 amp
 transistor with pulses 1 second on
 & 1 sec off to activate siren or

honk car horn or flashing light relay.

a. Non-stop activation from (Command "4")

5 b. 30-second activation from (Command "5")

6. Turn off the above Alert "A" from (Command "1")

10

The Orange Wire is for the starter interrupt and arm/disarm system, and operates as follows:

1. If dip switch 1 is in the:

a. On position and:

15

i. the Orange wire has 12 volts or neutral, the system switches to the disarmed mode

ii. the Orange wire is grounded, then the system is switched to the armed mode

20

iii. and the starter interrupt output will not automatically operate. Can only be activated from "Command #4"

25

b. Off position and:

i. the Orange wire does not effect the arming or disarming of the system.

30

ii. 30 seconds after system arms the Orange wire will automatically activate constant 500 ma ground until the system is disarmed. And from "command #4". Connect to

Starter interrupt relay
output.

5 2. Command 4 activates Orange wire to
 have 500 ma. negative until Command
 1 is received.

10 3. After Alert warning "B" is
 activated the first time it is
 thereafter bypassed while the
 orange wire remains grounded. Alert
 warning "B" is re-set to operate
 again 3 seconds after orange wire
 becomes ungrounded.

15 The vehicle unit may also include a Door Lock
 Plug configured as follows, for example:

 Green wire provides a 250 ma, negative 1
 second pulse for Lock Doors. (Command "6").

20 Red Wire provides a constant 12v output from
 the Red power wire.

25 Blue wire provides a 250 ma., negative 1
 second pulse for Unlock Doors (Command "7")

 Pink wire provides a 250ma., negative 1
 second pulse for remote Car Starter (Command
 "2").

30 An installation Test Button may also be
 provided to work as follows. Pressing the button
 activates Orange wire for 10-seconds (starter
 interrupt), with these circuits in sequence:

First: Activates Gray wire for 1-second.
(siren/horn)

After first stops: Activates Green wire for 1
second to lock the doors.

5 After second stops: Activate Blue wire for 1
second to unlock the doors.

After third stops: Activate Pink wire for 1
second to activate optional item.

10 Representative warning alerts are as follows:

Alert Warning "A": Automatic activation of
"Command 8" and the vehicle unit contacts monitor
station to instantly call 3 phone numbers with the
message "Your Vehicle is stolen please confirm then
15 call 911 to advise police of web site and your pin # so
police can locate the vehicle". This is detected with
the system armed and the GPS indicating movement.
Bypasses all future alert warning "A" until the system
is re-armed.

20

Alert Warning "B": the vehicle unit contacts
the monitoring station to instantly call 3 phone
numbers with the following message "Vehicle alarm
activated please confirm". This is with the system
25 armed and detecting Gray wire having 12 volts pulsing
or on constant for longer than 10-seconds). After
Alert warning "B" is activated the first time, it is
thereafter bypassed while the orange wire remains
grounded. Alert warning "B" is re-set to operate again
30 3 seconds after orange wire becomes ungrounded.

Alert Warning "C": the vehicle unit contacts
the monitoring station to instantly call 3 phone
numbers with the message "Vehicle PANIC activated
35 please confirm". This is with system disarmed and

detecting the Gray wire having 12 volts pulsing or on constant for longer than 10-seconds. After the first activation then this is bypassed until the ignition turns on again.

5

Alert Warning "D": the vehicle unit contacts the monitoring station to instantly call 3 phone numbers with the this message "Unauthorized remote transmitter was just programmed to operate your vehicle." This is with the system disarmed and the Gray wire detecting three or more 12 volt pulses within 2.5 seconds of yellow wire having seen 12 volts positive. All future alert "D" are bypassed until no 12 volt pulses are detected on the gray wire within 3 seconds of the yellow wire seeing 12 volts.

Alert Warning "E": the vehicle unit contacts the monitoring station to instantly call 3 phone numbers with the message "Vehicle has low battery voltage and system has changed to low voltage mode". This is with the system armed and detecting the Red wire with lower than 11 volts for ## minutes. All future alert "E" are bypassed until:

1. First: More than 13.5 volts are detected on the red wire and
2. Second: After yellow wire stops having positive voltage the red wire then must detects more than 12 volts.

Alert Warning "F": the vehicle unit contacts the monitoring station to instantly send e-mail message "vehicle was traveling faster than your preset amount of "###"and time limit of "##"seconds. Indicates the vehicle speed and location that the speeding started and how long speeding accrued" (Detected from GPS)

The following are representative commands for use in the system:

- 5 Command 1: Reset all circuits and system remains asleep until the ignition key is turned on. Resets the triggered mode and unit is asleep to prevent power drain on vehicle battery.
- 10 Command 2: (Accessory activation) monitoring station Command to the system to activate Pink wire to pulse 250 ma negative for 1 second.
- 15 Command 3: (Vehicle Location) Web site to indicate present location and past events in memory.
- 20 Command 4: (Hijack or Stolen) monitoring station Command to vehicle system to activate:
- 25 a. Gray wire to pulse 1sec on/1 sec off with 1 amp positive output and which continues until receive command # 1.
- 30 b. Orange wire to have 500 ma ground and which continues until receive command # 1.
- Command 5: (Car Find) monitoring station Command to system activating Gray wire for 30 seconds

-15-

pulsing 1 sec on/1 sec off
with 1 amp positive output.

5 Command 6: (Lock Doors) monitoring
station Command to system
activating Green wire to pulse
1 second with 250 ma.
negative.

10 Command 7: (Unlock Doors) monitoring
station Command to system to
activate Blue wire to pulse 1
second with 250ma. negative.

15 Command 8: (Start Constant Vehicle
Tracking) sends previous 2
events in memory and then
every 120 seconds get update
of location information sent
20 to the Web site.

The system is also operable in a battery
saver mode which operates as follows:

25 a) With the ignition key off, if the battery
voltage drops below 11.5 volts for more than
5 seconds, the GPS verification wakes up to
look:

30 i) Once instantly.
ii) Once in 1 hour if at the same
location.
iii) Once in 6 hours if at the same
location.
iv) Once in 12 hours if at the same
location.

v) Once every 24 hours if at the same location.

5 b) Activate alert "E" when the battery saver mode is activated, and bypass sending all future Alert "E" until the battery voltage goes above 13 volts for 10 minutes to reset this feature.

10 Another aspect of the invention relates to automatic vehicle alert e-mails sent containing some or all of the previous system events. This sending can be triggered as follows:

15 a) At a user selected predetermined time ## (01-24) of each day, or
 b) At a predetermined memory fill level, such as full or near full.

20 In addition, each system event may contains one or more of the following:

 a) Vehicle Location
 b) Vehicle total time at location
 c) Time of day
 d) Mph traveling
25 e) Total time traveling above MPH
 f) Direction traveling
 g) Delta
 h) Special Alert messages, if any, including:
 i) GPS signal not received for longer
30 than 5 minutes.
 ii) Traveling above ###MPH for ## minutes.
 iii) Vehicle is stolen.
 iv) Alarm activated.

- 5 v) Unauthorized remote transmitter alert.
- vi) Battery saver mode activated
- vii) Command 1: Reset all circuits and system remains asleep until the ignition key is turned on.
- viii) Command 2: (Accessory activation)
- ix) Command 3: (Vehicle Location was retrieved)
- 10 x) Command 4: (Hijack or Stolen mode activated)
- xi) Command 5: (Car Find mode activated)
- xii) Command 6: (Locked Doors)
- xiii) Command 7: (Unlocked Doors)
- 15 xiv) Command 8: (Started 2-second incremental Vehicle Tracking)

Another feature of the invention relates to the selectable threshold conditions causing an event to be recorded into the memory of the vehicle unit. For example, this may include:

- a) While the yellow wire has 12 volts, record events every "??" default 15 minutes time if the GPS location has changed. If the GPS location is same then only update stationary total time.
- 25 b) If the GPS antenna is not receiving any signal:
- i) Then enter last known GPS location and with indication this was the last known GPS location before GPS signal stopped and how long no GPS signal was received. And enter GPS location in the on-hold file.
- 30

c) When vehicle is traveling above ###MPH for ##-minutes.

The monitoring station may also provide a
5 number of automated phone calls as described above.
These include

a) The user's vehicle has issued a stolen alert:

10 i) If vehicle is stolen, after receiving
the phone message the user then calls
911 to advise police of the theft, and
gives the police the Web site address
and an identification number, such as
the user's PIN, to allows the police to
15 locate where your vehicle has been,
where it is now and keep tracking it
until the police can retrieve the
vehicle.

20 ii) If this is a false alert due to
vehicle being towed away for service,
for example, then the user may press "1"
to put the vehicle in an off mode. Once
the ignition key is turned on again the
system will reset back to its normal
25 operation mode.

b) The user's vehicle has issued an alarm
activated for more than 10 seconds alert.
The system will not respond to this alert
30 again until ignition key is turned on again
to reset this feature.

c) The vehicle battery voltage is low or has
been disconnected. The tracking system is in
35 low voltage mode. The system will not respond

to this alert again until the battery voltage goes above 13 volts for 10 minutes to reset this feature.

5 The backup battery may be sized according to the GPS receiver and processing power draw. In addition, the battery may also be sized based upon estimated micro burst transmitting power draw. Such transmission are typically at about 3 watts power to
10 the antenna.

 The system according to the invention including the vehicle unit and monitoring station provides a number of significant advantages and
15 features. For example, the police may be directly contacted by the user when the vehicle is stolen. The user receives the telephone message from the monitoring station, and this is done without requiring the intervention of a manual security monitoring operator,
20 such as an ADT operator, for example. In addition, once in the stolen mode, the vehicle unit will periodically continue to send out its location, so that the police may track the vehicle via the WEB, for example. This location sending feature begins
25 immediately, that is, without requiring the user to contact the vehicle to begin tracking. Having the vehicle contacting the monitoring station is considerably less expensive than other schemes where the vehicle is periodically polled via the cellular
30 network, for example.

 The system may also be interfaced to a breath alcohol sensor at the vehicle, for example, and this information recorded in memory. The information could
35 be passed along to the monitoring station, which, in

turn, could send out a notification message (e-mail or telephone) that the vehicle is being operated by a driver who may be impaired by alcohol. The vehicle's location could then be tracked to permit the police to
5 detain the driver.

The device or unit may be initially manufactured and shipped without all of the features being fully functional. One advantage of this is to
10 prevent the unit at will from sending messages when being initially installed and tested in the vehicle, thereby reducing potential false alarms and burdens on the communications system, as well as potential charges to the user. After the unit is fully installed, a
15 communication or transmission from the monitoring center may be sent to the unit enabling one or more selected features, such as during registration during which information is conveyed to the monitoring center and payment is made or authorized by the user.

20 Another aspect of the unit is that it may be able to recognize the desirability to bypass certain security breach triggers or other events. For example, a car finding feature can be provided that will allow the user to sound the horn or siren when near the
25 vehicle to help locate the vehicle, as in a crowded parking area. Without the bypass feature, the unit could recognize the horn or siren as a security breach and transmit such information to the monitoring center. In accordance with this aspect of the invention, the
30 unit would recognize the car finding feature was activated and thereby bypass sending a security breach transmission, for example. Again, false alarms and unneeded usage and expense of the communications infrastructure would be avoided.

Yet another aspect of the invention relates to thwarting a would-be thief who attempts to disable the alarm by cutting the battery cable or power supplied to the system. The unit preferably includes a
5 back-up battery. More particularly, upon being in an armed mode and sensing a breach of security, such as the hood opening, for example, the unit will send out a signal indicating the alarm or security breach and while the alarm is indicated, if the battery is
10 disconnected then the unit will send out a message indicating the vehicle is stolen, and also providing the vehicle's current position. Accordingly, the would-be thief is not able to defeat the security system by quickly disrupting power to the unit during an alarm
15 indication or security breach. Also to prevent additional alerts, this message is prevented from being transmitting again until user returns to the vehicle to disarm the system and/or turn on the ignition so that the unit sees a voltage above 13.volts indicating the
20 vehicle has started using the owner's ignition key. This aspect is further understood with reference to the enclosed flowchart labeled "Alert A".

Still another aspect of the invention relates to how the unit can discriminate between ordinary usage
25 or honking of the horn as compared to a security system triggered alarm. Most vehicle security systems will provide a pattern of horn soundings as an alarm indication, and this can be determined and used to reduce false alarm transmissions from the unit. For
30 example, the unit can look at the number of leading and trailing edges of the power pulse used to sound the horn. A single pressing of the horn switch by the user will cause two edges within a predetermined time, such as about 10 to 12 seconds. Accordingly, the unit can be
35 configured to not send a security breach transmission

to the control center based upon detecting two transitions. Since a number of vehicle security systems may have a continuous sounding of the horn within the predetermined time, the unit can send the transmission
5 upon detecting only a single transition. A number of other vehicle security systems provide a series of pulses or horn soundings within the predetermined time. Accordingly, the unit may also be configured to send a security breach transmission upon detecting greater
10 than a predetermined number of transitions, such as greater than nine, for example. This number is also typically higher than a user would generate honking the horn several times within the predetermined time. In other terms, the number of transitions of the horn
15 pulses can be counted, and if equal to one, or greater than nine, for example, the transmission is triggered, and otherwise the sounding of the horn is ignored. Also to prevent additional alerts, this message is prevented from being transmitting again until user returns to the
20 vehicle to disarm the system and/or turn on the ignition so that the unit sees a voltage above 13.volts indicating the vehicle has started using the owner's ignition key. This aspect is further understood with reference to the enclosed flowchart labeled "Alert B".

25 Yet another feature of the invention relates to a low vehicle battery alert. For example, the unit may monitor the battery voltage over a predetermined time such as ten minutes. The ten minute window prevents false tripping, for example, when the voltage
30 dips during engine cranking. In particular, the voltage can be sensed and determined whether it is greater than zero (eg. greater than six volts)and less than a high value (eg. eleven or twelve volts), and, if so, a low battery voltage transmission can be communicated to the
35 monitoring station, and ultimately to the vehicle user

when away from the vehicle. If vehicle is being serviced and battery is disconnected this will cause the battery voltage to be equal to zero, then the low battery voltage transmission will not be communicated to the monitoring station. Also to prevent additional alerts, this message is prevented from being transmitting again until user returns to the vehicle to disarm the system and/or turn on the ignition so that the unit sees a voltage above 13.volts indicating the vehicle has started using the owner's ignition key. Again false triggerings are reduced. This aspect is further understood with reference to the enclosed flowchart labeled "Alert E".

Yet another advantageous feature of some embodiments of invention relates to the ability to conserve electrical power. More particularly, when the vehicle is stopped and in the armed mode, the GPS receiver may be periodically operated to determine the vehicle position. If the vehicle position changes, this is indicative that the vehicle is being moved or stolen. For example, the GPS receiver may be operated to generate new vehicle position information every 29 seconds. These relatively quick successive position determinations or readings are generally termed hot start. These are relatively less complicated than a cold start position determination which takes longer, since the cold start position determination requires greater time to acquire and receive data from multiple satellites, as will be appreciated by those skilled in the art.

Unfortunately, this relatively high repeated usage of the GPS receiver may cause unnecessary battery drain, especially when the vehicle is left armed and unattended by the user for an extended period.

Accordingly, the power conserving feature of the invention permits the GPS receiver to be turned off when the vehicle is in the armed mode, and the GPS receiver is turned on only when needed. For example, a
5 vehicle sensor, such as a shock sensor, motion sensor, ignition sensor, door sensor, or other sensor, or combinations thereof could be used to start the GPS receiver. This sensor could also be used to trigger an alarm if desired; however it need not be so used in all
10 embodiments. The GPS receiver, once turned on, could operate in the normal periodic fashion as described above, or for a fixed period of time. The GPS receiver could also be turned off again after some predetermined time if no further sensor signal is received, or if the
15 position fails to change on subsequent position readings or determinations.

Yet another feature of the invention relates to permitting more colorful audible alert messages to be generated for the user. The user can, in some
20 embodiments, access an internet site to type or enter the text for a message to be sent, such as to alert the user that his vehicle is being stolen. The audible message then communicated by a telephone call to the user is generated by a speech message synthesizer based
25 upon the entered text. In accordance with this aspect of the invention, the user could type in phonetically spelled words or phrases, such as to create more colorful messages including slang terms, various accents, and/or to mimic various dialects, for example.
30 The speech synthesizer would then generate the desired message customized for the user. Of course, the system could also permit the user to test or preview the pronunciation generated by the speech message synthesizer based on the entered text message prior to
35 its adoption.

Alert "A" = Vehicle Stolen Alert

Vehicle stolen is determined two ways by vehicle monitorin:

1. Tracking system armed and vehicle location goes beyond 100' G.O Fencing range.
2. Tracking system Armed and Vehicle alarm is triggered and vehicle battery voltage is 0-volts.

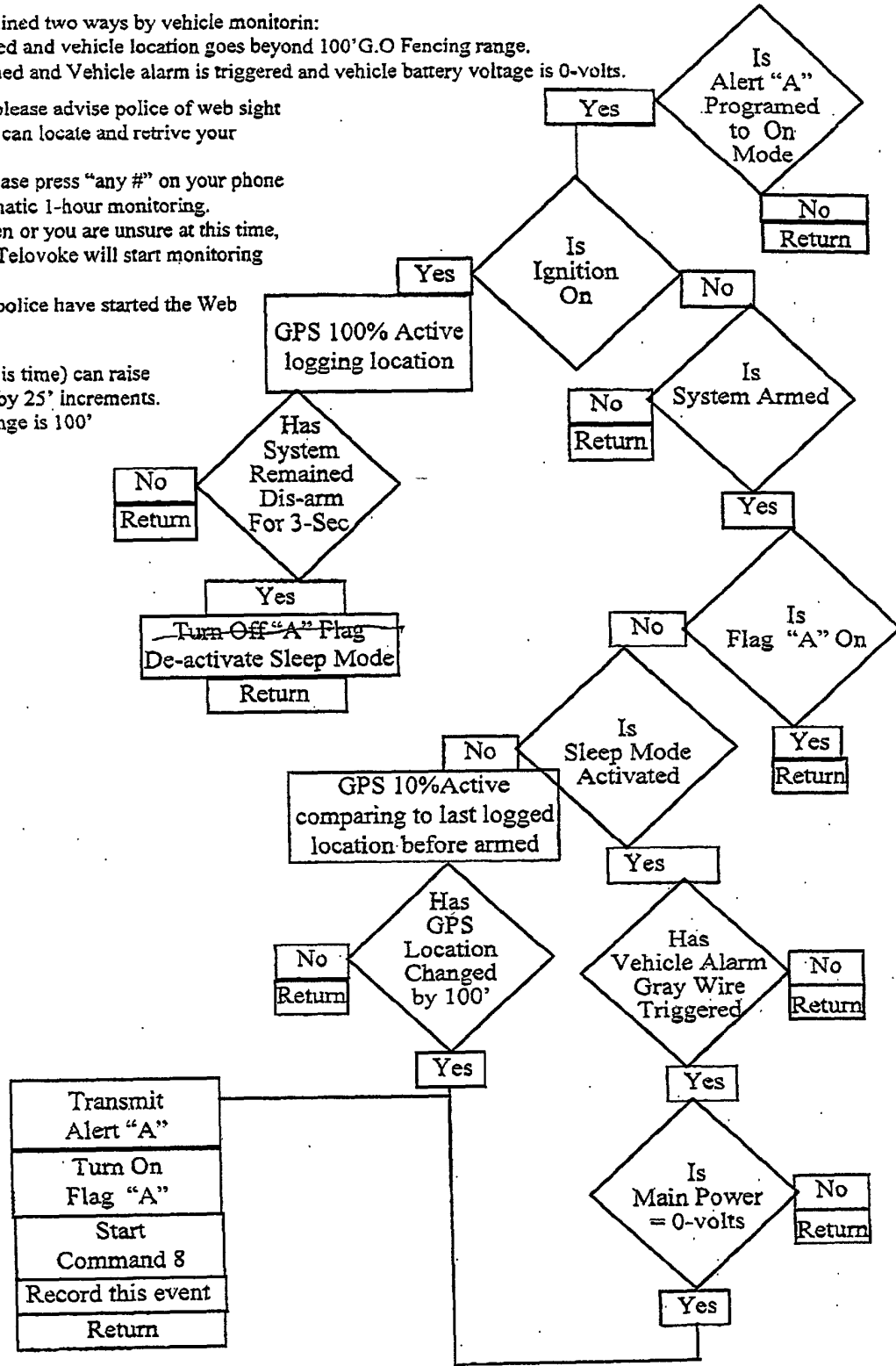
Your vehicle is stolen, please advise police of web sight and your pin# so police can locate and retrive your vehicle.

If this is a false alert please press "any #" on your phone now to deactivate automatic 1-hour monitoring.

If vehicle has been stolen or you are unsure at this time, hang up an call police. Telovoke will start monitoring for upto

1-hour vehicle or until police have started the Web monitoring.

Televoke (not user at this time) can raise or lower G.O.Fencing by 25' increments. G.O Fencing default range is 100'



Alert "B" = Vehicle's Alarm Sounding

Your vehicle alarm activated is detected by counting polarity changes within a set time.

1 change = a siren was latched on for that set time

>9 changes = a horn was pulsing on/off for a set time

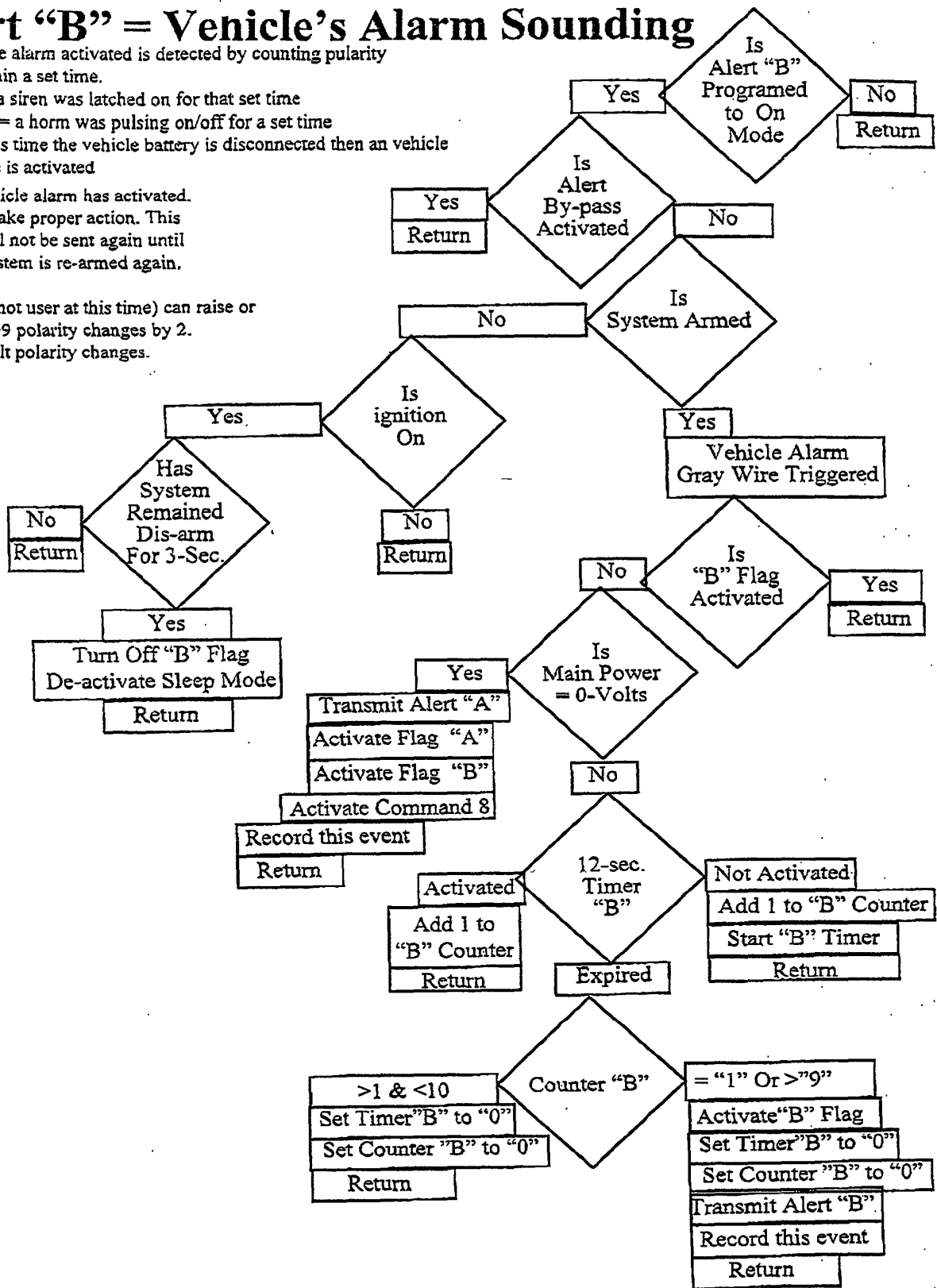
If during this time the vehicle battery is disconnected then an vehicle stolen mode is activated

Your vehicle alarm has activated.

Please take proper action. This alert will not be sent again until your system is re-armed again.

Televoke (not user at this time) can raise or lower the >9 polarity changes by 2.

>9 is default polarity changes.



Alert "C" = Speeding Too Long Of Time

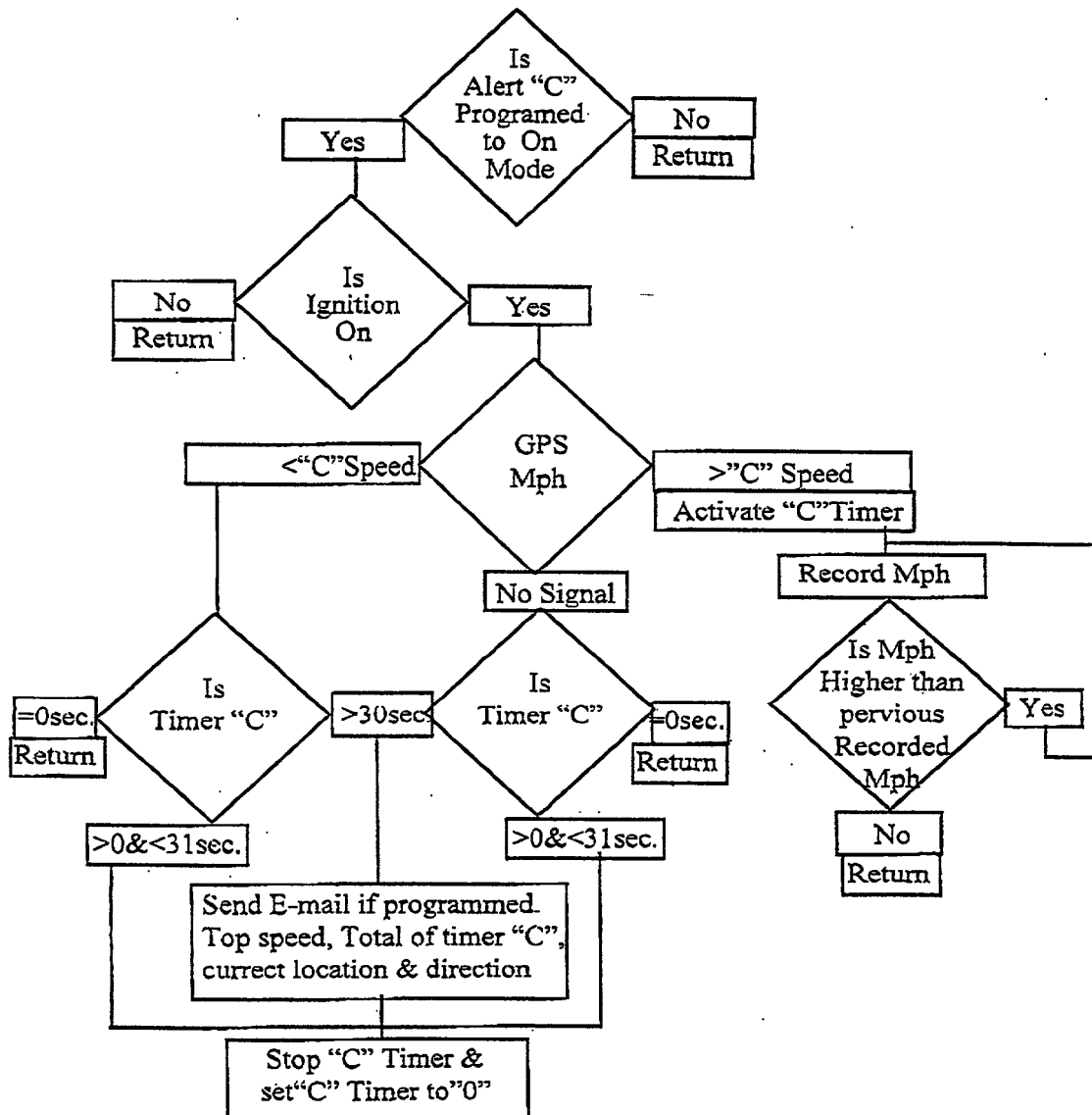
Vehicle was traveling faster than 80 m.p.h. for a longer time than 30 seconds. GPS indicates the speed.

If pre-programmed to do so, records this as an event and will send e-mail instantly of Top speed, total time, direction and location speeding had stopped.

Alert "C" operation can be turned on or off by user

80 M.p.h. is default speed. Televoke (not user at this time) can raise or lower the speed by 5 m.p.h. increments.

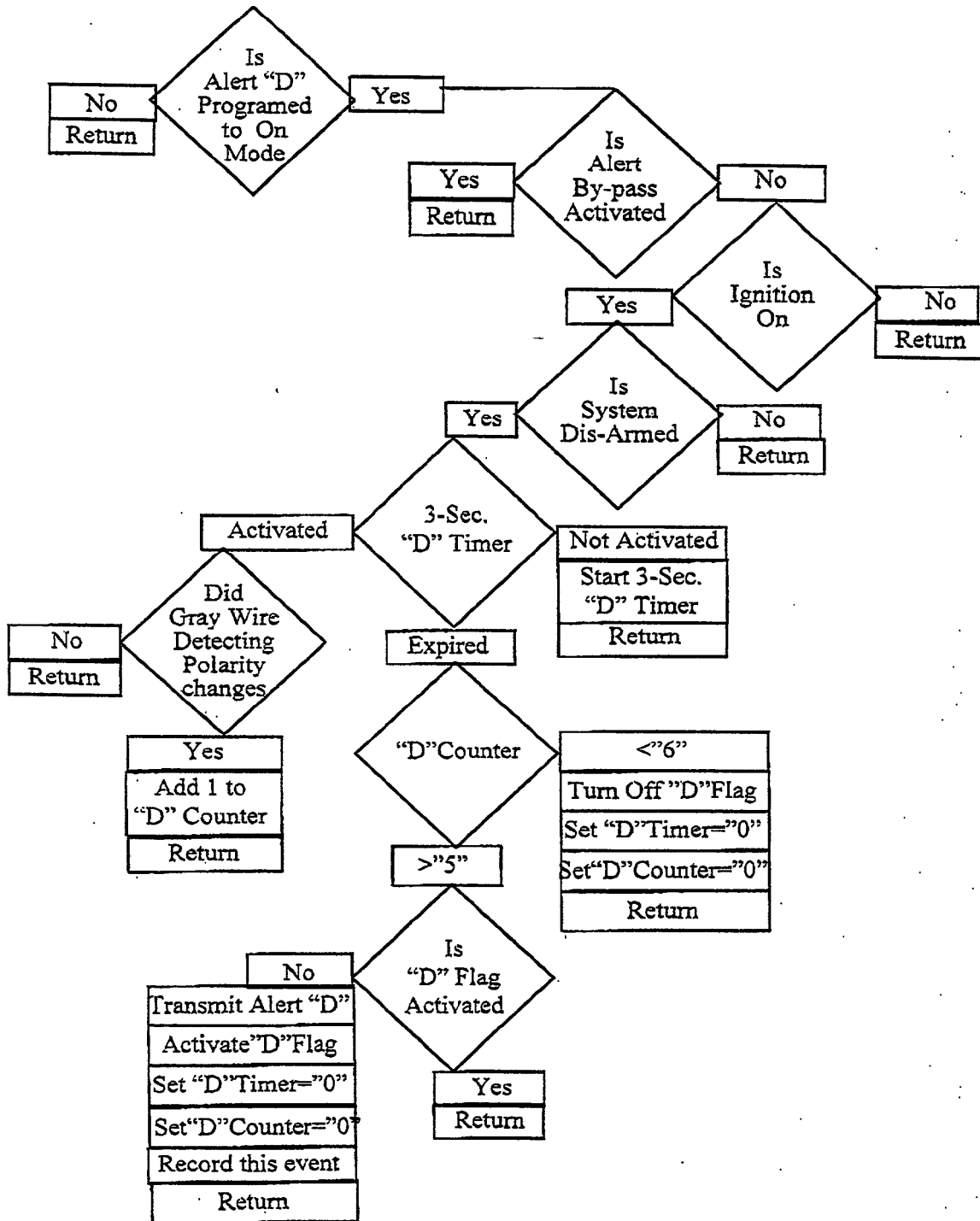
30-seconds time is default. Televoke (not user at this time) can raise or lower the time by 5 minutes increments.



Alert "D" = Unauthorized Transmitter Alert

Your vehicle was programmed to operate from a new ignition key or remote transmitter. Please take proper action. This alert will not be sent again till the vehicles alert signal stops.

Unauthorized Transmitter Alert is activated when ignition key is turned on and detects a plurality of polarity changes on Gray wire within a set time. This Alert is prevented from activated again until said circuit returns to normal.



Alert "E" = Low Car Battery Power

Your vehicle has a low battery voltage indication. Please take proper action. This alert will not be sent again until your vehicles battery has retained the proper voltage.

Low battery power Alert is activated by detecting the vehicle batter voltage being lower than a set voltage for a period of time and the said voltage not = "0".

