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Identification of Missing Aircraft Using Floatable Transmission Box

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ABSTRACT

The main objective of this project is for saving the human lives and improving the safety and reliability of aircrafts. To locate an aircraft more easily in case of accident. The flight section has microcontroller, floatable object, driver circuit, power supply, ejection mechanism and ejector button. Whenever the flight falls into the sea water sensor will start sensing and give command signal to microcontroller to eject the floatable object from flight with current location are sent via an android controller to the base station. The proposed system will be overcoming the all disadvantages in existing system, it includes mainly time delay in finding the black box, spending cost for sending the search teams. It includes dividing the area into particular segments for continuous communication between airplane and the rescue system, which means the earth station.

Keywords: Microcontroller, Power supply and Floatable object.

1. INTRODUCTION

It's important to start by understanding that what's called the "black box" is actually two different recordings devices: the "flight data recorder" (FDR) and the "cockpit voice recorder" (CVR). In general, they perform the same function (recording data from impact forces and exposure to at least two hours of fire; even if all of the hardware that actually supports the recording is destroyed, the memory cards themselves are expected to survive.

Air transport provides the worldwide transport facility. It is very essential for global business and tourism. It also plays an important role in improving the economic growth, mainly in developing countries. A technology which has been came for more effective providing a new generation hypersonic vehicles. Also the technology of satellite based communication system has been emerged in the year 2013.

Adverse weather conditions such as snow, fog, and also heavy rain may needs to cancelling of scheduled flights and deferment of air service [1]. The main disadvantages of air transport compared to other mode of transport is more chances of accidents, flight crash and breakdowns. So which as comparatively higher risk. Also very skilled and trained persons should be allowed for operating air planes. Air transport leads to many accidents.

1.1 Existing System

In the existing system, Black box also goes into the deep sea. Therefore very difficult to find out the accident location. Also cost of dispatching search teams is very high. Method they are using GSM using GSM network technology but do not address the hardware [2,3]. To overcome these problems we go for proposed system.

2. SECTIONS OF TRANSMISSION BOX

There are two sections in the floatable transmission box are flight section and floatable object section. In our flight section has microcontroller, power supply, ejector button, driver circuit, floatable object and ejection mechanism. If there any emergency exists in the flight, the driver AC object drives the motor and ejects the floatable object. The floatable object section consists of microcontroller, water sensor, temperature sensor, battery, solar panel, Bluetooth and android controller. If flight crashes in the water the water sensor sense and sends the data via an android controller. The locations are tracked by the two software used in this method one is track view and another one is blue act which is used to track the location and sends the location to the base station.

3. HARDWARE DESCRIPTION

3.1 Power Supply

Power supply is a reference to a source of electrical power. A device or system that supplies electrical or other types of energy to an output load or group of loads is called a power supply unit or PSU.

3.2 Regulator IC (78XX)

It is a three pin IC used as a voltage regulator. It converts unregulated DC current into regulated DC current.

3.3 Bluetooth

Bluetooth wireless technology is becoming a popular standard in the communication. It is one of the fastest growing fields in the wireless technologies. It is convenient, easy to use and has the bandwidth to meet most of today's demands for mobile and personal communications. Bluetooth technology handles the wireless part of the communication channel; it transmits and receives data wirelessly between these devices. It delivers the received data and receives the data to be transmitted to and from a host system through a host controller interface (HCI).

3.4 L293D

L293D is a dual H-bridge motor driver integrated circuit (IC). Motor drivers act as current amplifiers since they take a low-current control signal and provide a higher-current signal. This higher current signal is used to drive the motors.

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L293D contains two inbuilt H-bridge driver circuits. In its common mode of operation, two DC motors can be driven simultaneously, both in forward and reverse direction.

3.5 LCD Display

Liquid crystal displays (LCDs) have materials which combine the properties of both liquids and crystals. Rather than having a melting point, they have a temperature range within which the molecules are almost as mobile as they would be in a liquid, but are grouped together in an ordered form similar to a crystal.

3.6 Temperature Sensor

The LM35 series are precision integrated-circuit temperature sensors, whose output voltage is linearly proportional to the Celsius (Centigrade) temperature. The LM35 thus has an advantage over linear temperature sensors calibrated in Kelvin, as the user is not required to subtract a large constant voltage from its output to obtain convenient Centigrade scaling. The LM35 does not require any external calibration or trimming to provide typical accuracies of ±1⁄4°C at room temperature and ±3⁄4°C over a full −55 to +150°C temperature range. Low cost is assured by trimming and calibration at the water level.

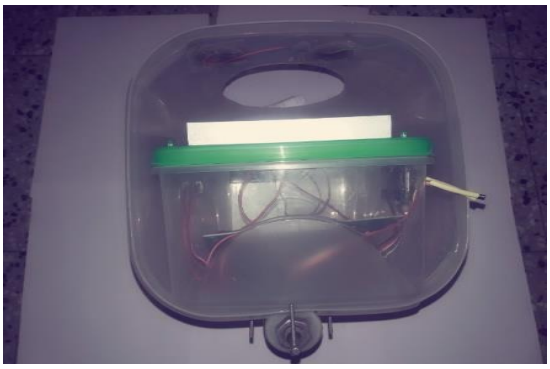
3.7 Solar Energy

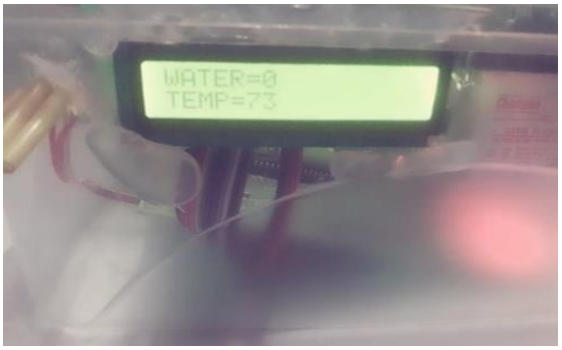
Photovoltaic modules, commonly called solar modules, are the key components used to convert sunlight into electricity. Solar modules are made of semiconductors that are very similar to those used to create integrated circuits for electronic equipment. The most common type of semiconductor currently in use is made of silicon crystal. Silicon crystals are laminated into n-type and p-type layers, stacked on top of each other. Light striking the crystals induces the "photovoltaic effect," which generates electricity. The electricity produced is called direct current (DC) and can be used immediately or stored in a battery

3.8 Battery

Batteries convert chemical energy directly to electrical energy. A battery consists of some number of voltaic cells. Each cell consists of two half-cells connected in series by a conductive electrolyte containing anions and cations. One half-cell includes electrolyte and the negative electrode, the electrode to which anions (negatively charged ions) migrate; the other half-cell includes electrolyte and the positive electrode to which cations (positively charged ions) migrate.

4. OUTPUT RESULT





5. CONCLUSION

The main objective for us to track the flight location once the flight crashes. This system proposes a suitable solution for finding the location of the airplane after the plane has met accident.

This system sends the information instantly to the ground station which works very fast and reliable transmission. Apart from finding the flight location with the help of black box which is time consuming. Using this floatable black box technology helps to rescue the accident soon and easiest method of tracking.

Using of wireless device which is for transmitting the information through the serial transmission is very fast and efficient in today world. The hardware devices which is used to implement will not cost high and efficiently give the better outputs. So this system is affordable and with high performance.

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