

The ILS is used for landing in adverse weather conditions. One of the components of the ILS is the localizer. The localizer emits a signal that is used by the pilot for precise azimuth or centerline guidance to the runway. Radiofrequency interference can cause the localizer to be rendered useless altogether or it can cause to be displayed to the pilot erroneous centerline guidance information.

Incidentally, there are approximately 240 instrument landing systems in the United States operated by the FAA. The FAA operates numerous other types of air navigation facilities which are susceptible to radiofrequency interference. They include short-range and long-range radar, distance-measuring equipment, TACAN bearing and distance equipment, and direction-finding equipment.

Radiofrequency interference can also create problems in communication between air traffic controllers and pilots. There is a considerable amount of air-ground voice communication in providing separation between aircraft during departure, en route to destination, and landing.

When frequencies used in these voice communications are cluttered or made unusable by interference, difficulties are created that add to the burden of the controller and the pilot. When interference on an air traffic control frequency becomes so great as to make the frequency unusable, the controller must find and switch to another frequency. This involves calling each aircraft under his control to inform the aircraft of his new frequency. This process diverts the controller's attention from his main task of controlling the aircraft.

Radiofrequency interference, besides causing delay and inconvenience, can create situations which could result in disaster. Where voice communications between controller and aircraft pilot are distorted or blanked out, vital communications at a critical stage in the flight may be lost, perhaps even a warning of impending collision with another aircraft. Interference may prevent the pilot from identifying the station he may be attempting to navigate by. Or interference from a garage-door opener, an example we have been hearing considerably of today, could cause a pilot to deviate from his intended course and thus fly into an area where he should not be. Any of these situations could cause or contribute to an aircraft accident.

Let me describe how one segment of the aviation radio spectrum is affected by an unregulated radio device, such as the garage-door opener.

Each authorized user in this band needs only a small portion of the spectrum to operate on. The garage-door opener radiates energy over a large portion of the band, thus, in a sense, contaminates the spectrum.

At present, where radiofrequency interference affects navigational performance or voice communications, the source of the interference must be located through aerial inspection and use of radio vans on the ground. When the source is located, action must be taken against the operator of the interfering device to shut down the device or have it modified to eliminate the interference.

Some time ago, in the Los Alamitos area of California, a serious amount of interference was noted on 243 megacycles, the frequency used for emergency communications, and on 282 megacycles, the homer frequency for the Los Alamitos Naval Air Station.