If you are healthy, do you stop taking care

On 5 May 2014, a colleague of mine contacted me and asked if we, in the Safety Unit of EUROCONTROL Network Manager, are those promoting the "One Runway, One frequency" campaign. He wanted to know more about it because he had received questions from frequency managers in some of the EUROCONTROL member States.

Apparently, according to the International Telecommunications Union (ITU), a specialised agency of the United Nations that coordinates the shared global use of the radio spectrum, VHF frequencies in the aeronautical mobile service may not be used for ground-ground communications. What this means in our specific runway case is that a vehicle should not use the TWR frequency to communicate with the Tower.

Can you stop it, if you cannot spot it?

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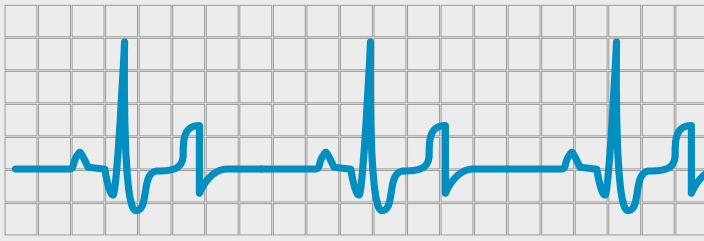
Editor in Chief of Hindsight

Now, imagine that a vehicle driver is, for whatever reason, confused and the prevailing visibility prevents visual identification of a potential conflict. This may happen at one of the many airports in Europe that are not equipped with ground surveillance or Advanced Surface Movement Guidance and Control System (A-SMGCS). It is a fact that there are many airports that cannot afford to buy expensive systems like these. It is another question why we, as an aviation industry, do not have a "low-cost" runway safety net – but I will leave this subject for one of the future issues of HindSight. In this situation of a vehicle straying onto an active runway just in front of an aircraft taking off in marginal visibility conditions, there are not many barriers that can help preventing an accident. Especially, if the crossing is at the "high energy" part of the runway – at a place where the speed of the aircraft will be too high to safely reject the take-off. One of the few barriers, maybe sometimes the only



one, is for the vehicle to be on the same frequency as all the aircraft so that the driver can monitor communications and is able to identify the busy status of the runway before entering.

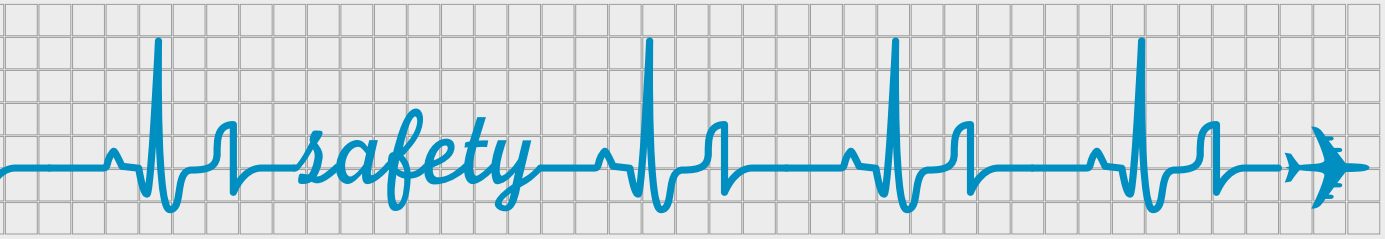
But is there a problem at all? One can argue that vehicles operate every day, in all meteorological conditions, sometimes on different frequencies and even talking different languages and still we do not hear of these causing accidents in Europe. What is even more compelling is that over the last few years, different global summaries of aviation safety have shown record levels of safety. There are calls to reduce the investment in aviation safety because we have achieved our goals. Indeed, why pour money and effort in something when there will be no obvious improvement. If you have no accidents you cannot improve anymore, can you?

This is difficult to argue against and the only analogy that comes to my mind is human health. If you invested in your health, if you were careful what you ate, exercised regularly and had a healthy style of live and as a result you did not have any health problems then would you stop taking care of your health?

But are we really that "healthy" in aviation safety terms?

Let us look at runway incursion incidents that happen in Europe. Each year I work with the European Air Navigation Service Providers, analyse incidents and prioritise the Top 5 safety issues to be taken care of at the EUROCONTROL level. For the year 2013, 92 Runway Incursion incidents classified as severity A or B were reported by EUROCONTROL member states. Severity A and B are the highest on the severity scale - the incidents which are assigned these severities are the most serious ones. I analysed a sample of 44 incidents out of these 92 incidents. The analysis was always done in the form of a discussion with

# of your health?



the investigators that investigated the events. This disclosed a lot of interesting information and explanations that were not easy to grasp by simply reading the investigation reports.

My sample included four cases where an accident was only prevented by "providence". In other words, pure chance was the only barrier that "saved the day". What could be more serious incidents than these?

All four of these cases were scenarios in which other traffic entered a runway on which an aircraft had begun take-off. Vehicles were involved in three of those cases. In three of the cases the Air Traffic Controller in charge of the runway recognised the conflict but there was insufficient time for an effective reaction. In two of the cases, the controller was alerted by the A-SMGCS and in one case by the activation of a stop bar crossing alert. My conclusion is simple – our system is very vulnerable to situations involving vehicles and an ATC resolution in these cases is not always assured.

Is this only a European "problem"?

It is not. Let me draw you attention to two events that happened elsewhere.

The first one[1] took place on 21 April 2006 at Brisbane Airport, Australia. The surface movement controller issued a clearance for the driver of an aircraft tow vehicle to cross an active runway in front of an aircraft taking-off which had been issued with a take-off clearance by the runway controller. The surface movement controller and runway controller were using separate radio frequencies. The flight crew of the 737 saw the tow vehicle crossing the runway ahead, but as they judged it would be clear before they reached that point, they elected to continue the take-off. In the investigation report it was reported that as a result of this occurrence, Airservices Australia would be actively considering a requirement that all runway crossing traffic should work the runway frequency as recommended by the International Civil Aviation Organisation.

The second event[2] happened on 29 July 2008 at Toronto International Airport, Canada. Three emergency vehicles were cleared by the ground controller to enter Runway 15R/33L on their way to the fire training area. Shortly afterwards, the runway controller cleared an aircraft to take-off from RWY 33L. An aural alert was generated that prompted the runway controller to instruct the aircraft to reject its take off but this was (understandably) ignored by the crew because the aircraft was about to rotate and was still approximately 750 metres from the vehicles.

It is not surprising that, when drafting the European Action Plan for the Prevention of Runway Incursions[3], the wise representatives from various sectors of the aviation industry included Recommendation 1.3.5 "Improve situational awareness….. by conducting all communications associated with runway operations on a common frequency".

After examining the facts, it seems to me that we have a problem. It is rather similar to the case of human health - to quote the philosopher Bertrand Russell:

"Diagnosis proves that there are no healthy people".

Enjoy reading HindSight!

1- http://www.skybrary.aero/index.php/Vehicle/B738,_Brisbane_Australia,_2006_(RI_HF)
2- http://www.skybrary.aero/index.php/Vehicles/B737,_Toronto_Canada,_2008_(RI_HF)
3- http://www.skybrary.aero/index.php/European_Action_Plan_for_the_Prevention_of_Runway_Incursions_(EAPPRI)