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Pre-flight breath analyzer tests and tweaking rules of DGCA

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Abstract
The purpose of this study was to extend previous examinations of commercial multi-crew airplane accidents and incidents to evaluate that alcohol being sedative in nature, consumption of alcohol by the operating pilots and crew members impairs performance and their judgements causing an increase in errors and risk-taking behaviour along with mood changes, poor coordination, lack of tracking and concentration and slow reaction times which can easily contribute to or cause accidents. We often hear and have read about our pilots, first officers and cabin crew members being involved in an accident which later investigated is found of flight duty while in state of intoxication, i.e.; alcohol consumption. It is a matter of fact that when the alcohol levels in our blood is zero, there are all possibilities that there may be some effect of hangover and nausea, which is mainly due to the congeners. Also that a hangover effect produced by alcoholic beverages after the acute intoxication has worn off, may be just as dangerous as the intoxication itself but, symptoms commonly associated with a hangover are dizziness, dry mouth, headache, fatigue, stuffy nose, irritability, and increased sensitivity to bright light, impaired judgment and upset stomach. Hence, it is imperative that all ATCOs, pilots and cabin crew members while on duty are in their best frame of mind and desist from use of substances which adversely impact their performance.

Keywords: commercial aviation, airlines, accident, alcohol consumption, breath analyser, aviation performance, DGCA

Introduction

This paper aims to assess the still emerging pilots, cabin crew or ATCO's who are still found to have consumed such substances and had given a false undertaking, causing such personnel being "off- rostered" and appropriate action to be taken against such individuals. In the past decade, over 171 pilots and co-pilots were investigated alcohol positive prior to take off, from the airports in India and abroad. As a matter of astonishment a very concerning number of "high flying" pilots was revealed by the Directorate General of Civil Aviation (DGCA), under the Civil Aviation Ministry via response to an RTI query that was filed by India Today. There have also been several incidents where pilots and cabin crew members have failed to undergo their pre-flight breath analyser tests, for example, in the year 2016 there were two pilots found drunk at the airport in Dubai, second in the year 2017, where one pilot failed to undergo the breath analyser test at Sharjah Airport in 2015. It is calculated that more than 40- 50 pilots and numerous cabin crew members who have been failing the breath analyser test every year.

When it comes to express the previous researches conducted on alcohol consumption and intoxication, it is diagnosed that majority of adverse effects produced by alcohol relate to the brain, eyes and inner part of human ear, which are three crucial organs of any person associated with safety related activities.

- The human body's visual symptoms include the eye muscle's imbalance, that leads to difficulty in focusing double vision.
- Our body's brain effects include reasoning, impaired reaction time, judgment and memory where alcohol decreases the ability of the brain to make use of oxygen.
- Our human body's inner ear effects include decreased hearing perception and dizziness.
- On other variables being added on the current intoxication, such as sleep deprivation, fatigue, medication use, the negative effects are significantly magnified.

Literature Review

In India, the DGCA rules clearly states that, when any member of the cabin crew/pilot/AMEO fails the test for the first time, his or her licence will be suspended for three months following for a second violation that his/her licence is suspended for 3 years and that the licence is permanently cancelled in case there is a third violation.

Amongst all of this, when the global pandemic COVID-19 hit the entire nation, The Director General
of Civil Aviation (DGCA) had to tweak its rules on Breath Analyser and its medical examination tests of flying air crew for alcohol consumption after it emerged that conducting large number of breath analyser tests in confined spaces at airports or using alternate methods like blood test was inappropriate. Hence, following the directives of our Delhi High Court on the May' 2021, all crew members were mandatorily advised to submit a written undertaking that they have not consumed alcohol in past 12 hours before the commencement of their particular flight or their ground duty, failing which they will be liable for penal action, via their concerned airliners.

Applicability

Civil Aviation Requirement (CAR), Section 5, Series F, Part-IV issued by Director General of Civil Aviation, India, are applicable to the following:

1. Organisations who are engaged in the provision of Aircraft Operation, Aircraft Maintenance and Repair, Ground Handling Agency, Aerodrome Management,

Air Traffic Control Services.
2. Personnel employed in organizations as in para (i) whether holding licence/ approval/authorisation or non-licensed personnel i.e.

a. Flight Despatchers, Air Traffic Controllers.
b. Aerodrome operation personnel, Aircraft Maintenance personnel, Vehicle drivers (including catering and refuelling vehicles) ground equipment operators and ground handling personnel, Fire and rescue personnel.

Safety Regulations

As per the orders issued under Civil Aviation Requirement (CAR), Section 5, Series F, Part-IV issued by Director General of Civil Aviation, India, the India's airlines and their associated organisations shall ensure that a minimum 10% of the individuals employed at their respective organisations as engaged in such functions, are randomly subjected to B.A. examination on a day to day basis, while reporting for the duty at the airport facilities. Every airline management and aerodrome authorities shall be held responsible for the conduct of B.A. test on the personnel of the ground handling agency and the aerodrome operational personnel with strict compliance. It is also advised that there are minimum two breath-analyser serviceable equipment's that are capable of giving accurate digital value up to three decimal places with a memory to store and recall at least last 1000 records for any investigation purpose by DGCA. Every airline and their associated organisations shall make available breath-analyser equipment shall be used only in auto mode, shall be attachable to a printer, shall be calibrated after 10,000 blows/six months/at a frequency as recommended by the equipment manufacturer from an agency having ISO certification, date of the last calibration shall be appended on the instrument, and record maintenance of such calibrations by the airliner to ensure continued serviceability of the breath analyser equipment and maintain such records holds a very crucial purpose.

Procedure for breath-analyzer examination

1. Every organisation shall have a Doctor holding minimum MBBS degree /Personnel holding BSC (Nursing)/ trained Paramedics/Emergency Medical Technician (EMT)/Diploma (Nursing) to conduct the breath-analyser examination at a designated place within the airport premises. Such activities shall be subjected to periodic checks by the DGCA.
2. The Medical Personnel before any test shall run an 'air blank' on the instrument and obtain a reading of 0.000. Any Breath Analyser test during examination of a personnel reads above will be considered as B.A. Positive. These B.A. examinations shall be recorded on camera and the recording of which should be preserved for a period of six months.
3. A repeat test shall be carried out after an interval of maximum 15-20 minutes, in case of a positive B.A. test.
4. There shall be no third test at any circumstances.
5. All the B.A. examination positive /refusal cases should be reported within 24 hours of occurrence to the concerned Regional Offices of the DGCA and at DGCA (HQ).

Suspension of Breath Analyzer Amid Covid

In this entire study it is evaluated that Covid-19 has adversely affected the normal routine Standard Operating Procedures within the airline and aviation industry. As a result, in the wake of surge in Covid- 19 cases, Air India pilots after the major sufferings of the pandemic in the year 2019, had requested the Directorate General of Civil Aviation to temporarily suspend breath analyser (BA) tests for pilots and cabin crew members, whereas, the BA tests were gradually planned during the last September (2020) with airlines asking to do random pre-flight BA for minimum 10 percent of the airline's crew members who are rostered for operating domestic flights and 100 percent who are rostered for operating international flights. The indicated 10% was hike on March, 2021, was when the global pandemic Covid-19 situation was improvising.

This order passed on by the Civil Aviation Authority of India was purely a temporary measure in view of Covid-19 havoc. It was clearly understood about the restoration of provisions of respective Civil Aviation Requirements on the subject will be reviewed from time to time where every aviation personnel reporting for duty is required to submit an undertaking in respect of the fact that he/she is not under the influence of any sedative/alcoholic items. The undertaking, which meant to be signed by each pilot and cabin crew members, were clearly educated on the repercussions on failing to comply by the norms; which was cancellation of licence or suspension for 3 months from duties, whichever applicable. After this move, the pilots as well as the crew members all over, had a feeling of relaxation from the global terror that the apparatus used for the same could spread the virus on a faster pace.

After all the above twerking new rules, the pilots in a letter to the DGCA said, that the operative part of the subject order on having 100 percent testing of crew members operating international flights should be placed in abeyance till a failsafe disinfection protocol is in place and the havoc amid Covid virus seems to have been in a controlled stage. Captain Rahul J Cowasji, President, Executive Pilots' Association in a letter to the DGCA, said that the practice of adopting 100 per cent BA testing was discontinued at the onset of the COVID-19 pandemic, when the countrywide case count was less than 1000, whereas, in the current scenario, the nationwide count of COVID-19 cases rose up to more than 4.8 million and exponentially increasing. Hence, considering the risk of crewmembers contracting the deadly virus is commensurately much higher than even before, especially from asymptomatic, undetected carriers". It is generally that a set of crewmembers on a long-haul flight to a North American destination consists of up to approx. 19 members. In such a case, the major concern that strikes the risk even further is that the same BA testing machine can be used several times on up to sixty different crew members in a very quick succession having no scientifically prescribed time gap or failsafe disinfection protocol of either the BA testing machine or the specific environment. The nation has already witnessed a large numbers of crew members who have tested positive of COVID-19 from our only National Carrier "Air India". The mainstay of the Vande Bharat mission is the one and only Air India crewmembers, and the elevated potential risk of contracting infections may adversely impact the movement of the mission, hence the control of the spread of COVID-19 virus amongst Air India's crew members is not just essential to halt any detrimental impact on the financial condition of the airline but was also essential to protect the national

interest".

It has been noticed that the disposable blow tubes for BA Tests are used and thrown in open bins posing a potential, virus-laden, biohazard risk, creating scepticism that the Crew members operating international flights undergoing the COVID-19 RT/PCR testing prior to every flight but the medical personnel handling the BA Instruments have been monitored not undergoing any testing and could be asymptomatic carriers themselves, also having the rare possibility of an asymptomatic crewmember (who may have earlier been tested as a 'false negative' during pre-flight COVID screening) using a common BA machine.

According to the matter published in research letter in the New England Journal of Medicine, titled " Aerosol and Surface Stability of SARS-CoV-2 as Compared to SARS-CoV" it was established that, the COVID Virus has been more consistent on stainless steel and plastics than on copper and cardboard, and this deadly virus was detected up to 72 hours after application to these surfaces". Subsequently, we can evaluate that this deadly virus could remain viable on BA testing instruments for not only hours which is uncertain but also for days. Additionally, disinfection of touch points in the testing room and environment as well as safely disposing the blow tubes as per biohazard handling norms, would be the prudent way forward. There has been specific emphasis on the manufacturer's document that the instrument for a period of time, ex 12 hours in the case of ATCOs as ordered by DGCA based on recommendations of Director General Medical Services (Air), it clearly does not suffice that cleaning and/or disinfecting the B.A. instrument will have to be the backbone of the programme to eliminate the risk of virus transmission. Also, endorsing the spirit of enforcing Aircraft Rule 24, it is suggested that the operative part of the subject order on 100 per cent testing of crew operating international flights is placed in abeyance till a failsafe disinfection protocol is in place minimising the risk of spread of this deadly virus. It is also suggested that a comprehensive Safety Risk Analysis should be carried out that will enable a safe way to enhance increase the confidence of all stakeholders, including crewmembers, in the process.

Conclusion

In this study, it is also found that the Federal Aviation Agency, USA and the Civil Aviation Authority, UK have developed and published their policy for detection of consumption of psychoactive substance including alcohol by personnel engaged in safety sensitive functions which is strictly complied by all airlines associated. Also the Rules laid by ICAO Annex -1 stating, that "Holders of licences should not exercise the privileges of their licences and related ratings while they are under the influence of any intoxication which might render them unable to safely and properly exercise these privileges". Lastly, in this study it is strongly believed to uphold the necessity to conduct such mandatory tests for the safety of Civil Aviation and its passengers, and to mitigate the risk if any, by following the Civil Aviation Requirements that lays down the procedures to be followed for the B.A. examination for consumption of alcohol, of the personnel engaged in safety sensitive functions pertaining to airside operations, and the provision for enforcement actions in case of any violation.

Today, India requires rigorous breath analyser tests for pilots before all their scheduled rostered flights and abstention for 12 hours before the flight, causing a bigger problem for drunk pilots. As data reveals that, there have been more than 40 pilots who have tested positive for being intoxicated on the job in the year 2015.), subsequently, in the UK and Australia, a pilot or co- pilot with a blood-alcohol limit over 0.02% is considered unfit for duty. A four-decade old substance and abuse treatment program called the Human Intervention Motivation can also be undertaken by the associated pilots to help the them regain their certificates to fly again, but, there arises a question that, "Should the passengers be happy that the airline industry is trying to tackle a problem for these pilots?", or "Who actually faces the long hours and intense pressure on board during a flight?" "Should the pilots be concerned that that there's enough of them to form a support and treatment group?", the question still needs to be answered.

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