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THE SEPARATION OF FUSELAGE NOSE SECTION AND FUSELAGE MIDSECTION OF COMMERCIAL PLANE

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ABSTRACT:
There is no doubt that evolution of Aircraft technology and their design have been changing day by day around from 400 BC to 17 August 1903,First attempted by the write brothers, to fly first controlled ,sustained flight of a powered heavier than the air fight. After few years biggest hurdle was the safety, all aviation industries are working on safety. We learn by previous accidents and implement new design as well as technology to prevent future ones .Also, discover all factor that may involve in aircraft structure, atmospherically conditions or due to human error. This paper present, number of accident from 1919 to 2018 there causes The use of such a model provides a pie chart for types of accident , accident prevention strategies including new methods to designing for safety and approaches to designing and safety of aircrafts.

Keywords: The Fuselage Nose-Section and Fuselage mid-Section (main body), Assembly with wings supporter, Pie-Charts explains number of crash reasons (1919 to 2018)

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INTRODUCTION:

There are thousands of death due to plane crash till this date. In time the death can be prevented by using advanced technology and design. We design the airplane in such way that it will helps to minimize death of man kinds in future. The Fuselage Nose-Section and Fuselage mid-Section (main body) which will separate from wing assembly. Pressure is well maintained in both the sections with help of sensors pressure equalizer valve. The Fuselage Nose-Section and Fuselage mid-Section, we used technique common berating mechanism. The main part will separated from wing assembly in which wings are linked to main body with help wing supporter and the sensors on wing and nose of cockpit are actuator according to EECU (Electronic Engine Control Unite) .There are different sensors are provide and design in plane to provide less drag and build to work in complex condition to provide correct reading and data while an emergency conditions. Airbags assembly (Stowed air bag assembly) are also provided at the bottom of sections actuated with level and pressure sensors

1. The Fuselage Nose-Section and Fuselage mid-Section (main body):

Overall design mainly focus on by of safety, Wings are design according to L/D ratio and it will be fuel efficient model and engine easy for maintenance access. While the high L/D would decrease the size of engines needed to rise, and so might improve fuel economy

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Fig .1-view of commercial airplane

1.1 *Principle Reason of these invention* :

This invention of innovative design relates to an airplane which may save lives of the travelers in an air accident due to mechanical (technical) as well as human error. When a fully loaded commercial airplane loses power or having other aircraft complications, the penalties would be the crash of the airplane to the ground or blast of air frame in air that is air blast. There are about 19576 deaths are recorded officially from 1919 to 2018 in commercial plane crash, but number of deaths are may be 20 or more times that of the exact deaths in crash because the number of deaths are not recorded since the beginning of plane traveling and we can see that from number of deaths and number of incidents are goes on increasing between 1950 to 1980 after that they are now prevented and reduced in maximum amount with help of modern design and some technology. As we can see that number of flights are increased and increasing according to number of passenger needs. Every time when traveler travel through plane they are concern about their safety when any technical difficulties or any problem occurred even if there are best constructions provided in plane such as advance aero plane engine with high speed, light aircraft frames wish made of alloy metals, best communication system while in emergency However, thus far, in fact, the aerospace industry cannot provide a safe airplane which is completely prevent crash accident, resistant to adverse meteorological conditions. The key purpose of the present invention is to provide an absolute solution to one of the long unsolved complex humankind issue. This will help to save millions of lives

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1.2. *Extraction of Compartment:*

Fig 1.2. A-The Fuselage Nose-Section, B-Fuselage mid-Section (main body)

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The principle reason behind the design is to separate The Fuselage Nose-Section and Fuselage mid-Section (main body) to prevent death of crew and passenger during an emergency situations it is principle focus of this invention .The Fuselage Nose-Section and Fuselage mid-Section (main body) are coupled together with an umbilical construction by sharing conjoint door. The passengers compartment sections as shown in Fig.1. 2(A).In critical conditions, the passenger's compartment separates instantly from the pilot cabin Fig .2(B) and with for triple parachutes are mounted on assembly provide safety during an emergency.

This Assembly is heart of this Project, the Common Berthing Mechanism (CBM) is a berthing mechanism principally used to attach pressurized components. It roughly resembles to the docking ports that are used to join such elements within the in space but it will be helpful for the small aircraft but operated in different ways. The CBM system is a grouping of structural, mechanical and control components that perform the capture, closure, and passive structural connection between two pressurized units. The total CBM system is composed of two distinct sets of equipment: the active and passive halves. The active half [ACBM] supports the mechanical and control elements which effect the actual capture and closure functions of the berthing operations. The passive half [PCBM] contains the inert elements required to complete the berthing and closure action. It also contains the seals effecting pressurized capability at the Section. The nasal section is separated from the mid-section by the hatch door it is actuated with help of actuator handle and pressure in both section is sustained with the help of pressure equalization valve

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2. Assembly with wings supporter:

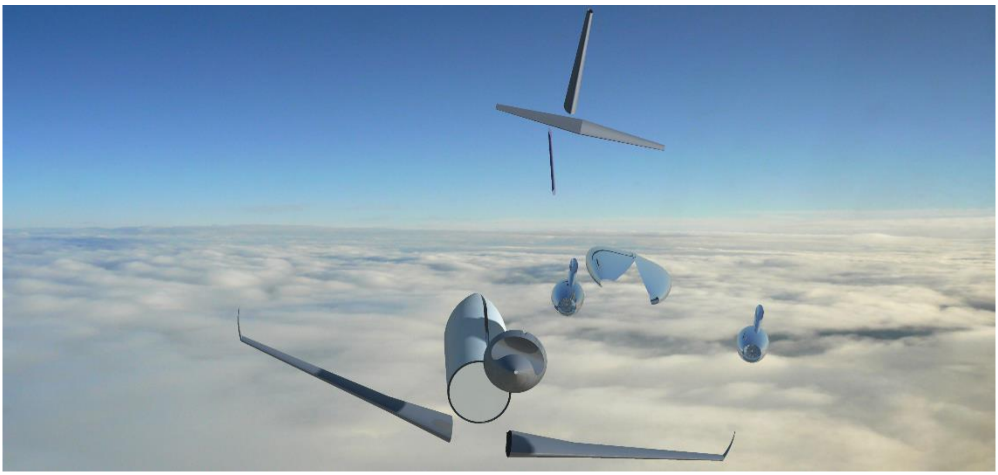

Fig 2. (The main assembly with wing supporter)

Main assembly separate according to the accident or emergency situations. To get the signals or data, since there are many sensors are mounted on planes which are working in high temperatures as well as low temperatures i.e. complex atmospherically conditions. Air temperature probe and Air Pressure probe provide on nose and mid-compartments cabin air pressure discharge valve is provide to maintain balanced air pressure in both sections, there are air cylinders during accidental conditions to maintained air pressure. When it comes to engine there are number of sensors are provide on engine such s temperature and pressure sensor to maintain the flow of air and temperature of engine ,due to overheating there are heat exchanger are mounted to cooling of engine and avoid the failure of engine signal send to computer unites . Electronic Engine Control Unit (EEC) send data to main system about situation of engine during working. Wing supporter are provided so during ejection time wing support eject he mid-section part and nose part. All parts are safe landed with help of triple parachute under the wing support assembly.

The pressure and temperature with respect to height as shown in fig 2.1, during an emergency condition the all sensors gives data to all main computer based system and main body part with nose section get separated from the main assembly section the reason might because of engine failure ,pilot error, bad weather conditions ,structure failure. As soon as the body assembly separated from main assembly the pilot- chute get activated and all triple parachute from both sides get activated .pilot-chute helpful to avoid malfunction of main triple parachutes. The nose section get separate from the mid-section with extraction mechanism and common breath mechanism the pressure is maintain in both the sections pressure equalizer valve. There are air bags assembly also provide at bottom of nose and mid-section stowed air bag assembly to provide crash free landing. air bags of larger sizes, and few small air bags are provided on the surface of the sections to avoid the collusion free landing and avoid damages of main and nose shell assembly by providing appropriate pressure by pressure sensor in large air bag and small air bags are actuated for accurate landing on surface by presser and level sensors, provide smooth landing on land as well as on water.

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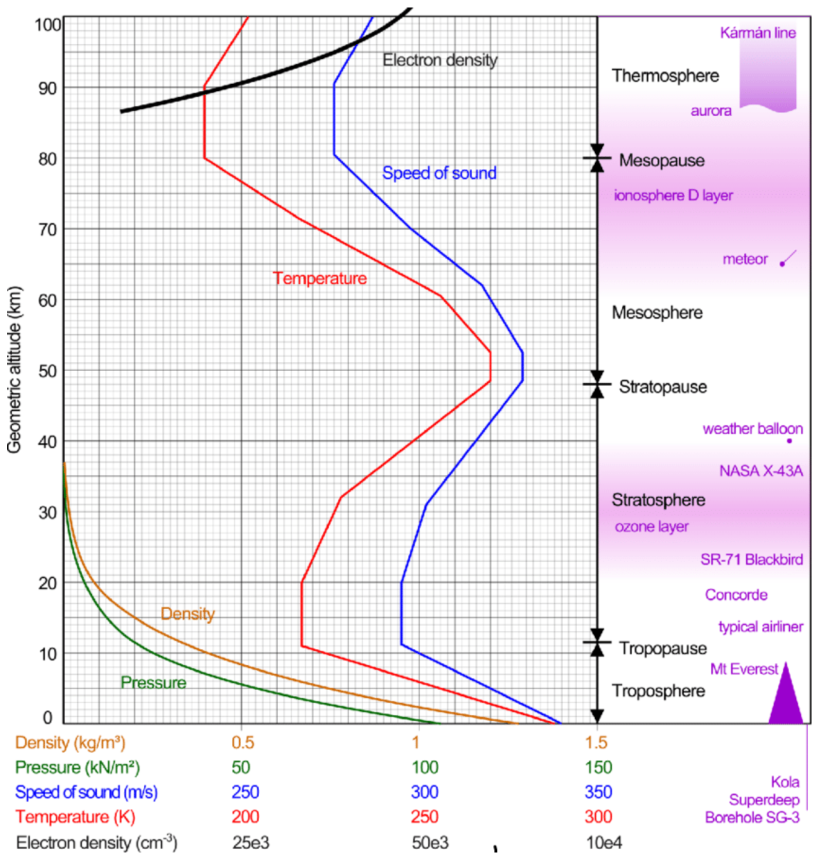

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Fig 2.1. Variation of Air Pressure by altitude

2.2 *Conditions for parachute inflate*:

Putting a complex parachute procedure on a plane will be heavy, meaning fewer passengers, or less fuel or cargo on board. All that extra weight has to be carry while flying around, requiring extra fuel. They would need regular maintenance checks, which is another charge. And a parachute would only be useful very, very infrequently

Data provided by BRS test, parachutes can be pulled and still fully expand at altitudes as low as 260 feet and speeds as high as 187 knots. Individual pilots have testified that they successfully deployed their chutes below 100 feet. BRS does not provide a specific least-altitude limitation.

By providing triple parachutes will be helpful and avoid damage by triple parachutes are help to balance the aircraft falling at high speed

Features of triple parachutes:

1 While the Earth's atmosphere will initially slow the aircraft down from 20,000 mph to 325 mph, the parachutes are needed to get to a safe landing speed of 20 mph or less

2. Even if one of the parachutes fails other two will prevent from collusion free landing. It helps to reduced speed of aircraft and it operated in complex temperature

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Features Airbags:

1. The air bags made up of polymer called vectran which having high tensile strength
2. The weight of airbags are reduced by 25%,it coated with silicon fabric which provide more strength and elongation and activate in any temperature it is better approach for air bags

3. Pie-Charts explains number of crash reasons (1919 to 2018)

The pie-chars illiterate number of incidents occurred between years 1919 to 2018, from month January to December and the number of deaths in these months. In the month of January in fig.3.1, February in fig.3.2 and March in fig.3.3 number of deaths are higher due to crash which was (1015 total number deaths) 65.85 %,(1397 total number deaths) 43.75 %,(1618 total number deaths) 50% respectively and number of deaths for next months are April in fig.3.4-(1058 total number deaths), May in fig.3.5-(1114 total number deaths), June in fig.3.6-(1735total number of death), July in fig.3.7-(1089 total number of death), August in fig.3.8-(888 total number deaths), September in fig.3.9-(12104 total number deaths), October in fig.3.10–(850 total number deaths), November in fig.3.11-(1543 total number deaths), December in fig.3.12– (998 total number deaths)

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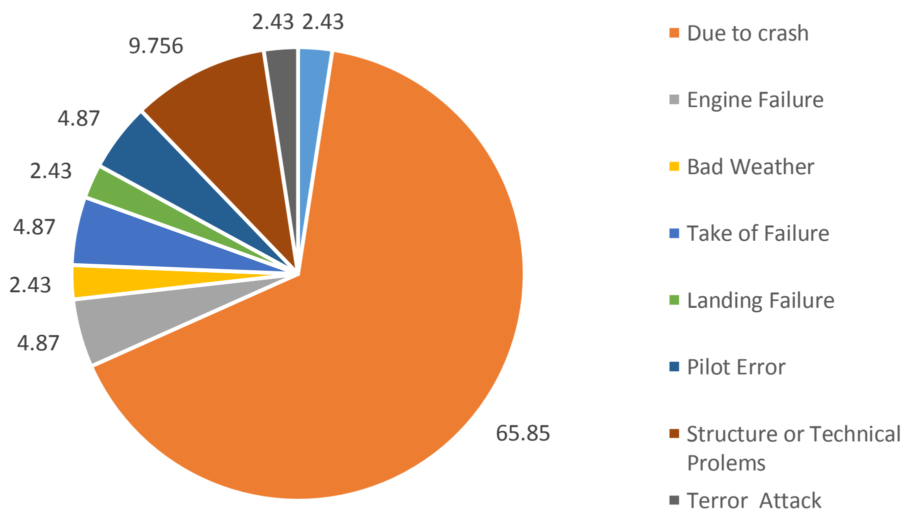
Fig3.1.Number of Resones of plane crash in percantage occured in January
(Between years 1919-1970)



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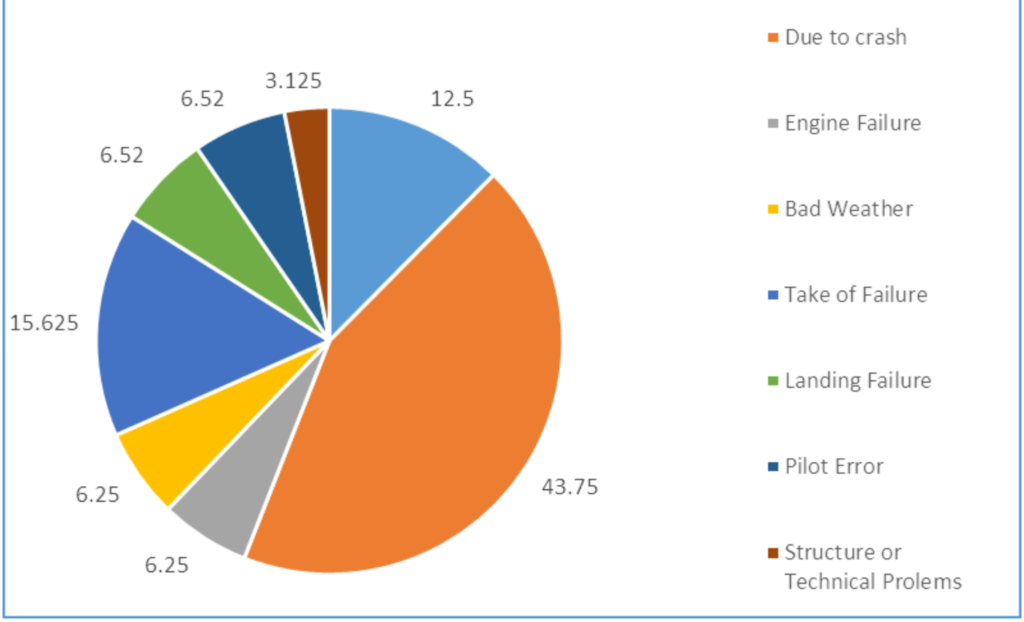

Fig.3.2.Number of Resones of plane crash in percantage occured in February (Between years 1919-1970)

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Fig.3.3Number of Resones of plane crash in percantage occured in March (Between years 1919-1970)

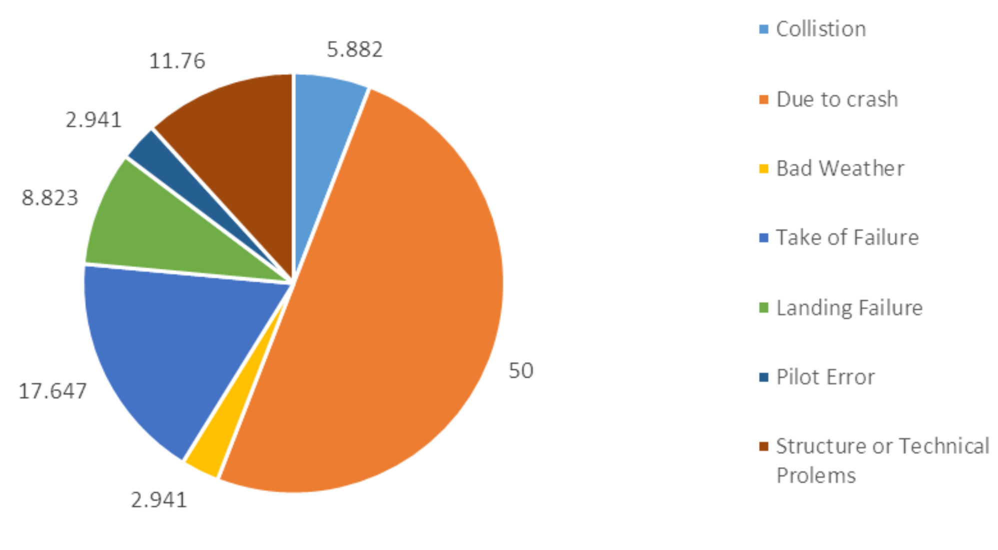

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Fig.34.Number of Resones of plane crash in percantage occured in April (Between years 1919-1970)

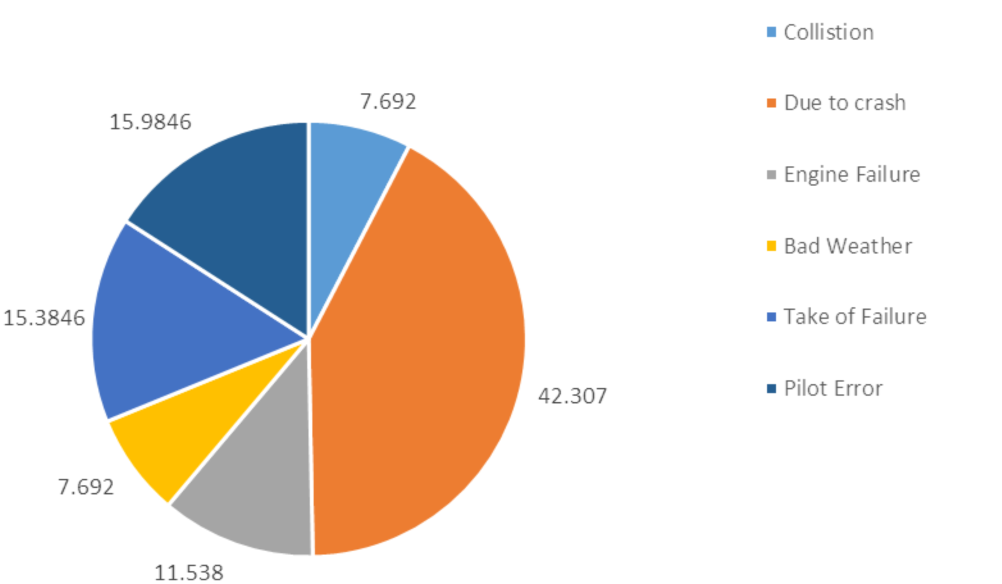

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Fig.3.5.Number of Resones of plane crash in percantage occured in May (Between years 1919-1970)

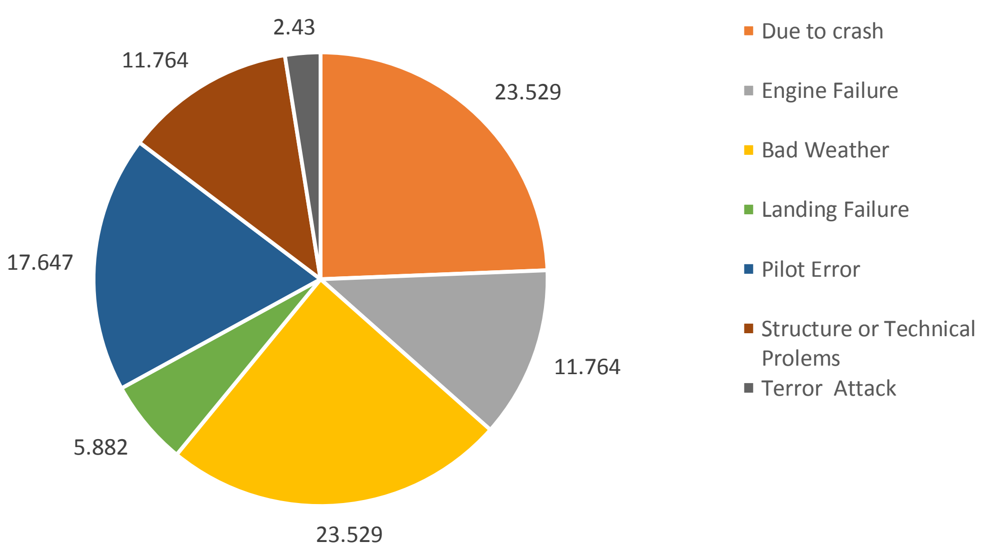

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Fig3.6.Number of Resones of plane crash in percantage occured in June (Between years 1919-1970)

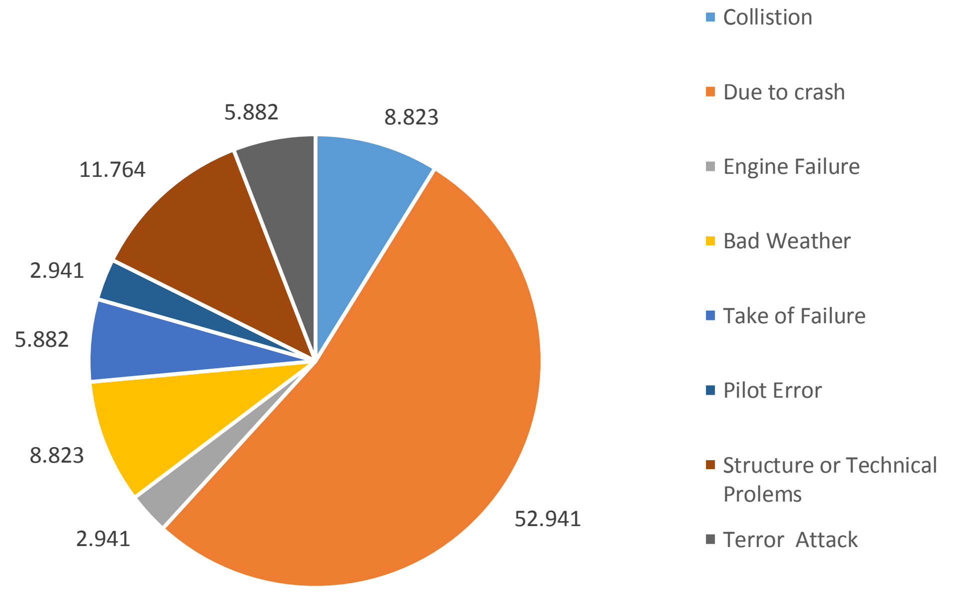

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Fig3.7.Number of Resones of plane crash in percantage occured in July (Between years 1919-1970)

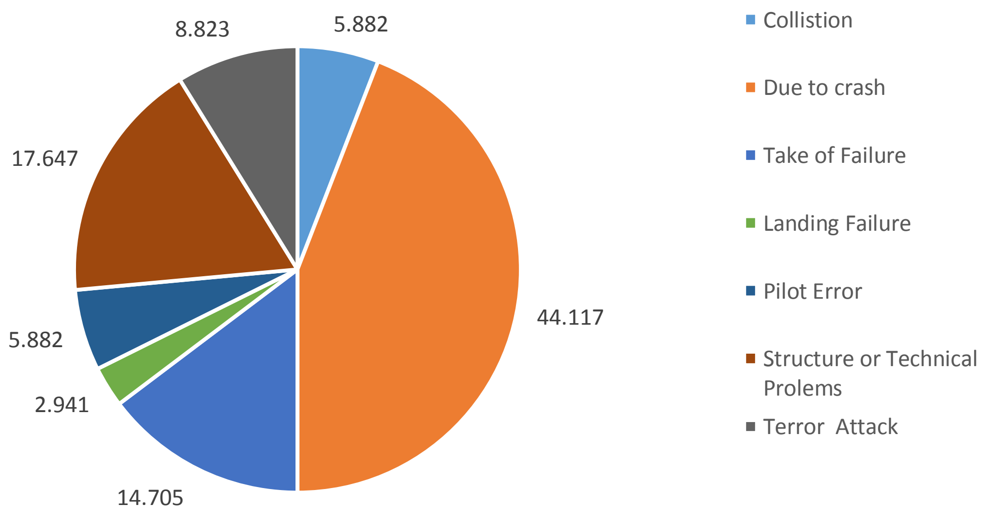

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Fig3.8.Number of Resones of plane crash in percantage occured in Auguest (Between years 1919-1970)

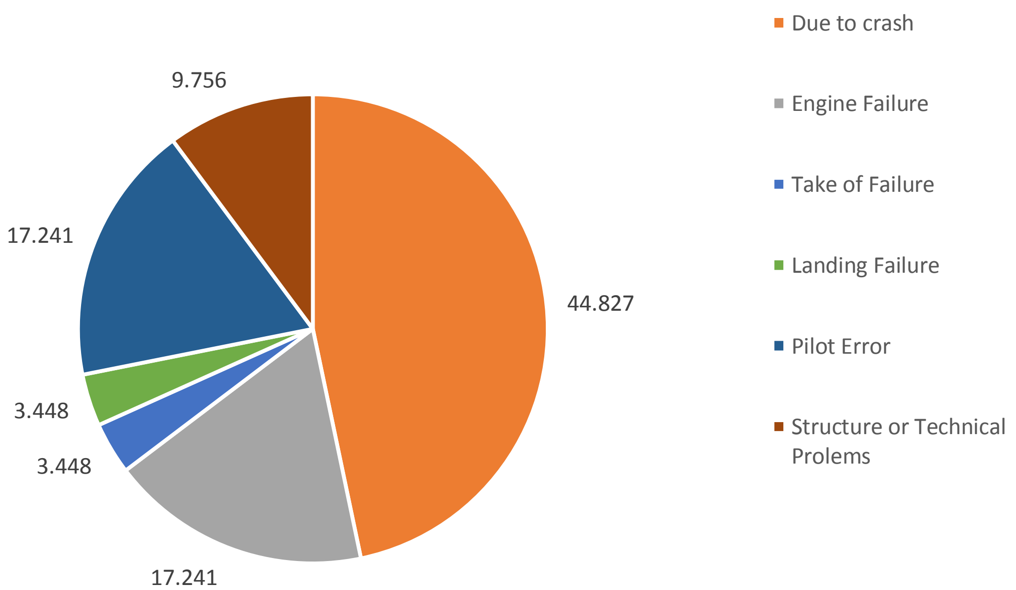

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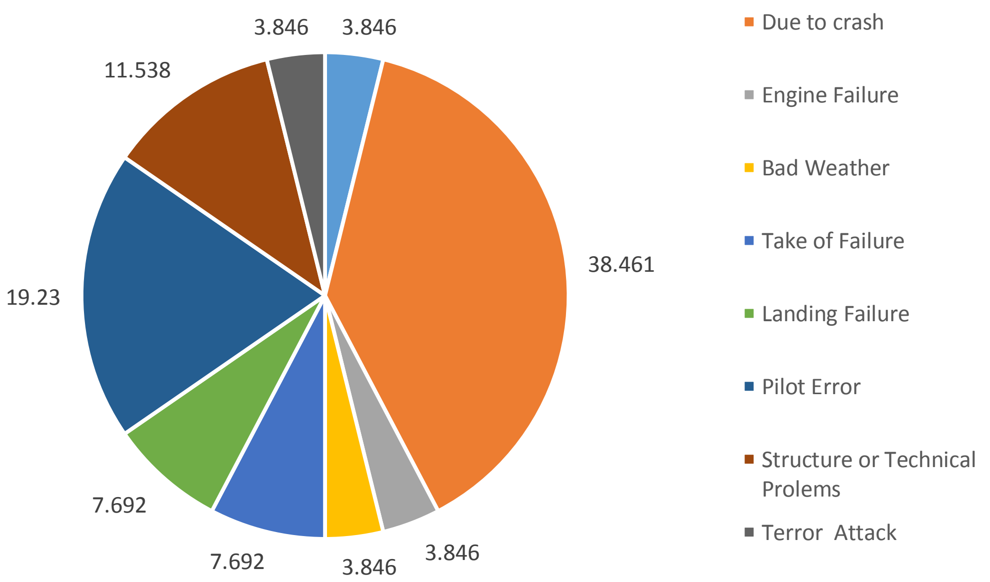
Fig3.9.Number of Resones of plane crash in percantage occured in September (Between years 1919-1970)



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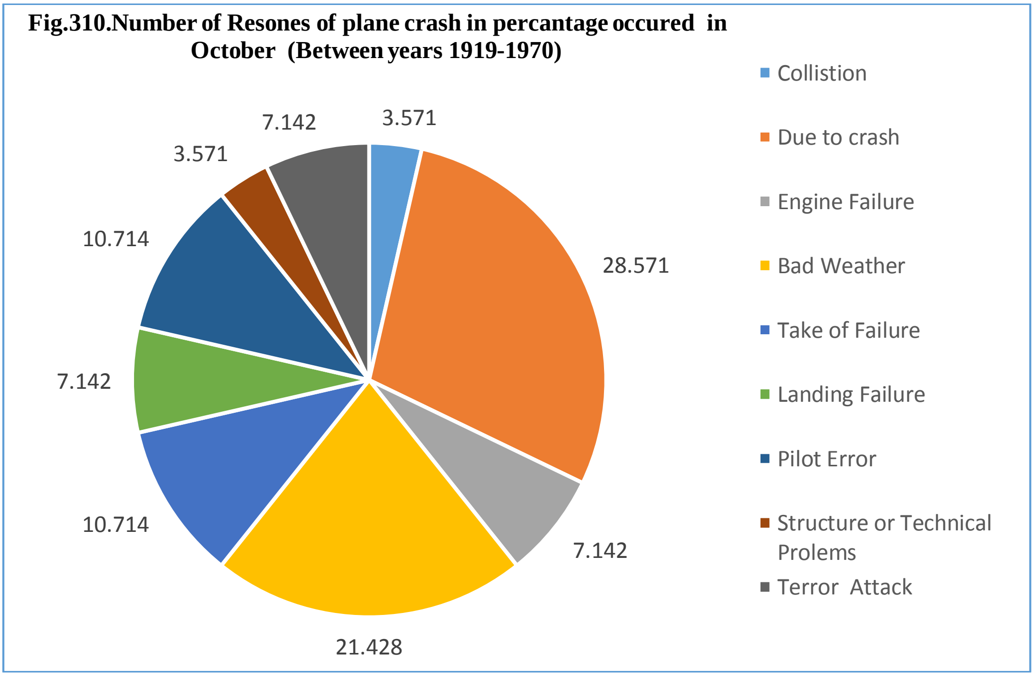

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Fig3.11.Number of Resones of plane crash in percantage occured in November (Between years 1919-1970)

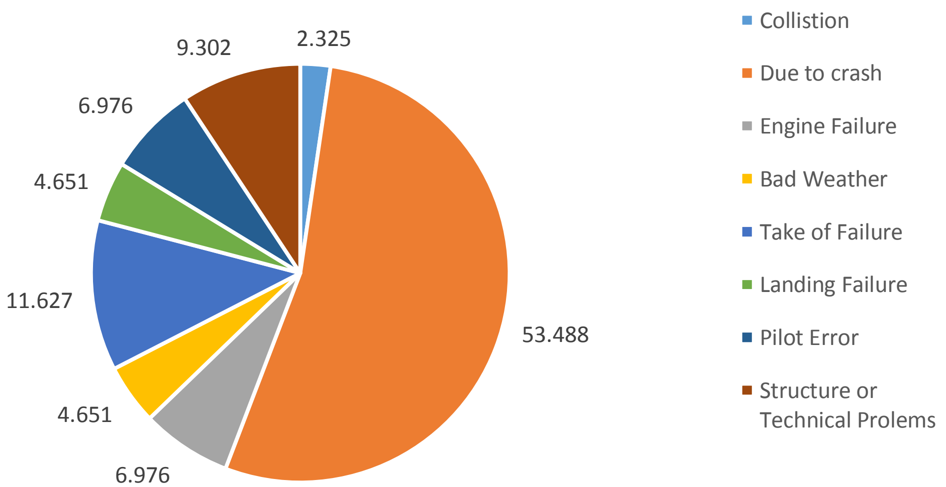

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Fig3.12.Number of Resones of plane crash in percantage occured in Decemer (Between years 1919-1970)

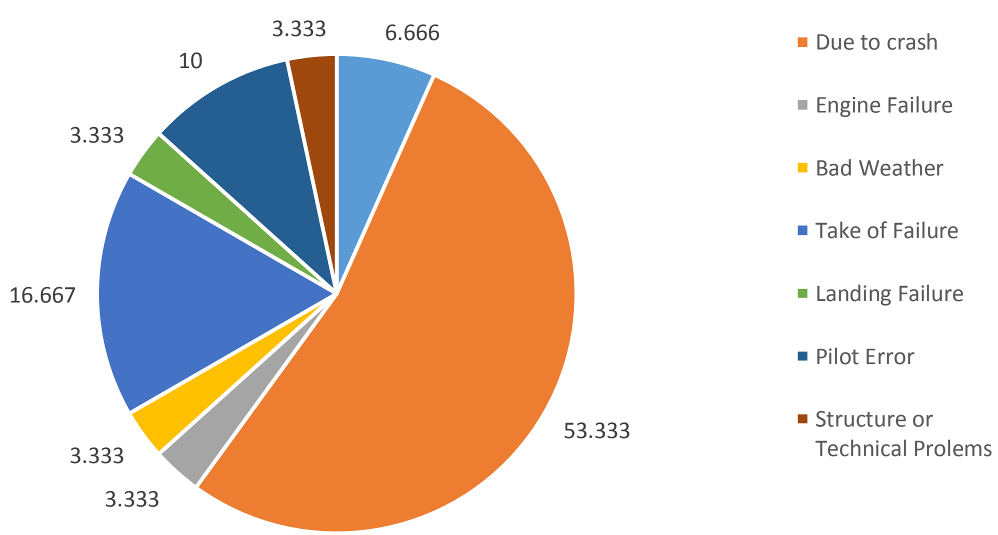

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Table 3: Number of incidents of plane crash till 2018

Years	*Incidents*	*Deaths*
2018	*5*	*189*
2017	*399*	*101*
2016	*629*	*102*
2015	*898*	*123*
2014	*1,328*	*122*
2013	*459*	*138*
2012	*800*	*156*
2011	*828*	*154*
2010	*1,130*	*162*
2009	*1,108*	*163*
2008	*952*	*189*
2007	*981*	*169*
2006	*1,298*	*192*

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2005	*1,463*	*194*
2004	*767*	*178*
2003	*1,233*	*201*
2002	*1,418*	*197*
2001	*1,539*	*210*
2000	*1,586*	*198*
1999	*1,150*	*221*
1998	*1,721*	*225*
1997	*1,768*	*232*
1996	*2,796*	*251*
1995	*1,828*	*266*
1994	*2,018*	*231*
1993	*1,760*	*275*
1992	*2,299*	*266*
1991	*1,957*	*240*

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1990	*1,631*	*261*
1989	*2,507*	*265*
1988	*2,313*	*254*
1987	*2,064*	*277*
1986	*1,763*	*238*
1985	*2,968*	*261*
1984	*1,273*	*234*
1983	*1,921*	*238*
1982	*1,958*	*250*
1981	*1,506*	*272*
1980	*2,203*	*325*
1979	*2,511*	*328*
1978	*2,042*	*356*
1977	*2,449*	*340*
1976	*2,419*	*277*

1975	*1,856*	*316*
1974	*2,621*	*270*
1973	*2,814*	*333*
1972	*3,346*	*344*
1971	*2,228*	*271*
1970	*2,226*	*298*

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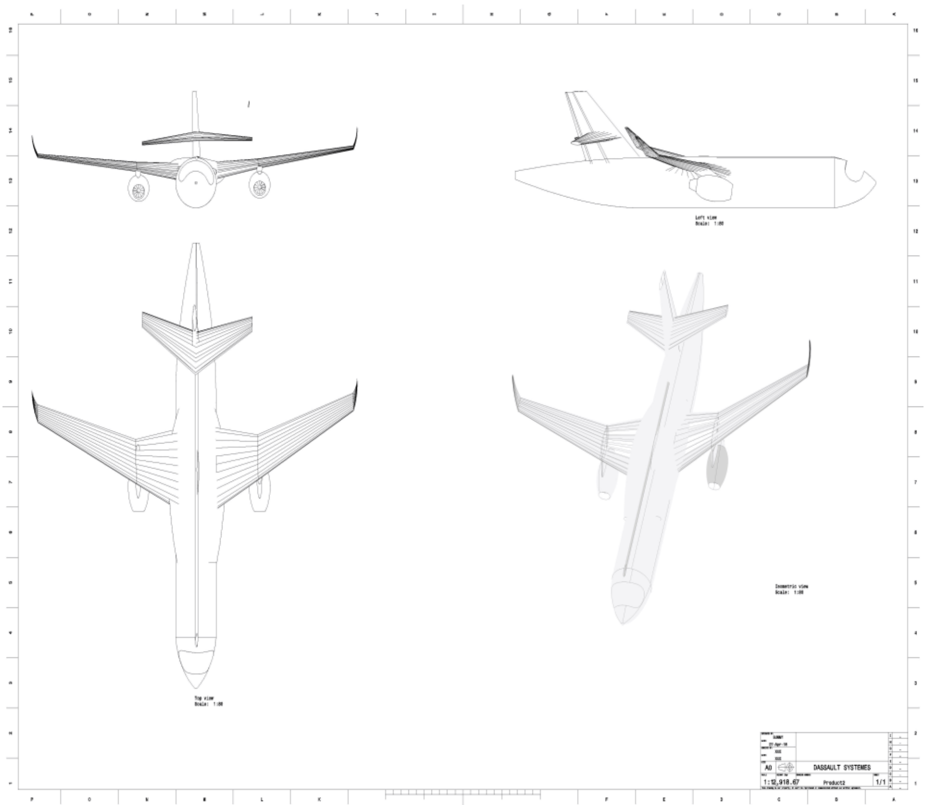

Fig .4 View of plane

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