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**OPERATION OF AIRCRAFT  
ACCIDENTS/INCIDENTS  
POTENTIAL CAUSES OF NEAR COLLISIONS AND OTHER INCIDENTS**

This AIC replaces AIC 23.5 dated 15-04-1996.

1. In the course of the investigation of near collision and other incidents during the past few years, a number of factors which are potential causative factors of these incidents have been noted. As a knowledge of these factors can enhance flight safety they are enumerated below.
2. Separation of VFR flights
  - 2.1. It has become apparent that the majority of reported near collisions during the last 12 months, have been submitted by pilots on VFR flights. It must be borne in mind that, when in VMC, it is the pilot's responsibility to keep a continuous look-out for other aircraft and that it is an offence to fly in conditions below the VFR minima as laid down for VFR flights.
  - 2.2. It has come to the Authority's notice that majority of pilots when adhering to a VFR flight plan, are under the impression that ATC, where radar is available, is continuously separating VFR flights. This is definitely not the case. As and when time permits ATC advises VFR flights of each other, but under no circumstances should pilots be lulled into a false sense of security that they are receiving the same separation as IFR flights. This applies especially in the Windhoek area, where VFR flights are operating in the Windhoek TMA/CTA.
  - 2.3. Due to ATC workload it is impossible for ATC to advise VFR flights of each other. ATC does however, where possible, advise IFR flights of other IFR flights and known VFR flights.
  - 2.4. To avoid the possibility of near collisions between VFR flights, it is recommended that pilots keep a continuous listening watch on the frequency applicable to the area so that they themselves are aware of the traffic operating therein.
3. Incorrect radio procedures. This defect frequently leads to misunderstandings and unnecessary congestion on the R/T channels. During peak periods especially, difficulties with R/T procedures can lead to situations which can be hazardous for all aircraft.
4. Defective radio equipment. This shortcoming leads inter alia to extra pressure on air traffic controllers and can, as in the case with the previous factor, lead to hazardous situations, especially during peak periods. The possibility also exists that a pilot may not be aware of the failure and

may transmit messages which are not received. Another defect under this heading, and one that has been responsible for many incidents, is caused by aircraft which are not equipped with all the necessary Air Traffic Services (ATS) frequencies. ATCs have permission to instruct an aircraft with defective radio equipment to clear controlled airspace if its flight endangers other aircraft as a result of its defective equipment.

5. Misunderstanding between aviation personnel have already been responsible for a number of incidents which could easily have resulted in accidents. When flight plans are completed, messages transmitted and information exchanged, special care must be taken to ensure that the possibility does not arise that a communication may be misunderstood.
6. Pilots who do not adhere to air traffic services procedures. The biggest problem encountered in this respect is caused by aircraft entering controlled airspace without the knowledge or the permission of air traffic control. Recently there have again been near collisions as a result of incidents of this nature. Before controlled airspace must be entered by aircraft without radio, specific arrangements must be made with air traffic control prior to the flight.
7. Pressure under which air traffic controllers have to work during peak periods. Pilots can assist in relieving the pressure under which air traffic controllers have to work by eliminating unnecessary R/T transmissions, by making their radio communications as short and concise as possible, by using the correct R/T procedures and by ensuring that the radio equipment in their aircraft is in proper working order. Where possible, all information required for a flight must be obtained before the flight is commenced and flight plans must not be submitted over the radio channels.
8. Aircraft not using the air traffic services. Incidents between aircraft making use of the ATS and aircraft not making use of these services frequently occur. To overcome this problem, pilots are advised to fly along ATS routes (airways, advisory routes and information routes) whenever possible and to remain in contact with the air traffic services during such flights. These routes are depicted on the ICAO 1: 1 000 000 maps. Airways are identified by a letter A, B, G, R or W before a number, advisory routes by the letter D after one of the letters and number mentioned above and information routes by the letter F after one of the first mentioned letters and number.
9. Semi-circular rule. There are two aspects concerning the semi-circular rule about which pilots should be aware. The first is that the application of the rule theoretically allows merely for a 500 feet vertical separation between IFR and VFR flights. When air traffic control provides vertical separation between controlled flights, a minimum separation of 1 000 feet is provided. Separation of 500 feet is permitted by the semi-circular rule firstly because VMC remains responsible for avoiding collisions with other aircraft and, secondly, in order to use airspace as sparingly as possible. From this it is clear how important it is that the altimeter must be accurate, that the aircraft must be flown on the standard altimeter setting and that the pilot must adhere to the chosen flight level as closely as possible. In recent times there have again been incidents caused by aircraft not adhering closely to their assigned flight levels. The second aspect is that the possibility exists that aircraft which fly on near reciprocal courses could be at the same level, e.g. aircraft on magnetic tracks of 005° and 175° may both be at flight level 70. Where an aircraft must undertake a flight where the magnetic track is between say 355° and 005° or 175° and 185° it is advisable that the pilot maintain contact with the air traffic services in order that he may be warned of other aircraft that may be traffic to his aircraft.
10. Traffic conflicts. As a result of the routings followed by aircraft, there are a number of places where potential traffic conflicts exist.

11. Terrain background at the Eros aerodrome. As a result of the hills at Eros, the background is such that, in certain circumstances, it is difficult to see aircraft in the circuit. Pilots flying at Eros must therefore maintain a very good lookout and must maintain close liaison with aerodrome control at Eros.
12. Colour schemes of certain aircraft. Air traffic controllers and pilots have difficulty in seeing aircraft with certain colour schemes in certain circumstances. Colour schemes blending with the background should therefore be avoided.
13. Incorrect time. Incidents have been caused by pilots using the incorrect time or by giving incorrect estimates for reporting points. The importance of using the correct time and giving accurate estimates cannot be overemphasised. Estimates of all position reports should be revised immediately when pilots become aware that they have lost or gained on their previous estimates passed to ATC. It must be realised, especially in the case of IFR flights, that ATC provides separation between such flights on a time basis. Time checks may be obtained from ATC.

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