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USE OF AIRCRAFT EXTERIOR LIGHTING TO INCREASE SITUATIONAL AWARENESS

1. Aircraft exterior lighting can be used to increase situational awareness and alert other aircraft and ground personnel on the intended movement of an aircraft. Pilots should consider the advantages of operating lights at all times to improve visibility of their aircraft.
2. Correct use of aircraft exterior lighting can also assist in preventing runway incursions. It is therefore recommended pilots use aircraft exterior lighting as an aid as described in this AIC.
3. The following operations of lights are recommended as best practice when operating on an aerodrome. The pilot-in-command of the aircraft shall determine the best operation of aircraft exterior lighting in accordance with the lights available on the aircraft and as per the aircraft manual and best practice.
4. A pilot is permitted to switch off or reduce the intensity of any flashing lights fitted if they are likely to adversely affect the satisfactory performance of the crews' duties or if they are likely to subject an outside observer to harmful dazzle. Specific consideration to reduced or no lighting should be made when their operation during adverse meteorological conditions would constitute a hazard or distraction.
5. Before selecting any supplementary or strobe lights pilots should consider the affect this may have on ground personnel or other pilots. In flight, pilots should also consider if these may cause adverse reflection from clouds.
6. Operation of the exterior lights is intended to provide ground personnel and other pilots that are operating around the aircraft better situational awareness of the aircraft intentions. Pilots are requested to operate exterior lighting in accordance with these guidelines as far as is safely practicable unless compliance with operating limitations on the aircraft's lighting systems would preclude such operations. The crew should comply with the provisions of the Aircraft Manual at all times. Where crew operate lights differently than recommended they should, where applicable, notify ATC and endeavour to inform those in the vicinity such as ground personnel of the differences.

7. Not all aircraft are equipped with the lights as mentioned below, and adherence to the guidelines in this AIC is voluntary. Pilots and ground personnel are cautioned not to rely solely on the status of an aircraft's lights to determine the intentions of the pilot(s) of the other aircraft.

Recommended Best Practice for Operating Aircraft Exterior Lighting

8. *Navigation lights.*

9. Navigation lights are required to be turned on for all flights at night. Best practice should be to display Navigation Lights whenever electrical power is turned on in the aircraft. Navigation lights should as far as possible be kept on until the aircraft is shut down and electrical power is turned off.
10. Navigation lights on a stationary aircraft are an indication to ground personnel and other aircraft that crew are onboard the aircraft and the electrical power is on. These lights also make the aircraft more visible on the apron. Navigation lights on a moving aircraft assist in indicating the relative path of the aircraft to an outside observer
11. Where it is not possible to turn Navigation lights on at the same time as selecting electrical power, the navigation lights should be selected prior to moving on the Movement Area.

12. *Rotating Beacon (Anti-collision Light)*

13. An aircraft anti-collision light system can use one or more rotating beacons and/or strobe lights. These are coloured either red or white, and have different intensities when compared to other aircraft lights. Many aircraft have both a rotating beacon and a strobe light system.
14. Anti-collision lights are required to be turned on for all flights at night, however it is recommended that the anti-collision lights are operated for all flights at day or night.
15. It is recommended that the red rotating beacon is turned prior to engine start, and is kept on until the engines are shut-down.
16. An illuminated red rotating beacon is an indication to ground personnel and other aircraft that the aircraft engines are about to be started, or are running.
17. Ground personnel should move clear of and remain clear of the engine hazard areas when the red anti-collision light becomes illuminated. Ground personnel and other aircraft should take note of the possibility of jet blast/prop wash in the area behind an aircraft with engines running.
18. Where a white flashing strobe anti-collision light is available in addition to the red rotating beacon and can be operated independently, the white strobe light should not be selected at this stage and should be operated as defined later in this document.

19. *Taxi Light*

20. Taxi lights should be selected when the aircraft is ready for taxi and used to illuminate the taxiway. At controlled aerodromes the taxi light may be selected prior to requesting taxi instructions from ATC.

21. Selection of the taxi lights indicates to ground personnel and other aircraft that the aircraft is about to start taxi or is taxiing.
22. Where an aircraft is holding short of an intersection to give way to another aircraft it is recommended practice for the aircraft holding to turn off the taxi light until the aircraft that has right of way has moved past the hold.
23. Taxiway turn-off lighting should be selected in addition to the taxi light as required.
24. **Logo Lights**
25. Logo lights should be displayed on the ground when it may be required to give more visibility to an aircraft especially at night and in periods of poor visibility. When taxiing on an aerodrome having the logo lights illuminated assists other crews who may have been instructed to follow a specific aircraft.
26. Logo lights make an aircraft more conspicuous in flight as well and should be used whenever more visibility of the aircraft is needed such as when operating in congested airspace.
27. Other lighting such as engine nacelle lights and wing lights may assist in illuminating the aircraft when taxiing at night or poor visibility conditions and crews may consider operating these as required.
28. **Strobe Lights**
29. Strobe lights (White flashing anti-collision light) should be selected whenever an aircraft is entering, crossing, taxiing on, back-tracking, or lining up on a runway. At a controlled aerodrome strobe lights should not be selected until an explicit clearance onto the runway has been obtained by ATC.
30. When operating on a runway pilots should consider any other additional lighting that may make their aircraft more visible and operate these as required, these may include logo lights, taxiway turn-off lights, wing lights, and engine nacelle lighting.
31. Strobe lights should be deselected when the aircraft has fully vacated the runway used. If the aircraft will hold short of the taxiway and the whole aircraft has not crossed the holding point, the strobes should be kept on until the aircraft is across the holding point.
32. Pilots should be aware that the operation of strobe lights in close proximity to other persons may cause blinding or dazzling and should consider this when selecting these lights.
33. Operation of the strobe light is an indication to Pilots and Air Traffic Controllers that the aircraft is entering or operating on a runway. Aircraft operating strobe lights that have not been cleared to enter a runway or if they entered the runway would cause a safety hazard (i.e. in front of a landing aircraft) should always be challenged by the ATC/pilots to confirm they will be holding short of the runway. In such cases it may be requested by ATC or the other crew that the strobes be turned off until it would be safe for that aircraft to enter the runway.
34. Strobe lights should be kept on while the flight is airborne unless the reflections of these affect the crews' performance.

35. Landing Light

36. When operating for departure, landing lights should be selected when the aircraft is about to commence its take-off roll. At a controlled aerodrome the landing light should only be selected once a take-off clearance has been issued.
37. Landing lights should be selected prior to landing. Selection of the landing light for landing, is not always an indication of a landing clearance having been received at a controlled aerodrome. In some cases, crew may select taxiway turn-off lighting with the landing light or when landing clearance is received to assist with vacating the runway.
38. In congested airspace it is recommended to operate the landing light in conjunction with the logo lights to make the aircraft more visible. Specific consideration for use should be made when crossing busy airways or when operating below 10,000ft AMSL.

CONCLUSION

39. Use of aircraft exterior lights can assist ground personnel, other crews and air traffic controllers determine the intentions of an aircraft as well as preventing runway incursions. All pilots should consider using aircraft lighting as indicated where their aircraft is capable of displaying such lights and can safely do so as per the aircraft operating specifications.
40. Pilots and air traffic controllers observing an aircraft operating lights differently than recommended in this AIC should request the crew of the aircraft to confirm their intentions especially if the movement of the aircraft would be hazardous to other persons or aircraft or has the potential to cause a runway/taxiway incursion.
41. A summary of the light selection is in the table below.

Lights	Best Practice - On	Best Practice -Off	Indication to Others
Nav Light	Electrical System on.	Complete Shut-down of Aircraft	Crew on Board Aircraft.
Rotating Beacon	Prior to Engine Start.	Engine Shut-down.	Engines starting/running.
Taxi light	Ready to taxi.	When giving way to other aircraft.	Aircraft about to/is taxiing.
Logo lights	Taxiing/flying in poor vis/night or congested areas		Improves visibility
Strobe Light	Entering/Crossing a Runway	Vacating the Runway	Aircraft will enter or is on Runway.
Landing light	Commencing take-off/Take off clearance received	When Airborne and safe to turn off/ After landing complete.	Aircraft is taking off or improves visibility of aircraft.