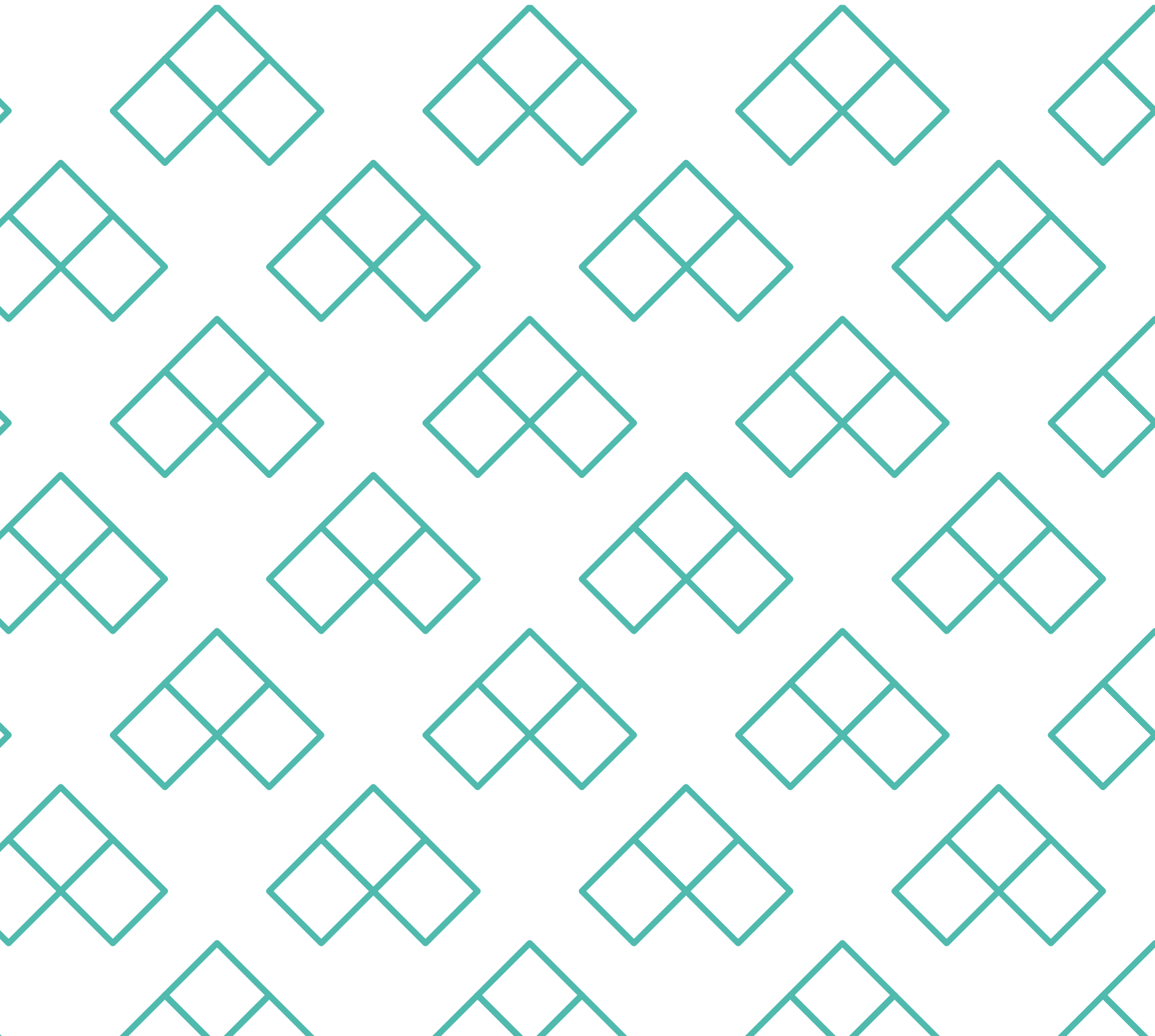
London Luton Airport

Arrival Code of Practice (ACOP)



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Introduction

The voluntary Code of Practice has been compiled for London Luton Airport by the Flight Operations Team and Air Traffic Control to give advice on the operational techniques aimed at improving the environmental impacts of aircraft operations through operational best practice.

The parts in this document will provide information relating to the ground operations and arrivals phases of flight and includes the use of Auxiliary Power Units (APU's), single engine taxi, Continuous Descent Operation (CDO) and delayed landing gear operations.

Nothing in this code shall take precedence over the requirement for safe operations and control of aircraft at all times. For the avoidance of doubts, all recommendations are to be read as being subject to the requirements of safety and manufacturer/ Operator Flight Reference Card limits. AMNs and OSIs should be followed, and the latest operational procedures are available on OpsCom.

Arrival Procedures

Operational Efficiency

Strong schedule planning is essential at London Luton Airport due to constrained runway capacity during peak waves. Flight delays are exacerbated by the bunching of arrival runway demand caused in part by peaks within the schedule, but also by airlines processes and performance which do not consistently deliver aircraft movements on plan (recognising that there are very often network factors outside of airline control, such as weather, industrial action or unplanned equipment outages). Aircraft are requested to arrive on time as to minimise the delays on the ground, for guests and for operators themselves. It is essential that all operators at LLA are familiar with this document.

On Time Arrivals

The key to efficient ground operations is aircraft arriving as close to scheduled in block time (SIBT) as possible. Aircraft that arrive early or late potentially cause unexpected delays due to their stand not being available, thus burning further fuel in the ZAGZO hold until permitted to land or congestion on taxiways waiting for a stand to become available. For early arrival flights scheduled (SIBT) to arrive in the day period (0710-2300L) Operators will not be permitted to land earlier than 0700(L), for flights scheduled (SIBT) during the Early Morning Shoulder period (0610-0705L) Operators will not be permitted to land earlier than 0600(L). This does not only impact on the airport, but also the overall passenger experience. LLA publish airport performance report detailing On Time Performance (OTP) to the Airline Operators Committee (AOC) monthly.

Slot Coordination, Aircraft QC and Chapters

Aircraft operating in Luton are required to operate to strict noise regulations taking into account individual aircraft QC values and Chapters. The maximum QC value permitted to operate through LTN is 2. Operations during the night period (2300L-0659L) are subject to night noise restrictions as per AIP 2.21 section 7, no aircraft with a QC value greater than 1 will be permitted during the night period.

All operations using the runway require a runway slot prior to operating the flight. For slot coordination and further information you are requested to contact our slot coordination team – ACL. The LLA CCU has additional charges in place for occurrences where movements take place on the runway without a valid slot held through ACL, and for operations where holding a daytime slot through ACL and operating off schedule into the night period. These charges will differ as to a daytime or nighttime violation and number of occasions the operator has had a violation.

We request that all new aircraft and operators upload their noise certificates to LOOP or if an operator cannot do this, it must be sent to the Airport Operations Control Centre (AOCC) via email on operations.control@ltn.aero team prior to operating at LLA.

STARs and Holding

Arriving aircraft into Luton will typically file one of 12 STARs terminating at the ZAGZO hold, sited to the Northwest of Luton.

STAR Name	Type Of Navigation NEW TABLE
UNDUG 1N	RNAV1 (DME/DME or GNSS)
SIRIC 1N	RNAV1 (DME/DME or GNSS)
TELTU 1N	RNAV1 (DME/DME or GNSS)
MEGEL 1N	RNAV1 (DME/DME or GNSS)
RINIS 1N	RNAV1 (DME/DME or GNSS)
XAMAN 1N	RNAV1 (DME/DME or GNSS)
TOSVA 1N	RNAV1 (DME/DME or GNSS)
FINMA 1N	RNAV1 (DME/DME or GNSS)
SILVA 1N	RNAV1 (DME/DME or GNSS)
LISTO 1N	RNAV1 (DME/DME or GNSS)
LOGAN 2A	RNAV5 (DME/DME or GNSS)
DET 2A	RNAV5 (DME/DME or GNSS)

The STARs indicate planned levels and speeds that should be flown. However, due to the complexities within the London TMA airspace, Air Traffic Control will give appropriate instructions on levels and speeds to be flown.

Descent clearances will be given in accordance to controlled airspace restrictions and may involve some step descents into the ZAGZO hold fix.

220 Knots is the maximum coded speed in the ZAGZO hold and assists with airspace containment and segregation from other LTMA traffic. In periods of low to medium traffic conditions, aircraft may be vectored off the STAR track before ZAGZO and given vectors into the sequence, any further descent below FL80 will be again subject to controlled airspace boundaries and other LTMA traffic. ATC will give a range from touchdown to assist the pilot for descent planning purposes.

Due to the proximity of other LTMA airports, pilots should be aware of possible high R/T usage by the controller and should listen carefully for their callsign and any instructions given.

Low Power / Low Drag Operations

Changing aircraft operational procedures is one strategy that can be used to reduce fuel burn and mitigate environmental impacts of aviation in relatively short timeframes with existing aircraft types. This may be in the form of delayed deceleration approaches, where the aircraft may be kept fast and in clean aerodynamic configuration for as long as possible during the approach phases of flight. This ultimately reduces the drag and thrust requirements and these procedures are therefore called Low Power/Low Drag approaches. “A noise abatement technique for arriving aircraft in which the pilot delays

the extension of trailing edge flaps and undercarriage until the final stages of the approach, subject to compliance with ATC speed control requirements and the safe operations of the aircraft". This broadly means the aircraft being in as "clean" a configuration as possible, for as long as possible.

Continuous Descent Operation (CDO)

London Luton Airport, promotes the use of CDO to minimise the amount of noise the local communities for aircraft arriving inbound to the Runway. CDO is intended to keep aircraft higher for as long as possible, and is acknowledged as a leading technique for reducing arrivals noise.

The compliance target of CDO for London Luton Airport is 95%.

For practical purposes, it is not classified as a CDO if it contains level flight longer than 2.5NM below an altitude of 5,000 ft.

CDO is currently considered by a number of operators, however, at London Luton Airport we request all operators wherever practicable and safe to do so to conduct CDO to achieve the level of noise reduction for the local community and forms part of our Noise Action Plan to improve overall CDO compliance.

CDO is closely monitored for each airline, should airlines wish to view their CDO percentage performance they should contact us directly as reports are not regularly distributed.

Landing Direction

At London Luton Airport, the runway is orientated 25 / 07. The prevailing wind is Westerly and therefore for the long term average the operating runway is 25. The split between 25 / 07 operations is 70% / 30% with a marked increase in Easterly operations during the spring months.

For Easterly Operations, Aircraft can expected to join the final approach at no less than 7nm during the day and 10nm during the Night.

For Westerly Operations, can expect to join the final approach at no less than 8nm during the day and 10nm during the Night.

ILS Approach

At London Luton Airport, we currently utilise a 3-degree glide slope operated by an ILS that all operators are requested to follow in line with Continuous Descent Operation.

Runways 07 and 25 are suitable for CAT I/III operations by operators whose minima have been accepted by the CAA.

During CAT II/III operations, special ATC procedures (LVPs) can be applied. Pilots will be informed by ATIS broadcast or by RTF when these procedures are in operation.

When transferring to Luton Tower from Luton Approach, crew should make initial contact with Luton Tower with callsign only unless instructed otherwise.

Delayed Landing Gear Operation

London Luton Airport have committed to a delayed landing gear deployment for aircraft operators whilst ensuring there would be no adverse impacts on safety or operational performance. By reducing the amount of time that the landing gear is down, this can reduce the noise experienced on the ground.

To operate delayed landing gear operations, we encourage all operators to deploy their landing gear no earlier than 5NM from the runway. LLA requires, when safety parameters are met, all aircraft to conduct delayed landing gear deployment.

It must be noted that all operators that have currently incorporated the delayed landing gear operations are noticing significant fuel savings over standard procedures.

Please note that this is subject to weather and operational restrictions and should not take priority over the safety of the aircraft and passengers on-board.

Go-Arounds

Go-arounds are performed for several reasons including, but not limited to, failure to acquire / loss of the required visual reference for landing, sudden change in wind velocity detrimental to continuing an approach, evidence or advice of a runway incursion and where an approach is unstable.

At London Luton Airport, we accept that during certain conditions, aircraft may be required to initiate a go-around for operational safety reasons.

Aircraft operators are encouraged to maintain safety at all times whilst operating and as such, should the crew feel that safety criteria is not met, then a go-around should be initiated.

Aerodrome Chart & Taxi Diagram

A direct link to EGGW AIP can be found here or on NATS eAIS website.

Ground Operations

Arriving Aircraft

All arriving aircraft are requested to decelerate to safely vacate the runway at which point further clearances will be instructed by Air Traffic Control as to their clearance to taxi to Stand. Pilots should ensure minimum occupancy time to increase runway capacity and minimise go arounds / delays. Aircraft arriving onto runway 07 are

requested to plan to vacate at taxiway Alpha. Turn-offs from the runway onto Taxiways Charlie are prohibited except when authorised by ATC.

All aircraft will be given a taxi clearance and this should be followed at all times. Taxiing aircraft should expect to be instructed to hold at intermediate taxiway holding points. Due to the aerodrome layout, it is imperative that extra vigilance is taken to minimise holding point busts and taxiway conflictions. If instructed to hold at an intermediate taxiway holding point, pilots must not cross the markings on the taxiway which depict the holding point, until onward clearance has been issued.

Commercial aircraft will be allocated a stand by ATC on the ground frequency with taxi instructions. All stands are nose-in/push-back. When approaching the aircraft stand and it has become evident that there is no marshaller located to direct you onto stand, the aircraft is to hold position on the taxiway centreline and not start to turn onto stand until a marshaller is present.

Upon arriving at the stand, aircraft should slow down and follow the instruction of the marshaller to direct the aircraft onto stand. Standard marshalling signals shall be used and once the marshaller signals to stop, the flight crew should select the brake and then follow their Standard Operating Procedures as to shut down.

For private aircraft, aircraft will similarly be given a taxi clearance to their respective FBO's (Harrods Aviation or Signature Flight Support). Aircraft operating with Signature Flight support will continue to taxi and may then be greeted by a vehicle with a "Follow Me" sign that will then direct the aircraft to a parking location. If this is not available, aircraft for both FBO's should follow the instructions of the marshaller.

Aircrew should conduct operations in a safe and secure manner and any situations identified by the crew should be highlighted to Air Traffic Control.

Single Engine Taxi Operations (SETO)

Single engine taxi operations (SETO) has a range of operational and environmental benefits if used effectively. At London Luton Airport, we encourage all operators to conduct single engine taxi operations if practicable and subject to various safety and weather conditions.

If used effectively, single engine taxi can provide benefits such as:

- Brake Savings
- Engine maintenance
- Reduced Noise
- Fuel Savings

Single engine taxi is key in minimising ground noise to our local residents where practicable, ensuring that noise is kept to a minimum. Single engine taxi also has environmental benefits, such that it reduces the CO2 produced by the aircraft and also reduces fuel consumption.

This procedure is currently operated by a number of operators at LLA as per their Standard Operating Procedures (SOP's), however the basis of this document is to encourage the continued use of such practice but to also encourage other operators to conduct this tactic.

There can be various factors affecting the use of SETO such as but not limited to, hills during taxi causing additional thrust required on a single engine, engine warm-up times (around 2 minutes) potentially causing delay and longer taxi time, slot availability.

On average there is a fuel saving of 5Kg for an A320 in the taxi phase of flight by operating single engine taxiing, however due to Luton's relatively short taxi times this may be less. Aircraft should, wherever possible, use single engine taxi to minimise noise in the local area. Aircrew should ensure they have all the appropriate equipment including aerodrome charts, instructions and appropriate frequencies to maximise airport efficiency. Crews should, however, be ready for departure on reaching the holding point.

APU Usage

In line with LLA Operational Safety Instructions, APU's are not to be used as a substitute for ground power. Airlines and their ground handlers are to ensure that APUs are used for the absolute minimum time necessary to meet operational needs.

Airlines/operators and handlers are to ensure that APU's are used for no more than 5 minutes after arrival on stand and no more than 30 minutes before planned departure.

Auxiliary Power Units (APUs) supply electrical power and temperature control to aircraft while on the ground. They typically operate at noise levels around 110 dB and consume approximately 2 kg of fuel per minute. While APUs are vital for ground operations, alternative power sources are available when the aircraft is parked at the stand.

At London Luton Airport, Ground Power Units (GPUs), diesel-powered generators, are used to supply power to aircraft, allowing the APUs to be shut down. This helps reduce noise, fuel consumption, and emissions. The airport is also trialling electric Ground Power Units (e-GPUs), which offer a cleaner, quieter alternative to traditional diesel GPUs.

Summary

This brief has been created to highlight some ideal practices regarding operations at Luton. It does not override AIP or company SOP procedures and is intended as a supplement to them. The points laid out in this document are designed to aid on-time arrivals and to make operations more efficient for all concerned.

- Operators should make arrangements with their respective handling agents to prepare for the arrival of the aircraft onto stand to reduce waiting times on stand and mitigate delays.
- Where possible and subject to operational procedures, operators must conduct low power/low drag operations including Delayed Landing gear deployment and Continuous Descent Operation (CDO).
- Where pilots are unable to comply with ATC speed restrictions, they must inform ATC as soon as possible.
- Aircraft commanders and crew should brief thoroughly for arrivals into London Luton Airport.
- Subject to operational and weather restrictions, aircraft should taxi under single engine taxi operations to minimise noise on the ground. Particular care should be taken when aircraft weights are near MTOM and potential uphill gradients are to be expected. Particular care should be taken when taxing via TWY E upslope (both to Main and North Apron).
- Particular care should be taken to understand the layout of Luton airport for taxing purposes and complying with all ATC instructions. Aircraft should take note of all taxiway stop signs and should take care not to bust the holding point for operational and safety reasons.
- Prior to entering the stand, if it is evident that a marshaller is not on stand, the aircraft is required to hold until directed otherwise.
- Aircraft arriving on stand should, notwithstanding SOP's, turn off APU as soon as practicable and make use of available GPU's provided by the respective ground handler.

We advise crew to contact the airport prior to arrival if there is any concern from them. The Flight Operations Team can be contacted by emailing FlightOps@ltn.aero.

Glossary

AIP	Aeronautical Information Publication
AMN	Airport Management Notice
APU	Auxiliary Power Unit
ATC	Air Traffic Control
CDO	Continuous Descent Operation
GPU	Ground Power Unit
ILS	Instrument Landing System
LLA	London Luton Airport
LTMA	London Terminal. Manoeuvring Area
nm	Nautical miles
OpsCom	A web-based System Management System with focus on Hazard and Safety, Risk Management, Occurrence Reporting and Risk Analysis.
OSI	Operational Safety Instruction
OTP	On Time Performance
SETO	Single Engine Taxi Operation
SIBT	Scheduled In Block Time
SOPs	Standard Operating Practices
QC	Quota Count