AZƏRBAYCAN RESPUBLİKASININ
RƏQƏMSAL İNKİŞAF VƏ NƏQLİYYAT NAZİRLİYİ
DÖVLƏT MÜLKİ AVİASİYA AGENTLİYİ

ƏMR

№ 3-27-102/7/3-2-23/2023

Bakı şəhəri "20" aprel 2023-cü il

"B747-400/-400F/-8/-8F tipli hava gəmilərinin bir mühərrik işləmədən başqa yerə sürülməsinə dair Təlimat - Məlumat sirkulyarı" sənədinin qüvvəyə minməsi barədə

"B747-400/-400F/-8/-8F tipli hava gəmilərinin bir mühərrik işləmədən başqa yerə sürülməsinə dair Təlimat - Məlumat sirkulyarı" ("Advisory Circular - One-Engine Inoperative Ferry Flight Instructions for the B747-400/-400F/-8/-8F")" adlı sənəd İstismarçı Sertifikatı (AOC) sahiblərinin istifadəsi üçün işlənib hazırlanmışdır.

Sözügedən sənədin tətbiqini təmin etmək məqsədilə "Azərbaycan Respublikasının Rəqəmsal İnkişaf və Nəqliyyat Nazirliyi yanında Dövlət Mülki Aviasiya Agentliyi haqqında Əsasnamə"nin 5.6.6-cı yarımbəndini rəhbər tutaraq,

əmr edirəm:

1. "B747-400/-400F/-8/-8F tipli hava gəmilərinin bir mühərrik işləmədən başqa yerə sürülməsinə dair Təlimat - Məlumat sirkulyarı" ("Advisory Circular - One-Engine Inoperative Ferry Flight Instructions for the B747-400/-400F/-8/-8F") adlı sənəd 2023-cü ilin 20 aprel tarixindən müvəqqəti olaraq qüvvəyə minsin.
2. Sənədin Dövlət Mülki Aviasiya Agentliyinin (DMAA) və onun tabeliyində "Mülki Aviasiyada Uçuşların Təhlükəsizliyi üzrə Dövlət Müfəttişliyi"nin aidiyyəti mütəxəssisləri tərəfindən öyrənilməsi və icrası təşkil edilsin.
3. Sənəd DMAA-nın rəsmi internet saytında yerləşdirilsin.
4. Əmr bütün şəxsi heyətə çatdırılsın.
5. Əmrin icrasına nəzarət direktorun müavini Hacıağa Hacıyevə həvalə edilsin.

Direktor **Arif Məmmədov**

Advisory Circular

One-Engine Inoperative Ferry Flight Instructions for the B747-400/-400F/-8/-8F

Date: 20 April, 2023
AC №: AC-OPS-001

1. INTRODUCTION

The operator/holder of the Air Operator's Certificate (AOC) is responsible for obtaining operational approval for the 3 Engine Ferry Flight (3EFF) from the State Civil Aviation Agency of the Republic of Azerbaijan (SCAA).

The operator must refer to the manufacturer's approved documentation and relevant provisions for the performance of 3EFF operations. This includes the Aircraft Flight Manual (AFM), MMEL and MEL, relevant national requirements, and requirements established by the SCAA. Cross reference to these documents must be made when developing the operators' own 3EFF procedures, with specific SOPs, MEL and briefing guides to ensure that all the relevant requirements have been met.

The 3EFF Manual must as a minimum provide detailed guidance with respect to the following 3EFF operations:

- Limitations
- Normal Procedures
- Non-Normal/ Emergency Procedures
- Performance
- Validation/approval process for 3EFF approved airports and runways
- Approval by the SCAA

Authorisation processes to approve 3EFF must be described in the approved Operations Manual Part A, and must include:

- Briefing and Simulator Training
- Documents to be carried
- SCAA Approvals

It is the recommendation of the OEB that all 3EFF operations must be described and defined in a specific 3EFF Manual.

2. CREW QUALIFICATION AND TRAINING

The 3 EFF qualification and training should be approved by a nominated post holder for flight operations or flight crew training and this should be included in his/her terms of reference, written in the Operations Manual Part A. To ensure a safe preparation and management of a 3EFF operation, the following requirements and training should be applied.

2.1 CREW PREREQUISITES

Both flight crew members (captain and first officer) must be qualified, current, and experienced on the applicable B747 variant and be specifically designated to carry out 3EFF operations. Inexperienced flight crew members as defined in AAR-OPS.ORO, ORO.FC.200(a) are not eligible for such operations.

If operators require the carriage of a Safety or relief Pilot, they must also be qualified and current for 3EFF operations with their duties clearly defined in the SOP's.

Boeing Pilots who are current and qualified on the applicable B747 variant and who have had specific 3EFF training are authorised to conduct 3EFF flights, subject to approval by the SCAA.

2.2 CREW TRAINING

2.2.1 INITIAL TRAINING

Before conducting a 3EFF operation, all designated crew members shall follow a B747 Three Engine Ferry Flight course approved by the SCAA.

The training must be conducted by a TRI/SFI who is qualified in accordance with the Operations Manual (Part D).

2.2.2 REFRESHER TRAINING

All designated crew members should follow refresher training on an annual basis to include all elements of the initial training course at airfields and in conditions where the operator is likely to conduct 3EFF on its network. The refresher training should also be used to review any 3EFF operations undertaken by the operator in the preceding 12 months.

2.2.3 PRIOR TO ANY ACTUAL 3EFF OPERATION

Whenever refresher training on an annual basis is not implemented by the operator, prior to conducting any 3EFF operation, all crew members should perform a simulator session in order to practice handling techniques and operational items. This practice session should use the forecast weather conditions, the actual aircraft conditions (inoperative engine, aircraft weight, etc.) and, ideally, the airport from which the 3EFF will depart.

2.2.4 BRIEFINGS FOR THE SIMULATOR SESSION AND BRIEFING PRIOR TO THE ACTUAL FERRY FLIGHT, AS APPLICABLE

A dedicated briefing should be performed and should include the following:

- Technical condition of the aircraft - MEL
- Airworthiness release
- Performance computation
- FMC Differences.
- Use of checklists
- Operating Limitations
- CG and TRIM setting
- Weather minima
- 3EFF operating procedures, with specific emphasis on Fuel Management
- EICAS messages
- Takeoff procedures
- Thrust setting procedures, highlighting the importance of coordination and communication between crewmembers. It is important that the recommended thrust setting is achieved at each speed “gate” so that the required take off performance is met
- 2nd Engine failure procedure and performance implications, including fuel jettison
- Non-normal procedures, including pilot incapacitation on take-off
- The above list is not exhaustive.

3. THREE-ENGINE FLIGHT (3EFF) PROCEDURES

3.1 TECHNICAL CONDITION OF THE AIRCRAFT

The inoperative engine must be configured in the specified condition as per Aircraft Maintenance Manual (AMM) procedures (i.e. in windmilling, locked rotor), by the maintenance crew.

The operative engines must be inspected by the maintenance crew as per Aircraft Maintenance Manual (AMM) procedures.

Other systems must be configured or set in specific condition for the flight.

Reference must be made to the AFM and MEL, Operations Manual Part A, and the 3EFF Manual.

3.2 MEL

Some aircraft systems are required operative prior to dispatch. Three Engine Ferry Flights are limited to 2 sectors. Flights must be made without passengers and without any freight that would not belong to the 'spare parts kit'. Limited ballast may be used if required for specific loading limitations. Reference must be made to the MEL.

3.3 FLIGHT PLANNING AND WEATHER CONDITIONS

A careful study of the route has to be performed. The Flight plan must be prepared at relevant speeds and altitudes for the appropriate engine configuration. During the en-route phase the aircraft should be capable of clearing all obstacles should a second engine fail. Weather minima for actual and forecast weather conditions should be considered. Known icing conditions should be avoided.

3.4 PERFORMANCE

The RTOM performance determination differs from that normally applied for Commercial Air Transport (CAT) operations. A thorough understanding of 3EFF performance is required prior to any 3EFF operations.

The 3EFF take-off, en route net flight path, go-around and landing performance must be determined by using calculations made in accordance with the AFM, or other performance applications, e.g. electronic means, dependent on approval by the SCAA.

Special note should be taken of the implications of Vstop compared to V1.Vstop is the speed to which the aircraft can be accelerated with all serviceable engines operating, and brought to a full stop within the accelerate-stop distance available. Full handling capability with regard to the failure of a serviceable engine is provided from Vr, whilst permitting a reduced level of performance, less than that normally assumed by CS 25. It is considered suitable for non-revenue, non-passenger operations to return the aircraft to a place where an engine may be repaired or changed. At or above Vstop and with a second engine failure, the decision should always be to continue the take-off, as the crew has no means to predict at which speed the aircraft will cross the runway end in case of takeoff abortion above Vstop.

4. OPERATING LIMITATIONS

4.1 CREW

The number of crew carried during 3EFF operations must be restricted to nominated essential crew as approved by the SCAA.

4.2 SECTORS

3EFF will be limited to a maximum of two planned sectors.

4.3 MAXIMUM AIRSPEED

Do not exceed 320kts IAS / Mach .85, or 270kts / Mach .80 if encountering unexpected icing conditions.

4.4 PERFORMANCE LIMITED TAKE-OFF MASS AND LANDING MASS

The maximum performance limited Take-off and Landing mass must be determined by either:

- Electronic methods approved by the SCAA
- Computer based RTOM data held by a route planning department approved by the SCAA.
- The performance charts in the AFM

4.5 TAKE-OFF CONDITIONS

Take-off shall be made using Flap 10.

4.6 MAXIMUM PRESSURE ALTITUDE

The Pressure altitude for take-off and landing must not exceed 9,500ft.

4.7 AIRPORT CONDITIONS

Take-off is authorised on a dry or wet runway. It is not authorised on a contaminated runway.

4.8 LIMITING CROSSWIND COMPONENT

The crosswind component of the tower reported or forecast reported wind velocity must not exceed 7kts from the side on which the unserviceable engine is located for take-off or landing. Crosswind from the other side is in accordance with the AFM or operator limitations.

4.9 WEATHER CONDITIONS

For 3EFF operations, a minimum ceiling of 1000ft and a minimum visibility of 3 kilometres at departure, and a minimum forecasted ceiling of 500ft and a visibility of 3 kilometres at destination and alternate airports should be used.

4.10 ICING CONDITIONS

It is not recommended that 3EFF be dispatched into regions of known, predicted or reported icing conditions, as no anti-icing is available on the inoperative engine.

4.11 ROUTE LIMITATIONS

No place along the intended track shall be more than 240 minutes flying time from a suitable alternate airport.

4.12 FUEL REQUIREMENTS

3EFF flight plans should be provided for either windmilling or locked rotor. Flight planning must be used using the correct flight planning data for the configuration being flown either from the flight planning system or the AFM. Special consideration must be given for increased fuel burns associated with a locked rotor.

5. OPERATING PROCEDURES

Specific operating procedures must be applied for the following:

- Aircraft line-up
- Rudder Trim Setting
- Thrust application

Follow specific one-engine inoperative procedures, if provided. Operators should develop specific callouts for the thrust setting procedure which will provide the Pilot Flying (PF) with sufficient information to increase the thrust on the asymmetric engine appropriately during the take-off roll. Emphasis on crew coordination and communication should be part of the briefing, as listed above. This is required because the attention of the Pilot flying is focused outside in order to maintain directional control during the asymmetric thrust application. The Pilot Monitoring will therefore need to monitor the engine thrust settings at defined speeds (speed gates) and call these out to the Pilot Flying.

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