



ICAO

Second Meeting of the Steering Group of the Improvement of Air traffic Services over the South Atlantic (SAT/SG2)

Dakar, Senegal, 9-12 December 2024

Agenda Item 5: SAT Members initiative

Higher Airspace Operations (HAO) and space object launch and recovery in Dakar FIR

(Presented by ASECNA)

SUMMARY

This paper presents an overview of recorded events related to higher airspace and space transport operations as well as their impact in air traffic management within Dakar Oceanic FIR.

REFERENCES

SAT Procedural Handbook

1. Introduction

- 1.1 This report aims to share experience of Higher Airspace Operations (HAO) and Space Transport Operations (STO) management within Dakar Oceanic FIR.
- 1.2 The paper contains statistical data as well as NOTAMs published in support of these operations to mitigate risks of safety events occurrence.

2 Discussion

- 2.1 **From 2020 to 2024, four (4) occurrences** concerning craft, balloon and drone operating at very high altitudes have been counted within Dakar Oceanic FIR.
- 2.2 A number of these operations occurs in quite extensive area causing a high impact on air traffic management.
- 2.3 As operational impacts, it can be mentioned the restriction of civil airspace and air traffic controllers may have to often divert aircraft that would transit over the areas concerned.
- 2.4 The registered occurrences and published NOTAM are presented below:

➤ **2020:**

_NOTAM relating to the launch of **ARIANE5** from 18/02 to 28/02/2020- Every day from 21:58 to 01:24 UT The area called ZC/VA252 will impact the GOOO, GLRB and DGAC FIRs is **marked in red**.

Special remarks: The flights that transit mainly in the area at this time and that enter the FIR GOOO are SAA203 and DAL201. All of them are leaving South Africa for the United States.



➤ **2021:**

Project Loon - Position report for DAKAR_OCEANIC FIR in 2021 which directly impacted the Oceanic FIR with the evolution coordinates that are in the FIR.
Balloons in DAKAR_OCEANIC FIR

Report Time: 2019-03-21 08:55 UTC

Report Sent: 12 hours before estimated entry of first balloon.

Report Update: every 6 hours*

For the latest information consult tracking website:

www.loon-atc.com | login: loon | password: projectloon

If you have trouble accessing the website, please contact Loon Mission Control.

Loon Mission Control: Direct (24h/365d): +1-650-966-7655 | E-mail: LoonMC@google.com

* Report only sent if at least one of the following is true:

- A balloon is in the FIR.
- A balloon is expected to enter the FIR in the next 12 hours.
- A balloon is close to the FIR.

Balloons close to FIR or expected to enter in the next 12 hours

Weather conditions can shift actual course.

| Flight | Beacon | ICAO | Current FIR | Current Altitude (Flight Level) | Current Position | Current Speed (knot) | Current Heading (degrees) | Est. Entry Time in DAKAR_OCEANIC | Est. Entry Point in DAKAR_OCEANIC | Clearance Request (Flight Level)* |
|---------|--------|--------|-------------|---------------------------------|------------------------------------|----------------------|---------------------------|----------------------------------|-------------------------------------|-----------------------------------|
| HBAL637 | 4453 | a3b0cc | PIARCO | FL515 | 11° 28' 8.89" N 46° 1' 40.92" W | 39 | 77 | 2019-03-21 20:51 UTC | 12° 0' 40.56" N 36° 50' 27.47" W | FL500+ |

Verbal coordination will be performed by telephone prior to entry. Balloons will remain at or above the coordinated clearance.

➤ **2024:**

NOTAM relating to the **US Department of Defense** which was the subject of a NOTAM request to DAKAR OCEANIC FIR (GOOO) in 2024.

We realized that the area is inside the Oceanic FIR and this pushes us to publish the NOATMs for users in order to avoid the area.

HAZARD AREA:

- 08°32'00"N 031°06'00"W
- 08°39'00"N 031°01'00"W
- 08°03'00"N 028°55'00"W
- 06°43'00"N 027°40'00"W
- 05°49'00"N 028°16'00"W
- 05°59'00"N 028°34'00"W
- 05°25'00"N 028°53'00"W

Schedule:

Primary day: 30 Jan 24 / 2100Z thru 31 Jan 24 / 0356Z
 Backup day: 01 Feb 24 / 2100Z thru 02 Feb 24 / 0356Z
 Backup day: 03 Feb 24 / 2100Z thru 04 Feb 24 / 0356Z

Please advise of scheduling conflicts ASAP to POC.

Please confirm receipt to both sender and POC.

POC is ATO Space Operations International email at 9-AJO-AJR-SpaceOps-Intl@faa.gov

A0145/24 NOTAMN

Q)GOOO/QWELW/IV/BO/W/000/999/0832N03106W 999

A)GOOO B)2024-01-30 21:00:00 C)2024-02-04 03:56:00

D)30/01:2100-2359 31/01:0000-0356

01/02:2100-2359 02/02:0000-0356

03/02:2100-2359 04/02:0000-0356

E)MILITARY ACTIVITIES WILL TAKE PLACE WITHIN LATERALS LIMITS :

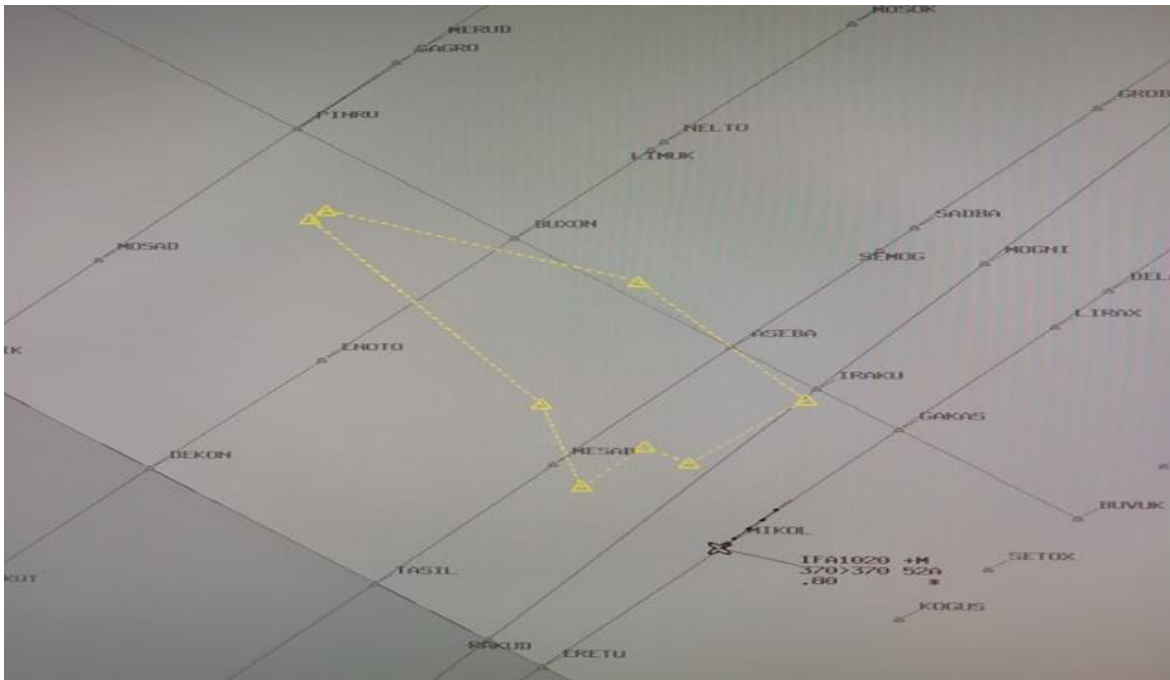
083200N0310600W - 083900N0310100W - 080300N0285500W - 064300N0274000W

- 054900N0281600W - 055900N0283400W - 052500N0285300W -

062500N0291700W - 083200N0310600W

F)GND

G)UNL



2024:

Scientific research mission below the South Atlantic from 11 August to 08 September 2024

(A1026/24 NOTAMN

Q)GOOO/QWELW/IV/BO/W/230/500/0700N01729W070

A)GOOO B)2408110900 C)2409082100

D)0900-2100

E)ATMOSPHERIC RESEARCH WORK INCLUDING DROPSONDES FROM FLIGHT LEVEL 410 OR ABOVE WILL TAKE PLACE IN NON-FIXED CIRCLES OF RADIUS 70 NM IN DAKAR UTA AND DAKAR OCEANIC UIR/FIR WITHIN THE AREA DEFINED AS FOLLOWS :

WP1: 150023N 02000W

- WP2: 2000N 02000W
 - WP3 : 1900N 01900W
 - WP4: 195533N 01800W (NEAR NOCUT)
 - WP5: 0200N 01800W
 - WP6: 020117N 0271856W
 - WP7: 0740N 03500W (MOVGA)
 - WP8: 162733N 03500W
 - WP9: 125757N 212201W
- AIRSPACE USERS MAY PLAN FLIGHTS IN THE DEFINED AREA WITH POSSIBLE INFLIGHT DEVIATIONS TO AVOID THE ABOVE-MENTIONED CIRCLES.
 F)FL230 G)FL500)

PROJECT
PERCUSSION – 13 AUG 2024 (V2)

MAP

DATA BLOCK

| | |
|---------------------------|----------------------|
| DOF | 13.08.2024 |
| REG/OPR | DADLR/DLR |
| ETD | 1415 UTC |
| TYPE | GLF5 |
| DEP | GVAC |
| DEST | GVAC |
| Init. Speed / Alt. | N0420 / FL410 |
| ETE | 09:00 |

RTE & REQ

DCT 1644N02257W DCT 2100N02133W DCT 1730N02215W
 DCT 1618N02229W DCT 1145N02322W DCT 0730N02411W
 DCT 0500N02439W DCT 0500N02330W DCT 0730N02301W
 STAY1/0010 0730N02301W DCT 1145N02210W STAY2/0100
 1145N02210W DCT 1600N02117W STAY3/0100
 1600N02117W DCT 1530N02206W STAY4/0040
 1530N02206W DCT 1644N02257W

SPECIAL REQUESTS:
 fly 3 circles with radius ~70NM at FL410/430 around following center points, dropsondes on the circle:
 C_South: 0730N02301W, ~12 dropsondes
 C_Mid: 1115N02210W, ~12 dropsondes
 C_North: 1600N02117W, ~12 dropsondes
 Fly 1 circle with radius ~38NM at FL350 around:
 C_ATR: 1530N02206W, 6 dropsondes

Sal Oceanic FIR/UIR: flight in coordination with F-HMTO. Aircraft are in contact concerning dropsonde release.

The aircraft is maneuverable according to ATC requirements at any time.

DLR Flight Operations under EASA SPO
 Operations +238 580 9232 +49 152 0162 88 34
 andrea.hausold@dlr.de

D-ADLR – G550

3. **Actions Required**

3.1 The meeting is invited to:

- a) note the information provided;
- b) share best practices related to STO/HAO management within SAT Area; and
- c) provide guidance as appropriate.