Does Sustainabilty effect Safety?
A view and questions arrising from real airport operation.

Brussels | 01.07.2022 | Georg Paschek

BER FLUGHAFEN BERLIN BRANDENBURG

When talking about sustainability at BER these example-projects are currently in development or already in place

noise abatement procedures on departure flight routes

photovoltaic installations

noise-event-based airport fees

Green GSE

But how and why do these projects might affect safety?
And most important: How can these issues been handeld?

BER FLUGHAFEN BERLIN BRANDENBURG

I. Green GSE
means massive rechargeable battery packs on the apron.

Ground handling providers at BER are obligated to bring in more and more electric GSE by their licence agreement. With that comes:

- Finding (safe) locations for loading infrastructure
- How can electric GSE be easily identifiable in case of fire (no regulation so far) as totally different firefighting tactics are needed.
- Doe RFFS have the right equipment for firefighting of new GSE?
- Operational issues:
  - different driving behaviour of GSE
  - range of battery (for example A/C-towing with RWY-crossings)

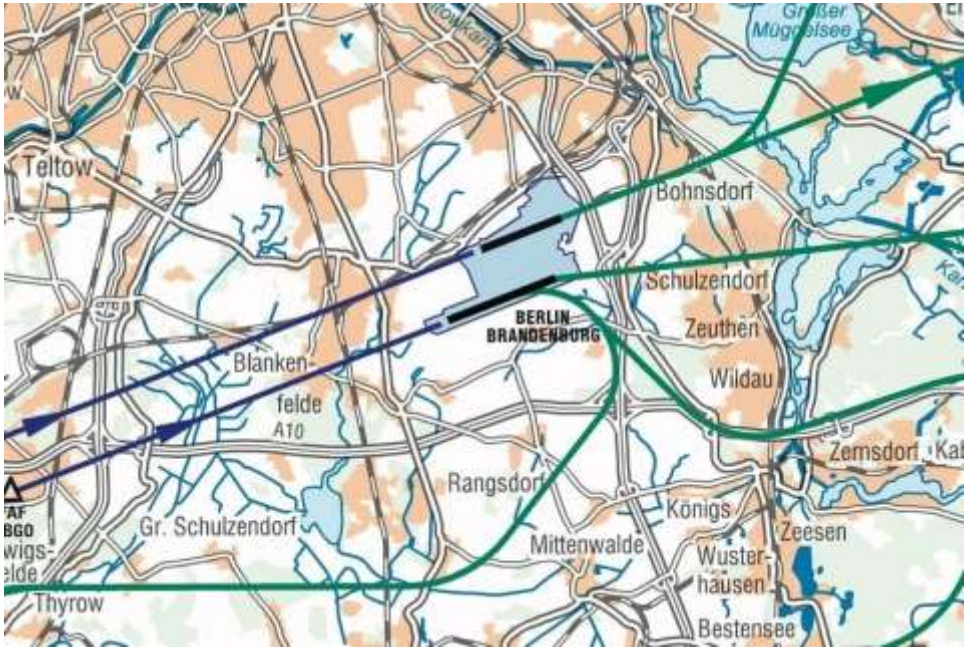
BER FLUGHAFEN BERLIN BRANDENBURG

II. Noise Abatement Procedures on departure flight routes or is it an air display within normal airport operations?

When departure and arrival routes for new BER RWY-setup were designed, noise footprint was one mayor issue in the discussions with neighbourhood.

Out of that discussions the *„Hoffmann-curve“* was created, named after the idea-giver Mr. Marcel Hoffmann, a PPL-holder living in the neighbourhood of BER.

Technically, we talk about QUEBEC-SIDs (GERGA 1Q, ARSAP 1Q, LUROS 1Q) for RWY 07R.

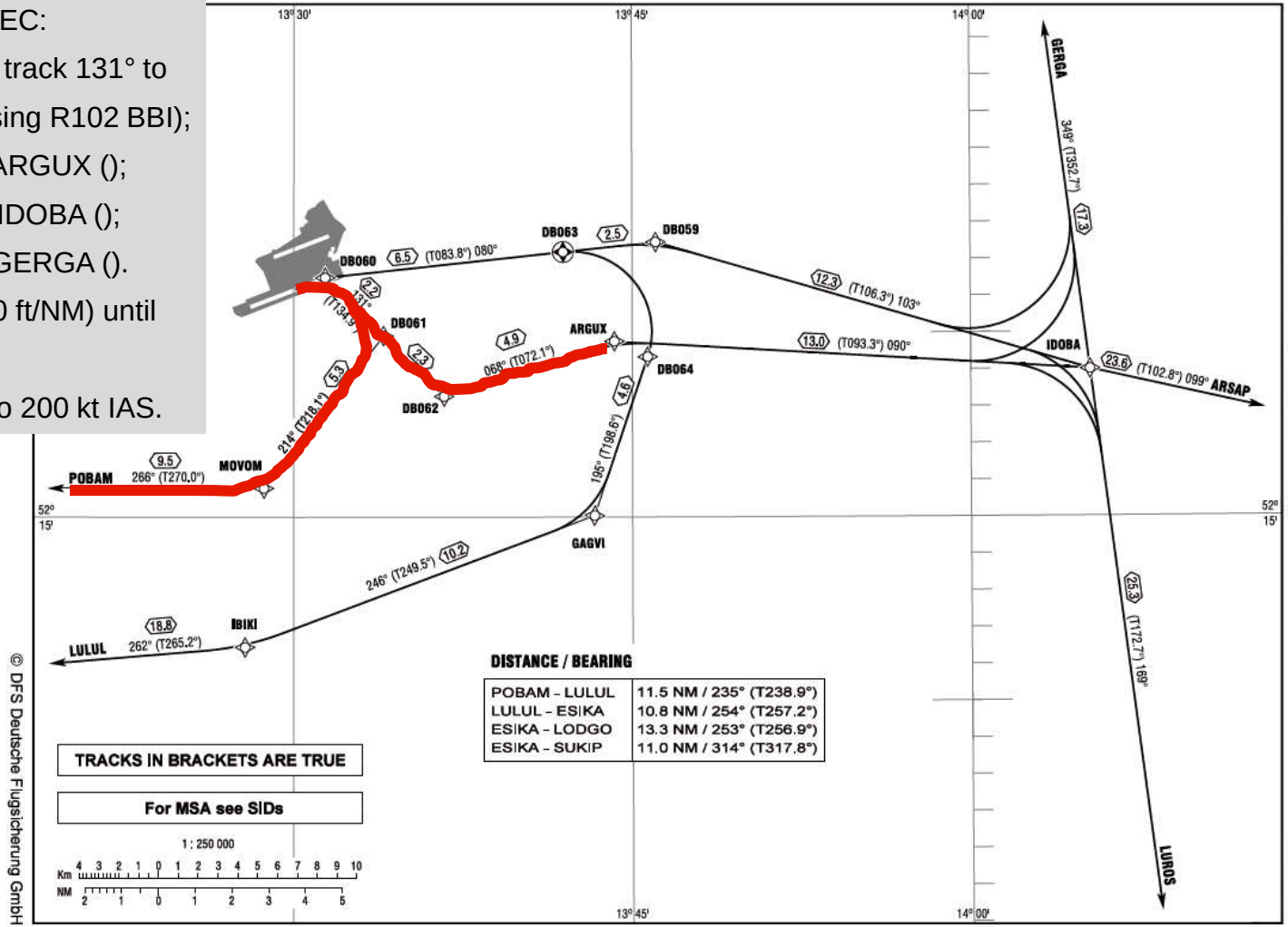


BER FLUGHAFEN BERLIN BRANDENBURG

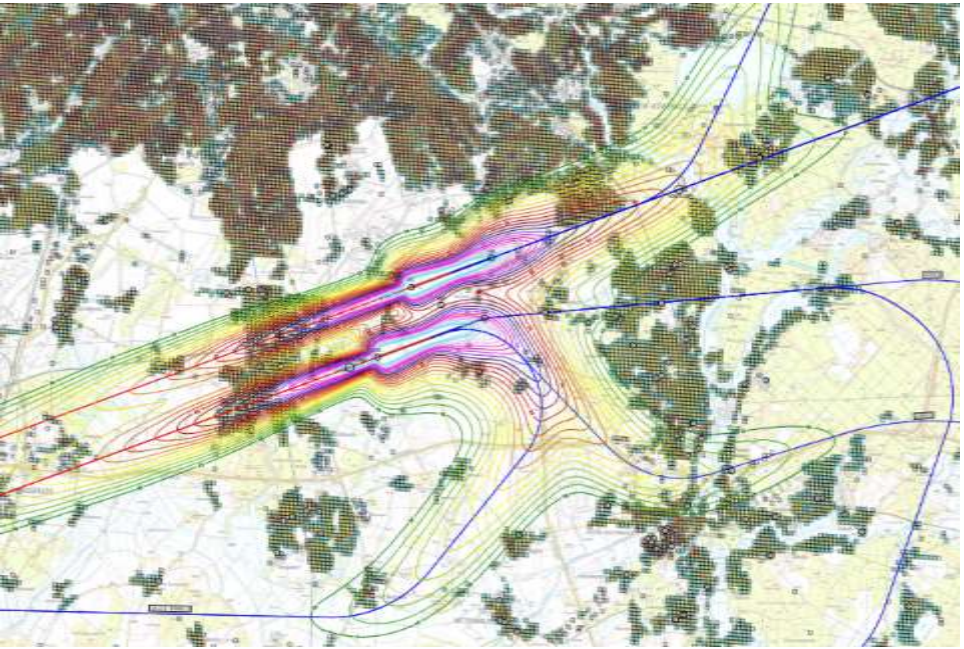
GERGA ONE QUEBEC:

Climb to 600; RT, on track 131° to 4.6 DME SDD (crossing R102 BBI); LT, on track 068° to ARGUX (); RT, on track 090° to IDOBA (); LT, on track 349° to GERGA (). Climb with 8.0% (490 ft/NM) until passing 5000.

Initial turn is limited to 200 kt IAS.



The „Hoffmann-Curve“ and safety?



Massive joint safey assessment was performed on departure flight routes in cooperation with DFS in full transparency with neighboorhood.

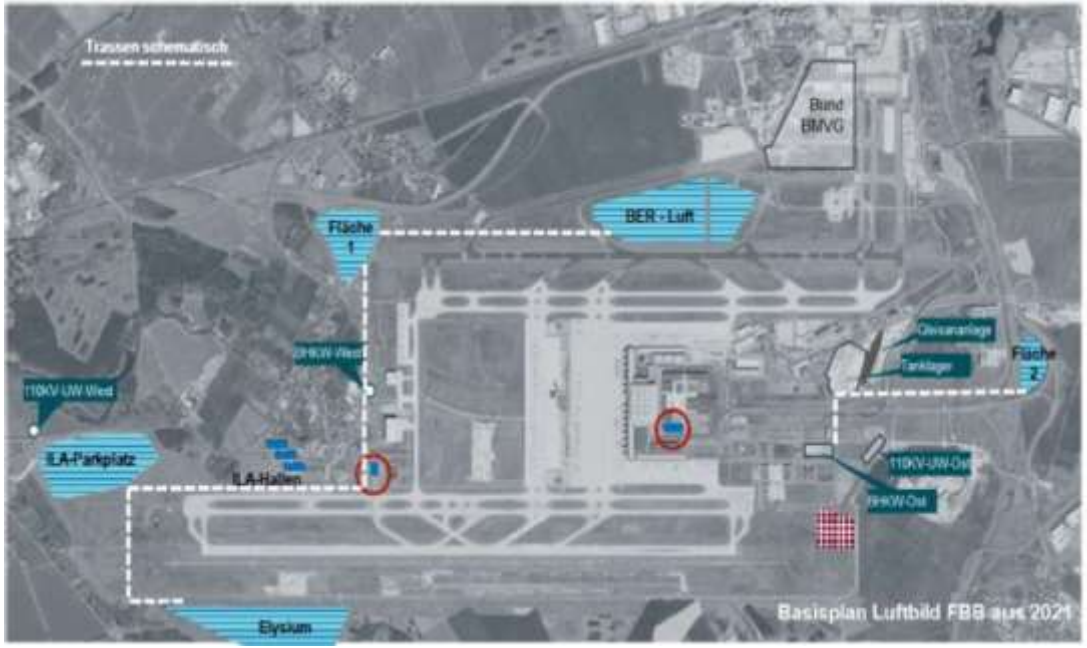
When operation on new southern runway (07R/25L) started some issues occured regarding:

- NAV-Database in A/C
- Performance calculations
- restrictions out of airline procedures / policies
- When and how exceptions are allowed (using „conventional“ but louder ZULU-SIDs)

BUT: QUEBEC-SIDs are safe.

III. Photovoltaic installations
at buildings and on ground within the airport premises

Potential areas at BER and trial areas



Car park P3

Winter services hall

BER FLUGHAFEN BERLIN BRANDENBURG

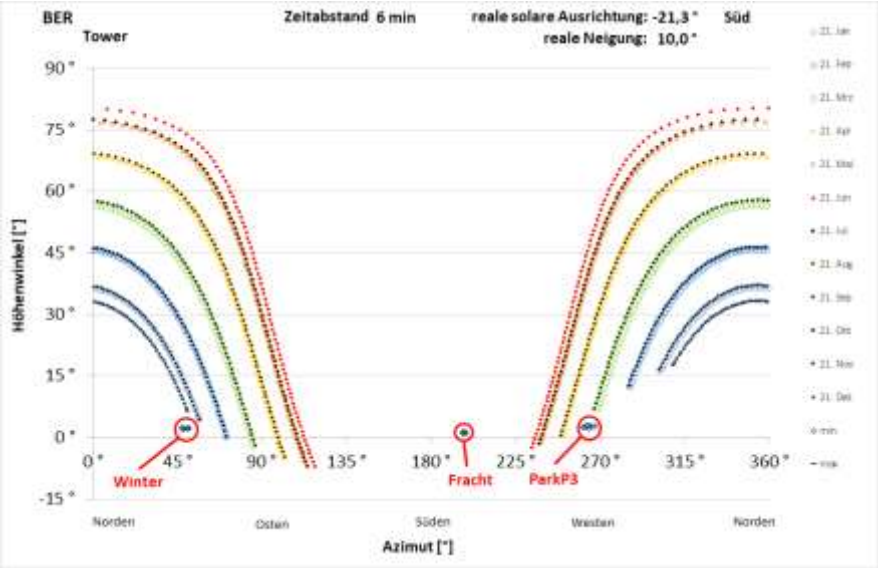
On photovoltaic installation reflections seem to be an issue.

Assessment was done on reflections generated by the two trial areas:

- reflections concerning the TWR
- reflections concerning departure / approaching sectors of RWYs 07R, 07L, 25R and 25L

Assessment will continue, as there might be relevant issues in approaching sectors.

<u>AND:</u> Have the RFF in mind. Photovoltaic or geothermal installations might affect firefighting tactics, equipment and reaction times when installed on the ground.



BER FLUGHAFEN BERLIN BRANDENBURG

IV. Noise-event-based airport fees as a new approach on rewarding quiet operation.

Old system

- A/C are put into different noise-groups with fixed noise fees for each group.
- Usage of louder procedures or louder configuration within same group of aircraft has no negative effect.

New system

- Measurement of each specific flight on three measure points
- Noise fees are calculated for each specific departure and approach by the real produced noise.
- The less noise you produce in reality, the less noise fees you pay.
- No additional costs for airlines, amount of noise fees shall be the same overall.

For now the old system is used, but the new system runs in the background to validate it and to see how fees would work out if new system would be effective.

Are noise-event-based airport fees a driver for a possible unsafe operation?

- Of course: Extensive ongoing discussions and involvement of airline-community and pilots (such as Local Runway Safety Team)
- But what is essential:
  - Pilots stay in charge and are allowed to do everything they need to do within the existing limitations.
  - Emergency and special situations will be out of the scope.
  - Other noise at the measurement stations can be filtered out, each noise event is recorded („red flag“).
  - BER will neither support nor accept any shortcuts on safety regulation. All existing safety margins remain the same.

The overall target is:

- Try to fly as less noisy as possible without comprimising safety (reverse thrust, intersection T/O)
- Use aircraft that are as quiet as possible (example Vortex-Generator on A320s).
- And to be honest: Less noise most often means less fuel burn and less CO2.

Summary
(or at least a try on that)

Big possibilities for creative ideas, but let‘s keep safety in mind.
There are safe solutions on the most issues arrising.
Safety is no obstacle but basic requirement.

Contacts

Flughafen Berlin Brandenburg GmbH
12521 Berlin

Georg Paschek

Head of Operational Safety

M georg.paschek@berlin-airport.de

www.berlin-airport.de


BER
FLUGHAFEN
BERLIN
BRANDENBURG