British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Aviation Client Case Study

BRITISH ANTARCTIC SURVEY

2024

CLIENT PROFILE

The British Antarctic Survey strives to uncover the secrets of the Polar Regions and the frozen regions of the Earth, with expertise spanning the depths of the oceans to the inner edge of space. BAS has been living and working in the extremes of Antarctica and the Arctic for over 60 years. World leaders in interdisciplinary research, BAS scientists discovered the hole in the ozone layer and identified key evidence for climate change in ancient ice – their science continues to inform decision-makers.

The British Antarctic Survey is part of the Natural Environment Research Council (NERC), part of UK Research and Innovation.

Presage has been the best of collaborators - where many consultants simply try to shape the customer's operation to what the consultant already knows, Presage learnt everything about us and shaped what they know to what we do.

- David Landy, Chief Pilot, BAS

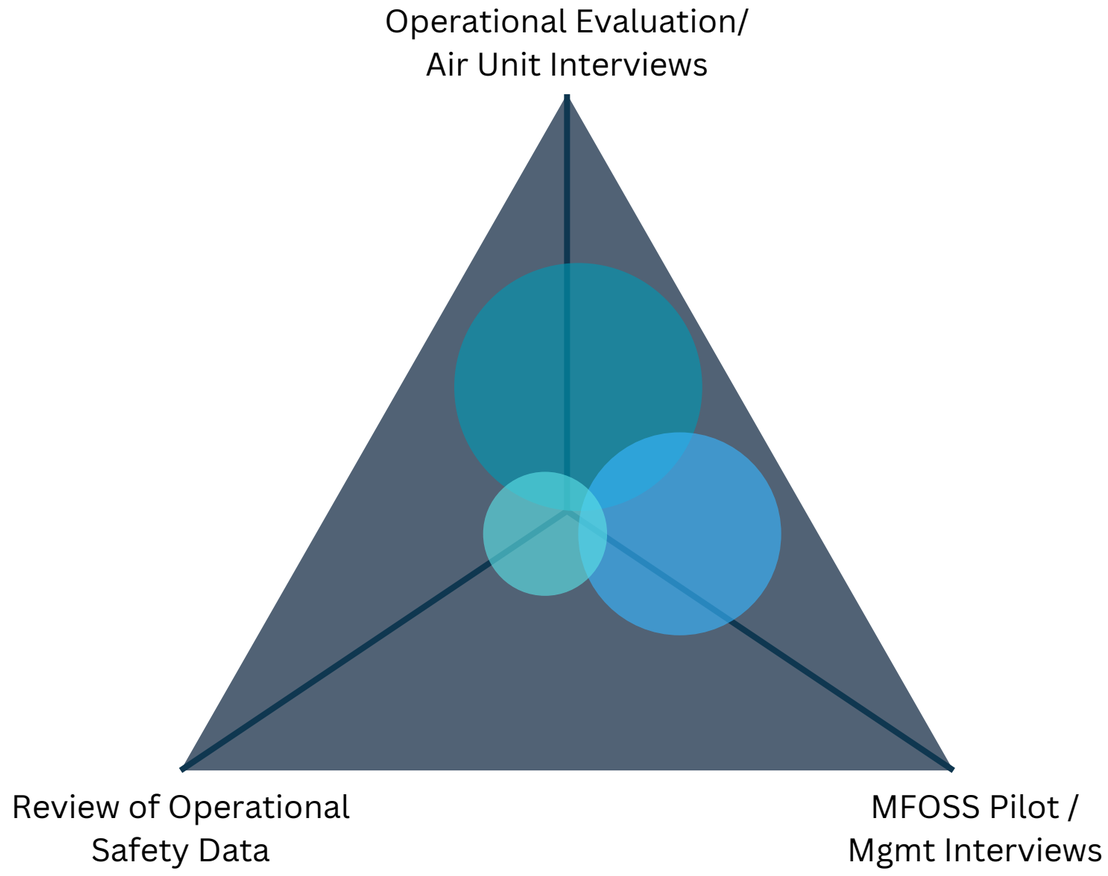
THE OPPORTUNITY

Presage Group Inc. was subcontracted to apply a Multiple Flight Operations Scientific Study to assist in the safe entry into service (EIS) of the Dash-8-314 aircraft into BAS' unique operating environment in Rothera, Antarctica.

OBJECTIVES

1. *To optimize pilot risk and safety awareness by enhancing policies, procedures and training.*

2. *To assist with the introduction of the Dash-8 by mitigating both operational and cultural risk.*



METHODS

We used a three-pronged, mixed methods approach to complete a ***Multiple Flight Operations Scientific Study*** *or (MFOSS), including i) a preliminary operational evaluation, ii) a review of operational safety data, and iii) semi-structured interviews. The goal of the MFOSS is to identify, quantify and mitigate the psychological, interpersonal, operational, and cultural factors that drive non-compliant decision-making.*

OPERATIONAL EVALUATION

An in-person Operational Evaluation of BAS' flight operations in Antarctica was conducted by a PGI representative in January 2023, focusing on Dash-7 and Twin Otter operations, procedures, functions, planning, SOPs, and training. Safety culture, group dynamics, personnel, and elements of BAS' unique operational environment were observed.

This initial evaluation and immersion in the BAS operating environment helped improve PGI's understanding of the contextual conditions within which BAS operates, and informed the types of quesitons asked in the interview portion of the MFOSS

MFOSS INTERVIEWS

In-depth, semi-structured 1-2 hour online interviews were conducted with 11 pilots and members of management from the BAS Air Unit . Transcripts were recorded, de-identified, and later reviewed against audio recordings and manually corrected.

>16 Hours of interviews conducted

252 Transcript pages recorded and reviewed

359 Direct quotes extracted during analysis

RESULTS

Three structural pillars of the BAS organization emerged through both field observations and in-depth interviews conducted among BAS personnel: i) pilot persona considerations, ii) operational integrity, and iii) safety and leadership culture. Following extensive data collection, working groups were conducted with members of BAS and PGI where proposed actions and recommendations were developed collaboratively.

PILOT PERSONA

RECOMMENDATION TOPICS:

- Individual development plans
- Coaching/mentoring
- Roles/resp including alternates

OPERATIONAL INTEGRITY

RECOMMENDATION TOPICS:

- Stable landing policy update
- Active communication protocol
- Real-time aircraft performance

SAFETY & LEADERSHIP CULTURE

RECOMMENDATION TOPICS:

- Proactive safety reporting
- Risk assessment process
- Interdepartmental comms

CLIENT TESTIMONIAL

> The stable approach methodologies developed in collaboration with Presage Group Inc. have been incorporated into BAS Air Unit Dash 7 SOPs and thoroughly tested during approaches at the short Rothera runway and at many large International airports. **The SOPs have been readily adopted by the pilots and have proven to be robust and effective.** In particular, **pilots have 'bought into' the concepts in a way that they previously didn't.** That is not to say that stabilised approaches were previously ignored -far from it- but rather the previous stabilised criteria were seen as a ballpark estimate that could be variably applied or excused away depending on circumstances provided the touchdown was ok. **Presage have developed with us a set of meaningful criteria that are relevant to our operating context and are non-negotiable by the pilots.** This has led to more meaningful approach briefing and driven a noticeable and healthy thirst for professional improvement amongst the small pilot team. As both Chief Pilot and a subject of this work, I am very pleased with the outcome and have no doubt that these SOPs and concepts will remain fundamental to safe Dash 7 operations at Rothera and be the foundation of any future BAS aircraft operation.
>
> *- David Landy, Chief Pilot, BAS*