

Project Title/No:	Scatsta ACP	Meeting Ref:	CPJ-5399-MIN-025 V1.0
Purpose:	Options Development and Evaluation Workshop	Date:	06 February 2020
Venue:	Mareel, Lerwick, Shetland	Time:	1000-1145
Attendees:	[REDACTED] (Shetland Islands Council); [REDACTED] (Eastern Airways); [REDACTED] (Serco); [REDACTED] (Bristow Helicopters); [REDACTED] (Cyrrus); [REDACTED] (Viking Energy); [REDACTED] (Babcock); [REDACTED] (Peel L&P Group); [REDACTED] (Serco); [REDACTED] (Cyrrus).		
Apologies:	[REDACTED] (SSE).		
Distribution:	Attendees listed above plus: [REDACTED] (Shetland Islands Council); [REDACTED] [REDACTED] (Coastguard SAR); [REDACTED] (Scottish Environmental Protection Agency); [REDACTED] (Logan Air); [REDACTED] (Bristow Helicopters); [REDACTED] (SSE); [REDACTED] (Scottish Natural Heritage); [REDACTED] [REDACTED] (Scottish Parliament).		

Notes

Reference	Description
5399-025-N01	<p>Following a welcome address, Cyrrus provided an explanation of the purpose of the workshop. The intention was to validate the Design Principles, to consider the impacts of the proposed turbines on the Scatsta Instrument Approach Procedures (IAPs), to consider the available 'Options' and to evaluate each in turn against the agreed Design Principles. The presentation (CPJ-5399-PRE-022 V1.0) had not been sent out to delegates or stakeholders but would be made available with the notes from the workshop.</p>
5399-025-N02	<p>The Design Principles agreed on 05 February 2020 during the Focus Group were presented to seek any further comments. The wording of Design Principle (DP10) was amended slightly at the request of [REDACTED] and other technical stakeholders to avoid any increase in the Missed Approach Climb Gradient (MACG) as follows:</p> <p><i>'Any change to the Missed Approach Procedure should avoid any increase in the Missed Approach Climb Gradient.'</i></p> <p>An additional Design Principle (DP11) was proposed by JT and other technical stakeholders as follows:</p> <p><i>'Any change to the IAPs should not result in a requirement to amend the Precision Approach Path Indicator (PAPI) Glide Path (GP) angle.'</i></p> <p>All eleven Design Principles were unanimously agreed to.</p>

Reference	Description
5399-025-N03	Cyrrus presented the 'Anatomy of an Instrument Approach Procedure' from the slide deck to assist the non-aviation stakeholders in understanding some of the terminology that would be subsequently used during the workshop.
5399-025-N04	Each of the issues caused by the proposed windfarm turbines was then presented along with the available 'Options' to mitigate each issue. As Cyrrus had conducted Instrument Flight procedure (IFP) Safeguarding Assessments previously on behalf of Scatsta Airport, both the issues and most of the viable mitigation options were known, hence they had been prepared in advance of the Design Principle engagement.
5399-025-N05	<p>Air Traffic Control Surveillance Minimum Altitude Chart (ATCSMAC)</p> <p>Issue: Introduction of obstacles results in need to change the Surveillance Minimum Altitude Area (SMAA) to 2500ft and the South East quadrant area outside the SMAA to 2500ft. <i>(Note, whilst this may be lowered to 2400ft, it was acknowledged, as per the presentation, that the worst case of 2500ft should be assumed. The worst case took into consideration the elevation of the terrain within 50m of the proposed turbine locations which is in some cases higher.)</i></p> <p>Options - Three options were presented:</p> <p>Option 1a was considered too operationally restrictive for both fixed-wing and rotary-wing operations.</p> <p>Option 1b was identified as the preferred option (ATC, Eastern, Bristow). Keeping the majority of the SMAA at 2000ft and introducing a sub sector at 2500ft was considered the most desirable option for instrument approaches as otherwise there was the potential for increased descent gradients inducing further risk. Additionally, the lower SMAA provides more flexibility for descending aircraft for visual approaches. Current rotary-wing operations were largely inbound from the North-East at 2000ft (despite the MSA of 2100ft) due to local operating procedure agreement. There was no appetite to see this changed by ATC or the rotary-wing operators.</p> <p>Option 1c was considered to carry the same disbenefit at Option 1a and the reduction in the size of the higher 2500ft fillet was of negligible benefit.</p> <p>Options 1a and 1c were unanimously rejected for further consideration.</p>
5399-025-N06	<p>Minimum Sector Altitude (MSA)</p> <p>Issue: South East Sector needs to change to 2500ft.</p> <p>Options – Two options were presented:</p> <p>Option 2a was undesirable to the technical stakeholders and was unanimously rejected for further consideration unless Option 2b could not be realised.</p> <p>Option 2b was identified as the preferred option for further consideration as it had the potential to provide far greater flexibility to operators and ATC. Cyrrus will develop this option further and seek to reconfigure the MSA quadrants to facilitate the most operationally effective solution.</p>

Reference	Description
5399-025-N07	<p>NDB (L) RWY24</p> <p>Issues: Final Approach Fix (FAF) needs to increase from 1005ft to 1400ft; and Lowest Hold Altitude (LHA) and Missed Approach instruction needs to change.</p> <p>Options – Two options were presented:</p> <p>Option 3a was not seen as viable. Eastern currently prefer not to use the NDB IAP as the gradients are not ideal, this would result in an 8.5% descent gradient (increased from current 6% when PANS-OPS requires no greater than 5.2% unless other means of obstacle avoidance have been attempted). Option 3a was unanimously rejected for further consideration.</p> <p>Option 3b was identified as the preferred option as it mimics the NDB(L)/DME procedure with the CAA for consideration and it provides a more stable approach with a shallower descent gradient.</p>
5399-025-N08	<p>NDB (L) RWY24</p> <p>Issue: Lowest Hold Altitude (LHA) and Missed Approach instruction needs to change.</p> <p>Options – Two options were presented:</p> <p>Option 4a was considered unacceptable to the technical stakeholders given the agreed Design Principle that there should be no increase to the MACG. Option 4a was unanimously rejected for further consideration.</p> <p>Option 4b was identified as the preferred option as it met the associated Design Principle and was considered to have no impact to performance, cost or payload. Furthermore, any additional track flown would be marginal resulting, if anything, in aircraft going around the Brae headland as opposed to over it and 500ft higher. Furthermore, any impact on fuel and emissions would be negligible especially given this is a Missed Approach Procedure.</p>
5399-025-N09	<p>NDB (L)/DME RWY24 (not yet implemented)</p> <p>Issue: Lowest Hold Altitude (LHA) and Missed Approach instruction needs to change.</p> <p>Options – The same two options were presented as they are equally relevant:</p> <p>Option 4a was unanimously rejected for the reasons given above.</p> <p>Option 4b was agreed as the preferred option for the reasons given above.</p>
5399-025-N10	<p>Offset LOC/DME/NDB RWY 24</p> <p>The Missed Approach Procedure was considered safe as published. The Lowest Hold Area would need to change depending on the outcome of the other changes made.</p>

Reference	Description
5399-025-N11	<p>RNAV (GNSS) – LNAV, LNAV/VNAV RWY 24 (not yet implemented)</p> <p>Issue: The Terminal Arrival Altitude (TAA) and the Initial Approach Fix (IAF) at LIZIN need to be raised to 2500ft and the text of the Missed Approach instruction needs to change.</p> <p>No options were presented as there were no perceived options other than what is described above. The changes described to raise the IF altitudes are within the required profiles and were acceptable to the stakeholders.</p> <p><i>Post-Meeting Note: During the Hazard Identification (HAZID) workshop, a suggestion was made that an option be considered to change the Missed Approach instruction to a right-hand turn (as opposed to the left-hand turn on the submitted designs. This would result in flight over the same downwind track as the Runway 06 Missed Approach at 2000ft and would negate the need to increase the altitude of the Missed Approach to 2500ft. Those present in the HAZID unanimously agreed it should be explored as an option. It was subsequently included in the Design Principle Evaluation.</i></p>
5399-025-N12	<p>RNAV (GNSS) – LNAV, LNAV/VNAV RWY 06 (not yet implemented)</p> <p>Issue: The Terminal Arrival Altitude (TAA) and the Initial Approach Fix (IAF) at ADPAM need to be raised to 2500ft.</p> <p>No options were presented as there were no perceived options other than what is described above. The changes described to raise the IF altitudes are within the required profiles and were acceptable to the stakeholders.</p>
5399-025-N13	<p>Design Principle Evaluation – A qualitative assessment was conducted to evaluate the options against the agreed Design Principles using a matrix with Red/Amber/Green (RAG) to depict the following:</p> <ul style="list-style-type: none"> ● Green – Meets the Design Principle ● Amber – Partially meets the Design Principle ● Red – Fails to meet the Design Principle.
5399-025-N14	<p>The final matrix, contained within the amended presentation (CPJ-5399-022 V1.0-Amended During Workshop) with RAG status, was reviewed by all. The following Options were excluded from the evaluation as they had been rejected: 1a, 1c, 2a, 3a, 4a.</p>
5399-025-N15	<p>The workshop was asked whether there were any options that were not considered and were there any other requirements or considerations. All agreed everything had been captured and considered.</p>
5399-025-N16	<p>An overview of the next steps was provided along with the aspects that would be considered within the Initial (Qualitative) Options Appraisal.</p>
5399-025-N17	<p>Cyrrus thanked all the stakeholders for their valuable input, advised that notes would be circulated and closed the meeting. Action: Cyrrus to circulate notes by 12 Feb 20.</p>

Decisions

Reference	Subject	Description
5399-025-D01	Options 1a and 1c	Unanimously rejected. [5399-025-N05]
5399-025-D02	Option 1b	Unanimously accepted. [5399-025-N05]
5399-025-D03	Option 2a	Unanimously rejected. [5399-025-N06]
5399-025-D04	Option 2b	Unanimously accepted. [5399-025-N06]
5399-025-D05	Option 3a	Unanimously rejected. [5399-025-N07]
5399-025-D06	Option 3b	Unanimously accepted. [5399-025-N07]
5399-025-D07	Option 4a	Unanimously rejected. [5399-025-N08 and N09]
5399-025-D08	Option 4b	Unanimously accepted. [5399-025-N08 and N09]
5399-025-D09	Additional Option	Include an option to amend the Missed Approach Procedure for the Runway 24 RNAV IAP to a right-hand turn out. [5399-025-N11]

New Actions

Reference	Description	Owner	Due Date
5399-025-A01	Circulate notes of the meeting. [5399-024-N17]	Cyrrus	12 Feb 20

Next meeting

Date:	Tbc	Time:	Tbc
Venue:	Tbc		