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Letter of Agreement

Berry Hill Operations
Royal Air Force Spadeadam

Between
and

GL Industrial Services UK Ltd

RELATING TO

**OPERATING PROCEDURES BETWEEN ROYAL AIR FORCE SPADEADAM BERRY HILL
OPERATIONS AND GL INDUSTRIAL SERVICES UK LTD RELATING TO DNV GL OPERATIONS
CONDUCTED WITHIN THE RAF SPADEADAM DANGER AREA EGD 510**

Effective: 1 Jun 16

1 PURPOSE

1.1 The purpose of this Letter of Agreement (LoA) is to define the terms and conditions designed to ensure the safe conduct of DNV GL managed operations (which include controlled explosions, demolitions, gas and pipe fracture testing) conducted within the confines of RAF Spadeadam (Danger Area EG D510) (to be called the DA), and to mitigate any Air Safety risks arising to Tolerable and ALARP¹ levels.

1.2 This agreement is underwritten by the Airspace Owner, the Battlespace Management Force Commander and managed by the RAF Spadeadam Stn Cdr and the DNV GL Operations Manager. Day-to-day administration is the responsibility of the RAF Spadeadam SATCO and DNV GL Operations Control personnel.

2 GENERAL

2.1 RAF Spadeadam.

- a. RAF Spadeadam is an Electronic Warfare Threat Training Facility (EWTTF) which is established to provide world-class, operationally-representative Electronic Warfare (EW) training and trials facilities to UK and Allied personnel.
- b. RAF Spadeadam's Operations Squadron conducts Battlespace Management (BM) duties for the EWTTF; this includes the provision of radar services to air systems using the DA and its surrounding airspace.
- c. RAF Spadeadam BM may also provide an air traffic service (ATS) to civilian and military air systems wishing to transit the DA during periods of inactivity, or traffic transiting close to the confines of the DA during operating hours.

2.2 DNV GL.

¹ ALARP is the Defence Safety Agency Acronym for As Low as Reasonably Practicable: the impact or likelihood of the risk cannot be reduced any further without excessive resource being applied.

LoA between RAF Spadeadam Berry Hill Operations and DNV GL Ltd

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- a. DNV GL is a technical advisor to the global oil and gas industry. The company provides services within technical and marine assurance and advisory, risk management and offshore classification, to enable safe, reliable and enhanced performance in projects and operations.
- b. DNV GL carries out research and technical service work on specific areas within the DA², following approval from Berry Hill Operations during EWTTTF operating hours and via liaison with MPGS when EWTTTF activity has ceased.

3 SPADEADAM DANGER AREA DIMENSIONS

3.1 Spadeadam dimensions are outlined in the UK Mil AIP at ENR 5.1.

4 DNV GL OPERATING LOCATIONS

4.1 DNV GL operates from 2 main sites:

- a. **Test Site East (R5/Pad B).** 55 02 72N 002 34 84W.
- b. **Test Site West.** 55 02 78N 002 36 90W.

4.2 DNV GL may also operate from R8 (55 01 955N 002 35 0177W); this activity will be coordinated with Berry Hill Operations.

5 POSITIONS & DEFINITIONS

5.1 **Spadeadam Controller.** The Spadeadam Controller is the Duty Air Traffic Controller (DATCO) on watch who is authorised to control air systems within the Spadeadam AoR, including the passing of traffic information, agreeing of coordination and controlling of transits or penetration of EG D510/EG D510A.

5.2 **Spadeadam Support Controller.** The Spadeadam Support Controller (Spt ATCO) is a qualified ATCO operating in support of the DATCO and is authorised to conduct duties on behalf of the DATCO, including those at Para 5.1.

5.3 **Spadeadam Operations Assistant.** The Spadeadam Operations Assistant is a qualified Flight Operations Assistant (FOA) who is authorised to conduct routine operational liaison calls but not to pass or receive traffic information regarding air systems or to grant approval to transit or penetrate EG D510/D510A. The FOA is only authorised to grant approval for DNV GL to conduct activities with the approval of a qualified ATCO.

5.4 **Spadeadam Electronic Warfare Threat Director.** The Spadeadam Electronic Warfare Threat Director (EWTD) is responsible for the control and management of all Electronic Warfare (EW) training and trials. The EWTD is not authorised to grant approval for DNV GL to conduct their operations when the DA is active but must be informed in order to ensure EW ground personnel are informed.

5.5 **Spadeadam Plans and Coordination Cell.** The Spadeadam Plans and Coordination Cell (PCC) is responsible for the coordination of all long and short term activity including NATO and UK training, exercises and trials being conducted in the DA.

² DNV GL activity is solely limited to EGD510.

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5.6 **Spadeadam Military Provost Guard Service.** The Spadeadam Military Provost Guard Service (MPGS) platoon operates from the Main Guard Room on a 24/7 basis. MPGS personnel are to be contacted and informed of DNV GL activity when Spadeadam Operations is unmanned. MPGS personnel do not have access to ATC radar information and as such, they cannot guarantee that the DA is clear of air systems. MPGS can provide information on ground personnel locations and activities, and make information tannoys to warn stn personnel.

5.7 **DNV GL Operations Control.** DNV GL operations control is responsible for the coordination of all DNV GL activity and will make formal requests to the DATCO for authorisation of activity via published landline telephone numbers.

6 DNV GL OPERATIONS CATEGORIES AND DEFINITIONS

6.1 DNV GL Explosive Definitions.

- a. **Small Explosion.** TNT equivalent is 30Kg or lower.
- b. **Medium Explosion.** TNT equivalent is between 31Kg and 100Kg.
- c. **Large Explosion.** TNT equivalent is greater than 101Kg.
- d. **Frag/No Frag.** Whether any fragmentation would be disseminated as a result of an explosion.

6.2 DNV GL Explosion Categories.

- a. **Category 1.** No physical effect³ outside of the DNV GL fence line to a height of 20m.
- b. **Category 2.** Physical effect to a maximum of 100m from the DNV GL fence line to a height of 150m.
- c. **Category 3.** Physical effect to a maximum of 300m from the DNV GL fence line to a height of 400m.
- d. **Category 4.** Physical effect to between 300 and 800m from the DNV GL fence line to a height of between 400 and 1000m.
- e. **Category 5.** Physical effect to over 800m from the DNV GL fence line to a height of over 1000m.

7 PRINCIPLES OF OPERATION - AIRSPACE PROCEDURES

³ Physical effect will include blast to 15 mbar and fragmentation.

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7.1 Where practicable, all DNV GL activity should be conducted when the DA is active and Spadeadam Operations is manned and able to mitigate any risk to air systems (military or civilian). In the event that there is no EWTF traffic operating and Berry Hill Operations is closed, EGD510A is to be deactivated and EG510 handed over to DNV GL with an entry recorded in the FOA logbook.

7.2 The FOA is to liaise with the Civil Aviation Authority (CAA) Notification to Airmen (NOTAM) office to ensure a NOTAM is issued to reflect that the DA (EG510 only) is active and under the control of DNV GL operations; this NOTAM should reference that the DNV-GL site is active and centred on 55 02 72N 02 34 84W (Test Site East) as the main operating surface, and up to 5000ft AGL vertically and 1.5nm laterally⁴. It is to include a contact number for DNV GL Operations.

7.3 DNV GL Operations Control is to:

- a. Ensure a NOTAM is issued via the CAA NOTAM office when they are conducting any activity outside the guidelines emphasised at Para 7.2. This NOTAM is to include lateral and vertical restrictions, details of the activity and a contact number.
- b. Liaise with Spadeadam Operations when testing is planned which would present a higher risk than can be resolved by the procedures in Para 7.3.a. A mutually agreed NOTAM will be requested by DNV GL and issued by the CAA NOTAM office to ensure that all DA and surrounding airspace users are given appropriate warning. DNV GL Operations Control is to ensure the following email addresses are included in email correspondence to the NOTAM office:

- (1) [REDACTED]
- (2) [REDACTED]
- (3) [REDACTED]
- (4) [REDACTED]

c. DNV GL exclusion zones⁶ differ for each type of test and a small blast may have a larger exclusion zone than a large blast depending on whether any fragmentation is produced. Explosive Health and Safety Testing Procedures are signed off for all tests and the exclusion zone is calculated from the possible test results, a NOTAM should be issued by DNV GL to capture the specific safety requirements for each activity.

8 PRINCIPLES OF OPERATION - LIAISON PROCEDURES.

8.1 Liaison Meeting Procedures.

⁴ The 1.5nm radius ensures that the lateral exclusion zone also extends beyond Test Site West.

⁶ Test exclusion zones do not normally cover the main road through the RAF site; however, when they do, the categories can be enhanced by an addition, such as, 'plus main road'. In such cases the main road will be closed and coordinated via Spadeadam Operations.

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- a. RAF Spadeadam hosts a Station Morning Brief [REDACTED] DNV GL is to send a representative to outline the upcoming weeks activities. If powerpoint slides are required, this can be coordinated via the Spadeadam PCC [REDACTED]
- b. RAF Spadeadam Berry Hill Operations staff conduct a Daily Brief, [REDACTED] DNV GL Operations Control is to send a representative to outline the day's activities. In the event that a representative cannot be sent, a liaison call is to be made with the DATCO on [REDACTED] prior to the Daily Brief.
- c. RAF Spadeadam PCC is to host a monthly meeting⁸ meeting with DNV GL to coordinate and deconflict DNV GL activity from Spadeadam operations.
- d. RAF Spadeadam's Stn Cdr hosts an Air Safety Management Group (ASMG) [REDACTED] in line with the Spadeadam Air Safety Management Plan (ASMP). DNV GL is requested to send a representative to attend the ASMG to ensure that DNV GL operations and any associated Air Safety critical issues are captured, managed and mitigated.

8.2 **Planning Request Procedures.** DNV GL Operations is to make a formal request via Spadeadam PCC iaw Para 8.1.c for all activity which effects the DA and any air systems using it. Should the activity be deemed of significant size or intensity, or conducted outside routine DA opening hours, a formal written request is to be sent to Spadeadam OC Operations at least 1 month prior to the proposed activity.

8.3 **Daily Booking Procedures.** The following procedures are to be followed:

- a. **DA NOT ACTIVE (BERRY HILL OPERATIONS MANNED OR UNMANNED).** No DNV GL operations are to be conducted without appropriate airspace protection e.g. activation of DA or by NOTAM(when additional airspace is required). The Airspace Operating Authority (DAA) is content for DNV GL Ltd to activate and utilise the DA as an added layer of protection to Airspace users out with Berry Hill operating times. During such periods, DNV GL Ltd becomes the Operating Authority, and, as a result, holds any culpability for operations conducted. **At all other times, DNV GL must seek approval from Berry Hill Operations prior to conducting any testing.**
- b. **DA ACTIVE AND BERRY HILL OPERATIONS MANNED.** When the DA is active DNV GL Operations staff are to make all formal requests for clearance to conduct their operations to Berry Hill Operations, via the Spadeadam Operations Assistant on the published landline.
 - (1) DNV GL staff are to make a warning call to Berry Hill Ops via the Spadeadam Operations Assistant 15, 5 and 2 minutes before each test, with details of whether there will be a Small/Medium/Large explosion, and if it will be Frag/No Frag. This information is to be forwarded to the DATCO or Spt ATCO, who will consult with the EWTD, if applicable, and ascertain if permission can be granted.
 - (2) The DATCO is to ensure no air systems over fly the DNV GL site until the test is complete. Air systems can be asked to hold in EGD510A or outside the boundary of

⁷ Or as notified.
⁸ [REDACTED]

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EGD510/510A. If there are no air systems on frequency the DATCO will confirm the area is clear of traffic.

(3) The DATCO is to make a transmission on all Spadeadam UHF and VHF ATC Frequencies:

'Spadeadam All Stations. There will be a small/medium/large explosion, from the DNV-GL test site.' (supplementary information as deemed necessary).

The DATCO is request an acknowledgement from all air systems in the DA.

(4) The Spadeadam Operations Assistant is to make a transmission on the Stn Tannoy prior to DNV GL activity commencing, using the following format:

'Standby for Broadcast from Spadeadam Operations. There will be a small/medium/large explosion with frag/no frag from the DNV GL site in the next X mins, no action is to be taken. End of Broadcast'

(5) The EWTD is to make a liaison call to any ground personnel on the DA using available communications.

(6) DNV GL is to notify Berry Hill Operations immediately the test is complete, in order to allow normal air operations to resume.

(7) Test start and finish times are to be logged by the Spadeadam Operations Assistant in the FOA Logbook.

c. **DA ACTIVE AND BERRY HILL OPERATIONS UNMANNED.** DNV GL Operations is to make all formal requests for clearance to conduct planned operations to MPGS via the Main Guard Room.

(1) DNV GL Operations staff are to make a warning call to MPGS 15, 5 and 2 minutes before each test, with details of whether there will be a Small/Medium/Large explosion, and if it will be Frag/No Frag.

(2) As MPGS personnel do not have access to the ATC radars and, as such, cannot guarantee DNV GL that the DA is clear of air systems, DNV GL Operations Control remains responsible for safeguarding against DA incursion by unknown air systems.

(3) MPGS personnel are to provide DNV GL with information on ground personnel and are to make a liaison call to any ground personnel operating within the DA using all available communications prior to DNV GL activity commencing.

(4) MPGS personnel are to make a transmission on the Stn Tannoy prior to DNV GL activity commencing, using the following format:

'Standby for Broadcast from Spadeadam Main Guard Room. There will be a small/medium/large explosion with frag/no frag from the DNV GL site in the next X mins, no action is to be taken. End of Broadcast.'