

Norfolk Vanguard Offshore Wind Farm

The Applicant

Responses to First

Written Questions

**Appendix 12.2 – RAF report on the
recovery of an F16 near Necton (1997)
(Q 12.9)**

Applicant: Norfolk Vanguard Limited
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Photo: Kentish Flats Offshore Wind Farm





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Please reply to The Officer Commanding

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REPORT ON THE RECOVERY OF AN RDAF F-16 TRAINER ET 205 FROM MONA FARM, NECTON, SWAFFHAM, NORFOLK.

- 1 Enclosed is the report appertaining to the recovery of ET205 which crashed at Mona Farm, Necton, Norfolk on 11 Dec 96.
- 2 Recommendations are made for considerations of AMM2 and EIFS(RAF).

T10/2

Redacted Sect 40

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 original on /16 - flight safety

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for Officer Commanding

Enclosure

- 1 Report on the Recovery of F16 Falcon Trainer ET205

Distribution:

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ACT II

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RAF Marham

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OC AESW
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REPORT ON THE RECOVERY OF AN RDAF F-16 TRAINER ET- 205 FROM MONA FARM, NECTON, SWAFFHAM, NORFOLK.

INTRODUCTION

1 On the morning of the 11 Dec the crew of a Royal Danish Air Force (RDAF) F-16 , ET 205, a student pilot and instructor, briefed for a return sortie from RAF Marham to their base in Denmark. After a routine start-up under the guidance of their own groundcrew, ET 205 took off at 0948 hrs. ATC reported to the crew that sparks were visible from the reheat flame as the aircraft rolled along the runway. After getting airborne the crew looked to the rear of their aircraft and saw flames reaching forward of the tailplane. The instructor pilot in the rear seat initiated command ejection, and the crew ejected successfully and came down safely in woods, just south of Narborough, some 2nm NE of RAF Marham. The aircraft continued on a random trajectory, climbing to 1200 ft, before descending and crashing on open farm land near the village of Necton, 10 nm E of RAF Marham.

RESPONSE

2 The Duty Aircraft Officer (ARO) was alerted by EIFS(RAF) at 1100 hrs and tasked to proceed to the crash scene and assist the RDAF investigators. The ARO and Site Co-ordinator left at 1200 hrs and on route made contact with both the Defence Land Agent (DLA) and the RAF Institute of Health and Medical Training (IHMT). Arriving during darkness at 1730 hrs, the ARO met and was fully briefed by the appointed Incident Commander (IC), OC Eng of RAF Marham. From this brief, it was quickly established that apart from the health and safety implications of hydrazine, aviation fuel and carbon composite fibres deposits, it should be a relatively straight forward recovery operation. The ARO then visited RAF Marham where he was introduced and briefed by OC Ops Wing, OC Eng HQ Flt, OC AEF and the RDAF Aircraft Investigators (AI). Having ascertained what had been said at both briefs, the ARO then informed AR&TF Control to the F16 recovery manpower and equipment requirements.

SITUATION/TOPOGRAPHY

3 Aircraft. The aircraft crashed on agricultural land owned by Redacted Sect 40
Civ B of Mona Farm. On impact, it produced a 3m deep crater and spread aircraft wreckage and aviation fuel over a wide area of what can only be described as a deeply harrowed and recently harvested sugar beet field. The crash site was also contaminated with hydrazine from the Emergency Power Unit (EPU) and burnt carbon composite fibres. The aircraft's ejection seats and canopy were located some 8 miles away in another recently ploughed field, with the parachutes being found close by, but stuck high up in 40ft trees.

CRASH SITE

4 The main wreckage area itself was gently sloping ground of some 100 acres and contained within its boundaries was a bush type copse, two small ponds and a field drainage river. A dirt track ran along three sides of the site and the Necton to Ivy Todd public road on the other. A safe and sensible cordon had been placed around the complete perimeter of the site which allowed uninterrupted use of the aforementioned road.

RECOVERY TEAM DEPLOYMENT

5. A recovery team of 9 including a qualified LSS wreckage plotter left St Athan, as directed through AR&TF Control by the ARO, at 1100 hrs on 12 Dec 96. They reported to the site at 0730 hrs on 13 Dec 96 and were tasked to set up the AR&TF control, support and accommodation facilities. By 1200 hrs on 13 Dec 96 the team were in position to respond to requests by the RDAF AI.

COMMAND AND CONTROL

6. In support of the F16 crash, RDAF had deployed a small party of personnel, which included a Board of Inquiry (BOI) president, aircraft investigators, hydrazine safety experts and a armament specialist. It was obvious by their limited number that this recovery would need AR&TF support in full. Therefore, after consultation with both EIFS and Danish BOI president, it was amicably agreed that the recovery of the F16 would be carried out under RDAF primacy, but iaw RAF Post Crash Management (PCM) procedures as contained in the AP100V-10.

7. The IC and the guard force were generated from RAF Marham, the nearest Unit to the crash site. They took control of the site from the onset and fully implemented the procedures and directives as laid down in the AP100V-10. This guarding commitment was later taken over by RAF Coltishall who maintained the excellent site control set by RAF Marham.

SURVEY AND RECOVERY

8. On the evening of 11 dec 96, [Redacted Sect 40- Maj C] OC AEF, RAF Marham, ARO and the RDAF armament specialist visited the site where the deployed ejection seats and canopy came to rest. Under a [Redacted Sect 40- Maj C] request the outline of the seats and canopy was painted on ground in order that their positions might be plotted in daylight on the next day. The seats were then disarmed and along with canopy were transported for safe keeping to RAF Marham. The parachutes and associated survival packs were retrieved from their lofty heights, again during daylight some 36 hrs later.

9. The initial survey of the main crash site was carried out on 12 Dec 96 by [Redacted Sect 40- Lt Col D] (BOI president), [Redacted Sect 40- Maj C] and the two RDAF hydrazine safety experts. They quickly located the aircraft's hydrazine tank, which had split open leaving several deposits within a 60 metre area down-slope from the crater. This area was deemed the inner cordon and only RDAF personnel were permitted to enter whilst the hydrazine threat was being alleviated by their specialist team. This lasted 3 days. During this time the RAF IHMT was advising the ARO on all health and safety measures to be employed, consulting with the local environmental agencies and carrying out an environmental assessment of the site. At the RDAF request a wreckage plot was commenced on the afternoon of 13 Dec 96. And, at the same time areas on the penphery of the outer cordon were being searched to ensure no parts had fallen from the aircraft prior to impact. The Defence Land Agent (DLA) arrived and began to contact the respective landowners. The Danish AI team, led by [Redacted Sect 40- Maj C] started to identify and remove vital parts of the wreckage from the inner cordon. At the request BOI president, AR&TF personnel found, plotted and removed the aircraft's engine and jet pipe which had landed in many different locations outside of the inner cordon. There were very few executive visits, if any, made to the main crash site or to the respective landowner during this early period of the recovery.

10 On the 14 Dec 96, a non flying window of opportunity allowed AR&TF and RAF Marham personnel to conduct a FOD sweep on either side of RAF Marham's main runway. This was mainly due to an eye witness report stating that pieces of red hot metal were seen coming from the F16's exhaust during its final take off. A sweep of the actual runway had been carried out shortly after the F16's last flight. Although these searches offered up some articles of interest, none were found to be F16 related.

RECOVERY OF MAIN SITE

11 The site was declared safe from the hydrazine on 15 Dec 96. On the same day, [REDACTED] left for Denmark. They were very polite and extremely generous in their praise of the AR&TF involvement. They left behind a liaison SNCO and a two man safety team for the duration of the recovery. The vital aircraft evidence that had been collected so far had been sent to RAF Marham for an onward and speedy dispatch to Denmark. The IHMT were on site assessing the carbon fibre hazard and advising the ARO on the dress category required. The recovery team, supplemented by spare personnel of the guard force were completing the sweep of the fields surrounding the crash site.

12 Recovery operations of the main site commenced in earnest on 16 Dec 96 and continued until 13 Jan 97. The progress was steady at first with the AR&TF team still being supplemented by six of the guard force. This was soon to change with overall guard force being slowly reduced and the threat of adverse weather. However, morale remained high and the non stop work continued up until the 24 Dec 96. The team was then stood down for 2 days. On the 28 Dec, the recovery team was split into two, one half continued to collect top surface wreckage whilst the other commenced excavation of the crater. A tracked excavator/digger and dumper truck were hired in support of the latter. Both operations were curtailed on 31 Dec 96 due to snow blizzards. The new year saw the complete site covered in snow, a situation where only excavation work was feasible. Except for two acquisition missiles, little wreckage was found in the crater. The RAF EOD team concurred this fact by checking the crater with their specialist detector equipment. On the 7 Jan 97 excavation of the crater was completed and the full team return to the field. The recovery operation continued till the 13 Jan 97. During this time both small ponds within the site were dredged for wreckage, none found. The main wreckage removed, stored in ISO containers and sent, via RAF Marham, to Denmark. The crater reclaimed, apart from the top soil level. And, finally in association with the DLA and IHMT, the ARO had all contaminated soil removed to licenced tips. The site was then handed over on 14 Jan 97 to the DLA for the completion of land recovery and compensation.

13 Environmental Health/Health and Safety at Work Aspects. The Hydrazine hazard gave concern throughout the recovery. However, the RDAF specialist team, dressed in chemical protective suits and full breathing apparatus, dealt with the initial contamination and there after, monitored the site through out the complete recovery. Both soil and water samples were taken by the IHMT team who were a necessary back up to the ARO. They briefed the DLA and the Landowner on their findings and full details can be found in their Report No.IHMT/5/97. Protective equipment was used, as directed by the ARO, by the AR&TF team and the support personnel of RAF Marham and Coltishall.

14 Team. An AR&TF recovery team of 10 carried out this task.

SUPPORT

15 RAF Marham gave every possible logistic and administrative support to the F16 recovery. Redacted Sect 40-
Sqn Ldr E OC Eng Wg HQ Flt of RAF Marham, was instrumental in this which set a fine example of inter unit co-operation.

RECOMMENDATIONS

16 This accident highlighted the dangers of hydrazine and the resultant need for specialist training, protective clothing and equipment, points that were made very clear by RDAF Hydrazine Safety Team during the recovery. This is an area that must be explored, sooner rather than latter, as we might not have the support of a specialist team the next time.

SUMMARY

17. This recovery operation was a splendid example of close cooperation between Units, different NATO Forces, Civilian Contractors and the Landowner(s). It gave a good insight into how the RDAF BOI and AI went about their work and how their safety team dealt with the hazards of Hydrazine. It was also very pleasing to receive the many compliments, from both RDAF and Redacted Sect 40-
Civ B the Landowner on the disciplined and professional attitude shown by the young men of AR&TF. Finally, as the ARO I could not have asked for better support from all the different agencies involved.