



NATIONAL RECONNAISSANCE OFFICE
Office of Inspector General



17 June 2010

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: (U//~~FOUO~~) Investigative Summary: False Claims
(Case Number 2003-044 I)

(~~TS//TK//NF~~) On 14 January 2003, the National Reconnaissance Office (NRO) Office of Inspector General (OIG) initiated an investigation to support the Department of Justice (DoJ) in a civil False Claims Act qui tam (whistleblower) lawsuit that had been filed against TRW, now owned by Northrop-Grumman (NG). The qui tam alleged that TRW knowingly allowed defective proprietary transistors to be used in NRO spacecraft resulting in multiple failures of on-orbit collectors. This defective part also required expensive reworking of satellites not yet launched, and delayed their availability for use by the government. The joint DoJ and OIG investigation developed sufficient evidence to persuade DoJ to intervene in the case, and pursue multiple civil fraud charges against NG. After more than six years, this case was settled before trial for \$325 million—the largest ever civil recovery by a government agency within the Intelligence Community. Please see the attached NRO OIG investigative summary report, which details the investigation results.


(U//~~FOUO~~) The OIG investigative reports are to be read only by the individuals to whom OIG provides them, or to whom OIG specifically authorizes their release. We have broadened the distribution of this summary to the senior members of the NRO because most of you have a partial perspective of the case and a need to know the final resolution. If there are other individuals you believe require access to this report as part of their official duties, please let us know; we will promptly review your request. This report is for informational purposes for addressees only and is to be returned to the OIG.

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(U//~~FOUO~~) Please direct any questions regarding this summary to Investigator [redacted] at secure [redacted] or to [redacted], Assistant Inspector General for Investigations, at secure [redacted].

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Lanie D'Alessandro
Inspector General

Attachment:
(U) Investigative Summary
Report (~~TS//TK//NF~~)

SUBJECT: (U//~~FOUO~~) Investigative Summary: False Claims
(Case Number 2003-044 I)

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Lead Investigator -

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~~(U//FOUO)~~ **Investigative Summary**
False Claims – Northrop Grumman
(Case Number 2003-044 I)

(U) EXECUTIVE SUMMARY

~~(U//FOUO)~~ On 2 April 2009, the United States and Northrop Grumman (NG) settled a civil False Claims Act (FCA) qui tam (whistleblower) lawsuit filed against TRW, now owned by NG. The qui tam alleged that TRW knowingly allowed the use of defective proprietary transistors, referred to as HBTs,¹ in National Reconnaissance Office (NRO) spacecraft resulting in multiple failures of on-orbit collectors. The NRO Office of Inspector General (OIG) participated in a joint investigation with the Department of Justice (DoJ), the Defense Criminal Investigative Service (DCIS) and subject matter experts (SMEs) from the Air Force Research Lab (AFRL), Microelectronics Division, at Wright-Patterson Air Force Base.

~~(U//FOUO)~~ The joint investigative team revealed that NG and TRW knowingly made material misrepresentations about, and concealed certain material facts regarding the reliability of their HBTs dating back to the mid-1990s. Further, NG and TRW failed to properly test and qualify for use in space certain HBTs manufactured by TRW from 1992 to 2002. As a result, NG and TRW integrated defective HBTs into NRO satellite equipment. Following an on-orbit failure, TRW employees worked side by side with NRO government engineers on the HBT technical root-cause inquiry. Subpoenaed documents showed that TRW employees already knew about the faulty HBT transistors and were told by their managers not to share their previous knowledge with the NRO. The company continued to report that the NRO “root-cause” finding was a “new discovery,” and, therefore, the company had no legal obligation to notify the NRO of previous HBT concerns.

~~(U//FOUO)~~ Notwithstanding NG’s assertions of a “new discovery,” the joint investigation team persuaded the Assistant Attorney General for the Civil Division of DoJ to direct its trial attorneys to intervene in the case and to pursue legal remedies for violations of the FCA as well as common law fraud.

~~(U//FOUO)~~ In early 2009, as the case was in active litigation, NG and DoJ began to discuss a settlement framework that would settle two cases at once: the NRO’s HBT case against NG, and a Contract Disputes Act (CDA) action brought by NG against the US Air Force (USAF). The CDA had been in litigation for over 12 years and involved claims in excess of \$1 billion. The United States and Northrop Grumman agreed to settle the HBT Case against NG and NG’s CDA against the USAF for \$325 million. The government based the \$325 million on a DoJ litigation risk analysis of the HBT case. There is no further investigative action required by the OIG. The OIG considers this investigation closed.

(U) ¹ Heterojunction Bipolar Transistor

(U) BACKGROUND

(TS//TK//NF) In early 2002, the NRO suffered an anomaly in its [redacted] satellite program caused by the failure of TRW's Heterojunction Bipolar Transistors (HBTs). This anomaly affected [redacted] satellite programs and delayed launch for [redacted] platforms. The failures affected multiple NRO contracts in the [redacted] Directorates, as well as other contracts in the Office of Space Launch (OSL). Because of the severity of the anomaly, the NRO initiated a root-cause investigation. TRW was a subcontractor or prime contractor for each satellite program affected. Once the root cause—the HBT failure—was determined, TRW told the NRO that the problem was a “new discovery.”

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(TS//TK//NF) On 14 January 2003, the NRO OIG initiated a joint investigation with the DoJ regarding a civil False Claims Act qui tam (whistleblower) lawsuit filed by Dr. Robert Ferro, an employee of Aerospace Corporation, against TRW.² Dr. Ferro alleged in his court complaint that TRW knowingly integrated defective HBTs in NRO satellites and failed to disclose that knowledge to the NRO. The NRO OIG worked with DoJ attorneys from the Commercial Litigation Branch of the Civil Division and from the US Attorney's office for the Central District of California. This joint investigative team determined (1) whether, and to what extent, the government had been damaged by actions of TRW; (2) whether there were legal remedies available to recover any damage; and (3) whether the government should intervene in the case, thereby taking control of the case to pursue such recovery. The Defense Criminal Investigative Service (DCIS) also joined the investigative team, assigning investigators from its Los Angeles (LA), California and northern Virginia offices. The subject matter experts (SMEs) for the investigation team were from the Air Force Research Lab (AFRL), Microelectronics Division, at Wright-Patterson Air Force Base.

(U) INVESTIGATIVE DETAILS

(TS//TK//NF) DoJ and OIG began conducting interviews immediately after opening the case in January 2003. Initially, the investigators conducted approximately 20 interviews of government employees. This included the Deputy Undersecretary of the Air Force for Military Space, the Director of [redacted], the Director of the [redacted] Program Office, Division and Branch Chiefs, and engineers. Interviews of TRW employees and former TRW employees came much later as the case developed. By the end of the investigation, through the conduct of over 50 interviews, the investigators uncovered critical evidence that verified the allegations of defective satellite parts. The testimony elicited in the initial interviews justified the issuance of a Department of Defense OIG subpoena.

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(U//FOUO) In May 2003, the joint investigation team issued administrative subpoenas, through DCIS, to Lockheed-Martin Corporation (LMC), Aerospace, and NG. All three companies complied with the subpoenas. The joint investigative team received over 1.5 million pages of documents in response to the subpoenas.

(U)² During the investigation, Northrop-Grumman (NG) acquired TRW.

(U) Records Review

(TS//TK//NF) At the start of the NRO's root-cause investigation, an NRO program person sent TRW an e-mail, dated 7 February 2002, asking, "***Have these parts (wafers, dies, chips, etc.) or this technology been used elsewhere and if so, do we have historical data that may assist with our investigation?***" TRW responded by saying that it did not know of any other issues. However, evidence from the subpoena record review proved that in 2001, a year before the NRO's problems with HBTs began to surface, TRW had the same problem with its commercial HBTs sold to Nokia.³ TRW had initiated a root-cause investigation into the Nokia anomaly staffed by the same scientists that would later staff the NRO's root-cause investigation. Subpoena documents revealed e-mails and briefing charts of a September 2001 TRW briefing to Nokia and an April/May 2002 TRW briefing to the NRO that clearly showed the two problems to be the same. Furthermore, evidence showed that TRW deliberately withheld information from the NRO concerning the Nokia failures and took steps to ensure that NRO program personnel would not find out about the Nokia incident. An e-mail dated 27 September 2001 from [redacted], TRW's [redacted], states: "***I have not raised this concern with [redacted] management yet ... partly due to the corporate desire to "keep a lid" on the Nokia problem as far as the outside world is concerned. Also, I certainly don't want to spread unnecessary panic over in the program area.***"

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(TS//TK//NF) When confronted with the evidence, TRW denied that the failure mechanisms were the same. Charts from TRW's 17 July 2002 root-cause briefing to the NRO stated, "***This mechanism has never been associated with HBT degradation... 'New Discovery.'***" However, in an e-mail dated 29 May 2002, [redacted] states, "***We should have done more... I am assuming you don't want us to say Nokia to anyone ... this is a minefield and I'm running through naked.***" The e-mail response from senior TRW manager, [redacted], stated "***And you're right – please – no mention of Nokia!!... As far as the minefield – we are all naked together on this one. The key is to keep the team focused on solutions, moving forward – the past is irretrievable.***" In another e-mail, dated 20 September 2001 concerning the relevance of the Nokia root cause to space-qualified HBTs, [redacted] stated: "***The problem is VERY relevant.***" [redacted] e-mails continue to include comments regarding the magnitude of the problem: "***Yes, all GaAs HBT [Gallium Arsenide HBT– the type of HBTs used in NRO products] technologies have this potential problem.***"

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(TS//TK//NF) The joint investigation also found a TRW internal memorandum titled, "***Failure Anomaly Strategy for Tiger Team Leaders.***" This memorandum circulated among the TRW employees selected to participate in the Nokia root-cause investigation. Three bullet points were listed: "***1. Keep TRW out of trouble, 2. Make the customer believe we are putting 110% of our energy into the effort, 3. Make the customer believe we are open to a TRW problem and not hiding anything.***"

(U)³ Nokia was the world's largest manufacturer of cell phones as of 2009.

(U//~~FOUO~~) While the document review and analysis was continuing, the DoJ Trial Attorney in LA, an Auditor from the OIG LA Office, and a forensic auditor hired by DoJ, constructed a damage model. The purpose of this model was to calculate the harm done to the NRO by these faulty parts. This model included the actual costs incurred because of

- the root cause investigation,
- re-work of multiple NRO satellites,
- launch delays,
- maintenance of the Titan line for 18 months after its scheduled close, and
- the loss of value of the on-orbit collector that was shut down for six months.

(U//~~FOUO~~) TRW's own briefing charts stated, "***Four NGST [Northrop Grumman Space Technologies] programs required significant rework at total cost to the USG exceeding \$1B.***" The DoJ presented the investigative findings and the damage assessment to NG executives and their legal team in October 2005, essentially showing NG a summary of the case the government would present in court. This was the first of several rounds of formalized presentations that occurred over the course of longer than a year, sequentially presenting and responding to each other's respective litigation positions.

(U//~~FOUO~~) In September 2006, in further response to the 2003 subpoena, NG released an additional 76,000 pages of documents to the DoJ/OIG team. Many of the documents were allegedly found in an unidentified employee's garage. These documents provided some of the most critical information produced in the case. Documents were found demonstrating that TRW had ample data in the mid-1990s concerning reliability issues with its HBTs and that TRW deliberately chose to ignore the data (several of the affected NRO satellites were being built by TRW at that time). An e-mail dated September 1997 from [redacted], a former TRW manager in charge of reliability, stated (in response to TRW manager [redacted] request for a reliability report on their HBTs), "***Interesting note about [redacted] asking for a reliability summary... I like the part about 'its purpose is to dispel the perception that our reliability has been degrading over the years'. What a coordinated lie this will be! ... God forbid we should tell the truth.***" When interviewed by the DoJ/OIG team about this e-mail and asked what the "truth" was, [redacted] stated that the truth was that the reliability had decreased since 1989.

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(U//~~FOUO~~) Investigators discovered additional evidence that clearly showed TRW's HBTs had never been qualified for use in space—according to TRW's own internal processes and requirements. The uncovered evidence revealed that TRW did not meet industry standards. Furthermore, numerous charts and e-mails revealed that TRW did not perform some required tests, some performed tests failed, and other test data that did not support TRW's desired results were discarded by the company.

(U//~~FOUO~~) In addition to obtaining and analyzing documents coming from NG, OIG took the lead role to ensure that the government would be able to satisfy its own discovery obligations to NG. Failure to do so would result in dismissal of the government's case by the court. As the case moved into the active litigation phase, the DoJ anticipated wide-ranging discovery requests from NG to which the government, and specifically NRO, would be obligated to respond. In August 2008, a team of cleared DoJ contractors began to digitize the relevant data

in an NRO facility. Within this facility, OIG and DoJ monitored the process that digitized all documents to a hard drive to create a searchable database. To meet its anticipated discovery obligations, in September 2008, the NRO Office of General Counsel (OGC) initiated a Tier Action to collect all HBT-related documents held by any NRO personnel.

(U//~~FOUO~~) The OGC Tier Action resulted in collecting only a minimal number of documents. The OGC authorized the OIG to begin direct action to collect more documents. All documents collected⁴ from sources at Westfields and other NRO locations were digitized in the document processing facility. The OIG also began the process of addressing the collection of soft copy documents from all existing NRO networks and systems, including the “NeXT” computer system, which the NRO used in the late 1990s. In addition, the OIG prepared six data calls on the NRO Records Center for retired records. The six data calls gathered all the archived documentation related to the programs that had been affected by HBTs. The NRO’s Records Center agreed to deliver 25 boxes of documents at a time. By March 2009, after receiving documents from the first two of the six data calls, 238 boxes (over 700,000 pages) were discovered, reviewed, and scanned.

(U) Results

(U//~~FOUO~~) In November 2008, the DoJ intervened in the qui tam. In early 2009, NG and DoJ began to discuss a settlement framework that might settle two cases at once: the HBT Case against NG, and a Contract Disputes Act action brought by NG against the US Air Force (USAF). The government offered and NG accepted \$325 million to settle the HBT Case as well as NG’s suit against the USAF. The claim against the USAF had been in litigation for over 12 years and involved claims in excess of \$1 billion. With this offer on the table, the court extended the deadline for the government to file its Complaint in Intervention, to allow the parties to finalize the terms and conditions of the settlement agreement. Ultimately, DoJ did not file a complaint but, instead, executed a settlement agreement on behalf of the United States of America on 2 April 2009.

(U//~~FOUO~~) The \$325 million was based on a DoJ litigation risk analysis. The damages were established by the HBT evidence, reduced in recognition of the difficulties and uncertainties in prevailing at trial with a very complex and technologically advanced case. On 2 April 2009, to effectuate the terms of the settlement, all parties agreed that the USAF would make payment of \$58.5 million to NG. Contingent upon NG’s receiving the above-referenced \$58.5 million from the USAF, NG agreed to pay \$58.5 million to the United States by electronic funds transfer pursuant to written instructions provided by the DoJ. Contingent upon the United States receiving the referenced \$58.5 million from NG, the United States agreed to pay \$48.5 million to the “relator,”⁵ Dr. Robert Ferro, with the remainder to the United States government.

(U) ⁴ Within three weeks, the OIG collected over 100 boxes of documents from Westfields with additional material arriving via courier from outlying NRO facilities.

(U) ⁵ “Relator” is the term used for the whistleblower in a qui tam case.

(U) CONCLUSION

~~(TS//TK//NF)~~

~~(U)~~ TRW and NG actions violated the civil False Claims Act (31 U.S.C. 3729-3733). The government's investigation into the HBT case concluded that Northrop and TRW failed to properly test and qualify certain HBTs manufactured by TRW from 1992 to 2002. As a result, NG and TRW integrated defective HBTs into NRO satellite equipment. The investigation further concluded that NG and TRW made misrepresentations about, and concealed certain material facts regarding, the reliability of the HBTs. Defective HBTs affected [redacted] satellites across [redacted] programs. As additional impact, the NRO had to bear the cost of maintaining the Titan program for 18 months beyond its scheduled shut down. The NRO incurred thousands of hours of labor cost to remove all suspect parts [redacted] individual satellites and manage the loss of use [redacted]. Those satellite programs included [redacted].

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(U) CASE CLOSURE

~~(U//FOUO)~~ For twelve months following settlement of the court case, the joint investigative team, with the assistance of the DoJ, Office of Security and Counter Intelligence, Office of Contracts, the Information Management Services Center, and several program offices across the NRO, worked to ensure the proper retention or disposition of over two million pages of documents obtained during the course of this investigation. By July 2009, all archived documents had been returned to the NRO Records Center; original documents submitted under subpoena had been returned to their respective companies; 40 boxes of copies of subpoenaed documents had been taken to the Westfields destruction facility and shredded under witness. Approximately 20 boxes of material have been archived with the OIG Case file. In July 2009, the document copying space was emptied and returned to the Management Services and Operations [redacted].

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~~(U//FOUO)~~ On 20 November 2009, OIG held the HBT Resolution Tribute in the NRO Jimmie D. Hill Auditorium to honor many government employees and NRO contractors representing the NRO, DoJ, DCIS, AFRL, Central Intelligence Agency, ManTech, Vance, Boeing Services Corp., Aerospace Corp., and General Dynamics. On 3 December 2009 and 26 February 2010, various members of the joint DoJ/OIG investigative team received awards from the Attorney General of the United States and from the United States Attorney for the Central District of California in recognition of their "integrity, commitment and outstanding service to the people of the United States of America." There is no further investigative action on the part of the OIG. The OIG considers this investigation closed.