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**Ralph D. Heath**

Executive Vice President – Lockheed Martin Corporation  
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January 30, 2012  
RDH12-07

Drs. J.S.J. Hillen  
Minister of Defense  
Plein 4  
2511 CR The Hague  
The Netherlands

Attachment (A): First Quarter 2012 F-35 Program Status

Dear Minister Hillen,

It was a great privilege to host you and your delegation during your visit to Lockheed Martin Aeronautics in Fort Worth earlier this month. We appreciated the opportunity to provide an update on the F-35 JSF program. As we discussed, we exceeded our flight test goals for 2011 and achieved several key milestones, including the highly successful F-35 STOVL deployment onboard the USS Wasp. This year we are on track to again take the F-35 program to the next level and are honored to have the Netherlands as a partner on this revolutionary and historic program.

While we have made significant progress thus far, we remain focused on strong program execution and committed to meeting our flight test and production goals in 2012. Some of our key focus areas include cost/affordability, test, production and software upgrades, along with maintaining our strong international partnership and industrial participation. I am attaching a status summary of some of the major ongoing activities and initiatives in each of these areas.

Minister Hillen, 2012 promises to be an exciting and challenging year as the F-35 program continues to mature and significant milestones are achieved. As a partner, the Netherlands plays a key role in the program's future and success. Thank you for the enormous investment of your time during your visit, and thank you for your trust and confidence in Lockheed Martin. We highly value the relationship we have with the Netherlands – a relationship that extends over many decades – and we look forward to continuing that relationship far into the future with the F-35.

Kindest Regards,

A handwritten signature in black ink, appearing to read "R D Heath", with a long horizontal flourish underneath.

**First Quarter 2012**  
**F-35 Program Status**

**Cost/Affordability**

The F-35 cost model is based on consistent and predictable increases in production rates to maintain program affordability. Production rate increases allow the industrial team to spread the fixed costs of our factories over more units each year, lowering the incremental cost per aircraft. Lockheed Martin has a comprehensive affordability plan that drives down the unit cost over time. We have decreased the unit cost from Low Rate Initial Production (LRIP) 1 to LRIP 4 by 42 percent.

Over the last two years, program adjustments have flattened the ramp rate as we complete critical testing on the program. While the movement of aircraft out of the near-term procurement profile to future years impacts the near-term costs, keeping the total quantities intact is important to ensure long-term cost objectives are met. One of our most significant concerns is retaining efficient production profiles to ensure we achieve the economies of scale that allow affordable recapitalization of the U.S. and Allied multirole fighter force. All participating nations must help achieve this objective.

Concurrency, which is the cost of changes to production jets resulting from System Development and Demonstration (SDD) discoveries, has been a much-discussed topic in the last year. Concurrency is an expected aspect of concurrent programs for which some level of funding is identified in each contract. The decision to have concurrency on the F-35 program was made to reduce production costs as was true for the F-16. The concurrency costs for F-35 continue to decline for each lot as experienced by all fighter aircraft development programs. Going forward, the savings associated with building at increased production rates will continue to mitigate concurrency costs.

**Test**

The F-35 multi-variant flight test program is the most complex and comprehensive in history. It is occurring at three test sites simultaneously and is tracking well to the new plan and making progress every day.

The 2011 SDD flight test program resulted in the completion of more test flights and test points than in all previous years. The 2011 flight test plan called for the accumulation of 872 flights and 6,622 test points. For the year, the SDD program flew 972 flights and tallied 7,823 test points. The F-35A conventional takeoff and landing (CTOL) variant flew 474 flights and accomplished 3,600 test points. The F-35B short takeoff/vertical landing (STOVL) variant accomplished 333 flights and 2,636 test points. The F-35C carrier variant (CV) flew 165 flights and tallied 1,587 test points. Along with this, the STOVL aircraft executed 268 vertical landings. In summary, all three variants achieved their planned test flights and test points for the year.

Our mission system (sensor equipped) jets are demonstrating the impressive new capability of the F-35 sensor systems. Initial signature testing and software stability, both key indicators of next-generation capabilities, are performing as predicted. Additionally, in 2011 we completed both static structural and maturity testing, and initial production software maturity testing on the first two Conventional Take Off and Landing (CTOL) aircraft, the configuration destined for the Royal Netherlands Air Force.

The Helmet Mounted Display System (HMDS) has flown successfully in all F-35 flights since early 2007 and is receiving excellent pilot reviews. However, night vision sensitivity requires improvement. We are updating our night vision camera to next-generation technology and evaluating a dual-path development plan that integrates legacy night vision goggles into the F-35 as a risk-management strategy. Recent pilot reports indicate that the HMDS is on track for successful resolution.

## **Production**

During your visit you had a chance to autograph your first Operational Test jet, called AN-1. That aircraft will deliver to your Air Force in August this year, and the second aircraft will deliver in March 2013. Your test jets and those of the United Kingdom underscore the multi-national dimension of this program. Our production program continues to make significant progress as improvement initiatives drive down cost and span reductions, thereby supporting affordability and future production rate increases. At this time, 70 aircraft are in assembly: 13 of 15 aircraft were delivered in 2011, six LRIP 4 aircraft are in mate and we are more than 50 percent complete overall for 2012 aircraft deliveries. Lockheed Martin has invested more than \$1.3 billion in factory expansion and efficiencies to date to support affordable F-35 production.

Overall production learning curves are equal to or better than those for legacy aircraft, even though we are producing three F-35 variants. This production efficiency is the result of high F-35 commonality, a tri-variant assembly flow, and the digital thread design tools employed across the entire design team. The latest F-35 CTOL delivered required 66 percent fewer touch labor hours to assemble than the first CTOL aircraft produced. This improvement trend will continue as we approach full rate production. At present, it takes approximately two years to assemble an F-35. In the future, that span will be reduced to approximately 12 to 14 months.

Lockheed Martin is actively working with our global suppliers, including several critical suppliers in the Netherlands, to improve quality and improve factory efficiency. The F-35 production plan is to deliver 40 aircraft in 2012; we are well-positioned to achieve this goal.

## **Software**

The software, supplier, test, and laboratory teams are in the midst of developing multiple software Block releases, which are all in different phases of the development life-cycle. Our Ready for Training configuration has been released and is ready to support activities at Eglin. The initial Multi-Level Security (Block 1B) configuration is currently progressing through flight test; it is receiving extremely positive feedback from the USG/LM test team, including the test pilot community. The software configuration for F-35s delivered this year has completed system integration and test and has been released for flight testing.

Concurrently, the Block 2 and Block 3 software integration activities for initial and final full warfighting capability are progressing with the rapid integration/build cycle in the laboratories and on our Boeing 737 Cooperative Avionics Test Bed (CATB) flying laboratory. The recent CATB ground/flight testing has enabled us to achieve excellent progress.

## **International Partnership**

The F-35 is the Department of Defense's largest cooperative program with America's allies. The combined procurement and shared investment by the U.S. and partners yields significant cost savings to all. International F-35 Partners alone contribute more than \$36 billion in combined savings and investment to the U.S. Today, the U.S. and all Partner nations remain committed to their acquisitions, although several are delaying procurement because of USG program ramp rate modifications and internal budget challenges. At this point in the program, stability in production demand is critical to achieving the economies of scale that were envisioned across the nine nation partnership. All partners want price stability, which is dependent upon stable order quantities. It remains essential that all Partners firmly commit to production deliveries to ensure this stability.

We are seeing growing international interest beyond the nine-nation partnership. Israel is in negotiations for their first tranche of F-35s, and Japan recently selected the F-35 in a competitive evaluation with the Eurofighter and Super Hornet. We expect several more countries to join the program over the next year or two.

The F-35 program experienced additional significant international milestones in 2011:

- In April, your Dutch Parliament agreed to procure a second F-35 test aircraft for inclusion in Operational Test and Evaluation.
- In June, the Norwegian Parliament unanimously approved the funding of four F-35 Lightning II training jets to be delivered in 2016.
- In November, Lockheed Martin rolled out the first international aircraft for delivery to the United Kingdom.
- Turkey committed to its first two operational jets in January 2012.

The continued success of the F-35 as the fighter of choice in the International and U.S. domestic arenas further validates the importance and necessity of the F-35 and its 5<sup>th</sup> generation capabilities.

#### **International Industrial Participation (IP)**

IP is a key tenant of the F-35 program, creating a partnership that continues through development, production and sustainment of the F-35 weapons system. IP is based upon the unique best-value concept and creates economic and industrial underpinnings for the long-term alliances our countries share. Netherlands industry is a key part of the F-35 program's industrial alliance. Fokker Elmo manufactures all F-35 wiring harnesses and has been recognized as an outstanding supplier. Key structural components such as in-flight opening doors and flaperons are manufactured in precision composites by Fokker Aerostructures. Thales is involved in building radar components and in developing an improved cryogenic cooler. Dutch Aerospace and NLR are actively involved in the Embedded Training for the F-35 program. For Partner countries that have committed funding for production F-35s, the next phase of IP will allow local industries the opportunity to participate in potential F-35 sustainment efforts. Dutch industry has been integral to the sustainment of the F-16 and as part of the European Participating Air Forces (EPAF). It is our belief that the F-35 sustainment program may also benefit from Dutch leadership and expertise as the Netherlands commits to the production phase of the program.