NASA/TM—2016–219394

Second-Generation Large Civil Tiltrotor 7- by 10-Foot Wind Tunnel Test Data Report

Colin R. Theodore, Carl R. Russell, and Gina C. Willink
Ames Research Center, Moffett Field, California

Ashley E. Pete
U.S. Army Aeroflightdynamics Directorate
Ames Research Center, Moffett Field, California

Sierra A. Adibi, Adam Ewert, and Lieselotte Theuns
Science and Technology Corporation
Ames Research Center, Moffett Field, California

Connor Beierle
Universities Space Research Association
Ames Research Center, Moffett Field, California

October 2016

NASA STI Program ... in Profile

Since its founding, NASA has been dedicated to the advancement of aeronautics and space science. The NASA scientific and technical information (STI) program plays a key part in helping NASA maintain this important role.

The NASA STI program operates under the auspices of the Agency Chief Information Officer. It collects, organizes, provides for archiving, and disseminates NASA's STI. The NASA STI program provides access to the NTRS Registered and its public interface, the NASA Technical Reports Server, thus providing one of the largest collections of aeronautical and space science STI in the world. Results are published in both non-NASA channels and by NASA in the NASA STI Report Series, which includes the following report types:

- TECHNICAL PUBLICATION. Reports of completed research or a major significant phase of research that present the results of NASA Programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA counterpart of peer-reviewed formal professional papers but has less stringent limitations on manuscript length and extent of graphic presentations.

- TECHNICAL MEMORANDUM. Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.

- CONTRACTOR REPORT. Scientific and technical findings by NASA-sponsored contractors and grantees.

- CONFERENCE PUBLICATION. Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or co-sponsored by NASA.

- SPECIAL PUBLICATION. Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.

- TECHNICAL TRANSLATION. English-language translations of foreign scientific and technical material pertinent to NASA's mission.

Specialized services also include organizing and publishing research results, distributing specialized research announcements and feeds, providing information desk and personal search support, and enabling data exchange services.

For more information about the NASA STI program, see the following:

- Access the NASA STI program home page at http://www.sti.nasa.gov

- E-mail your question to help@sti.nasa.gov

- Phone the NASA STI Information Desk at 757-864-9658

- Write to:
  NASA STI Information Desk
  Mail Stop 148
  NASA Langley Research Center
  Hampton, VA 23681-2199

NASA/TM—2016–219394

Second-Generation Large Civil Tiltrotor 7- by 10-Foot Wind Tunnel Test Data Report

Colin R. Theodore, Carl R. Russell, and Gina C. Willink
Ames Research Center, Moffett Field, California

Ashley E. Pete
U.S. Army Aeroflightdynamics Directorate
Ames Research Center, Moffett Field, California

Sierra A. Adibi, Adam Ewert, and Lieselotte Theuns
Science and Technology Corporation
Ames Research Center, Moffett Field, California

Connor Beierle
Universities Space Research Association
Ames Research Center, Moffett Field, California

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, CA 94035-1000

October 2016

Available from:

NASA STI Support Services
Mail Stop 148
NASA Langley Research Center
Hampton, VA 23681-2199
757-864-9658

National Technical Information Service
5301 Shawnee Road
Alexandria, VA 22312
webmail@ntis.gov
703-605-6000

This report is also available in electronic form at

http://ntrs.nasa.gov

TABLE OF CONTENTS

LIST OF FIGURES iv
LIST OF TABLES v
NOMENCLATURE vi
SUMMARY 1
INTRODUCTION 1
EXPERIMENTAL HARDWARE 2
Wind Tunnel 2
Test Model 3
TEST SCOPE 6
Airplane Mode Testing 7
Helicopter Mode Testing 10
Wing-Only Testing 17
POST PROCESSING 20
PRESENTED DATA 20
Airplane Mode Data 21
Helicopter Mode Data 39
Wing-Only Data 80
CONCLUSIONS 90
REFERENCES 90

APPENDIX A—LCTR2 MODEL TECHNICAL DRAWINGS A-1
APPENDIX B—OIL FLOW TESTING B-1
APPENDIX C—WEIGHT TARE DATA C-1
APPENDIX D—AERODYNAMIC TARE DATA D-1
APPENDIX E—RUN TO TARE E-1

LIST OF FIGURES

Figure 1: The different hardware components involved in the wind tunnel test. 2

Figure 2: An exploded view of the test model hardware components. 3

Figure 3: A summary of the different wing configurations. 5

Figure 4: Placement of trip dots on model. 6

Figure 5: The L00E model configuration mounted inside the wind tunnel with aerodynamic fairings. 8

Figure 6: The L00 model configuration mounted inside the wind tunnel with round fairings. 9

Figure 7: The LNNC model configuration mounted inside the wind tunnel with round fairings. 9

Figure 8: Full airframe model in helicopter mode with varying yaw angles. 10

Figure 9: The L60E model configuration mounted inside the wind tunnel with round fairings. 12

Figure 10: The L75E model configuration mounted inside the wind tunnel with round fairings. 12

Figure 11: The L85E model configuration mounted inside the wind tunnel with round fairings. 13

Figure 12: The L95E model configuration mounted inside the wind tunnel with round fairings. 14

Figure 13: The L60 model configuration mounted inside the wind tunnel with round fairings. 14

Figure 14: The L75 model configuration mounted inside the wind tunnel with round fairings. 15

Figure 15: The L85 model configuration mounted inside the wind tunnel with round fairings. 16

Figure 16: The L95 model configuration mounted inside the wind tunnel with round fairings. 16

Figure 17: The WC wing-only configuration mounted inside the wind tunnel with aerodynamic fairings. 17

Figure 18: The WN wing-only configuration mounted inside the wind tunnel with aerodynamic fairings. 19

Figure 19: The WNE2L wing-only configuration mounted inside the wind tunnel with aerodynamic fairings. 20

LIST OF TABLES

Table 1: LCTR2 and Wind Tunnel Model Parameter Comparison 4
Table 2: Model Configuration Definitions 7
Table 3: Airplane Mode Test Case Matrix 7
Table 4: Helicopter Mode Test Case Matrix 11
Table 5: Wing-Only Test Case Matrix 18
Table 6: L00E Airplane Mode Corrected Data 21
Table 7: L00 Airplane Mode Corrected Data 27
Table 8: LNNC Airplane Mode Corrected Data 32
Table 9: LNNC Helicopter Mode Corrected Data 39
Table 10: L60E Helicopter Mode Corrected Data 48
Table 11: L75E Helicopter Mode Corrected Data 49
Table 12: L85E Helicopter Mode Corrected Data 50
Table 13: L95E Helicopter Mode Corrected Data 61
Table 14: L60 Helicopter Mode Corrected Data 62
Table 15: L75 Helicopter Mode Corrected Data 63
Table 16: L85 Helicopter Mode Corrected Data—Without Grit 64
Table 17: L85 Helicopter Mode Corrected Data—With Grit 68
Table 18: L95 Helicopter Mode Corrected Data 79
Table 19: WC Wing-Only 55% Corrected Data 80
Table 20: WC Wing-Only 5% Corrected Data 82
Table 21: WN Wing-Only 55% Corrected Data 84
Table 22: WN Wing-Only 5% Corrected Data 86
Table 23: WNE2L Wing-Only Corrected Data 88

NOMENCLATURE

α	angle of attack, + nose up (°)
β	yaw angle, + nose right (°)
Q	dynamic pressure (lb/ft^2)
V	wind tunnel velocity (ft/sec)
Re	Reynolds number, based on wing chord of 8.1 in.
L	lift force, + up (lb)
D	drag force, + aft (lb)
SF	side force, + body to the right (lb)
PM	pitching moment, + nose up ($ft \cdot lb$)
RM	rolling moment, + left wing up ($ft \cdot lb$)
YM	yawing moment, nose right ($ft \cdot lb$)
$a_1, b_1, c_1,$	weight tare function coefficients (dimensionless)
a_2, b_2, c_2	weight tare function coefficients (dimensionless)
$a_3, b_3, c_3, \ldots, i_3$	weight tare function coefficients (dimensionless)
$a_4, b_4, c_4, \ldots, i_4$	weight tare function coefficients (dimensionless)
a_5, b_5, c_5, d_5, e_5	aero tare function coefficients (dimensionless)
$a_6, b_6, c_6, \ldots, k_6$	aero tare function coefficients (dimensionless)
$a_7, b_7,$	aero tare function coefficients (dimensionless)
i_w	angle of incidence between wing and model fuselage (+3.3°)

SECOND-GENERATION LARGE CIVIL TILTROTOR 7- BY 10-FOOT WIND TUNNEL TEST DATA REPORT

SUMMARY

An approximately 6-percent scale model of the NASA Second-Generation Large Civil Tiltrotor (LCTR2) Aircraft was tested in the U.S. Army 7- by 10-Foot Wind Tunnel at NASA Ames Research Center January 4 to April 19, 2012, and September 18 to November 1, 2013. The full model was tested, along with modified versions in order to determine the effects of the wing tip extensions and nacelles; the wing was also tested separately in the various configurations. In both cases, the wing and nacelles used were adopted from the U.S. Army High Efficiency Tilt Rotor (HETR) aircraft, in order to limit the cost of the experiment. The full airframe was tested in high-speed cruise and low-speed hover flight conditions, while the wing was tested only in cruise conditions, with Reynolds numbers ranging from 0 to 1.4 million. In all cases, the external scale system of the wind tunnel was used to collect data. Both models were mounted to the scale using two support struts attached underneath the wing; the full airframe model also used a third strut attached at the tail. The collected data provides insight into the performance of the preliminary design of the LCTR2 and will be used for computational fluid dynamics (CFD) validation and the development of flight dynamics simulation models.

INTRODUCTION

As the popularity of air transportation continues to rise, runway congestion is becoming an increasingly serious problem. Short- and medium-range aircraft currently require the same amount of time on a runway as their higher-range, higher-capacity counterparts, resulting in sub-optimal runway scheduling. In order to remedy some of the current airport congestion, NASA is developing the Second-Generation Large Civil Tiltrotor (LCTR2), which can take off and land without the use of a full-length runway.

The LCTR2 is designed to carry up to 90 passengers at a cruise speed of 300 knots for flights of approximately 1,000 NM. The LCTR2 features tilting nacelles, which allow the aircraft to take off and land over much shorter distances by rotating the thrust vector to point vertically, thus eliminating the requirement for long runways. Once in flight, the craft can then rotate its thrust vector forward, thereby achieving higher speeds and efficiency [1].

In 2012 and 2013, an approximately 6-percent scale model of the LCTR2 was tested in the U.S. Army 7- by 10-Foot wind tunnel at NASA Ames Research Center. The model featured the LCTR2 fuselage, tail, and wing tips, with the wing and nacelles of the U.S. Army High Efficiency Tilt Rotor (HETR). In 2014, C. Theodore, et. al., published the preliminary results of the experiment, including the effects of the wing extensions on the performance of the aircraft [2].

This report presents information on the experimental hardware used, including a description of the 7- by 10-Foot Wind Tunnel setup and the LCTR2 model with HETR wing. The basic experimental procedures and test performed are presented, along with a brief discussion of the post-processing of the data. Finally, the corrected data from the testing is presented.

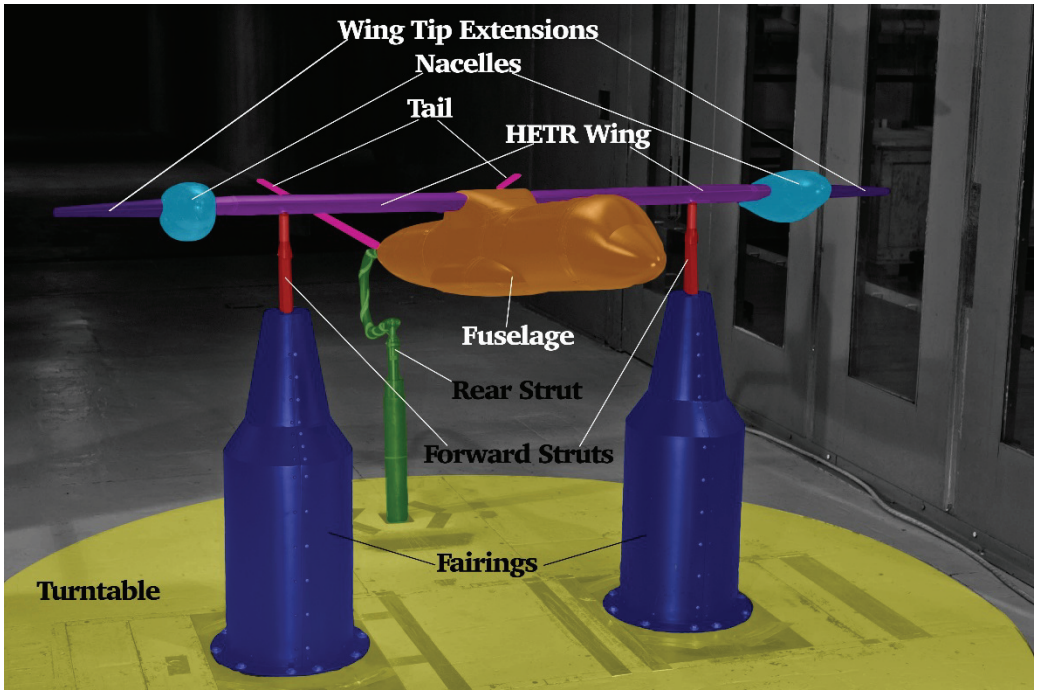

Figure 1: The different hardware components involved in the wind tunnel test.

EXPERIMENTAL HARDWARE

The major hardware components of the LCTR2 wind tunnel experiment were the 7- by 10-Foot Wind Tunnel at NASA Ames Research Center, where the testing was performed, and the 6-percent LCTR2 model. An illustration of the experimental setup inside the wind tunnel is shown in Figure 1.

Wind Tunnel

The 7- by 10-foot closed-return wind tunnel at NASA Ames Research Center has a maximum flow speed of 200 knots with a contraction ratio of 14:1. The wind tunnel's drive system features a six-bladed, 28-foot-diameter fan with an 1,800-horsepower electric motor encased within a nacelle at the center. The tunnel is pressurized to one atmosphere and is dedicated to rotorcraft research.

The wind tunnel features a turntable that is capable of varying the yaw of the model between –180 and +180 degrees. The three-point mounting system attaches the model to the external scale via support struts; the scale measures the forces and moments on the craft during testing. The turntable is arranged with two forward struts and one rear strut.

In order to limit the amount of aerodynamic forces and moments on the struts, fairings were placed around the bases of each of the struts. For the high-speed cruise flight condition tests, fairings with an aerodynamic shape were used, and for the low-speed flight conditions, round fairings were used. The round fairings were chosen to minimize the effects of large yaw angles of the aircraft, and necessarily, the large angles of the struts and fairings with respect to the air flow.

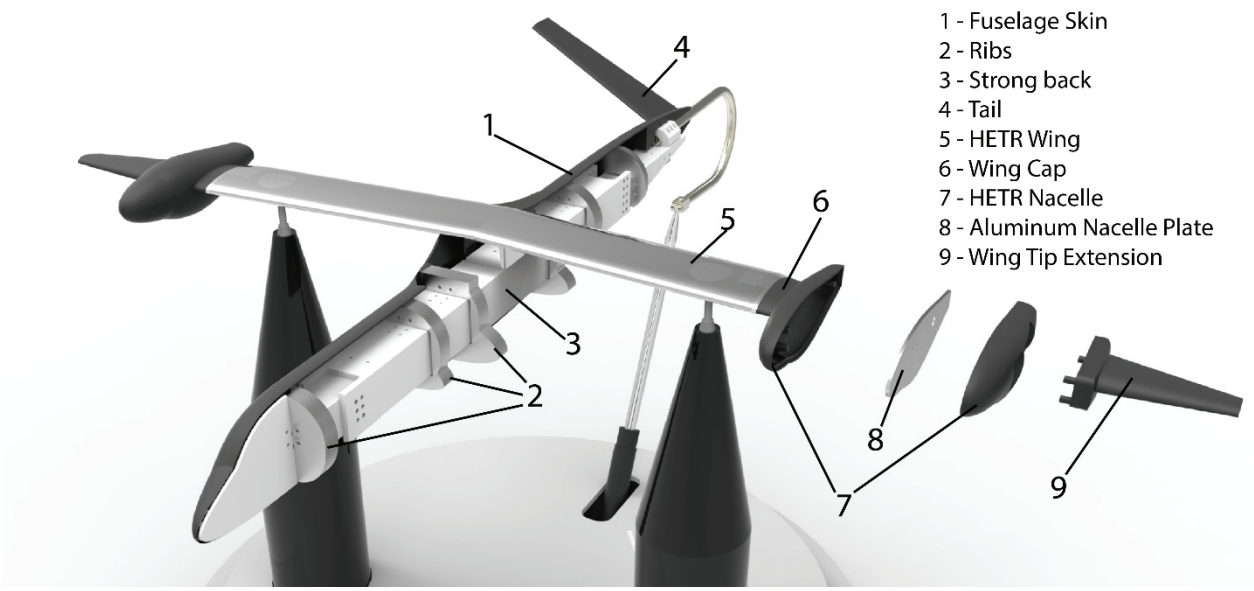

Figure 2: An exploded view of the test model hardware components.

Test Model

The 6-percent LCTR2 model is comprised of multiple components, including the fuselage skin, ribs, strong back, tail, wing tip extensions and caps, and HETR wing and nacelles [2]. Figure 2 is a diagram of the different model components. Technical drawings of the LCTR2 model are shown in Appendix A.

A comparison of the full size LCTR2 airframe and the model used in testing is shown in Table 1. In reference [2], the author provides a table of full-scale and 6-percent-scale model dimensions for the LCTR2. The values provided in Table 1 vary slightly from this data, as the 6-percent scale is based on the U.S. Army HETR craft. The LCTR2 wind tunnel model was then scaled to fit the HETR wing and nacelles; thus, the LCTR2 model is not exactly 6 percent of the full scale.

The strong back is constructed from 4-inch aluminum square tubing and provides the model's central structure. The wing and tail of the model are also manufactured from aluminum and attach directly to the strong back. The fuselage skin panels, which are constructed of Glass Filled Nylon 12 using Selective Laser Sintering (SLS), attach to the strong back via a system of aluminum ribs.

Table 1: LCTR2 and Wind Tunnel Model Parameter Comparison

Parameter	Full-Scale LCTR2	Wind Tunnel Model LCTR2 Plus HETR Wing
Full Wing Span (in.)	1284.0	79.9
Inner Wing Span (in.)	828.0	53.0
Inner Wing Sweep (°)	–5.0	–5.0
Inner Wing Taper Ratio	0.0	0.0
Inner Wing Chord (in.)	128.9	8.1
Wing Cap Length (in.)	2.0	2.6
Wing Extension Length (in.)	140.9	9.0
Wing Extension Sweep (°)	0.0	0.0
Wing Extension Taper Ratio	0.41	0.41
Wing Cap Chord (in.)	128.9	7.1
Wing Extension Tip Chord (in.)	47.6	3.0
Inner Wing Planform Area (in^2)	106,700	409
Full Wing Planform Area (in^2)	119,200	454
Wing-Fuselage Incidence (°)	+3.3	+3.3
Extension Root Incidence (°)	+3.3	+3.3
Nacelle Hub to Hub Distance (in.)	924.0	57.6
Nacelle Length (in.)	304.9	15.9
Nacelle Maximum Diameter (in.)	96.0	5.0
Fuselage Length (in.)	1310.8	81.4
Fuselage Maximum Diameter (in.)	120.0	7.5

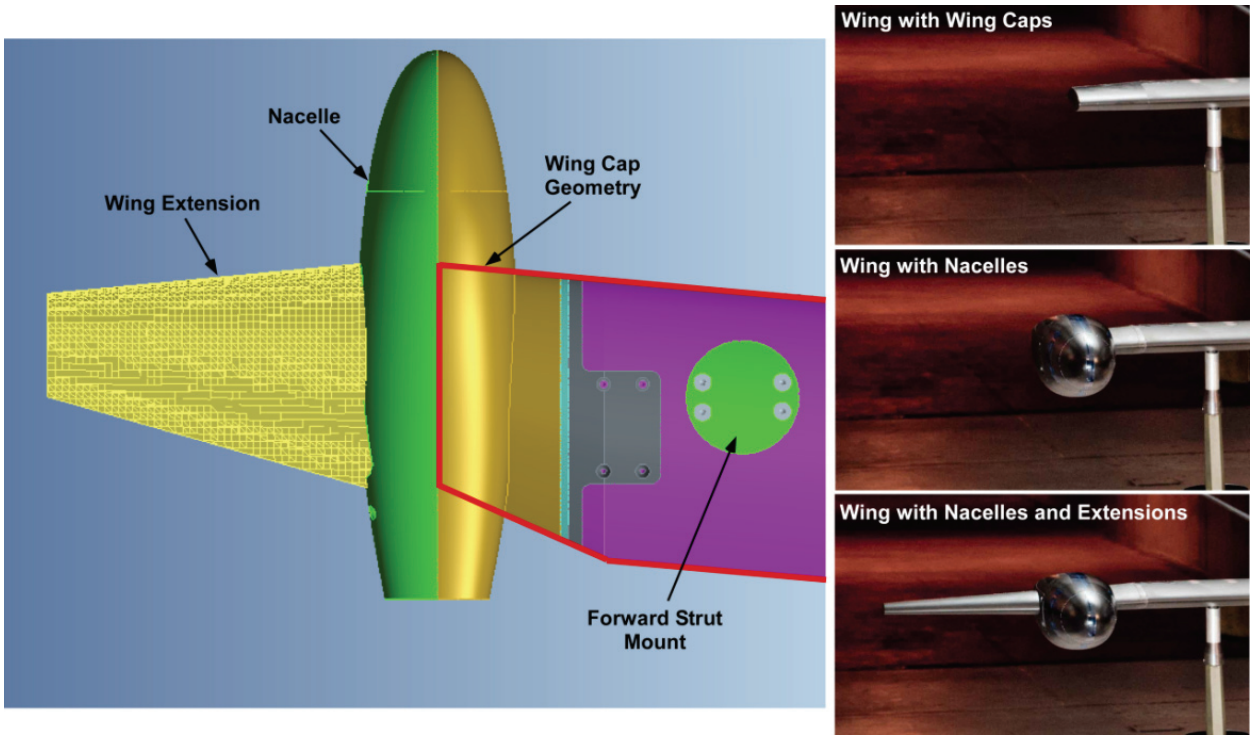

Figure 3: A summary of the different wing configurations.

The LCTR2 wing tips and nacelles attach to the wing via a pivoting hinge, which allows them to rotate around the center line of the wing, from 0° to +95°. Both the wing tips and nacelles were constructed using the same SLS Glass Filled Nylon 12 as the fuselage skin panels, and feature internal aluminum plates for structure. In testing, the wing tips and nacelles were removable, for cases where the wing was to be studied with only its caps. Figure 3 shows the three different wing configurations tested.

The HETR wing and the LCTR2 tail and fuselage were fitted with trip dots in order induce a fixed transition point from laminar to turbulent flow of the boundary layer on these components. On the HETR wing, the trip dots were typically placed on the upper surface at 55 percent of the chord length, as measured from the leading edge; in some cases of wing-only testing, the trip dots were moved to 5 percent of the chord length to study boundary layer transition effects. On the tail, the trip dots were placed on the upper surface at 5 percent of the chord length for all tests that included the full airframe. On the fuselage, trip dots were placed in two rings; one just aft of the seam that connects the cockpit to the fuselage and another at the seam just aft of the sponson. A diagram showing trip dot placement and relative size is provided in Figure 4.

In addition to trip dots, when in helicopter mode, testing was often performed with a fine grit covering the model fuselage and nacelles. This grit was used to induce a turbulent boundary layer and prevent flow separation over the airframe.

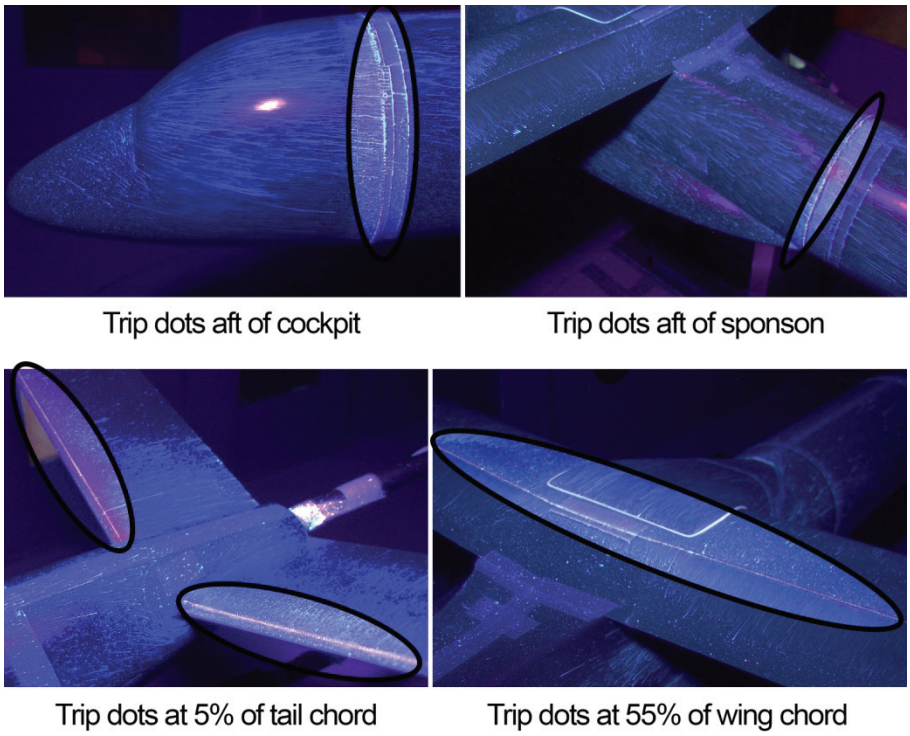

Figure 4: Placement of trip dots on model.

TEST SCOPE

The three main objectives of the wind tunnel test were to collect data for: (1) the validation of computational fluid dynamics tools, (2) the validation of the performance predictions obtained from the preliminary design, and (3) the development of flight dynamics simulation models. The results also give insight into the aerodynamic performance of the LCTR2 and the HETR wing, as well as the wing tip extensions and nacelles.

The LCTR2 wind tunnel tests were divided into three major categories, each with variations in the configuration. First, the full airframe was tested in airplane mode with two support struts attached at the underside of the wing, as well as a third strut at the tail of the aircraft. Second, the full airframe was tested in helicopter mode, using the same strut configuration. Finally, the wing was tested alone, using only the two forward support struts. Further descriptions of the different cases tested are provided in the following sections. Table 2 provides a definition of the different model configurations.

Additionally, a few of the configurations were examined using oil flow testing in the wind tunnel, in order to qualitatively observe the airflow over the airframe. In these cases, the models were mounted in the wind tunnel and covered with oil. The wind tunnel was brought up to speed for a short time, and then the wind tunnel was turned off so that the testing team could collect photos of the airflow patterns. Photos and further information regarding the oil flow testing are provided in Appendix B.

Table 2: Model Configuration Definitions

Configuration	Fuselage	Nacelles	Wing Tips	Nacelle Orientation (°)
L00E	Y	Y	Y	0
L00	Y	Y		0
LNNC	Y			
L60E	Y	Y	Y	60
L75E	Y	Y	Y	75
L85E	Y	Y	Y	85
L95E	Y	Y	Y	95
L60	Y	Y		60
L75	Y	Y		75
L85	Y	Y		85
L95	Y	Y		95
WC	← Basic HETR Wing →			
WN		Y		0
WNE2L		Y	Y	0

Airplane Mode Testing

In airplane mode, the full LCTR2 airframe was tested with the HETR wing in three different configurations, identified as L00E, L00, and LNNC. A test case matrix for the airplane mode tests is provided in Table 3.

Table 3: Airplane Mode Test Case Matrix

Configuration	α (deg)	β (deg)	Re (10^6)	Data Table No.
L00E	$-10 < \alpha < +12$	0	0.80, 1.20, 1.40	Table 6
	$-10 < \alpha < +12$	+5	0.80, 1.20, 1.40	
	$-10 < \alpha < +12$	+10	0.80, 1.20, 1.40	
L00	$-10 < \alpha < +12$	0	0.80, 1.20, 1.40	Table 7
	$-10 < \alpha < +12$	+5	0.80, 1.20, 1.40	
	$-10 < \alpha < +12$	+10	0.80, 1.20, 1.40	
LNNC	$-10 < \alpha < +12$	–5	0.80, 1.20, 1.40	Table 8
	$-10 < \alpha < +12$	0	0.80, 1.20, 1.40	
	$-10 < \alpha < +12$	+5	0.80, 1.20, 1.40	
	$-10 < \alpha < +12$	+10	0.80, 1.20, 1.40	

L00E—Airplane Mode Configuration 1

The L00E configuration shown in Figure 5 used the full wing configuration, including the wing tip extensions and nacelles. The inner wing was set at a +3.3° positve incidence to the fuselage water line. For this model orientation, the nacelles and wing tips were oriented at 0° incidence with respect to the fuselage water line. Angles of attack ranging between –10° and +12° were examined at three different yaw angles, 0°, +5°, and +10°. Data was taken at three Reynolds numbers, approximately 800k, 1,200k, and 1,400k.

L00—Airplane Mode Configuration 2

The L00 configuration shown in Figure 6 used the HETR wing with the nacelles, but without the wing tip extensions. For this model orientation, the nacelles were oriented at 0° with respect to the fuselage water line. Again, angles of attack ranging between –10° and +12° were examined at three different yaw angles, 0°, +5°, and +10°. Data was taken at three Reynolds numbers, approximately 800k, 1,200k, and 1,400k.

LNNC—Airplane Mode Configuration 3

The LNNC configuration shown in Figure 7 used the HETR wing without the nacelles or wing tip extensions. Angles of attack ranging between –10° and +12° were examined at four different yaw angles, –5°, 0°, +5°, and +10°. Data was taken at three Reynolds numbers, approximately 800k, 1,200k, and 1,400k.

Figure 5: The L00E model configuration mounted inside the wind tunnel with aerodynamic fairings.

Figure 6: The L00 model configuration mounted inside the wind tunnel with round fairings.

Figure 7: The LNNC model configuration mounted inside the wind tunnel with round fairings.

Helicopter Mode Testing

In helicopter mode, the full LCTR2 airframe was tested with the HETR wing in nine different configurations: LNNC, L60E, L75E, L85E, L95E, L60, L75, L85, and L95. In these configurations, a variety of yaw angles were studied in order to simulate cross and tail winds in hover flight conditions. Figure 8 provides an example of a full airframe model in helicopter mode in varying yaw angles.

Unless otherwise noted, the helicopter mode test orientations used grit on the fuselage and nacelles. This grit was used to induce a turbulent boundary layer around the model, thus reducing drag by preventing flow separation. A test case matrix for the helicopter mode tests is shown in Table 4.

LNNC—Helicopter Mode Configuration 1

The LNNC configuration shown in Figure 7 used the LCTR2 airframe and HETR wing, without the nacelles or wing tip extensions. At an angle of attack of 0°, the yaw angle of the aircraft was varied between approximately 0° and +180°, and data was taken at three Reynolds numbers, approximately 300k, 450k, and 600k. The Reynolds number was then kept steady at approximately 600k, and yaw angles were examined between 0° and +180° for angles of attack of –10°, –5°, 5°, and 10°.

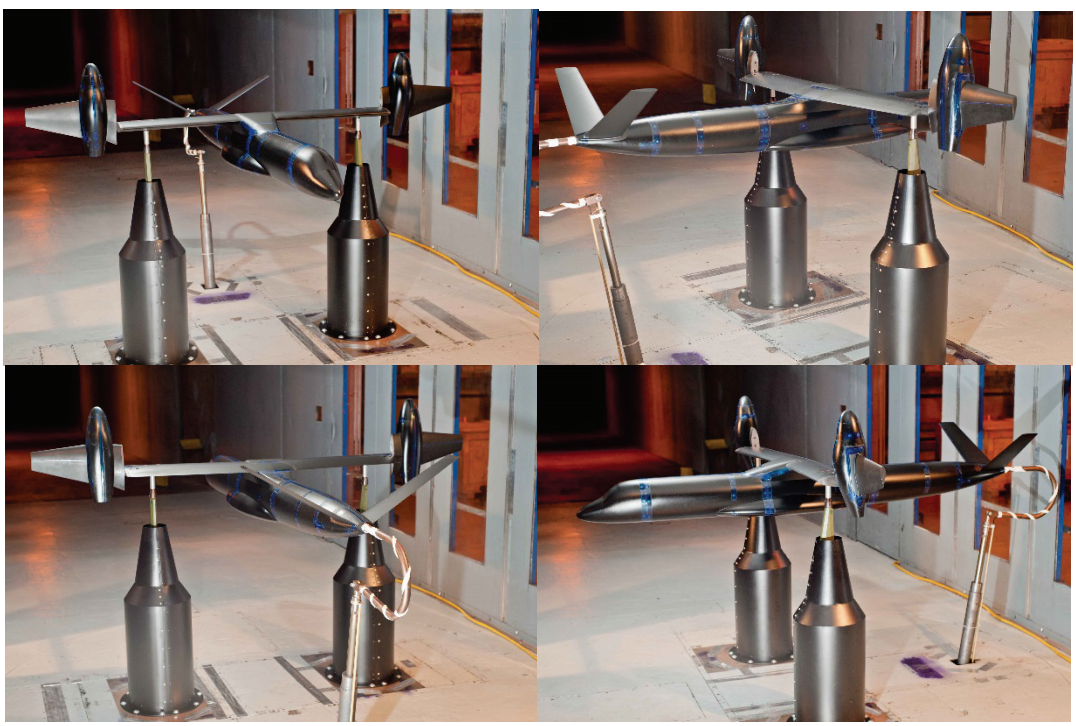

Figure 8: Full airframe model in helicopter mode with varying yaw angles.

Table 4: Helicopter Mode Test Case Matrix

Configuration	α (deg)	β (deg)	Re (10^6)	Data Table No.
LNNC	0	0 < β < +180	0.30, 0.45, 0.60	Table 9
	–10	0 < β < +180	0.60	
	–5	0 < β < +180	0.60	
	+5	0 < β < +180	0.60	
	+10	0 < β < +180	0.60	
L60E	0	0 < β < +180	0.60	Table 10
L75E	0	0 < β < +180	0.60	Table 11
L85E	0	0 < β < +180	0.30, 0.45	Table 12
	0	–180 < β < +180	0.60	
	–10	0 < β < +180	0.60	
	–5	0 < β < +180	0.60	
	+5	0 < β < +180	0.60	
	+10	0 < β < +180	0.60	
L95E	0	0 < β < +180	0.60	Table 13
L60	0	0 < β < +180	0.60	Table 14
L75	0	0 < β < +180	0.60	Table 15
L85 (no grit)	0	0 < β < +180	0.30, 0.45, 0.60	Table 16
	0	–180 < β < +180	0.60	
	–10	0 < β < +180	0.60	
	–5	0 < β < +180	0.60	
	+5	0 < β < +180	0.60	
	+10	0 < β < +180	0.60	
L85 (with grit)	0	0 < β < +180	0.30, 0.45, 0.60	Table 17
	+10	0 < β < +180	0.60	
L95	0	0 < β < +180	0.60	Table 18

L60E—Helicopter Mode Configuration 2

The L60E configuration shown in Figure 9 used the full wing configuration, including the wing tip extensions and the nacelles. For this model orientation, the nacelles and wing tips were oriented at 60° with respect to the fuselage. Fuselage yaw angles ranging between 0° and +180° were examined at an approximate angle of attack of 0° and Reynolds number of 600k.

L75E—Helicopter Mode Configuration 3

The L75E configuration shown in Figure 10 used the full wing configuration, including the wing tip extensions and the nacelles. For this model orientation, the nacelles and wing tips were oriented at 75° with respect to the fuselage. Fuselage yaw angles ranging between 0° and +180° were examined at an approximate angle of attack of 0° and Reynolds number of 600k.

Figure 9: The L60E model configuration mounted inside the wind tunnel with round fairings.

Figure 10: The L75E model configuration mounted inside the wind tunnel with round fairings.

L85E—Helicopter Mode Configuration 4

The L85E configuration shown in Figure 11 used the full wing configuration, including the wing tip extensions and the nacelles. For this model orientation, the nacelles and wing tips were oriented at 85° with respect to the fuselage. Data was taken for fuselage yaw angles ranging between 0° and +180°, an approximate angle of attack of 0°, and Reynolds numbers of 300k and 450k. Additionally, a data run was recorded at an approximate angle of attack of 0°, Reynolds number of 600k, and yaw angles ranging from –180° and +180°. Finally, data was taken for yaw angles ranging between 0° and +180°, a Reynolds number of 600k, and angles of attack of –10°, –5°, 5°, and 10°.

L95E—Helicopter Mode Configuration 5

The L95E configuration shown in Figure 12 used the full wing configuration, including the wing tip extensions and the nacelles. For this model orientation, the nacelles and wing tips were oriented at 95° with respect to the fuselage. Fuselage yaw angles ranging between 0° and +180° were examined at an approximate angle of attack of 0° and Reynolds number of 600k.

L60—Helicopter Mode Configuration 6

The L60 configuration shown in Figure 13 used the HETR wing configuration with nacelles, but no wing tip extensions. For this model orientation, the nacelles were oriented at 60° with respect to the fuselage. Fuselage yaw angles ranging between 0° and +180° were examined at an approximate angle of attack of 0° and Reynolds number of 600k.

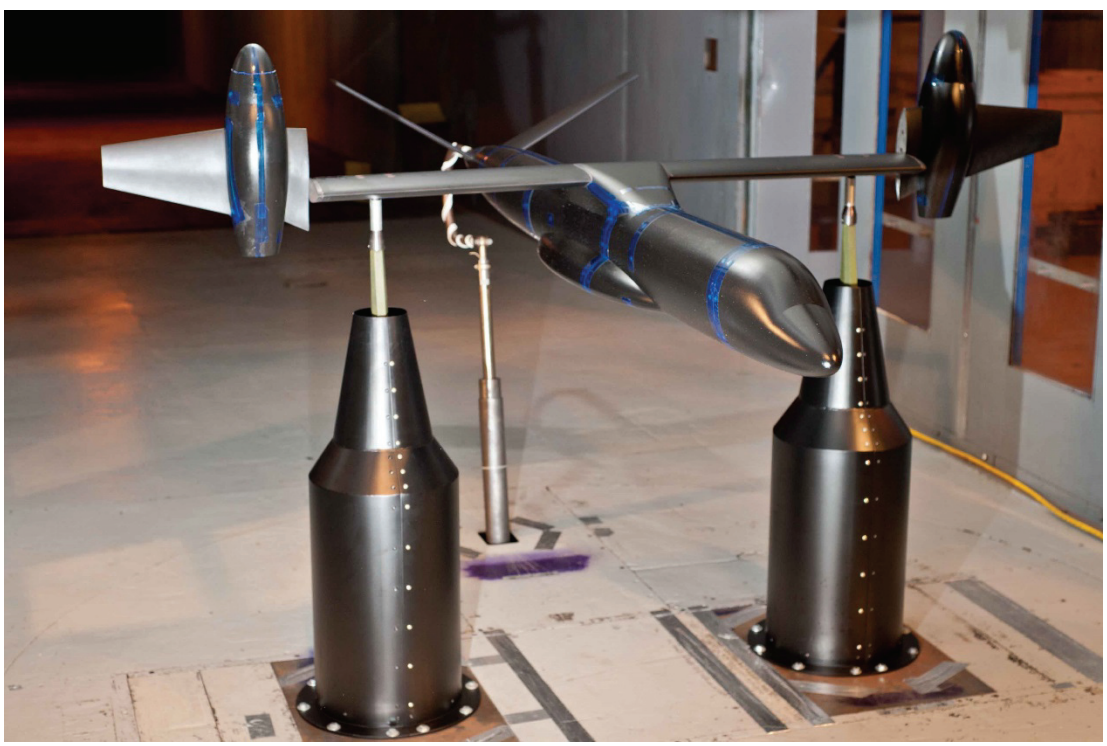

Figure 11: The L85E model configuration mounted inside the wind tunnel with round fairings.

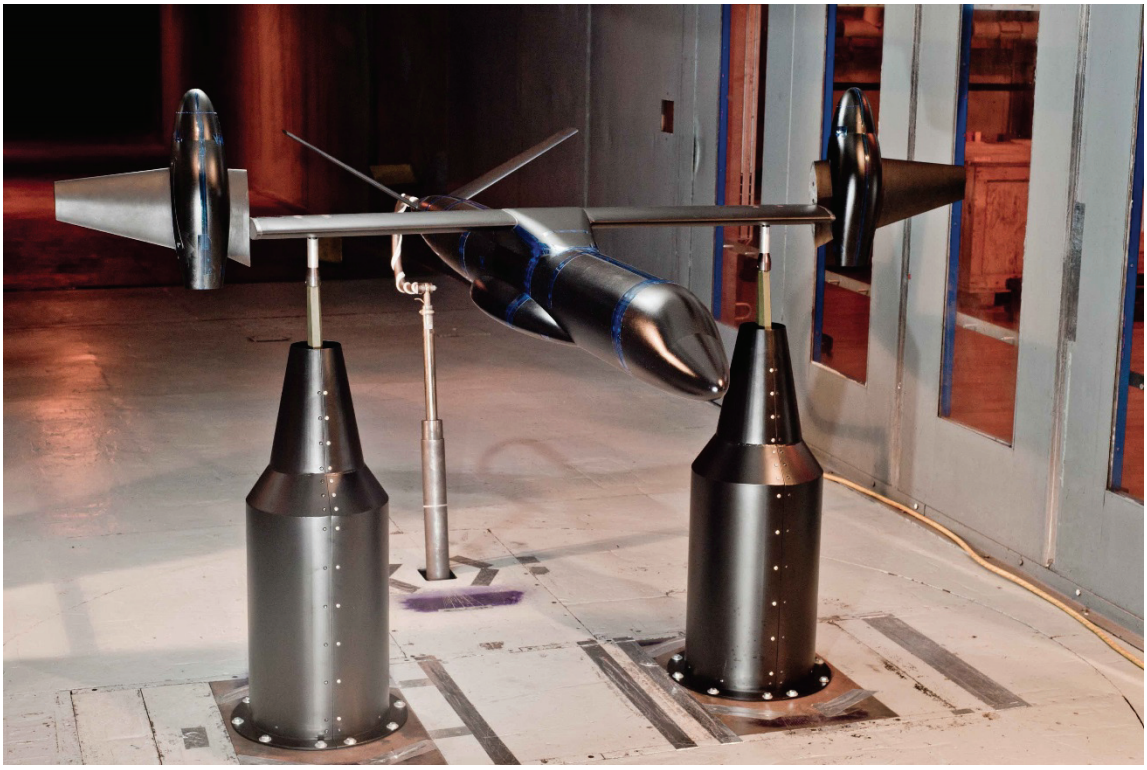

Figure 12: The L95E model configuration mounted inside the wind tunnel with round fairings.

Figure 13: The L60 model configuration mounted inside the wind tunnel with round fairings.

L75—Helicopter Mode Configuration 7

The L75 configuration shown in Figure 14 used the HETR wing configuration with nacelles, but no wing tip extensions. For this model orientation, the nacelles were oriented at 75° with respect to the fuselage. Fuselage yaw angles ranging between 0° and +180° were examined at an approximate angle of attack of 0° and Reynolds number of 600k.

L85—Helicopter Mode Configuration 8

The L85 configuration shown in Figure 15 used the HETR wing configuration with nacelles, but no wing tip extensions. For this model orientation, the nacelles were oriented at 85° with respect to the fuselage. Data was taken for fuselage yaw angles ranging between 0° and +180°, an approximate angle of attack of 0°, and Reynolds numbers of 300k, 450k, and 600k, both with and without grit applied to the aircraft fuselage and nacelles. Additionally, a data run was recorded at approximate angle of attack of 0°, Reynolds number of 600k, and yaw angles ranging from –180° and +180°, with grit. Finally, data was taken for yaw angles ranging between 0° and +180°, Reynolds number of 600k, and angles of attack of –10°, –5°, 5°, and 10°; data for the aircraft both with and without grit was taken for the angle of attack at 10°.

L95—Helicopter Mode Configuration 9

The L95 configuration shown in Figure 16 used the HETR wing configuration with nacelles, but no wing tip extensions. For this model orientation, the nacelles were oriented at 95° with respect to the fuselage. Fuselage yaw angles ranging between 0° and +180° were examined at an approximate angle of attack of 0° and Reynolds number of 600k.

Figure 14: The L75 model configuration mounted inside the wind tunnel with round fairings.

Figure 15: The L85 model configuration mounted inside the wind tunnel with round fairings.

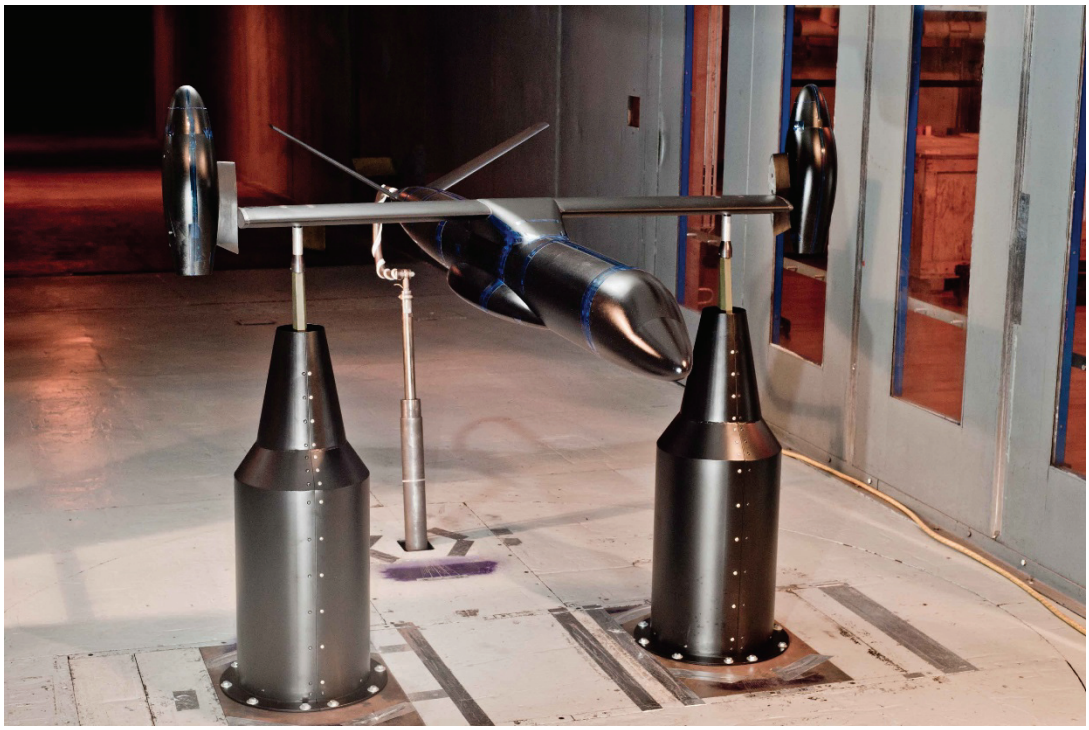

Figure 16: The L95 model configuration mounted inside the wind tunnel with round fairings.

Wing-Only Testing

In wing-only testing—without the LCTR2 airframe—the HETR wing was studied in its three configurations. These configurations were WC, WN, and WNE2L. For each of the wing configurations, the angle of attack was measured as the fuselage angle of attack. Therefore the actual wing angle of attack was +3.3° greater than the fuselage angle of attack. A test case matrix for the wing-only tests is shown in Table 5.

WC—Wing-Only Configuration 1

The WC configuration shown in Figure 17 used only the HETR wing with wing caps. This configuration was first tested with trip dots at 55 percent of the chord length, then again with trip dots at 5 percent of the chord length. For each trip dot configuration the same eight tests were performed. With zero yaw angle, Reynolds numbers were varied between 0 and 1,400k for angles of attack of –6°, –3°, 0°, +6°, and +8°. The angle of attack was then held constant at 0°, and data was taken for Reynolds numbers of 1,200k and 1,400k at yaw angles of –5°, +5°, and +10°.

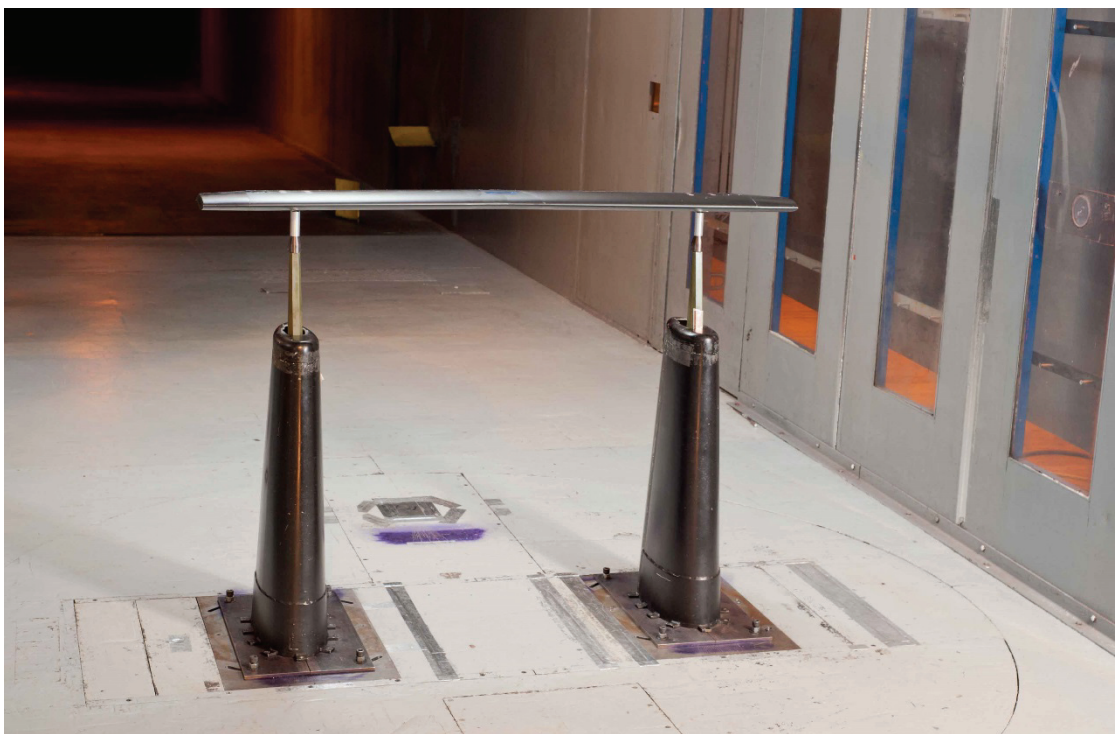

Figure 17: The WC wing-only configuration mounted inside the wind tunnel with aerodynamic fairings.

Table 5: Wing-Only Test Case Matrix

Configuration	α (deg)	β (deg)	Re (10^6)	Data Table No.
WC 55%	–6	0	0 < Re < 1.40	Table 19
	–3	0	0 < Re < 1.40	
	0	0	0 < Re < 1.40	
	+6	0	0 < Re < 1.40	
	+8	0	0 < Re < 1.40	
	0	–5	1.20, 1.40	
	0	+5	1.20, 1.40	
	0	+10	1.20, 1.40	
WC 5%	–6	0	0 < Re < 1.40	Table 20
	–3	0	0 < Re < 1.40	
	0	0	0 < Re < 1.40	
	+6	0	0 < Re < 1.40	
	+8	0	0 < Re < 1.40	
	0	–5	1.20, 1.40	
	0	+5	1.20, 1.40	
	0	+10	1.20, 1.40	
WN 55%	–6	0	0 < Re < 1.40	Table 21
	–3	0	0 < Re < 1.40	
	0	0	0 < Re < 1.40	
	+6	0	0 < Re < 1.40	
	+8	0	0 < Re < 1.40	
	0	–5	1.20, 1.40	
	0	+5	1.20, 1.40	
	0	+10	1.20, 1.40	
WN 5%	–3	0	0 < Re < 1.40	Table 22
	0	0	0 < Re < 1.40	
	+6	0	0 < Re < 1.40	
	0	–5	1.20, 1.40	
	0	+5	1.20, 1.40	
	0	+10	1.20, 1.40	
WNE2L	+8	0	0 < Re < 1.40	Table 23
	–6	0	1.20, 1.40	
	–3	0	1.20, 1.40	
	0	0	1.20, 1.40	
	+6	0	1.20, 1.40	
	0	–5	1.20, 1.40	
	0	+5	1.20, 1.40	
	0	+10	1.20, 1.40	

WN—Wing-Only Configuration 2

The WN configuration shown in Figure 18 used the HETR wing with nacelles at 0° with respect to the wing, but no wing tip extensions. This configuration was first tested with trip dots at 55 percent of the chord length, then again with trip dots at 5 percent of the chord length. For the 55-percent case, eight tests were performed. With zero yaw angle, Reynolds numbers were varied between 0 and 1,400k for angles of attack of –6°, –3°, 0°, +6°, and +8°. The angle of attack was then held constant at 0°, and data was taken for Reynolds numbers of 1,200k and 1,400k at yaw angles of –5°, +5°, and +10°. For the 5-percent case, the same tests were performed, with the exception of the –6° and +8° angle-of-attack Reynolds number sweeps.

WNE2L—Wing-Only Configuration 3

The WNE2L configuration shown in Figure 19 used the HETR wing with nacelles at 0° with respect to the wing and wing tip extensions; this configuration was tested only with trip dots at 55 percent of the chord length. With zero yaw angle and an angle of attack of +8°, data was taken for Reynolds numbers between 0 and 1,400k. Data was then taken for 0° yaw angle at angles of attack of –6°, –3°, 0°, and +6°, and Reynolds numbers at 1,200k and 1,400k. Finally, the angle of attack was held at 0°, and measurements were taken for yaw angles of –5°, +5°, and +10° at Reynolds numbers of 1,200k and 1,400k.

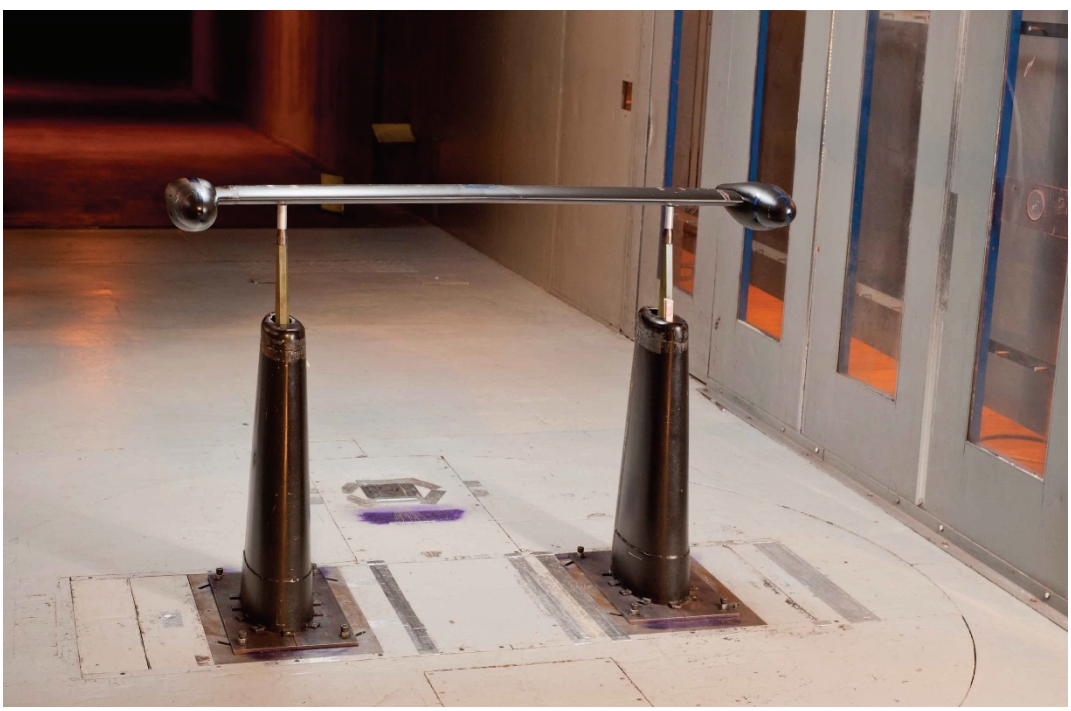

Figure 18: The WN wing-only configuration mounted inside the wind tunnel with aerodynamic fairings.

Figure 19: The WNE2L wing-only configuration mounted inside the wind tunnel with aerodynamic fairings.

POST PROCESSING

In order to ensure the data presented is relevant, some post processing was performed on the raw data of the LCTR2 wind tunnel testing. Housekeeping data was collected for each run performed, in order to zero the system data and check for data repeatability, and is not included in the data presented [3]. All of the data was then examined, compared to the testing notes, and corrected accordingly.

Throughout testing, aerodynamic and weight tares were performed in order to account for the effects of support struts, fairings, and weight of the models [4]. Functions were fitted to the individual tare data points, and data corrections were made based on the tare functions. A more in-depth description of the process for applying weight tares, the raw data for the weight tare runs, and the applied weight tare functions are shown in Appendix C. The corresponding aerodynamic tare data is shown in Appendix D.

PRESENTED DATA

The data for LCTR2 wind tunnel tests is shown in Table 6 through Table 23; included is information regarding the orientation of the test model, the conditions inside the wind tunnel, and the forces and moments on the model. The data presented has been corrected using the post-processing considerations described above. Information regarding the weight and aero tares applied to each data set is shown in Appendix E.

Airplane Mode Data

Table 6: L00E Airplane Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R254	2	-9.88	0.00	39.77	182.40	0.80	0.16	-54.72	17.16	0.19	32.99	2.06	1.10
	3	-7.92	0.00	40.05	183.12	0.80	0.17	-28.16	12.89	0.23	45.57	2.67	0.91
	4	-5.96	0.00	40.44	184.02	0.81	0.17	3.77	10.36	0.69	45.29	3.46	-0.50
	5	-3.95	0.00	39.67	182.24	0.80	0.16	36.78	8.83	0.60	41.01	2.84	0.22
	6	-1.98	0.00	40.25	183.77	0.80	0.17	70.70	8.17	0.46	36.35	2.95	1.26
	7	0.06	0.00	40.08	183.36	0.80	0.17	103.63	7.94	0.39	30.40	4.02	1.41
	8	2.06	0.00	39.70	182.48	0.80	0.16	133.46	8.49	0.32	23.46	2.60	1.12
	9	4.06	0.00	40.27	183.79	0.80	0.17	155.87	9.97	0.27	15.55	1.66	0.12
	10	6.07	0.00	39.94	183.03	0.80	0.16	169.35	11.91	0.22	3.79	2.48	-0.05
	11	8.04	0.00	39.45	181.88	0.79	0.16	190.42	14.52	0.38	-7.89	1.34	-0.46
	12	10.03	-0.01	39.02	180.89	0.79	0.16	211.66	18.51	0.76	-23.42	-0.73	-1.66
	13	10.03	0.00	40.19	183.72	0.80	0.17	217.84	19.01	0.82	-24.96	-1.32	-1.97
	14	12.11	0.00	39.65	182.53	0.79	0.16	237.19	24.45	1.32	-41.07	-3.63	-2.95
	15	0.05	0.00	40.35	184.16	0.80	0.17	106.17	7.97	0.40	27.57	3.21	1.61
R255	2	-9.90	0.00	92.29	281.56	1.20	0.25	-137.68	37.79	-1.29	138.31	-3.54	5.82
	3	-7.93	0.00	93.34	283.58	1.20	0.26	-71.12	28.50	0.89	149.31	1.74	-0.84
	4	-5.92	0.00	94.10	284.98	1.21	0.26	11.84	23.16	1.17	136.50	2.64	-1.03
	5	-5.92	0.00	94.08	285.02	1.21	0.26	12.15	23.09	1.17	136.38	3.93	-0.76
	6	-3.95	0.00	94.97	286.40	1.21	0.26	96.27	20.12	0.86	117.69	2.02	1.25
	7	-1.98	0.00	93.59	284.24	1.20	0.26	171.88	17.97	0.38	99.44	-1.12	5.36
	8	0.00	0.00	93.50	284.21	1.20	0.26	249.83	17.91	0.76	79.03	-8.64	3.24
	9	2.03	0.00	92.79	283.24	1.20	0.25	316.96	19.39	0.84	59.46	-12.90	0.03
	10	4.07	0.00	94.17	285.39	1.20	0.26	356.18	23.64	1.35	33.93	-11.18	-2.45
	11	6.04	0.00	93.45	284.26	1.20	0.26	405.01	28.59	0.71	6.61	-12.11	-0.87
	12	8.07	-0.01	94.41	285.76	1.21	0.26	467.58	36.06	0.93	-21.48	-9.51	-1.83
	13	10.06	0.00	93.54	284.41	1.20	0.26	513.75	46.66	2.72	-50.22	-8.79	-6.99
	14	12.06	0.00	94.37	286.01	1.20	0.26	571.27	61.37	4.18	-86.13	-18.11	-10.35
	15	0.04	0.00	95.02	287.01	1.21	0.26	262.74	18.18	0.41	80.16	-0.69	2.77

Table 6: L00E Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R256	2	-9.81	0.00	128.74	336.41	1.40	0.30	-187.67	53.32	-1.09	196.15	0.79	2.51
	3	-7.91	0.00	129.75	338.28	1.40	0.30	-99.61	40.29	2.07	214.76	6.93	-6.36
	4	-5.90	0.00	131.43	340.88	1.40	0.31	16.19	32.61	2.07	200.56	5.91	-5.46
	5	-3.95	0.00	130.81	340.29	1.40	0.31	133.71	28.04	0.92	176.27	6.43	0.20
	6	-1.94	0.00	132.03	342.03	1.40	0.31	256.40	25.38	-0.27	151.59	0.37	4.96
	7	0.06	0.00	131.00	340.63	1.40	0.31	365.24	25.40	0.67	121.07	-5.00	1.53
	8	2.05	-0.01	130.44	339.87	1.40	0.30	449.39	27.89	1.01	93.01	-6.77	-3.05
	9	4.06	0.00	132.00	342.31	1.40	0.31	500.98	34.06	0.24	55.47	-3.42	-3.41
	10	6.05	0.00	132.07	342.40	1.40	0.31	576.53	42.34	-0.04	17.44	-5.69	-2.36
	11	8.05	-0.01	131.63	342.14	1.40	0.31	655.27	52.79	0.31	-19.58	2.37	-3.12
	12	10.04	-0.01	130.21	340.19	1.39	0.30	728.85	69.53	2.16	-66.83	-7.47	-9.19
	13	12.04	0.00	128.69	338.09	1.38	0.30	783.46	88.24	4.03	-112.78	-14.75	-14.16
	14	0.06	0.00	133.93	345.58	1.40	0.31	379.76	26.28	0.58	125.68	3.23	-0.48
R257	2	-9.99	5.08	42.84	191.84	0.80	0.17	-60.59	19.59	1.94	59.78	1.39	9.21
	3	-7.92	5.08	43.08	192.40	0.81	0.17	-35.60	14.85	2.78	66.15	-8.33	10.38
	4	-5.96	5.08	42.66	191.44	0.80	0.17	-3.82	11.18	3.98	63.41	-15.64	7.87
	5	-3.93	5.08	42.56	191.24	0.80	0.17	32.66	9.74	4.50	53.38	-18.35	7.89
	6	-1.97	5.08	42.98	192.19	0.80	0.17	68.03	9.20	4.75	44.47	-19.16	9.25
	7	-1.97	5.08	42.96	192.15	0.80	0.17	68.08	9.19	4.77	44.46	-19.39	9.26
	8	0.07	5.08	42.88	192.15	0.80	0.17	103.27	8.85	5.14	36.16	-19.12	9.27
	9	2.09	5.08	42.80	191.97	0.80	0.17	137.27	9.47	5.42	26.43	-18.12	8.88
	10	4.07	5.08	42.79	191.95	0.80	0.17	158.52	10.96	6.03	14.95	-17.34	4.88
	11	6.03	5.08	42.43	191.13	0.80	0.17	175.55	13.29	6.32	2.38	-12.07	2.72
	12	8.08	5.08	43.00	192.62	0.80	0.17	204.50	16.56	6.59	-10.94	-7.68	1.32
	13	10.04	5.08	42.76	192.07	0.80	0.17	228.50	20.18	7.11	-23.21	-3.71	0.84
	14	12.05	5.06	42.92	192.44	0.80	0.17	251.02	28.46	8.51	-39.37	-0.31	-2.70

Table 6: L00E Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R258	2	-9.97	5.00	99.00	296.18	1.20	0.26	-139.93	45.89	5.66	138.43	-9.68	16.33
	3	-7.98	5.00	99.79	297.85	1.20	0.26	-84.03	35.29	9.34	164.38	-22.73	12.48
	4	-5.94	5.00	100.81	299.41	1.21	0.27	-3.47	26.51	11.66	162.97	-29.23	9.99
	5	-3.94	5.00	99.55	297.46	1.20	0.26	87.35	22.88	13.15	135.78	-28.57	7.52
	6	-1.97	5.00	100.03	298.50	1.20	0.26	174.90	21.72	12.72	114.47	-27.51	13.92
	7	0.01	5.00	100.54	299.29	1.20	0.27	257.08	21.09	12.58	94.90	-27.98	16.90
	8	2.05	5.00	99.93	298.34	1.20	0.26	331.30	23.05	14.10	69.94	-27.30	13.38
	9	4.08	5.00	99.79	298.11	1.20	0.26	373.23	27.44	16.57	40.88	-22.66	2.35
	10	6.02	4.99	99.30	297.35	1.19	0.26	423.84	33.22	16.67	11.12	-15.21	-0.73
	11	8.07	4.99	101.07	300.38	1.20	0.27	496.06	41.55	16.91	-18.61	-4.10	-1.90
	12	10.03	4.99	99.73	298.30	1.19	0.26	546.98	51.78	18.35	-45.59	6.24	-4.73
	13	12.08	4.99	100.55	299.57	1.20	0.27	592.73	79.33	22.06	-94.15	7.51	-13.97
	14	0.05	5.00	101.21	300.60	1.20	0.27	262.75	21.31	13.12	95.29	-27.36	16.08
R259	2	-9.96	10.00	44.87	198.38	0.80	0.18	-60.26	21.73	6.05	66.14	-9.20	16.14
	3	-7.92	10.00	44.89	198.66	0.80	0.18	-32.93	18.36	7.56	68.20	-19.13	14.74
	4	-5.96	10.01	45.04	198.99	0.80	0.18	-7.51	14.90	10.37	74.61	-27.41	11.80
	5	-3.94	10.01	45.50	200.03	0.81	0.18	28.17	11.89	12.27	71.19	-26.58	8.35
	6	-1.97	10.00	45.07	199.09	0.80	0.18	64.47	10.64	12.12	60.61	-27.08	10.08
	7	0.07	10.00	45.45	199.94	0.80	0.18	101.91	10.38	12.62	51.71	-26.86	11.18
	8	2.07	10.00	45.45	199.98	0.80	0.18	137.08	11.06	13.09	40.13	-24.18	11.64
	9	4.07	10.00	45.22	199.62	0.80	0.18	162.12	12.65	13.97	24.25	-23.10	8.51
	10	6.05	10.00	44.80	198.67	0.80	0.18	184.80	15.08	14.62	14.23	-16.19	4.84
	11	10.05	10.00	45.45	200.12	0.80	0.18	240.32	27.03	16.57	-14.34	-1.28	-0.81
	12	12.12	10.00	44.71	198.46	0.80	0.17	258.15	37.42	16.94	-33.95	3.50	-4.32
	13	8.04	10.00	44.96	199.03	0.80	0.18	213.28	18.64	15.65	2.60	-8.25	1.89
	14	8.04	10.00	45.01	199.14	0.80	0.18	213.77	18.69	15.69	2.58	-8.60	1.85

Table 6: L00E Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R260	2	-9.97	10.00	103.93	307.12	1.20	0.27	-137.68	51.95	16.28	132.78	-26.28	30.23
	3	-7.97	10.00	104.60	308.15	1.20	0.27	-79.81	44.29	21.14	154.28	-41.50	21.92
	4	-5.94	10.01	105.19	309.05	1.20	0.27	-12.62	34.88	25.65	170.32	-34.51	23.87
	5	-3.93	10.01	103.70	306.78	1.20	0.27	72.47	27.38	30.02	160.41	-30.91	11.12
	6	-1.96	10.01	103.90	307.07	1.20	0.27	160.53	25.14	29.49	137.46	-30.11	16.33
	7	0.05	10.01	104.18	307.76	1.20	0.27	246.89	24.96	29.94	114.87	-25.48	19.15
	8	2.06	10.01	103.64	306.93	1.19	0.27	322.23	26.66	30.30	85.83	-21.54	20.47
	9	4.05	10.00	105.78	310.20	1.20	0.27	383.21	32.09	33.83	52.76	-11.38	10.65
	10	6.04	10.00	104.89	308.84	1.20	0.27	440.80	38.30	36.41	30.46	4.01	0.26
	11	8.05	10.00	104.13	307.71	1.20	0.27	505.22	46.24	36.11	3.42	18.81	-1.22
	12	10.04	10.01	105.96	310.51	1.21	0.27	567.73	70.78	39.31	-41.12	38.15	-7.20
	13	12.08	10.01	105.42	309.68	1.20	0.27	611.15	99.04	42.51	-86.95	61.08	-3.48
	14	0.05	10.01	105.52	309.85	1.20	0.27	253.78	25.40	31.67	115.92	-29.64	19.29
R265	2	-9.94	10.00	126.76	333.03	1.40	0.30	-173.08	63.19	23.08	167.53	-15.92	36.30
	3	-7.97	10.00	128.47	335.70	1.41	0.30	-104.51	55.95	28.90	185.58	-26.66	26.04
	4	-5.94	10.00	130.11	338.28	1.41	0.31	-23.32	44.69	32.37	206.87	-8.34	31.63
	5	-3.96	10.01	129.38	337.61	1.41	0.30	81.51	35.05	38.77	212.15	0.11	10.91
	6	-1.94	10.00	128.81	336.83	1.40	0.30	193.20	31.91	38.21	179.57	-2.48	16.06
	7	0.03	10.00	128.72	336.69	1.40	0.30	294.52	31.49	38.60	153.32	-0.92	19.28
	8	2.05	10.00	127.65	335.23	1.40	0.30	382.59	33.62	39.63	112.30	-6.54	16.79
	9	4.09	10.00	128.42	336.28	1.40	0.30	452.87	39.72	42.76	72.30	5.37	7.51
	10	6.06	10.00	128.55	336.48	1.40	0.30	535.47	47.66	45.25	46.86	22.93	0.27
	11	8.07	10.00	129.13	337.56	1.40	0.30	624.50	59.49	46.39	18.04	53.53	-4.33
	12	10.06	10.00	129.31	337.82	1.40	0.30	691.00	89.31	49.26	-37.21	75.18	-9.28
	13	12.05	10.00	126.84	334.43	1.39	0.30	740.72	118.35	52.47	-96.88	87.00	-8.41

Table 6: L00E Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R266	2	-9.93	4.99	127.95	335.94	1.40	0.30	-184.08	60.52	7.20	172.00	-42.29	22.34
	3	-7.94	4.99	128.73	337.01	1.40	0.30	-111.97	47.08	10.81	203.61	-48.89	22.11
	4	-5.94	5.00	130.54	339.83	1.41	0.31	-9.20	35.15	15.81	215.64	-42.42	13.18
	5	-3.97	4.99	129.16	338.26	1.39	0.30	107.08	30.84	18.31	185.15	-41.63	9.29
	6	-1.93	4.99	129.22	338.34	1.40	0.30	223.52	28.09	17.94	155.89	-42.07	14.61
	7	0.04	5.00	129.21	338.34	1.40	0.30	327.04	28.12	17.49	130.15	-44.68	19.88
	8	2.06	5.00	130.25	339.76	1.40	0.31	412.97	31.11	18.98	99.31	-42.28	17.25
	9	4.07	5.00	131.69	342.05	1.40	0.31	481.80	37.71	22.87	61.05	-39.08	5.40
	10	6.01	5.00	130.68	340.66	1.40	0.31	554.10	45.60	23.90	22.91	-31.19	-1.73
	11	8.04	5.00	129.52	339.08	1.39	0.30	625.83	56.14	24.19	-11.74	-5.58	-1.60
	12	10.03	5.00	129.68	339.29	1.39	0.30	705.45	71.23	26.34	-47.93	15.02	-6.81
	13	12.06	5.00	127.19	335.95	1.38	0.30	746.97	105.71	29.82	-115.02	14.78	-15.72
R272	2	-4.95	-0.01	98.77	296.36	1.20	0.26	48.20	23.16	2.07	145.51	0.63	-4.79
	3	-3.93	-0.01	100.03	298.74	1.20	0.27	94.25	21.98	1.91	136.72	0.08	-3.43
	4	-2.95	-0.01	100.39	299.32	1.20	0.27	137.36	20.94	1.63	127.91	0.19	-1.46
	5	-1.97	-0.01	100.51	299.49	1.20	0.27	180.83	20.07	1.51	118.59	-0.17	-0.17
	6	-0.95	-0.01	100.54	299.83	1.20	0.27	223.36	19.79	1.15	109.02	0.95	1.51
	7	0.04	-0.01	100.40	299.61	1.20	0.27	263.16	19.93	1.20	98.06	0.63	1.13
	8	1.06	-0.01	100.01	299.00	1.20	0.27	300.46	20.64	1.44	86.14	-2.96	-1.29
	9	2.05	-0.01	99.51	298.23	1.20	0.27	332.63	21.84	1.02	76.05	-4.78	-0.58
	10	3.06	-0.01	99.02	297.47	1.19	0.26	350.98	23.49	1.49	64.35	-6.33	-3.41
	11	4.06	-0.01	100.54	299.83	1.20	0.27	373.84	26.23	1.41	49.89	-4.86	-3.97
	12	5.07	-0.01	100.32	299.76	1.20	0.27	400.00	28.69	1.07	34.01	-5.98	-3.24

Table 6: L00E Airplane Mode Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R276	2	-4.95	10.00	103.32	306.28	1.20	0.27	27.76	32.48	29.30	156.80	-16.29	19.73
	3	-3.96	10.00	104.18	307.91	1.20	0.27	67.19	28.09	32.49	159.64	-14.63	11.69
	4	-2.95	10.00	104.14	308.02	1.20	0.27	113.10	26.64	32.81	146.07	-17.51	11.74
	5	-1.96	10.00	104.82	309.07	1.20	0.27	156.57	25.77	32.83	136.13	-16.98	14.96
	6	-0.96	10.00	104.76	308.97	1.20	0.27	199.70	25.17	33.35	124.74	-17.81	15.63
	7	0.05	10.00	104.85	309.11	1.20	0.27	239.59	25.33	33.96	114.42	-16.56	16.03
	8	1.05	10.00	104.21	308.13	1.20	0.27	278.15	25.92	34.45	100.64	-15.07	16.87
	9	2.04	10.00	103.86	307.58	1.20	0.27	313.95	27.01	34.86	85.57	-19.17	16.14
	10	3.05	10.00	103.52	307.06	1.19	0.27	339.47	28.80	35.96	64.16	-19.78	12.67
	11	4.05	10.00	105.04	309.40	1.20	0.27	370.93	31.61	37.41	50.06	-14.81	10.59
	12	5.05	10.00	104.43	308.46	1.20	0.27	399.88	34.55	39.13	39.72	-7.65	3.62

Table 7: L00 Airplane Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R280	2	-9.85	10.00	128.76	337.26	1.40	0.30	-129.79	60.17	23.35	167.40	-38.10	39.29
	3	-7.95	10.00	129.78	339.16	1.40	0.31	-74.42	53.12	28.45	188.30	-22.64	29.64
	4	-5.94	10.00	131.04	340.95	1.40	0.31	22.05	42.55	32.57	208.32	-212.27	35.97
	5	-3.99	10.00	129.99	339.85	1.39	0.31	56.46	34.82	40.20	215.55	-6.12	17.80
	6	-1.93	10.00	132.73	343.58	1.41	0.31	146.76	33.19	40.47	187.49	0.09	23.23
	7	0.05	10.00	132.44	343.52	1.40	0.31	226.76	33.61	41.70	160.67	3.84	23.68
	8	2.06	10.00	132.41	343.47	1.40	0.31	298.00	35.98	42.56	128.29	5.27	23.37
	9	4.05	10.00	131.64	342.42	1.40	0.31	347.35	40.63	43.68	85.15	9.17	18.39
	10	6.07	10.00	130.45	340.79	1.39	0.31	405.18	47.40	45.75	57.10	22.88	7.29
	11	8.04	10.00	129.18	339.05	1.39	0.30	470.03	57.23	46.77	28.08	33.65	-2.13
	12	10.06	10.00	129.30	339.39	1.38	0.30	529.10	82.43	46.58	-20.77	38.74	-4.77
	13	12.05	10.00	127.30	336.77	1.37	0.30	578.55	104.47	48.50	-80.42	36.18	-16.83
R283	2	-9.84	-0.01	97.62	293.55	1.20	0.26	-109.36	39.33	0.05	164.38	7.27	4.77
	3	-7.97	-0.01	98.07	294.92	1.20	0.26	-63.72	30.10	-0.08	174.71	-3.22	4.63
	4	-5.93	-0.01	99.18	296.95	1.20	0.26	2.75	24.34	1.24	158.90	-3.59	-1.12
	5	-3.93	-0.01	99.77	297.86	1.20	0.27	71.27	21.96	1.62	137.70	-3.37	-2.03
	6	-1.96	-0.01	100.60	299.14	1.21	0.27	137.44	21.06	0.84	119.28	-3.46	2.29
	7	0.02	-0.01	100.54	299.31	1.20	0.27	200.03	21.53	0.59	98.74	-2.72	3.55
	8	2.04	-0.01	100.20	298.79	1.20	0.27	257.13	23.86	0.75	75.85	-4.64	2.42
	9	4.04	-0.01	99.15	297.16	1.20	0.26	286.96	27.28	0.90	51.18	-4.79	-1.90
	10	6.03	-0.01	99.99	298.47	1.20	0.27	326.61	32.86	0.83	22.68	-6.89	-2.84
	11	8.05	-0.01	98.94	297.07	1.19	0.26	372.62	39.73	1.52	-5.03	-11.00	-4.14
	12	10.05	-0.01	97.98	295.62	1.19	0.26	419.81	48.32	2.52	-35.52	-16.82	-7.79
	13	12.10	-0.01	99.91	298.60	1.20	0.27	478.87	61.63	3.42	-74.23	-22.83	-9.20

Table 7: L00 Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R284	2	-9.95	-0.01	43.92	195.56	0.80	0.17	-52.24	18.44	-0.44	72.10	12.20	3.03
	3	-7.96	-0.01	44.09	195.96	0.80	0.17	-30.27	13.87	-0.44	74.20	1.81	2.67
	4	-5.95	-0.01	44.37	196.69	0.80	0.17	-2.26	11.00	0.28	68.21	0.73	-0.05
	5	-3.97	-0.01	44.88	197.89	0.81	0.18	27.15	9.91	0.49	60.28	0.43	-0.02
	6	-1.96	-0.01	43.92	195.73	0.80	0.17	54.94	9.22	0.42	50.66	-0.26	0.67
	7	0.05	-0.01	44.04	195.92	0.80	0.17	83.66	9.25	0.40	42.18	0.12	0.75
	8	2.06	-0.01	43.87	195.62	0.80	0.17	109.85	10.30	0.49	33.11	-1.21	0.86
	9	4.08	-0.01	43.71	195.26	0.80	0.17	131.21	11.93	0.07	22.83	-1.01	0.39
	10	6.06	-0.01	43.37	194.47	0.79	0.17	139.30	13.96	0.15	10.47	-0.58	-0.95
	11	8.04	-0.01	44.15	196.24	0.80	0.17	161.67	17.19	0.43	-1.89	-2.32	-1.77
	12	10.06	-0.01	43.61	195.02	0.80	0.17	181.92	21.11	0.93	-16.38	-3.15	-2.96
	13	12.07	-0.01	43.03	193.70	0.79	0.17	199.81	26.12	1.27	-31.94	-4.55	-3.40
R285	2	-9.96	4.99	43.36	194.15	0.80	0.17	-48.47	18.65	2.44	66.06	-7.35	10.02
	3	-7.86	4.99	43.50	194.87	0.80	0.17	-28.66	14.68	3.33	72.28	-11.72	10.67
	4	-5.95	4.99	43.86	195.78	0.80	0.17	-4.19	11.03	4.92	73.10	-8.51	7.05
	5	-3.96	4.99	44.12	196.36	0.80	0.17	24.84	10.03	5.51	64.52	-7.50	7.38
	6	-1.96	4.99	44.65	197.55	0.80	0.18	53.98	9.74	5.95	55.57	-5.90	7.73
	7	0.03	4.99	44.85	198.01	0.81	0.18	81.90	9.84	5.75	47.66	-5.67	9.38
	8	2.03	4.99	43.98	196.05	0.80	0.17	107.47	10.45	5.97	37.50	-4.91	8.81
	9	4.08	4.99	43.70	195.41	0.80	0.17	128.80	12.15	6.30	26.06	-5.38	6.90
	10	6.05	4.99	44.50	197.42	0.80	0.17	143.35	14.55	6.89	13.71	-0.12	3.20
	11	8.05	4.99	44.13	196.59	0.80	0.17	162.78	17.60	7.11	-0.27	1.36	0.45
	12	10.06	4.99	43.72	195.66	0.79	0.17	183.02	21.35	7.64	-13.86	2.50	-1.45
	13	12.07	4.99	44.54	197.50	0.80	0.17	208.72	27.13	8.21	-29.72	3.71	-2.60

Table 7: L00 Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R286	2	-9.96	5.02	101.04	300.94	1.20	0.27	-113.23	44.36	5.78	164.52	-13.37	22.65
	3	-7.95	5.01	101.34	301.92	1.20	0.27	-67.81	34.39	7.98	174.86	-13.98	22.15
	4	-5.94	5.01	102.23	303.35	1.20	0.27	-7.62	26.02	11.67	176.20	-7.94	15.01
	5	-3.96	5.02	103.31	305.23	1.20	0.27	62.21	23.69	13.40	153.41	-5.53	13.10
	6	-1.95	4.99	102.75	304.37	1.20	0.27	130.29	22.60	13.66	128.80	-2.14	15.55
	7	0.03	5.04	103.05	304.82	1.20	0.27	193.19	22.97	13.83	109.23	-2.15	17.40
	8	2.06	5.01	102.58	304.11	1.20	0.27	253.23	25.16	14.53	86.12	0.25	15.26
	9	4.05	5.05	102.15	303.45	1.20	0.27	288.35	28.81	15.73	57.57	3.67	9.14
	10	6.05	5.03	103.09	304.90	1.20	0.27	332.27	35.29	16.76	28.83	10.54	2.99
	11	8.06	5.07	102.08	303.34	1.20	0.27	381.51	42.56	17.39	-2.00	11.42	-3.67
	12	10.06	4.99	100.58	301.02	1.19	0.27	427.71	50.79	18.75	-29.92	10.45	-7.75
	13	12.07	4.99	103.68	305.80	1.21	0.27	488.56	73.11	20.41	-75.14	8.28	-12.10
R287	2	-9.95	10.00	44.82	198.88	0.80	0.18	-50.10	20.89	7.20	69.35	-17.09	14.89
	3	-7.94	10.00	45.18	200.00	0.80	0.18	-27.48	17.73	8.38	68.71	-16.52	13.72
	4	-5.95	10.00	45.48	200.68	0.80	0.18	-8.85	14.83	11.23	77.26	-12.54	10.98
	5	-3.96	10.00	45.84	201.50	0.80	0.18	18.36	12.97	12.72	73.43	-9.81	9.12
	6	-1.96	10.00	45.42	200.54	0.80	0.18	45.92	11.05	12.94	65.80	-7.06	9.09
	7	0.07	10.00	45.51	200.76	0.80	0.18	74.59	11.19	13.47	57.13	-5.82	9.78
	8	2.05	10.00	45.55	200.84	0.80	0.18	101.90	11.96	13.41	46.83	-2.99	11.50
	9	4.06	10.00	45.29	200.28	0.80	0.18	124.03	13.39	13.99	32.13	-4.10	9.99
	10	6.05	10.00	45.04	199.70	0.80	0.18	141.48	15.47	14.74	21.49	1.92	4.82
	11	8.06	10.00	46.12	201.95	0.81	0.18	165.87	19.20	15.87	12.27	7.75	1.02
	12	10.06	10.00	44.96	199.34	0.80	0.18	183.87	23.33	15.64	0.07	11.62	-2.00
	13	12.02	10.00	45.68	200.97	0.80	0.18	204.15	36.41	16.72	-24.28	11.74	-5.55

Table 7: L00 Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R289	2	-9.96	0.00	121.65	323.99	1.40	0.30	-140.06	49.56	-3.43	192.46	0.86	15.50
	3	-7.96	0.02	121.04	323.37	1.40	0.30	-74.46	37.07	-0.39	208.71	3.08	5.42
	4	-5.96	0.02	122.26	325.24	1.40	0.30	4.25	29.86	0.71	196.37	4.18	-0.40
	5	-3.96	0.00	121.78	324.57	1.40	0.30	87.29	27.03	1.03	171.60	3.87	-0.99
	6	-1.94	0.00	122.21	325.17	1.40	0.30	167.62	25.44	-0.03	146.54	4.55	5.05
	7	0.05	0.00	122.57	325.70	1.40	0.30	243.85	26.17	0.04	121.19	3.18	4.77
	8	2.06	0.06	122.06	325.27	1.40	0.30	313.70	29.07	0.40	95.28	-0.82	3.55
	9	4.05	0.00	122.44	325.79	1.40	0.30	348.17	33.95	0.49	62.45	-0.48	-0.49
	10	6.05	0.00	123.92	327.84	1.41	0.30	405.73	41.32	1.25	27.00	-6.61	-3.76
	11	8.06	0.00	122.93	326.47	1.40	0.30	465.06	49.85	1.64	-6.73	-10.22	-4.59
	12	10.06	0.00	123.50	327.56	1.40	0.30	534.93	61.61	3.16	-45.79	-16.43	-9.44
	13	12.06	0.02	123.21	327.16	1.40	0.30	596.08	76.62	3.97	-90.75	-19.99	-10.74
R290	2	-9.94	5.08	121.50	323.93	1.40	0.30	-130.00	53.73	7.54	174.12	-18.50	23.22
	3	-7.95	5.08	122.56	325.90	1.40	0.30	-75.01	42.47	10.92	195.35	-11.34	20.15
	4	-5.96	5.08	123.00	326.50	1.40	0.30	-4.12	31.52	15.11	206.45	-5.59	12.05
	5	-3.94	5.08	122.48	326.00	1.40	0.30	78.77	28.50	16.26	180.90	0.18	12.82
	6	-1.94	5.08	123.74	327.83	1.40	0.30	157.38	27.77	17.29	154.92	8.01	15.38
	7	0.04	5.07	123.22	327.11	1.40	0.30	232.71	27.93	16.81	128.97	7.25	20.01
	8	2.05	5.08	122.65	326.30	1.40	0.30	301.83	30.51	17.10	100.93	5.25	19.83
	9	4.06	5.08	123.46	327.43	1.40	0.30	347.20	35.61	18.79	65.85	8.48	10.60
	10	6.07	5.08	123.08	326.91	1.40	0.30	400.65	43.25	20.65	29.44	12.73	0.21
	11	8.05	5.08	123.59	327.60	1.40	0.30	466.46	52.52	20.90	-6.12	15.87	-4.66
	12	10.07	5.08	123.98	328.16	1.40	0.30	534.36	63.88	22.86	-41.79	16.25	-9.82
	13	12.05	5.08	123.71	327.77	1.40	0.30	587.54	91.68	23.75	-102.34	17.91	-14.94

Table 7: L00 Airplane Mode Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R291	2	-9.95	10.00	89.36	276.07	1.20	0.25	-97.98	41.25	14.10	138.40	-36.79	27.77
	3	-7.96	10.00	89.36	276.48	1.20	0.25	-59.03	34.92	17.35	147.11	-41.20	22.69
	4	-5.96	10.00	89.71	277.04	1.20	0.25	-18.37	27.90	20.61	149.12	-42.98	25.09
	5	-3.95	10.00	89.87	277.29	1.20	0.25	35.83	23.14	25.38	144.44	-35.70	14.87
	6	-1.95	10.00	89.68	277.08	1.20	0.25	92.39	21.37	24.98	123.84	-31.89	18.00
	7	0.06	10.00	90.04	277.83	1.20	0.25	150.07	21.56	26.03	105.69	-27.27	18.51
	8	2.03	10.00	90.25	278.16	1.20	0.25	202.22	23.34	26.49	83.78	-24.00	19.95
	9	4.04	10.00	90.27	278.20	1.20	0.25	242.10	26.79	27.85	53.99	-21.74	16.15
	10	6.04	10.00	89.58	277.09	1.20	0.25	278.51	31.42	29.30	35.80	-8.84	7.89
	11	8.06	10.00	90.88	279.43	1.20	0.25	330.02	39.37	31.32	14.56	1.47	-1.14
	12	10.05	10.00	91.03	279.67	1.20	0.25	372.55	55.50	32.48	-18.75	4.52	-5.74
	13	12.06	10.00	91.73	280.78	1.21	0.25	412.83	73.51	33.78	-55.40	2.65	-11.10

Table 8: LNNC Airplane Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R292	2	-9.96	10.00	125.53	331.56	1.40	0.30	-117.62	50.78	22.87	177.97	-43.85	32.64
	3	-7.97	10.00	125.95	332.45	1.40	0.30	-67.17	44.20	27.72	189.77	-46.82	22.02
	4	-5.95	10.00	126.47	333.49	1.40	0.30	-15.93	36.11	31.07	198.80	-37.72	26.51
	5	-3.97	10.00	127.55	334.97	1.40	0.30	51.07	29.69	38.20	203.52	-29.39	9.45
	6	-1.96	10.00	128.00	335.60	1.41	0.30	127.29	28.19	37.79	176.69	-23.37	14.19
	7	0.04	10.00	126.85	334.06	1.40	0.30	201.00	28.25	38.26	147.76	-18.76	15.65
	8	2.05	10.00	126.95	334.48	1.40	0.30	272.71	30.94	38.48	115.44	-18.41	18.98
	9	4.06	10.00	128.17	336.17	1.40	0.30	327.75	36.07	39.81	75.31	-16.48	17.71
	10	6.04	10.00	127.27	334.94	1.40	0.30	379.94	42.71	42.59	46.52	-10.63	7.88
	11	8.05	10.00	128.32	336.72	1.40	0.30	447.75	52.38	44.85	16.02	-6.23	-2.23
	12	10.08	10.00	127.51	335.60	1.40	0.30	496.77	75.96	45.84	-37.85	-4.20	-5.16
	13	12.05	10.00	128.51	336.97	1.40	0.30	557.61	97.08	48.63	-99.28	-5.52	-13.36
	14	8.04	10.00	128.32	336.71	1.40	0.30	448.19	52.45	45.18	16.37	-3.18	-3.14
	15	4.04	10.00	127.86	336.08	1.40	0.30	328.18	36.15	39.84	73.79	-15.96	17.63
R293	2	-9.94	10.00	92.43	283.20	1.20	0.26	-87.83	36.80	14.51	147.05	-36.94	28.67
	3	-7.94	10.00	92.35	283.40	1.19	0.26	-51.72	32.25	19.02	151.03	-41.85	18.27
	4	-5.96	10.00	93.28	285.11	1.20	0.26	-13.73	25.80	22.44	152.75	-36.31	19.92
	5	-3.94	10.00	93.66	285.75	1.20	0.26	37.55	21.10	27.93	149.01	-30.43	6.91
	6	-1.94	10.00	94.17	286.56	1.20	0.26	93.68	19.93	27.13	127.15	-26.10	12.56
	7	0.06	10.00	94.53	287.12	1.21	0.26	148.96	20.23	27.98	107.42	-23.90	13.03
	8	2.06	10.00	94.49	287.06	1.20	0.26	200.65	22.68	28.74	83.32	-20.70	13.54
	9	4.05	10.01	94.44	286.98	1.20	0.26	241.98	25.97	29.22	53.11	-20.38	13.77
	10	6.04	10.00	93.92	286.16	1.20	0.26	280.28	30.47	30.53	32.44	-12.33	7.89
	11	8.07	10.00	92.81	284.65	1.19	0.26	324.24	36.88	32.03	7.88	-7.10	-1.39
	12	10.06	10.00	94.91	288.00	1.20	0.26	372.19	52.11	34.10	-25.19	-5.44	-6.11
	13	12.07	10.00	94.58	287.48	1.20	0.26	409.34	70.26	35.65	-68.91	-8.41	-11.05

Table 8: LNNC Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R294	2	-9.96	10.00	40.97	186.91	0.80	0.17	-39.44	16.38	5.63	62.47	-17.28	14.01
	3	-7.96	10.00	40.96	187.18	0.80	0.17	-22.08	14.09	7.16	63.20	-22.34	11.16
	4	-5.96	10.01	41.23	187.97	0.80	0.17	-8.01	11.53	9.88	67.86	-26.24	8.11
	5	-3.98	10.01	41.39	188.34	0.80	0.17	12.98	9.28	11.57	63.77	-29.33	4.45
	6	-1.97	10.00	41.53	188.65	0.80	0.17	37.37	8.67	11.03	54.54	-27.61	7.20
	7	0.06	10.00	41.89	189.47	0.80	0.17	62.17	8.67	11.25	45.76	-25.69	7.94
	8	2.04	10.00	41.92	189.54	0.80	0.17	85.52	9.64	11.71	36.76	-23.07	9.00
	9	4.05	10.00	41.65	188.93	0.80	0.17	105.97	9.65	11.72	32.56	-21.85	9.44
	10	4.05	10.00	41.67	188.91	0.80	0.17	106.13	11.19	11.76	23.55	-22.68	9.41
	11	6.06	10.00	41.51	188.43	0.80	0.17	122.72	13.19	12.63	11.76	-21.00	5.20
	12	8.07	10.00	41.17	187.64	0.80	0.17	139.33	15.83	13.17	1.73	-18.38	2.28
	13	10.05	10.01	41.17	187.66	0.80	0.17	158.34	19.52	13.78	-8.91	-14.66	-0.73
	14	12.05	10.00	41.61	188.67	0.80	0.17	174.17	30.77	14.79	-33.40	-15.63	-3.63
R295	2	-9.94	5.08	95.91	290.30	1.20	0.26	-92.82	35.74	6.40	171.74	-10.25	17.08
	3	-7.95	5.08	95.21	289.19	1.20	0.26	-54.01	25.47	10.35	188.33	-3.93	8.20
	4	-5.95	5.08	94.44	287.70	1.20	0.26	1.07	20.20	11.67	172.31	-1.58	6.97
	5	-3.96	5.08	95.10	288.74	1.20	0.26	60.85	18.67	13.40	149.36	1.05	4.40
	6	-1.96	5.08	95.74	289.76	1.21	0.26	118.35	18.24	12.95	126.96	6.68	9.27
	7	0.05	5.08	94.56	287.90	1.20	0.26	167.91	18.68	12.91	106.59	10.58	11.53
	8	2.04	5.08	94.33	287.54	1.20	0.26	219.12	20.67	13.74	85.89	9.73	11.43
	9	4.06	5.08	93.66	286.49	1.19	0.26	255.42	24.06	14.25	57.86	7.26	7.23
	10	6.05	5.08	94.76	288.22	1.20	0.26	295.68	29.39	15.50	30.55	7.83	1.61
	11	8.06	5.08	94.78	288.25	1.20	0.26	341.29	35.68	16.20	1.98	7.42	-4.20
	12	10.04	5.08	95.12	288.80	1.20	0.26	388.48	43.18	17.79	-25.34	7.54	-7.39
	13	12.04	5.08	95.16	288.86	1.20	0.26	431.25	58.62	18.99	-61.61	5.95	-9.79

Table 8: LNNC Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R296	2	-9.95	5.00	40.67	186.07	0.80	0.17	-38.31	14.80	2.09	78.45	-0.46	8.41
	3	-7.95	5.00	40.83	186.78	0.80	0.17	-20.99	11.34	3.15	82.03	0.67	7.50
	4	-5.95	4.99	41.08	187.35	0.80	0.17	2.10	8.54	4.30	78.50	3.48	4.93
	5	-3.94	5.00	41.26	187.78	0.80	0.17	27.36	7.73	4.54	68.58	5.20	5.67
	6	-1.94	5.00	41.65	188.68	0.80	0.17	51.38	7.63	4.91	59.84	7.23	6.20
	7	0.05	5.00	41.30	187.86	0.80	0.17	74.41	7.77	4.82	51.27	8.36	6.87
	8	2.06	4.99	41.43	188.18	0.80	0.17	97.47	8.73	5.31	43.06	9.79	6.79
	9	4.06	5.00	41.25	187.75	0.80	0.17	117.57	10.32	5.72	32.32	10.20	5.44
	10	6.06	5.00	41.07	187.36	0.80	0.17	129.45	12.27	6.24	20.11	11.10	2.32
	11	8.07	5.00	41.67	188.73	0.80	0.17	149.61	15.12	6.36	7.17	11.33	0.79
	12	10.04	5.00	41.35	187.99	0.80	0.17	167.61	18.20	6.92	-4.62	12.71	-0.32
	13	12.05	5.00	41.31	187.91	0.80	0.17	187.94	22.25	7.54	-19.23	12.91	-1.27
R298	2	-9.94	5.08	119.90	319.38	1.40	0.29	-111.77	43.45	8.70	195.36	-15.95	18.63
	3	-7.95	5.08	118.85	318.35	1.39	0.29	-60.13	33.50	11.15	212.06	-9.93	16.39
	4	-5.95	5.08	119.63	319.44	1.40	0.29	-0.24	25.76	16.19	216.65	-2.52	6.04
	5	-3.95	5.08	119.64	319.46	1.40	0.29	73.31	23.53	18.42	186.36	1.08	2.04
	6	-1.95	5.08	121.33	322.12	1.40	0.29	146.76	23.23	17.34	158.48	6.59	9.95
	7	0.06	5.08	121.06	321.75	1.40	0.29	215.58	23.88	16.71	133.00	6.76	14.14
	8	2.05	5.08	120.47	320.91	1.40	0.29	278.19	26.58	17.44	104.96	4.15	13.13
	9	4.06	5.08	119.97	320.22	1.40	0.29	323.15	30.90	18.53	69.24	4.22	7.76
	10	6.05	5.08	120.42	320.84	1.40	0.29	374.42	37.71	20.81	35.07	5.28	-1.82
	11	8.04	5.08	120.23	320.86	1.39	0.29	433.71	45.62	20.34	-2.56	7.44	-4.37
	12	10.05	5.08	121.71	322.93	1.40	0.29	501.54	55.76	22.58	-38.94	7.30	-8.97
	13	12.06	5.08	121.35	322.42	1.40	0.29	551.32	79.81	23.66	-94.17	9.60	-12.92

Table 8: LNNC Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R299	2	-9.93	-0.01	121.07	321.65	1.40	0.29	-121.85	40.36	-2.29	200.19	9.78	11.38
	3	-7.96	-0.01	122.40	324.10	1.40	0.30	-62.53	30.74	0.82	212.20	1.61	-0.58
	4	-5.96	-0.01	122.42	324.13	1.40	0.30	11.60	25.09	2.55	199.56	2.90	-7.14
	5	-3.92	-0.01	122.58	324.33	1.40	0.30	89.55	22.89	2.35	170.56	3.19	-5.73
	6	-1.94	-0.01	123.13	325.09	1.41	0.30	162.30	22.08	1.21	144.43	5.94	-0.20
	7	0.03	-0.01	122.27	323.89	1.40	0.29	228.77	22.77	0.86	116.44	8.65	0.83
	8	2.02	-0.01	121.82	323.28	1.40	0.29	291.64	25.48	1.14	88.99	8.64	-0.47
	9	4.00	-0.01	121.19	322.39	1.40	0.29	332.26	29.41	1.57	56.59	8.78	-3.31
	10	6.01	-0.01	122.28	324.23	1.40	0.29	385.93	35.99	1.84	19.28	2.82	-5.55
	11	8.00	-0.01	123.14	325.43	1.40	0.30	447.20	44.16	1.68	-16.27	-1.06	-4.81
	12	10.02	-0.01	121.83	323.61	1.40	0.29	506.16	53.65	2.92	-55.77	-5.57	-9.45
	13	12.06	-0.01	122.41	324.39	1.40	0.30	569.52	64.07	3.52	-81.63	-8.08	-10.13
R317	2	-4.95	0.04	89.46	275.96	1.19	0.25	38.70	16.97	0.06	133.84	4.56	0.42
	3	-3.95	0.07	91.22	279.30	1.20	0.25	66.76	16.61	-0.08	127.20	5.20	2.41
	4	-2.95	0.01	91.94	280.44	1.20	0.25	95.21	16.28	-0.11	118.56	5.07	3.41
	5	-1.95	0.01	91.20	279.27	1.20	0.25	122.60	15.91	-0.19	108.34	5.15	3.91
	6	-0.96	-0.01	91.37	279.54	1.20	0.25	150.12	15.94	-0.23	99.39	5.60	4.29
	7	0.04	0.08	91.33	279.49	1.20	0.25	178.18	16.44	0.08	89.67	5.77	3.62
	8	1.06	0.01	91.19	279.27	1.20	0.25	206.06	17.38	0.19	79.32	5.25	3.00
	9	2.06	0.03	91.06	279.33	1.20	0.25	232.68	18.66	0.38	69.74	6.01	2.68
	10	3.06	0.08	92.13	281.03	1.20	0.25	256.71	20.34	0.78	59.31	3.65	1.26
	11	4.04	0.07	91.97	280.77	1.20	0.25	262.94	21.89	1.18	46.21	3.66	-0.06
	12	5.06	-0.01	91.69	280.33	1.20	0.25	274.90	24.01	0.93	29.79	4.09	-1.30

Table 8: LNNC Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R321	2	-4.92	10.00	94.57	286.80	1.20	0.26	13.91	21.97	27.16	154.96	-11.69	8.16
	3	-3.95	10.00	95.06	287.79	1.20	0.26	42.49	20.88	27.28	144.85	-10.43	10.45
	4	-2.93	10.00	95.29	288.19	1.20	0.26	71.29	20.25	27.58	133.50	-8.40	10.84
	5	-1.94	10.00	95.61	288.70	1.20	0.26	100.31	19.93	27.45	122.13	-8.03	12.54
	6	-0.92	10.00	95.76	288.92	1.20	0.26	130.05	20.03	27.88	111.33	-6.66	13.05
	7	0.04	10.00	95.96	289.23	1.21	0.26	157.53	20.66	28.44	101.76	-6.83	12.71
	8	1.05	10.00	96.00	289.30	1.21	0.26	185.99	21.41	28.44	90.86	-5.56	14.77
	9	2.03	10.00	96.21	289.62	1.21	0.26	213.14	22.47	28.88	78.83	-4.62	15.02
	10	3.03	10.00	95.88	289.10	1.20	0.26	234.90	24.10	29.42	62.15	-7.78	13.58
	11	4.05	10.00	95.68	288.81	1.20	0.26	254.20	25.88	29.53	45.34	-8.37	12.95
	12	5.03	10.00	95.20	288.05	1.20	0.26	272.11	27.89	30.06	34.45	-2.70	9.13
R297A	2	-9.95	0.07	41.15	187.44	0.80	0.17	-43.00	14.88	0.07	69.15	2.82	1.88
	3	-7.97	0.07	41.34	188.14	0.80	0.17	-22.33	11.31	0.11	70.57	2.63	1.49
	4	-5.95	0.07	41.73	189.03	0.80	0.17	2.36	8.71	0.68	65.09	3.02	-0.93
	5	-3.96	0.08	41.46	188.40	0.80	0.17	27.36	7.88	0.78	56.32	3.62	-1.11
	6	-1.94	0.07	41.95	189.52	0.81	0.17	52.80	7.64	0.68	48.39	4.13	-0.20
	7	0.05	0.08	41.88	189.36	0.80	0.17	77.09	7.81	0.55	39.92	4.80	0.16
	8	2.06	0.08	41.74	189.05	0.80	0.17	100.70	8.75	0.55	31.08	4.38	0.13
	9	4.07	0.07	41.52	188.40	0.80	0.17	121.18	10.26	0.33	21.23	5.52	0.10
	10	6.05	0.08	41.18	187.69	0.80	0.17	130.45	12.00	0.36	8.71	4.19	-1.34
	11	8.06	0.08	40.92	187.17	0.80	0.17	147.48	14.43	0.54	-3.40	2.35	-1.81
	12	10.04	0.07	41.50	188.49	0.80	0.17	169.05	18.02	0.97	-17.10	2.59	-2.77
	13	12.05	0.08	41.03	187.22	0.80	0.17	186.01	22.32	1.27	-32.62	1.41	-3.13

Table 8: LNNC Airplane Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R297B	2	-9.95	0.08	94.61	287.67	1.20	0.26	-96.80	32.07	-0.52	164.77	3.19	3.84
	3	-7.95	0.07	95.01	288.30	1.20	0.26	-48.84	23.52	0.27	170.83	1.86	0.77
	4	-5.97	0.07	94.79	288.22	1.20	0.26	8.36	19.14	1.03	152.70	2.29	-1.68
	5	-3.96	0.08	94.71	288.11	1.20	0.26	66.31	17.36	0.59	130.64	3.36	0.07
	6	-1.97	0.08	94.75	288.17	1.20	0.26	123.45	16.67	0.34	110.69	4.60	2.27
	7	0.05	0.07	94.69	288.05	1.20	0.26	178.54	17.19	0.04	89.48	6.25	2.48
	8	2.07	0.07	94.44	287.66	1.20	0.26	231.23	19.48	-0.06	68.08	6.15	2.21
	9	4.06	0.08	93.93	286.86	1.20	0.26	262.18	22.72	0.29	43.90	4.74	-0.28
	10	6.07	0.07	94.87	288.35	1.20	0.26	301.42	27.79	0.40	14.56	-0.50	-1.92
	11	8.07	0.08	93.98	286.94	1.20	0.26	342.39	33.33	1.08	-12.50	-3.23	-3.63
	12	10.06	0.07	94.72	288.11	1.20	0.26	392.14	41.36	2.05	-42.50	-5.88	-7.06
	13	12.06	0.07	93.64	286.42	1.19	0.26	432.64	50.98	2.80	-76.43	-8.01	-7.70
R300A	2	-9.90	-4.94	119.61	320.37	1.39	0.29	-104.44	44.39	-7.73	179.39	23.87	-17.02
	3	-7.90	-4.94	123.37	325.98	1.40	0.30	-63.37	32.52	-12.90	224.71	11.97	-8.42
	4	-5.87	-4.94	122.54	324.83	1.40	0.30	4.25	26.13	-11.85	215.71	10.77	-17.54
	5	-3.90	-4.94	123.72	326.78	1.40	0.30	79.30	24.17	-14.18	188.73	9.22	-13.17
	6	-1.93	-4.94	124.45	327.78	1.41	0.30	150.97	23.15	-16.27	161.92	8.75	-6.91
	7	0.04	-4.94	123.74	326.80	1.40	0.30	217.70	24.34	-15.72	133.51	8.60	-9.15
	8	2.02	-4.94	123.70	326.74	1.40	0.30	284.37	27.08	-16.23	105.25	5.25	-10.51
	9	4.00	-4.95	122.84	325.55	1.40	0.30	333.19	31.52	-18.53	65.76	1.55	-4.93
	10	5.99	-4.95	123.67	327.02	1.40	0.30	387.33	38.38	-18.05	29.64	-9.01	-5.44
	11	8.00	-4.94	123.61	326.94	1.40	0.30	448.07	45.94	-18.22	-6.51	-20.07	-4.23
	12	10.03	-4.94	124.14	327.66	1.40	0.30	512.91	56.33	-18.69	-43.00	-28.93	-5.99
	13	12.08	-4.94	122.56	325.47	1.39	0.30	563.02	75.64	-19.38	-91.84	-32.60	-5.43

Table 8: LNNC Airplane Mode Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R300B	2	12.10	-4.94	91.01	278.81	1.20	0.25	421.54	52.79	-14.74	-63.89	-17.72	-4.73
	3	10.08	-4.95	90.39	277.56	1.20	0.25	375.82	40.49	-13.75	-31.14	-12.82	-5.06
	4	8.04	-4.94	91.06	278.63	1.20	0.25	332.68	33.41	-13.42	-3.74	-9.21	-4.01
	5	6.02	-4.94	91.37	279.12	1.21	0.25	289.18	27.98	-13.33	23.01	-4.21	-5.00
	6	4.02	-4.94	92.02	280.14	1.21	0.25	253.92	23.41	-13.72	49.18	3.12	-5.50
	7	2.03	-4.94	92.13	280.32	1.21	0.25	216.90	20.11	-12.69	76.52	5.14	-8.63
	8	0.04	-4.94	90.37	277.53	1.20	0.25	162.72	17.47	-12.24	95.77	5.94	-7.72
	9	-1.95	-4.94	89.74	276.53	1.20	0.25	111.77	16.62	-12.50	115.15	6.89	-5.98
	10	-3.92	-4.94	88.97	275.29	1.19	0.25	59.48	17.16	-10.99	134.88	6.11	-9.46
	11	-5.88	-4.94	90.07	277.04	1.20	0.25	6.52	19.04	-9.67	158.32	6.88	-12.82
	12	-7.87	-4.94	89.65	276.62	1.19	0.25	-45.23	23.08	-9.66	173.20	7.10	-8.96
	13	-9.82	-4.94	90.79	278.44	1.20	0.25	-79.58	30.87	-7.88	159.32	13.74	-8.70
R300C	2	-9.88	-4.94	40.01	182.97	0.80	0.17	-35.77	15.10	-2.85	67.85	10.32	-5.31
	3	-7.92	-4.94	40.06	183.10	0.80	0.17	-20.44	12.09	-3.69	74.54	7.80	-4.63
	4	-5.95	-4.94	40.26	183.55	0.80	0.17	-0.17	8.65	-4.42	75.24	6.42	-3.86
	5	-3.99	-4.94	40.54	184.20	0.81	0.17	23.90	7.70	-4.99	66.76	5.33	-3.18
	6	-2.02	-4.94	39.97	182.72	0.80	0.17	46.79	7.23	-5.36	57.30	5.18	-2.22
	7	-0.04	-4.94	40.33	183.53	0.81	0.17	69.94	7.59	-5.63	49.40	5.73	-2.41
	8	1.92	-4.94	40.37	183.63	0.81	0.17	92.64	8.54	-5.94	40.93	5.37	-2.43
	9	3.95	-4.94	39.78	182.26	0.80	0.16	112.64	9.96	-6.14	30.22	3.84	-1.47
	10	5.97	-4.94	39.61	181.88	0.80	0.16	124.14	11.75	-6.46	18.13	0.84	0.80
	11	8.00	-4.94	39.33	181.21	0.80	0.16	140.25	14.18	-6.51	5.93	-1.65	0.71
	12	10.04	-4.94	40.25	183.36	0.81	0.17	163.24	17.87	-6.87	-6.74	-3.33	1.40
	13	12.12	-4.94	39.71	182.11	0.80	0.16	192.81	23.46	-7.98	-22.32	-4.93	2.36

Helicopter Mode Data

Table 9: LNNC Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R373	2	0.05	0.08	0.00	0.00	0.00	0.00	0.08	-0.11	0.25	-8.45	-2.05	0.08
	3	0.05	0.08	5.84	70.47	0.30	0.06	12.71	1.41	0.56	-3.68	-4.29	-0.27
	4	0.05	15.01	6.13	72.42	0.30	0.06	10.92	2.19	2.24	4.70	-1.47	0.36
	5	0.05	30.06	6.18	72.75	0.30	0.06	6.10	4.71	4.81	2.54	-1.21	-1.14
	6	0.04	45.11	6.15	72.58	0.30	0.06	1.89	8.82	5.52	-6.15	1.43	-1.53
	7	0.05	60.05	6.13	72.50	0.30	0.06	-1.28	13.55	6.73	-16.49	3.03	-3.41
	8	0.06	75.09	6.06	72.06	0.30	0.06	-9.77	18.16	4.21	-10.74	8.61	-4.50
	9	0.06	90.14	5.94	71.31	0.30	0.06	-6.40	19.16	-1.07	-8.99	-17.65	-16.38
	10	0.06	105.08	6.14	72.55	0.30	0.06	-0.30	17.81	-4.95	-6.98	5.38	-18.61
	11	0.04	120.12	6.07	72.16	0.30	0.06	0.13	14.98	-8.73	-0.86	3.05	-21.56
	12	0.05	135.17	6.16	72.58	0.30	0.06	-1.92	9.79	-9.25	-2.34	-8.02	-20.21
	13	0.05	150.11	5.83	70.59	0.30	0.06	1.92	4.79	-6.56	-6.41	-9.08	-14.65
	14	0.05	165.15	6.09	72.16	0.30	0.06	2.55	2.17	-5.92	-5.80	-4.44	-13.03
	15	0.04	178.84	6.09	72.25	0.30	0.06	5.33	1.12	-4.09	-3.09	-3.44	-0.47
	16	0.05	-0.01	6.06	72.07	0.30	0.06	13.78	1.52	0.53	-3.98	-3.89	-0.43
	17	0.05	0.00	0.02	3.62	0.02	0.00	1.33	-0.11	0.19	-8.03	-6.30	0.02

Table 9: LNNC Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R374	2	0.05	0.00	0.00	0.00	0.00	0.00	-0.02	-0.11	0.26	-8.43	-1.54	0.08
	3	0.05	0.00	13.56	107.85	0.45	0.10	29.56	2.90	0.71	1.71	-4.51	-0.06
	4	0.05	15.02	13.79	108.76	0.45	0.10	23.69	4.28	6.68	13.59	-4.26	2.19
	5	0.06	30.06	13.49	107.58	0.45	0.10	13.07	9.42	13.72	5.99	-2.34	-0.97
	6	0.04	45.02	13.61	108.16	0.45	0.10	2.54	20.81	18.73	-8.80	1.51	-3.57
	7	0.05	60.05	13.65	108.31	0.45	0.10	-7.29	29.50	18.11	-27.26	7.19	-4.35
	8	0.05	75.09	13.43	107.41	0.45	0.10	-11.11	36.32	11.89	-11.30	8.99	-11.15
	9	0.06	90.05	13.82	108.96	0.45	0.10	-7.67	45.25	2.14	-10.82	-18.84	-34.60
	10	0.05	105.08	13.60	108.00	0.45	0.10	-0.47	39.25	-10.21	-4.66	16.10	-46.94
	11	0.06	120.12	13.42	107.27	0.45	0.10	1.43	31.82	-18.34	9.39	17.93	-49.02
	12	0.07	135.08	13.51	107.64	0.45	0.10	-3.37	21.65	-21.52	6.59	-0.41	-48.23
	13	0.05	150.11	13.50	107.60	0.45	0.10	2.61	11.52	-16.88	-7.32	-4.78	-38.17
	14	0.04	165.14	13.43	107.31	0.45	0.10	3.86	5.49	-11.08	-2.91	-0.38	-30.04
	15	0.05	178.84	13.77	108.67	0.45	0.10	16.17	3.58	-0.69	-25.76	-7.18	2.29
	16	0.05	178.84	13.77	108.69	0.45	0.10	10.18	3.61	-0.66	8.91	-7.17	2.33
	17	0.05	0.08	5.87	70.92	0.30	0.06	12.80	1.50	0.59	-2.83	-0.81	-0.11
	18	0.05	0.08	0.01	2.27	0.01	0.00	-1.12	-0.08	0.28	-6.90	3.28	0.40

Table 9: LNNC Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R379	2	0.05	0.05	0.00	0.00	0.00	0.00	-0.02	-0.12	0.26	-8.38	-1.61	0.08
	3	0.06	-179.97	0.00	0.00	0.00	0.00	1.61	0.78	-10.80	-27.78	7.14	-9.22
	4	0.05	-179.97	21.90	134.94	0.60	0.12	17.86	7.41	-1.45	6.42	-12.92	-1.57
	5	0.05	-165.08	22.46	136.68	0.60	0.12	5.25	9.93	11.53	-21.43	-3.37	35.98
	6	0.05	-150.04	22.43	136.58	0.60	0.12	6.91	19.17	24.14	-14.66	-1.99	51.63
	7	0.05	-134.99	22.27	136.10	0.60	0.12	-7.49	36.21	34.62	-0.20	-0.28	73.29
	8	0.06	-120.06	22.26	136.07	0.60	0.12	5.00	50.20	30.43	21.71	-52.94	75.67
	9	0.04	-105.02	22.33	136.43	0.60	0.12	1.82	62.91	16.66	-7.92	-51.91	78.55
	10	0.07	-89.97	22.64	137.36	0.60	0.12	-10.19	73.19	-4.61	-31.73	-5.64	58.67
	11	0.04	-75.03	22.61	137.30	0.60	0.12	-8.41	63.06	-22.08	-29.57	-38.21	20.15
	12	0.05	-59.99	22.28	136.28	0.60	0.12	0.95	47.20	-32.60	-49.78	-28.35	4.13
	13	0.05	-44.94	22.48	136.90	0.60	0.12	13.77	35.19	-35.55	-32.23	-22.02	4.11
	14	0.05	-30.01	22.23	136.13	0.60	0.12	32.29	14.68	-25.73	-2.55	-8.50	3.57
	15	0.05	-14.97	22.38	136.46	0.60	0.12	43.98	6.99	-11.68	10.73	-7.23	-1.76
	16	0.05	-0.01	22.13	135.73	0.60	0.12	52.80	4.82	-0.32	12.02	-8.87	2.63
	17	0.05	3.06	22.24	136.06	0.60	0.12	52.15	4.84	1.48	13.17	-10.26	4.43
	18	0.05	6.05	22.24	136.05	0.60	0.12	50.26	4.87	3.25	14.49	-11.05	6.31
	19	0.04	9.03	22.38	136.49	0.60	0.12	48.38	5.21	5.52	15.89	-11.70	6.44
	20	0.05	12.03	22.24	136.06	0.60	0.12	44.78	5.77	8.04	17.20	-12.39	6.20
	21	0.05	15.01	22.47	136.76	0.60	0.12	42.42	6.94	10.71	17.85	-12.98	5.89
	22	0.05	18.00	22.22	136.02	0.60	0.12	38.63	7.76	13.53	18.13	-13.97	4.62
	23	0.04	20.99	22.06	135.50	0.60	0.12	34.97	8.28	16.17	20.56	-14.54	4.07
	24	0.05	24.08	22.20	136.04	0.60	0.12	31.85	9.41	19.16	18.07	-15.75	3.97
	25	0.05	27.06	22.58	137.23	0.60	0.12	29.14	11.54	21.56	16.43	-14.98	4.84
	26	0.05	30.05	22.15	135.90	0.60	0.12	26.79	14.72	24.14	8.75	-13.01	0.83
	27	0.05	45.01	22.51	137.03	0.60	0.12	6.01	35.95	33.12	-16.22	-4.21	-0.49
	28	0.05	60.04	22.48	136.93	0.60	0.12	-7.15	51.17	33.66	-38.22	-0.06	-10.23
	29	0.04	69.11	22.36	136.55	0.60	0.12	-13.08	60.27	26.82	-29.83	17.77	-16.75
	30	0.04	72.10	22.28	136.32	0.60	0.12	-12.72	62.28	23.29	-23.63	15.98	-20.61
	31	0.05	75.08	22.37	136.61	0.60	0.12	-12.53	64.90	20.24	-24.14	11.56	-25.94
	32	0.05	78.07	22.17	135.98	0.60	0.12	-11.31	65.87	16.99	-24.88	3.42	-30.92
	33	0.05	81.07	22.42	136.75	0.60	0.12	-11.90	69.17	14.11	-25.32	-4.46	-36.52
	34	0.05	84.06	22.67	137.50	0.60	0.12	-10.38	72.96	11.72	-29.47	-17.69	-43.35

Table 9: LNNC Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R379	35	0.05	87.05	22.53	137.06	0.60	0.12	-11.02	76.20	7.24	-33.37	-28.94	-53.92
	36	0.06	90.14	22.26	136.23	0.60	0.12	-11.57	76.13	2.86	-33.89	-27.96	-59.32
	37	0.05	93.12	22.25	136.18	0.60	0.12	-9.15	75.38	-2.29	-33.70	-22.59	-66.92
	38	0.05	96.11	22.20	136.03	0.60	0.12	-6.87	72.19	-8.17	-28.46	-5.39	-71.95
	39	0.05	99.09	22.19	136.05	0.60	0.12	-2.74	70.17	-11.92	-22.67	9.06	-73.58
	40	0.05	102.09	22.38	136.75	0.60	0.12	1.16	69.17	-16.35	-19.57	20.47	-79.70
	41	0.05	105.07	22.39	136.77	0.60	0.12	4.71	69.97	-21.23	-19.34	31.04	-87.81
	42	0.05	108.06	22.47	137.02	0.60	0.12	10.50	69.30	-26.09	-18.06	42.95	-94.00
	43	0.04	111.05	22.62	137.47	0.60	0.12	12.55	71.23	-31.64	-20.68	48.32	-99.15
	44	0.05	120.11	22.52	137.16	0.60	0.12	10.50	59.35	-37.29	18.30	40.54	-86.13
	45	0.05	135.16	22.65	137.56	0.60	0.12	0.94	40.40	-40.09	14.02	-0.05	-82.70
	46	0.05	150.10	22.51	137.15	0.60	0.12	7.01	19.19	-29.34	-13.12	-9.18	-64.47
	47	0.04	159.07	22.58	137.35	0.60	0.12	5.59	12.22	-22.14	-14.12	-8.33	-55.73
	48	0.04	162.14	22.41	136.90	0.60	0.12	7.97	10.47	-19.86	-9.46	-6.20	-52.97
	49	0.05	165.13	22.74	137.96	0.60	0.12	35.39	9.15	-18.04	-2.99	119.22	-49.82
	50	0.05	165.13	22.73	137.95	0.60	0.12	10.85	9.18	-18.10	-2.77	-3.62	-50.01
	51	0.04	168.12	22.52	137.27	0.60	0.12	13.39	8.07	-15.48	1.79	-4.50	-44.58
	52	0.05	171.12	22.51	137.25	0.60	0.12	14.50	7.17	-13.39	5.19	-3.58	-39.64
	53	0.05	174.11	22.85	138.31	0.60	0.12	18.46	6.84	-9.94	17.11	0.01	-31.14
	54	0.05	177.18	22.42	136.99	0.60	0.12	19.72	6.13	-0.80	17.94	-17.22	-4.22
	55	0.05	178.84	22.49	137.20	0.60	0.12	19.74	6.31	2.23	16.50	-19.70	6.70
	56	0.05	0.08	5.49	67.51	0.30	0.06	15.08	1.49	0.55	-9.71	-7.60	-0.49
	57	0.04	0.08	0.01	3.16	0.01	0.00	3.78	0.11	0.28	-13.72	-12.31	-0.04

Table 9: LNNC Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R380	2	5.07	0.08	0.00	0.00	0.00	0.00	0.02	-2.56	0.80	8.38	0.68	15.53
	3	5.04	0.08	22.55	137.28	0.60	0.12	75.61	5.48	-1.18	2.69	-6.30	2.30
	4	5.04	3.06	22.61	137.56	0.60	0.12	75.63	5.73	1.46	10.63	-7.62	1.40
	5	5.04	6.05	22.74	137.98	0.60	0.12	75.95	6.15	4.27	10.53	-9.96	0.74
	6	5.04	9.03	22.92	138.54	0.60	0.12	75.52	6.72	6.91	9.07	-11.83	1.01
	7	5.03	12.03	22.80	138.29	0.60	0.12	73.78	7.37	9.39	7.60	-13.61	1.31
	8	5.04	15.01	22.70	137.99	0.60	0.12	71.04	8.19	11.94	7.54	-14.77	2.24
	9	5.03	18.01	22.49	137.34	0.60	0.12	67.61	8.74	14.69	7.31	-14.25	2.28
	10	5.04	20.99	22.63	137.75	0.60	0.12	65.01	9.16	18.44	9.59	-14.77	0.52
	11	5.04	24.08	22.67	137.86	0.60	0.12	61.73	11.22	21.91	8.21	-13.46	-1.43
	12	5.06	27.07	22.76	138.14	0.60	0.12	56.70	15.75	24.82	5.10	-11.00	-2.65
	13	5.05	30.05	22.55	137.58	0.60	0.12	52.66	18.96	26.89	2.07	-9.98	-3.59
	14	5.05	45.11	22.80	138.41	0.60	0.12	35.95	40.99	36.90	-32.90	-3.47	4.09
	15	5.05	60.04	22.67	138.03	0.60	0.12	3.76	53.49	35.06	-38.07	13.06	-4.90
	16	5.04	69.04	22.79	138.38	0.60	0.12	-6.80	63.16	28.50	-27.34	33.75	-13.43
	17	5.06	72.10	22.75	138.26	0.60	0.12	-7.51	64.84	24.84	-23.94	29.65	-18.26
	18	5.06	75.08	22.86	138.60	0.60	0.12	-8.54	67.00	21.38	-23.59	24.76	-23.04
	19	5.06	78.07	22.90	138.84	0.60	0.12	-6.90	68.76	17.72	-26.26	14.99	-27.87
	20	5.07	81.07	22.85	138.68	0.60	0.12	-8.81	70.83	14.24	-27.12	5.06	-34.31
	21	5.05	84.06	22.97	139.05	0.60	0.12	-9.05	74.38	11.63	-31.03	-9.87	-41.57
	22	5.06	87.05	23.05	139.30	0.60	0.12	-12.17	78.36	7.17	-38.31	-19.80	-52.77
	23	5.06	90.14	22.94	138.97	0.60	0.12	-14.15	78.80	3.33	-40.30	-20.79	-58.85
	24	5.06	93.03	22.88	138.81	0.60	0.12	-11.69	78.24	-1.88	-41.08	-17.75	-67.99
	25	5.05	96.11	23.04	139.43	0.60	0.12	-11.22	75.78	-8.55	-38.24	-0.73	-75.75
	26	5.05	99.09	23.20	139.93	0.60	0.13	-7.76	73.38	-12.05	-32.33	11.39	-77.12
	27	5.04	102.09	22.98	139.25	0.60	0.12	-4.90	70.50	-16.01	-26.27	23.43	-81.22
	28	5.06	105.07	22.99	139.29	0.60	0.12	-2.68	71.46	-20.90	-27.22	33.09	-90.93
	29	5.05	108.07	22.98	139.24	0.60	0.12	2.27	70.40	-26.19	-25.53	46.36	-97.23
	30	5.04	111.05	23.20	139.92	0.60	0.13	4.16	72.30	-32.10	-26.72	55.31	-102.71
	31	5.06	120.11	23.18	139.99	0.60	0.13	-2.32	62.93	-37.54	4.13	39.99	-100.02
	32	5.06	135.16	23.22	140.10	0.60	0.13	-17.36	45.90	-38.02	-4.06	4.24	-92.72
	33	5.05	150.10	23.26	140.22	0.60	0.13	-12.37	22.27	-25.70	-28.30	-6.34	-60.70
	34	5.05	159.16	23.34	140.57	0.60	0.13	-18.28	14.49	-18.71	-30.77	-4.56	-53.84

Table 9: LNNC Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R380	35	5.04	162.15	23.43	140.86	0.60	0.13	-17.66	13.00	-17.00	-30.44	-4.24	-50.66
	36	5.05	165.14	23.47	140.98	0.60	0.13	-17.84	11.72	-15.03	-31.66	-4.15	-45.67
	37	5.04	168.13	23.69	141.64	0.61	0.13	-17.84	10.84	-13.04	-31.19	-4.20	-41.39
	38	5.04	171.12	23.21	140.20	0.60	0.13	-15.74	9.77	-11.23	-28.79	-2.40	-36.86
	39	5.05	174.11	23.41	140.81	0.60	0.13	-14.57	9.32	-10.30	-29.38	1.25	-33.53
	40	5.05	177.19	23.55	141.24	0.60	0.13	-14.27	8.42	-8.47	-27.91	2.76	-26.40
	41	5.06	178.84	23.51	141.11	0.60	0.13	-17.16	8.93	-1.19	-41.80	-6.90	0.19
	42	5.06	0.08	5.49	68.06	0.29	0.06	19.28	0.28	-0.14	3.78	3.04	9.02
	43	5.05	0.08	0.00	1.68	0.01	0.00	0.79	-2.43	0.67	6.48	-2.19	15.64
R381	2	10.06	0.08	0.00	0.00	0.00	0.00	-0.37	-1.29	0.30	6.20	6.55	6.94
	3	10.06	0.08	24.12	144.21	0.60	0.13	108.27	10.64	-0.98	-17.22	-6.57	2.37
	4	10.05	15.02	24.42	145.35	0.60	0.13	100.89	18.94	13.39	-12.97	-8.50	-0.11
	5	10.04	30.05	24.86	146.67	0.60	0.13	89.28	27.79	29.39	-11.30	-7.38	2.02
	6	10.05	45.11	24.48	145.54	0.60	0.13	50.96	52.92	39.30	-36.63	-0.31	10.46
	7	10.05	60.05	24.87	146.83	0.60	0.13	17.07	62.35	38.21	-44.18	31.39	-0.75
	8	10.06	75.09	24.72	146.41	0.60	0.13	0.48	74.12	23.42	-31.08	36.82	-24.46
	9	10.05	90.14	24.87	146.83	0.60	0.13	-13.17	85.92	4.98	-50.08	-19.23	-62.45
	10	10.05	105.08	24.56	145.96	0.60	0.13	-8.02	75.99	-20.53	-38.42	35.27	-93.56
	11	10.04	120.12	24.93	147.04	0.60	0.13	-17.01	67.65	-37.26	-13.58	37.13	-108.03
	12	10.05	135.17	24.57	146.01	0.60	0.13	-28.16	52.17	-36.90	-23.80	9.81	-96.84
	13	10.05	150.10	24.62	146.19	0.60	0.13	-30.25	28.66	-22.97	-42.77	-4.67	-58.98
	14	10.06	165.14	24.86	146.96	0.60	0.13	-43.43	18.17	-10.74	-56.49	-6.90	-38.50
	15	10.05	178.84	24.66	146.24	0.60	0.13	-46.80	14.96	0.44	-79.11	-7.59	4.26
	16	10.06	0.00	6.30	73.69	0.30	0.07	27.49	2.56	-0.56	-1.77	5.00	4.10
	17	10.06	-0.01	0.02	4.21	0.02	0.00	1.05	-1.18	0.15	5.66	2.50	7.11

Table 9: LNNC Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R382	2	-9.95	0.00	0.00	0.00	0.00	0.00	-0.31	-2.10	0.98	-16.71	-4.40	23.74
	3	-9.95	-0.01	24.40	145.49	0.60	0.13	-16.86	10.73	-1.39	41.36	6.70	3.87
	4	-9.96	15.02	24.83	146.90	0.60	0.13	-21.87	13.31	6.96	37.06	-11.65	10.92
	5	-9.95	30.06	24.67	146.41	0.60	0.13	-34.94	20.65	17.95	41.45	-10.29	6.88
	6	-9.95	30.06	24.72	146.57	0.60	0.13	-34.84	20.73	19.62	41.48	-19.32	6.84
	7	-9.95	45.05	24.68	146.44	0.60	0.13	-38.90	38.12	24.57	11.33	-8.23	-4.19
	8	-9.96	60.05	24.46	145.65	0.60	0.13	-41.41	52.97	25.21	-21.96	-0.56	-9.42
	9	-9.96	60.05	24.48	145.73	0.60	0.13	-41.28	52.59	25.02	-21.47	-0.54	-9.09
	10	-9.95	75.09	24.80	146.69	0.60	0.13	-25.64	71.92	16.13	-23.77	12.17	-26.14
	11	-9.94	90.07	24.94	147.10	0.60	0.13	-15.10	86.14	-1.04	-34.89	-18.57	-68.26
	12	-9.94	105.08	24.58	146.01	0.60	0.13	17.08	78.82	-22.77	-6.34	51.11	-99.59
	13	-9.95	120.12	24.73	146.47	0.60	0.13	33.87	71.64	-40.70	35.08	60.79	-95.71
	14	-9.97	135.17	24.79	146.63	0.60	0.13	32.26	45.90	-38.73	62.53	3.87	-79.91
	15	-9.95	150.11	24.50	145.77	0.60	0.13	52.19	24.95	-31.51	40.41	-4.77	-60.00
	16	-9.95	165.14	24.56	145.82	0.60	0.13	65.73	14.74	-24.10	72.15	7.11	-27.72
	17	-9.95	178.84	24.22	144.80	0.60	0.13	76.01	11.15	0.77	85.46	-10.62	3.56
	18	-9.96	0.00	6.06	72.16	0.30	0.06	-2.69	1.74	0.07	-0.41	3.47	14.16
	19	-9.95	0.00	0.02	4.34	0.02	0.00	0.59	-2.13	0.98	-15.12	-7.71	23.73

Table 9: LNNC Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R385	2	-4.96	0.00	0.00	1.05	0.00	0.00	-0.25	-0.49	-1.12	-12.13	3.33	14.02
	3	-4.95	0.00	21.85	134.05	0.60	0.12	15.95	4.68	-0.79	26.90	-1.82	2.07
	4	-4.95	3.06	21.80	133.90	0.60	0.12	14.82	4.85	1.35	33.13	-4.17	1.94
	5	-4.95	6.05	21.81	133.92	0.60	0.12	13.11	5.32	3.72	32.99	-6.63	1.19
	6	-4.96	9.03	21.69	133.56	0.60	0.12	12.09	6.62	5.50	28.80	-9.03	1.93
	7	-4.95	12.03	22.18	135.19	0.60	0.12	11.68	7.85	7.42	25.09	-11.08	2.31
	8	-4.95	15.01	21.83	134.12	0.60	0.12	10.27	8.71	8.84	19.98	-12.81	3.75
	9	-4.96	18.00	22.16	135.13	0.60	0.12	7.95	9.42	10.94	18.28	-13.79	4.61
	10	-4.95	20.99	22.02	134.70	0.60	0.12	5.93	9.59	13.67	18.86	-14.70	3.55
	11	-4.96	24.00	21.74	133.84	0.60	0.12	2.34	10.91	16.40	19.53	-15.86	1.10
	12	-4.95	26.98	21.95	134.49	0.60	0.12	-1.51	13.12	18.90	20.19	-16.81	0.30
	13	-4.95	30.05	21.71	133.75	0.60	0.12	-4.42	15.75	20.73	16.29	-15.99	-1.46
	14	-4.96	45.04	21.78	133.97	0.60	0.12	-15.08	31.92	26.59	-7.13	-7.94	-1.65
	15	-4.95	60.04	21.80	134.04	0.60	0.12	-21.49	49.42	29.66	-36.55	-2.87	-7.58
	16	-4.95	69.02	21.95	134.48	0.60	0.12	-20.10	57.76	22.89	-28.04	9.04	-12.88
	17	-4.96	72.08	21.91	134.36	0.60	0.12	-21.04	60.84	20.12	-23.67	10.70	-17.38
	18	-4.96	75.08	21.86	134.30	0.60	0.12	-18.47	63.47	17.00	-23.73	8.76	-21.81
	19	-4.95	78.07	21.91	134.50	0.60	0.12	-17.83	64.99	13.90	-23.97	4.32	-27.13
	20	-4.95	81.06	21.97	134.68	0.60	0.12	-16.55	67.74	11.34	-25.39	-2.51	-32.54
	21	-4.96	84.06	22.17	135.30	0.60	0.12	-14.04	71.75	8.78	-29.95	-14.39	-40.39
	22	-4.95	87.04	22.06	134.97	0.60	0.12	-14.44	74.37	4.28	-32.64	-24.89	-51.89
	23	-4.95	90.04	22.17	135.30	0.60	0.12	-13.30	76.12	-0.15	-35.07	-22.85	-59.67
	24	-4.95	93.10	21.89	134.42	0.60	0.12	-9.37	74.55	-4.54	-32.38	-16.26	-65.84
	25	-4.96	96.10	22.02	134.86	0.60	0.12	-6.22	72.04	-10.23	-26.91	2.03	-74.15
	26	-4.96	99.09	22.08	135.01	0.60	0.12	-1.11	69.93	-13.79	-20.30	16.61	-75.97
	27	-4.96	102.08	21.95	134.64	0.60	0.12	3.80	67.57	-17.46	-13.45	28.08	-79.99
	28	-4.95	105.07	22.00	134.78	0.60	0.12	8.43	69.71	-22.34	-14.27	37.39	-90.00
	29	-4.96	108.06	21.94	134.60	0.60	0.12	14.79	68.78	-25.95	-12.03	47.63	-95.55
	30	-4.95	111.13	22.06	134.96	0.60	0.12	17.82	69.29	-31.16	-11.07	53.76	-100.40
	31	-4.95	120.11	22.09	135.06	0.60	0.12	20.61	59.10	-37.70	27.30	50.22	-86.98
	32	-4.95	135.06	21.73	133.94	0.60	0.12	15.11	37.76	-37.14	30.05	-0.02	-78.00
	33	-4.96	150.09	21.91	134.51	0.60	0.12	24.75	18.80	-28.57	10.81	-7.86	-57.96
	34	-4.95	159.16	22.03	134.89	0.60	0.12	29.71	12.13	-20.95	14.92	-9.54	-42.44

Table 9: LNNC Helicopter Mode Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R385	35	-4.96	162.14	22.20	135.39	0.60	0.12	31.57	10.43	-19.39	18.84	-7.30	-38.72
	36	-4.95	165.13	21.67	133.75	0.60	0.12	35.20	8.82	-16.34	29.05	-2.27	-30.53
	37	-4.96	168.12	21.71	133.90	0.60	0.12	37.44	7.82	-14.38	34.17	-0.38	-26.16
	38	-4.95	171.11	21.92	134.54	0.60	0.12	40.08	7.05	-12.67	40.77	0.32	-23.75
	39	-4.95	174.10	21.95	134.63	0.60	0.12	42.54	6.74	-11.63	47.40	3.29	-25.56
	40	-4.96	177.09	22.00	134.78	0.60	0.12	44.69	5.97	-8.71	50.99	3.02	-21.11
	41	-4.95	178.84	21.95	134.63	0.60	0.12	45.32	6.55	-0.19	49.63	-14.13	2.94
	42	-4.95	0.00	5.41	66.65	0.30	0.06	6.18	1.28	-0.61	-3.48	2.32	8.67
	43	-4.95	0.00	0.02	4.25	0.02	0.00	2.23	-0.45	-1.14	-15.18	-0.62	14.32

Table 10: L60E Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R371	2	0.05	0.07	0.00	0.00	0.00	0.00	-0.02	-0.11	0.25	-4.52	-1.01	0.12
	3	0.05	0.07	22.69	138.06	0.60	0.12	57.93	42.82	-0.35	18.02	-12.87	3.33
	4	0.04	15.01	22.97	138.97	0.60	0.13	51.82	44.66	2.95	20.16	-12.37	1.85
	5	0.04	30.05	22.62	137.91	0.60	0.12	37.08	45.05	9.62	25.45	-13.80	6.24
	6	0.05	45.01	23.15	139.66	0.60	0.13	25.92	64.07	18.37	-6.66	15.29	-16.53
	7	0.04	60.04	22.74	138.39	0.60	0.12	2.58	67.38	19.00	-27.26	7.24	-10.14
	8	0.05	75.08	22.70	138.27	0.60	0.12	-9.07	71.68	11.67	-18.53	19.07	-37.45
	9	0.04	90.04	22.94	138.99	0.60	0.12	-11.81	84.41	-1.20	-26.22	-21.05	-65.03
	10	0.04	105.08	22.79	138.53	0.60	0.12	0.82	78.58	-19.05	-14.95	36.51	-80.16
	11	0.05	120.12	22.88	138.85	0.60	0.12	-0.51	74.38	-23.66	4.14	51.68	-69.74
	12	0.05	135.17	22.85	138.85	0.60	0.12	-21.51	64.27	-20.62	12.56	13.93	-65.96
	13	0.04	150.11	22.69	138.35	0.60	0.12	-14.03	48.56	-13.87	-5.74	-2.62	-55.18
	14	0.05	165.14	22.93	139.08	0.60	0.12	-9.96	43.79	-8.92	7.81	1.97	-49.21
	15	0.05	178.84	22.85	138.82	0.60	0.12	0.82	41.59	2.53	27.21	-17.33	6.12
	16	0.05	0.07	5.68	68.94	0.30	0.06	15.53	10.91	0.42	1.94	-5.61	0.02
	17	0.05	0.07	0.02	3.95	0.02	0.00	2.68	-0.11	0.20	-3.95	-10.75	0.51

Table 11: L75E Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R359	2	0.05	0.08	0.00	0.00	0.00	0.00	-0.03	-0.11	0.26	-3.89	-0.87	0.10
	3	0.05	0.08	22.95	138.94	0.60	0.12	48.74	48.22	-0.12	19.19	-7.37	3.99
	4	0.04	15.01	23.19	139.80	0.60	0.13	42.49	50.18	1.83	22.18	-8.44	3.11
	5	0.05	30.05	23.19	139.78	0.60	0.13	27.48	49.64	7.81	24.60	-11.10	6.02
	6	0.05	45.02	23.06	139.53	0.60	0.13	10.24	66.92	12.98	-13.78	9.57	-22.70
	7	0.05	60.05	23.19	139.93	0.60	0.13	-7.00	69.46	15.65	-27.62	5.71	-18.20
	8	0.03	75.09	22.99	139.32	0.60	0.12	-13.15	73.58	8.69	-24.85	13.89	-38.71
	9	0.05	90.14	22.87	138.95	0.60	0.12	-10.32	83.58	-0.86	-34.12	-28.81	-67.54
	10	0.03	105.08	23.08	139.60	0.60	0.13	-0.57	78.72	-15.13	-24.27	29.13	-76.64
	11	0.05	120.11	23.39	140.54	0.60	0.13	5.73	77.72	-21.54	-6.25	43.07	-66.68
	12	0.07	135.17	23.23	140.05	0.60	0.13	-13.35	68.47	-17.16	1.39	3.04	-62.97
	13	0.05	150.10	23.23	140.03	0.60	0.13	-4.99	54.44	-13.17	-12.99	-8.84	-59.10
	14	0.04	165.14	22.80	138.78	0.60	0.12	-3.14	48.55	-9.15	-4.66	-4.53	-50.92
	15	0.05	178.84	23.24	140.18	0.60	0.13	7.56	47.32	2.31	15.33	-15.18	6.08
	16	0.04	-0.01	5.65	68.91	0.30	0.06	11.82	12.19	0.52	1.26	-4.14	0.12
	17	0.05	0.00	0.00	1.50	0.01	0.00	1.30	0.01	0.20	-4.41	-3.71	0.47
R360	2	0.05	-0.01	0.01	2.24	0.01	0.00	-0.02	-0.12	0.26	-3.83	-0.77	0.09
	3	0.05	-0.01	23.65	141.98	0.60	0.13	49.53	49.71	-0.10	19.56	-2.44	4.26
	4	0.04	15.01	23.96	142.92	0.60	0.13	43.36	51.88	1.80	23.17	-3.69	3.21
	5	0.05	30.05	23.74	142.26	0.60	0.13	27.23	50.86	7.98	25.37	-6.73	6.23
	6	0.05	45.01	23.62	142.02	0.60	0.13	9.13	68.53	13.33	-12.70	14.86	-22.87
	7	0.05	60.05	23.79	142.56	0.60	0.13	-8.20	71.14	16.38	-28.08	10.57	-18.80
	8	0.05	75.09	23.88	142.85	0.60	0.13	-14.15	76.72	9.26	-28.56	20.59	-39.41
	9	0.05	90.10	23.86	142.78	0.60	0.13	-10.53	87.22	-1.01	-38.60	-23.94	-71.19
	10	0.06	105.08	23.95	143.05	0.60	0.13	-0.99	81.87	-16.05	-27.73	35.72	-78.98
	11	0.03	120.11	23.64	142.13	0.60	0.13	4.75	78.41	-21.27	-5.46	46.65	-65.43
	12	0.06	135.07	23.75	142.47	0.60	0.13	-14.02	70.37	-17.86	1.48	8.42	-65.38
	13	0.05	150.10	23.79	142.60	0.60	0.13	-6.48	55.79	-13.50	-13.87	-4.57	-60.25
	14	0.05	165.14	23.68	142.29	0.60	0.13	-4.32	50.45	-9.41	-3.47	0.49	-52.94
	15	0.05	178.84	23.47	141.67	0.60	0.13	7.10	47.68	2.45	16.81	-11.83	5.59
	16	0.04	0.07	5.86	70.47	0.30	0.06	11.13	12.73	0.45	2.94	-0.13	-0.08
	17	0.04	0.08	0.01	2.91	0.01	0.00	1.25	0.01	0.24	-2.89	-3.95	0.20

Table 12: L85E Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R343	2	-0.01	0.05	0.00	0.00	0.00	0.00	-0.02	-0.12	0.19	-3.51	0.15	0.10
	3	0.00	0.05	5.63	68.66	0.30	0.06	8.72	12.40	0.52	3.19	-0.85	-0.22
	4	-0.01	15.01	5.78	69.69	0.30	0.06	7.41	13.35	-0.05	-0.43	-0.90	-0.06
	5	0.00	30.06	5.64	68.85	0.30	0.06	3.39	13.38	-0.10	-2.43	2.41	1.39
	6	-0.01	45.09	5.62	68.71	0.30	0.06	0.24	16.17	-0.94	-11.28	7.63	-6.99
	7	0.01	60.05	5.87	70.20	0.30	0.06	-3.57	16.82	1.25	-13.78	6.02	-7.22
	8	0.00	75.09	5.77	69.63	0.30	0.06	-2.77	17.84	0.65	-9.09	-2.60	-8.04
	9	-0.01	90.05	5.76	69.57	0.30	0.06	-6.34	19.87	-1.99	-10.88	-13.93	-16.86
	10	0.00	105.08	5.77	69.63	0.30	0.06	-1.09	18.85	-2.34	-11.00	6.81	-15.13
	11	-0.01	120.12	5.91	70.46	0.30	0.06	-0.97	18.38	-2.04	-4.70	2.89	-18.05
	12	-0.01	135.08	5.72	69.38	0.30	0.06	-3.45	16.95	-2.42	-4.20	-6.43	-13.97
	13	0.00	150.11	5.86	70.25	0.30	0.06	0.32	14.05	-2.41	-7.24	-7.17	-13.08
	14	-0.01	165.14	5.70	69.19	0.30	0.06	0.83	12.24	-3.43	-7.03	-3.22	-12.32
	15	-0.01	178.84	5.64	68.81	0.30	0.06	3.16	11.24	-4.13	-6.71	1.37	-0.84
	16	0.00	0.00	5.69	69.18	0.30	0.06	8.74	12.24	0.49	3.50	-0.25	-0.18
	17	-0.01	0.00	0.01	3.43	0.01	0.00	1.01	-0.03	0.24	-2.22	-3.75	0.19
R344	2	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.04	-0.13	0.26	-3.37	-0.27	0.11
	3	0.01	0.00	12.92	104.51	0.45	0.09	20.26	27.99	0.98	8.92	1.61	0.43
	4	0.00	15.02	12.98	104.85	0.45	0.09	16.34	29.20	1.61	6.93	0.60	0.65
	5	-0.01	30.05	13.13	105.49	0.45	0.09	8.70	29.85	3.76	4.03	2.34	2.53
	6	0.00	45.11	13.18	105.77	0.45	0.09	-0.52	37.36	4.88	-15.03	11.08	-15.00
	7	0.01	60.05	13.31	106.42	0.45	0.09	-10.29	38.56	7.70	-27.31	11.83	-9.58
	8	-0.01	75.01	13.00	105.17	0.45	0.09	-6.45	39.14	4.77	-13.89	7.79	-18.17
	9	-0.01	90.05	13.22	106.03	0.45	0.09	-7.88	46.29	-0.52	-13.83	-9.90	-37.52
	10	0.00	105.08	13.16	105.90	0.45	0.09	-3.42	43.09	-6.11	-10.86	18.23	-39.72
	11	-0.02	120.12	13.31	106.51	0.45	0.09	1.52	40.89	-8.84	3.15	19.62	-36.51
	12	0.01	135.08	13.27	106.35	0.45	0.09	-4.00	38.74	-7.38	3.58	2.95	-32.63
	13	0.01	150.11	13.31	106.53	0.45	0.10	0.05	32.35	-7.19	-8.92	-4.13	-33.56
	14	0.00	165.10	13.28	106.41	0.45	0.09	-0.11	29.60	-5.98	-5.23	0.12	-30.28
	15	-0.01	178.84	13.35	106.68	0.45	0.10	6.31	27.73	-1.68	3.47	-2.04	-0.46
	16	0.01	0.06	5.91	70.83	0.30	0.06	8.53	13.05	0.58	1.86	1.82	-0.24
	17	0.00	0.04	0.00	0.00	0.00	0.00	0.64	-0.03	0.24	-4.25	-3.04	0.25

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R348	2	0.05	0.07	0.01	2.34	0.01	0.00	-0.02	-0.12	0.26	-8.75	-2.14	0.10
	3	0.06	-179.97	0.01	2.56	0.01	0.00	-0.23	0.43	-10.80	-27.02	12.52	-9.21
	4	0.05	-179.97	21.45	132.52	0.60	0.12	10.88	46.61	-1.92	8.56	-3.36	-2.90
	5	0.05	-165.08	21.01	131.14	0.60	0.12	-1.82	47.19	1.66	-17.85	5.24	32.46
	6	0.04	-150.05	21.47	132.73	0.60	0.12	2.16	51.57	7.26	-10.34	8.06	40.73
	7	0.05	-135.00	21.41	132.54	0.60	0.12	-11.04	63.21	11.79	0.06	5.29	47.45
	8	0.04	-120.06	21.33	132.28	0.60	0.12	5.13	65.05	12.03	13.86	-31.60	56.83
	9	0.05	-105.02	21.57	133.01	0.60	0.12	-2.47	67.29	7.81	-4.63	-36.88	59.99
	10	0.05	-90.07	21.57	133.04	0.60	0.12	-11.37	72.92	-2.90	-18.01	7.67	54.29
	11	0.04	-75.04	21.33	132.28	0.60	0.12	-14.15	65.16	-10.69	-20.99	-29.20	31.23
	12	0.04	-60.00	21.53	132.91	0.60	0.12	-9.14	62.42	-14.11	-40.82	-29.48	11.77
	13	0.05	-44.95	21.60	133.12	0.60	0.12	7.44	62.22	-12.73	-37.64	-24.10	24.16
	15	0.05	-30.01	21.91	134.22	0.60	0.12	20.18	49.36	-9.95	11.17	0.19	-0.26
	16	0.06	-14.97	21.59	133.23	0.60	0.12	31.21	47.37	-2.86	16.91	-1.54	-0.98
	17	0.05	-0.01	21.73	133.67	0.60	0.12	36.86	46.90	0.26	20.16	0.37	3.21
	18	0.05	3.05	21.71	133.58	0.60	0.12	35.96	46.70	0.71	20.50	-0.32	4.34
	19	0.05	6.04	21.62	133.32	0.60	0.12	34.93	46.71	0.81	20.90	-0.45	5.10
	20	0.04	9.03	21.61	133.29	0.60	0.12	33.11	47.00	1.63	20.17	-1.04	3.35
	21	0.04	12.03	21.81	133.90	0.60	0.12	31.19	47.75	2.38	21.92	-1.33	2.76
	22	0.04	15.01	21.54	133.07	0.60	0.12	28.53	48.20	2.84	21.87	-2.67	2.73
	23	0.04	18.00	21.71	133.72	0.60	0.12	25.96	48.61	3.58	24.43	-4.37	3.16
	24	0.05	21.08	21.64	133.50	0.60	0.12	22.77	48.08	4.23	28.72	-6.12	4.01
	25	0.04	24.07	21.75	133.84	0.60	0.12	19.92	47.96	5.27	28.84	-7.06	4.93
	26	0.03	27.06	21.85	134.15	0.60	0.12	17.20	48.16	6.49	25.65	-6.46	5.89
	27	0.05	30.05	21.57	133.30	0.60	0.12	16.14	48.21	7.76	17.19	-3.50	4.98
	28	0.05	45.10	21.76	133.89	0.60	0.12	-1.99	63.81	10.35	-17.99	12.30	-23.61
	29	0.03	60.04	21.45	133.01	0.60	0.12	-13.41	63.65	14.59	-32.96	13.30	-17.56
	30	0.04	69.10	21.60	133.51	0.60	0.12	-19.02	67.50	13.14	-20.02	23.41	-19.89
	31	0.04	72.09	21.86	134.32	0.60	0.12	-18.12	69.23	8.79	-20.11	22.31	-28.98
	32	0.04	75.08	21.85	134.30	0.60	0.12	-17.10	69.16	7.52	-19.91	18.43	-34.93
	33	0.04	78.07	21.88	134.39	0.60	0.12	-15.64	70.44	6.74	-20.28	9.99	-38.90
	34	0.05	81.06	22.00	134.75	0.60	0.12	-13.96	72.33	6.36	-21.90	0.43	-40.42
	35	0.06	84.05	21.63	133.61	0.60	0.12	-11.76	74.33	5.51	-22.62	-12.82	-44.54

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R348	36	0.02	87.13	21.90	134.57	0.60	0.12	-13.07	78.11	2.76	-27.55	-19.93	-56.57
	37	0.05	90.13	21.71	133.99	0.60	0.12	-11.43	78.79	-0.52	-28.22	-19.55	-63.04
	38	0.04	93.11	21.75	134.11	0.60	0.12	-9.01	78.25	-3.66	-26.74	-13.06	-67.71
	39	0.04	96.10	22.00	134.90	0.60	0.12	-9.11	76.57	-8.03	-24.56	0.68	-69.83
	40	0.04	99.09	21.80	134.28	0.60	0.12	-6.26	73.32	-8.83	-17.93	11.96	-65.62
	41	0.04	102.09	21.96	134.89	0.60	0.12	-4.54	73.39	-10.64	-16.84	22.35	-66.45
	42	0.05	105.07	22.26	135.82	0.60	0.12	-3.15	73.71	-12.03	-16.83	31.15	-68.37
	43	0.04	108.06	22.25	135.78	0.60	0.12	-0.23	73.62	-13.01	-15.30	39.43	-66.79
	44	0.05	111.05	22.32	135.99	0.60	0.12	2.22	72.32	-16.20	-14.69	46.73	-63.66
	45	0.05	120.11	22.22	135.81	0.60	0.12	9.33	71.08	-16.43	5.51	37.43	-61.07
	46	0.04	135.16	21.98	135.08	0.60	0.12	-4.17	65.28	-13.76	8.67	7.25	-55.33
	47	0.05	150.10	22.13	135.55	0.60	0.12	0.59	53.65	-12.69	-8.14	-2.32	-55.06
	48	0.04	159.16	22.04	135.28	0.60	0.12	-2.39	50.61	-9.81	-8.14	-3.15	-51.11
	49	0.04	162.15	22.46	136.69	0.60	0.12	-0.20	51.02	-9.55	-4.68	0.50	-52.24
	50	0.04	165.13	22.16	135.77	0.60	0.12	1.79	49.44	-9.30	1.10	1.58	-49.51
	51	0.05	168.12	22.32	136.27	0.60	0.12	4.30	48.58	-8.80	5.58	2.84	-46.77
	52	0.05	171.12	22.27	136.11	0.60	0.12	5.83	47.57	-8.13	8.85	1.71	-42.33
	53	0.04	174.11	22.16	135.77	0.60	0.12	10.62	46.79	-6.55	21.25	5.57	-33.07
	54	0.05	177.09	22.12	135.68	0.60	0.12	11.89	45.96	-4.45	22.72	2.42	-21.74
	55	0.05	178.84	22.39	136.49	0.60	0.12	12.77	47.15	1.78	20.44	-12.24	4.91
	56	0.04	-0.01	5.68	68.59	0.30	0.06	9.10	12.64	0.48	-6.09	-2.55	0.00
	57	0.04	-0.01	0.01	2.97	0.01	0.00	2.08	0.09	0.11	-12.21	-8.79	0.44
	2	-9.96	-0.01	0.00	1.29	0.01	0.00	-0.31	-2.11	0.98	-16.77	-4.18	23.71

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R349	3	-9.94	-0.01	22.58	137.41	0.60	0.12	-7.53	53.56	-1.46	44.90	4.58	2.99
	4	-9.95	15.01	22.92	138.67	0.60	0.12	-11.27	54.74	-2.66	42.43	-9.83	7.80
	5	-9.95	30.05	22.77	138.20	0.60	0.12	-18.96	52.45	2.25	52.90	-18.10	10.86
	6	-9.95	45.01	23.13	139.43	0.60	0.13	-23.89	67.60	3.10	22.38	-5.93	-28.66
	7	-9.95	60.04	22.86	138.62	0.60	0.12	-28.08	67.39	6.18	-13.91	2.72	-23.29
	8	-9.95	75.08	23.00	139.20	0.60	0.12	-24.41	72.52	2.72	-15.44	7.89	-34.27
	9	-9.94	90.04	23.22	139.87	0.60	0.13	-11.71	84.32	-4.48	-22.58	-20.05	-65.61
	10	-9.95	105.07	23.01	139.22	0.60	0.12	4.75	78.94	-13.91	-6.38	40.93	-74.67
	11	-9.95	120.10	23.02	139.24	0.60	0.13	23.07	77.60	-14.11	18.28	58.15	-60.71
	12	-9.96	135.07	22.78	138.62	0.60	0.12	16.66	65.73	-11.83	33.32	16.53	-46.38
	13	-9.96	150.09	22.99	139.25	0.60	0.12	30.95	58.00	-12.25	31.03	2.85	-48.25
	14	-9.94	165.13	23.24	140.01	0.60	0.13	41.48	53.81	-12.93	64.00	15.47	-26.11
	15	-9.95	178.84	23.06	139.49	0.60	0.13	51.76	50.58	-7.41	80.02	7.63	-22.14
	16	-9.95	-0.01	5.73	69.32	0.30	0.06	-1.16	12.53	-0.13	-1.48	-0.93	14.88
	17	-9.96	-0.01	0.00	1.83	0.01	0.00	1.89	-2.01	0.84	-16.73	-12.87	24.00
	2	-5.00	-0.01	0.00	0.00	0.00	0.00	-0.68	-0.49	-1.10	-8.70	2.32	14.01
R350	3	-5.00	-0.01	23.22	140.26	0.60	0.13	11.80	49.60	-0.94	43.06	11.40	2.69
	4	-5.01	15.01	23.58	141.52	0.60	0.13	8.89	54.20	1.44	35.09	4.52	1.09
	5	-5.00	30.05	23.31	140.70	0.60	0.13	-4.55	52.20	4.70	40.99	-4.82	5.91
	6	-5.00	45.01	23.34	140.80	0.60	0.13	-15.94	66.02	6.55	5.29	8.01	-27.88
	7	-5.01	60.04	23.57	141.63	0.60	0.13	-26.16	70.79	12.14	-27.17	9.90	-19.17
	8	-5.00	75.08	23.56	141.61	0.60	0.13	-22.88	75.04	5.22	-20.50	21.98	-35.85
	9	-4.96	90.04	23.65	141.88	0.60	0.13	-12.84	85.89	-3.30	-28.38	-12.18	-68.60
	10	-4.99	105.07	23.63	141.95	0.60	0.13	-0.31	80.22	-15.42	-12.03	47.72	-78.97
	11	-5.00	120.11	23.57	141.76	0.60	0.13	14.45	77.31	-18.75	16.62	62.72	-66.21
	12	-5.00	135.07	23.60	141.85	0.60	0.13	5.51	68.08	-13.51	24.75	17.88	-56.58
	13	-5.00	150.10	23.80	142.47	0.60	0.13	11.64	57.41	-12.66	18.49	3.75	-55.33
	14	-5.00	165.14	23.83	142.55	0.60	0.13	21.84	52.45	-8.70	37.47	12.64	-36.19
	15	-5.01	178.84	23.65	142.01	0.60	0.13	34.78	49.86	-0.50	63.22	0.06	-0.05
	16	-4.98	-0.01	5.93	70.89	0.30	0.06	1.28	12.97	-0.60	5.05	8.59	8.22
	17	-4.99	-0.01	0.02	3.73	0.02	0.00	-0.58	-0.36	-1.13	-9.43	2.03	14.19
	2	5.05	-0.01	0.00	1.68	0.01	0.00	-0.95	-2.56	0.76	12.89	5.33	15.61

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R351	3	5.06	-0.01	23.40	141.54	0.59	0.13	63.27	50.78	-0.83	13.47	7.29	2.99
	4	5.06	15.01	24.04	143.62	0.60	0.13	55.47	54.87	4.00	17.32	-2.87	-1.16
	5	5.06	30.05	23.86	143.23	0.60	0.13	39.63	57.38	11.69	5.30	3.48	-3.83
	6	5.02	45.01	24.31	144.59	0.60	0.13	18.43	74.91	14.27	-30.61	14.74	-20.68
	7	5.03	60.04	24.05	143.82	0.60	0.13	-11.40	74.18	16.85	-32.37	26.83	-12.54
	8	5.02	75.08	24.33	144.66	0.60	0.13	-13.11	78.90	9.14	-29.56	33.32	-34.78
	9	5.06	90.04	24.33	144.80	0.60	0.13	-12.28	89.12	-0.27	-38.52	-14.08	-68.71
	10	5.01	105.07	24.14	144.23	0.60	0.13	-8.05	80.63	-12.29	-22.36	35.41	-76.20
	11	5.06	120.11	24.36	144.89	0.60	0.13	-3.61	79.07	-21.49	-5.09	36.38	-79.02
	12	5.06	135.16	24.09	144.08	0.60	0.13	-17.97	76.26	-13.06	-4.34	4.96	-68.52
	13	5.08	150.10	24.09	144.08	0.60	0.13	-9.57	59.81	-11.07	-16.95	-4.75	-51.13
	14	5.06	165.14	24.10	144.11	0.60	0.13	-17.39	55.85	-6.29	-20.37	-2.23	-46.94
	15	5.07	178.84	24.28	144.69	0.60	0.13	-15.81	53.29	-1.09	-32.58	-2.11	-0.78
	16	5.05	0.07	6.06	72.08	0.30	0.06	14.36	12.34	-0.03	12.67	8.08	8.29
	17	5.04	0.07	0.03	4.83	0.02	0.00	-0.55	-2.52	0.76	13.68	3.22	15.57
	2	10.04	0.00	0.01	2.86	0.01	0.00	-0.30	-1.31	0.29	5.36	5.79	6.87
R357	3	10.05	0.00	21.47	132.82	0.60	0.12	75.84	49.93	-0.59	-9.11	2.24	2.15
	4	10.05	15.01	21.12	131.74	0.59	0.12	68.63	54.98	4.12	-8.55	-7.72	-4.23
	5	10.06	30.05	21.61	133.40	0.60	0.12	58.61	59.54	10.38	-22.37	-2.71	-3.67
	6	10.05	45.11	21.79	133.94	0.60	0.12	28.74	73.14	10.32	-49.01	7.80	-8.86
	7	10.05	60.04	21.70	133.69	0.60	0.12	-2.73	68.86	13.92	-39.96	28.82	-5.58
	8	10.05	75.08	21.61	133.52	0.60	0.12	-7.11	70.61	8.72	-24.37	28.45	-29.75
	9	10.05	90.13	21.78	134.05	0.60	0.12	-11.02	79.98	0.45	-37.83	-17.74	-60.99
	10	10.05	105.06	21.87	134.32	0.60	0.12	-10.17	72.84	-9.58	-27.29	23.81	-66.27
	11	10.05	120.10	21.63	133.57	0.60	0.12	-12.41	72.57	-17.40	-18.10	15.43	-67.35
	12	10.06	135.15	21.67	133.71	0.60	0.12	-15.94	71.64	-10.21	-16.37	-3.11	-62.26
	13	10.05	150.09	21.94	134.53	0.60	0.12	-14.92	58.21	-7.01	-33.02	-12.01	-45.75
	14	10.05	160.12	21.81	134.14	0.60	0.12	-21.83	54.90	-1.77	-40.45	-10.42	-37.10
	15	10.05	165.12	21.67	133.73	0.60	0.12	-24.91	54.02	-0.49	-44.15	-9.68	-32.56
	16	10.06	178.84	21.62	133.68	0.60	0.12	-26.22	52.72	0.03	-66.62	-5.64	0.77
	17	10.05	0.00	5.36	66.30	0.30	0.06	18.14	12.16	-0.30	-0.47	5.78	4.53
	18	10.04	0.00	0.02	4.44	0.02	0.00	0.71	-1.17	0.26	3.85	3.47	7.08
	2	0.00	0.07	0.00	0.00	0.00	0.00	-0.02	-0.11	0.25	-8.76	-2.04	0.11

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R364	3	0.00	-179.97	0.00	0.00	0.00	0.00	0.42	0.33	-10.70	-23.82	9.54	-9.18
	4	-0.03	-179.97	22.61	137.68	0.60	0.12	12.44	49.22	-1.57	12.56	-6.23	-2.11
	5	0.00	-165.08	22.51	137.51	0.60	0.12	-0.99	50.64	2.32	-15.76	3.98	33.47
	6	0.02	-150.04	22.77	138.31	0.60	0.12	3.30	54.73	8.43	-8.16	6.32	43.88
	7	-0.01	-135.00	22.73	138.20	0.60	0.12	-10.15	67.39	13.36	-1.74	2.57	51.65
	8	-0.02	-120.06	22.55	137.65	0.60	0.12	5.65	68.37	15.67	12.58	-39.57	63.35
	9	-0.01	-105.02	22.82	138.61	0.60	0.12	-1.84	72.18	9.96	-10.16	-40.79	70.70
	10	0.02	-89.97	22.81	138.57	0.60	0.12	-10.56	79.24	-2.84	-26.17	3.53	63.13
	11	-0.02	-75.04	22.97	139.05	0.60	0.13	-15.10	70.84	-11.42	-22.86	-34.75	34.43
	12	-0.01	-60.00	22.73	138.30	0.60	0.12	-8.92	66.09	-15.89	-41.63	-31.98	12.37
	13	0.01	-44.95	22.83	138.63	0.60	0.12	7.62	65.40	-14.15	-35.60	-24.94	25.03
	14	-0.01	-30.01	22.87	138.75	0.60	0.12	21.52	51.55	-10.95	13.34	-0.75	-0.64
	15	0.00	-14.96	22.92	138.89	0.60	0.12	34.43	50.28	-3.24	19.63	-3.22	-0.58
	16	0.00	0.04	22.88	138.77	0.60	0.12	39.54	49.17	0.19	23.70	-0.71	4.24
	17	0.01	3.06	22.69	138.20	0.60	0.12	37.88	48.89	0.67	24.07	-1.11	4.72
	18	0.00	6.05	22.51	137.65	0.60	0.12	37.22	48.84	0.76	23.89	-2.01	5.79
	19	0.00	9.03	22.66	138.11	0.60	0.12	35.53	49.78	1.73	23.88	-2.07	4.12
	20	0.00	12.03	22.70	138.23	0.60	0.12	33.02	50.29	2.66	24.62	-2.50	3.07
	21	0.00	15.01	22.99	139.13	0.60	0.13	31.01	51.83	3.10	25.51	-4.01	3.64
	22	0.00	18.00	22.51	137.65	0.60	0.12	27.58	50.53	3.75	27.79	-5.83	3.62
	23	-0.01	21.05	22.41	137.33	0.60	0.12	24.44	49.88	4.56	31.95	-7.80	4.78
	24	0.00	24.08	22.71	138.27	0.60	0.12	21.84	50.27	5.55	31.73	-8.62	5.67
	25	-0.01	27.06	22.64	138.05	0.60	0.12	18.50	50.12	6.85	27.66	-8.16	6.32
	26	0.01	30.05	22.73	138.32	0.60	0.12	17.43	50.88	8.08	19.93	-6.00	5.94
	27	-0.01	45.01	22.53	137.71	0.60	0.12	-0.66	65.71	10.15	-15.88	12.32	-23.40
	28	0.02	60.04	22.98	139.11	0.60	0.13	-13.05	68.67	15.89	-33.36	12.72	-17.73
	29	0.00	69.11	22.90	138.86	0.60	0.12	-17.31	72.58	14.69	-24.90	26.42	-21.34
	30	0.00	72.09	22.78	138.49	0.60	0.12	-14.65	73.86	9.95	-24.34	24.15	-30.07
	31	0.00	75.08	22.80	138.54	0.60	0.12	-16.09	73.17	7.45	-23.79	22.94	-38.85
	32	0.00	78.08	22.77	138.45	0.60	0.12	-14.46	74.49	6.80	-23.89	14.29	-42.43
	33	0.01	81.07	22.48	137.58	0.60	0.12	-12.96	75.02	5.91	-21.84	3.44	-43.70
	34	0.00	84.06	22.76	138.42	0.60	0.12	-11.08	79.18	5.45	-25.90	-11.14	-48.18
	35	0.01	87.05	22.88	138.80	0.60	0.12	-11.52	83.10	2.51	-30.47	-21.20	-59.48

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R364	36	0.00	90.14	22.99	139.14	0.60	0.13	-9.59	84.72	-1.17	-34.17	-20.74	-68.10
	37	0.00	93.12	22.75	138.41	0.60	0.12	-7.39	82.21	-4.89	-29.53	-13.54	-72.32
	38	-0.02	96.11	22.74	138.38	0.60	0.12	-7.97	80.52	-8.73	-26.82	6.53	-73.19
	39	-0.02	99.10	22.93	138.97	0.60	0.13	-3.95	78.16	-10.19	-19.82	14.25	-69.35
	40	0.00	102.09	22.69	138.24	0.60	0.12	-1.42	76.76	-12.16	-16.35	26.45	-70.88
	41	0.00	105.08	22.60	137.95	0.60	0.12	0.11	77.75	-13.81	-17.30	35.76	-73.70
	42	0.00	108.07	22.90	138.88	0.60	0.12	3.90	78.31	-16.28	-18.42	47.52	-73.73
	43	0.00	111.13	23.07	139.37	0.60	0.13	7.20	79.98	-20.10	-21.57	54.18	-71.53
	44	0.00	120.12	23.04	139.30	0.60	0.13	10.94	76.20	-21.79	3.90	45.33	-66.89
	45	0.02	135.17	22.86	138.75	0.60	0.12	-3.15	69.59	-15.93	9.67	7.79	-58.83
	46	0.00	150.10	22.88	138.80	0.60	0.12	2.20	55.10	-13.01	-4.46	-3.80	-57.67
	47	0.00	159.17	22.80	138.56	0.60	0.12	-1.12	52.25	-10.17	-6.41	-2.89	-52.95
	48	-0.01	162.16	23.23	139.87	0.61	0.13	1.16	52.37	-9.74	-1.08	0.15	-54.09
	49	-0.01	165.14	23.20	139.80	0.61	0.13	2.77	51.61	-9.36	4.66	1.22	-52.18
	50	0.00	168.13	22.37	137.25	0.59	0.12	5.22	48.24	-8.07	8.94	1.34	-45.41
	51	0.00	171.12	23.19	139.75	0.61	0.13	7.20	49.44	-7.93	13.45	0.78	-43.21
	52	-0.01	174.12	23.32	140.14	0.61	0.13	12.05	49.18	-6.69	26.16	5.60	-34.08
	53	0.00	177.12	22.39	137.31	0.59	0.12	12.76	46.37	-4.35	26.69	2.51	-20.57
	54	0.00	178.84	22.82	138.62	0.60	0.12	13.73	48.06	2.08	23.76	-12.78	6.38
	55	0.00	66.03	22.84	138.80	0.60	0.12	-18.57	71.72	16.76	-28.68	35.16	-19.96
	56	0.01	57.06	22.95	139.14	0.60	0.13	-15.46	71.27	14.69	-45.71	17.47	-13.36
	57	0.01	54.06	23.00	139.31	0.60	0.13	-10.73	70.11	13.56	-40.49	17.76	-14.89
	58	0.00	51.08	22.98	139.24	0.60	0.13	-7.62	70.33	14.63	-32.30	16.98	-21.09
	59	0.01	-27.02	22.66	138.27	0.60	0.12	22.64	49.69	-8.42	14.65	-6.08	-2.27
	60	0.01	-24.03	23.19	139.89	0.60	0.13	25.23	50.30	-6.96	26.65	3.14	-2.36
	61	0.01	-20.94	23.05	139.62	0.60	0.13	27.93	49.95	-5.78	26.93	2.27	-1.28
	62	-0.01	-17.96	22.99	139.43	0.60	0.13	31.43	50.03	-4.57	23.27	-0.07	-0.40
	63	-0.04	0.04	5.83	69.93	0.30	0.06	10.15	12.82	0.26	7.36	-0.50	0.46
	64	-0.01	0.03	0.01	3.45	0.01	0.00	2.68	-0.02	-0.04	1.08	-6.92	0.80
	2	-4.94	-0.01	0.01	2.70	0.01	0.00	-0.60	-0.49	-1.11	-9.73	2.95	13.97

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R365	3	-4.97	-0.01	23.45	141.32	0.60	0.13	11.94	49.94	-0.79	44.06	-3.24	2.77
	4	-4.95	3.06	23.39	141.29	0.60	0.13	10.59	50.07	-0.39	52.24	-3.63	2.47
	5	-4.96	6.05	23.78	142.49	0.60	0.13	9.70	51.69	0.32	50.77	-6.25	0.93
	6	-4.95	9.03	23.65	142.08	0.60	0.13	9.64	53.14	0.98	43.54	-7.48	0.38
	7	-4.96	12.03	23.53	141.72	0.60	0.13	9.36	53.75	1.71	38.06	-8.25	0.00
	8	-4.96	15.01	23.55	141.80	0.60	0.13	8.61	54.47	2.02	33.13	-9.72	0.00
	9	-4.96	18.00	23.68	142.30	0.60	0.13	6.85	54.04	2.51	34.62	-10.79	2.44
	10	-4.94	20.99	23.66	142.25	0.60	0.13	4.94	53.11	2.90	37.99	-12.75	4.12
	11	-4.94	24.08	23.84	142.78	0.60	0.13	2.82	53.03	4.06	40.60	-14.86	3.46
	12	-4.95	27.06	23.38	141.40	0.60	0.13	-0.79	52.40	4.92	40.10	-15.82	4.31
	13	-4.95	30.05	23.73	142.47	0.60	0.13	-3.14	53.38	4.70	40.44	-16.26	6.03
	14	-4.95	45.01	23.51	141.81	0.60	0.13	-15.04	67.56	7.26	3.34	-0.22	-29.80
	15	-4.96	60.04	24.07	143.51	0.61	0.13	-23.70	72.31	13.93	-27.71	-0.32	-22.00
	16	-4.96	69.04	23.52	141.83	0.60	0.13	-18.08	75.09	11.26	-20.22	18.63	-19.14
	17	-4.95	72.10	23.29	141.11	0.60	0.13	-19.46	76.07	8.02	-21.45	19.16	-30.72
	18	-4.95	75.09	23.66	142.24	0.60	0.13	-19.29	76.66	5.88	-23.38	20.50	-39.26
	19	-4.95	78.08	23.74	142.49	0.60	0.13	-17.94	77.72	4.60	-23.13	15.28	-43.06
	20	-4.94	81.07	23.41	141.48	0.60	0.13	-16.01	78.56	3.89	-21.21	5.07	-45.45
	21	-4.96	84.06	23.60	142.09	0.60	0.13	-14.21	82.37	3.32	-23.57	-8.51	-50.84
	22	-4.95	87.14	23.73	142.48	0.60	0.13	-13.56	86.26	0.21	-27.62	-18.73	-61.70
	23	-4.95	90.14	23.69	142.35	0.60	0.13	-11.53	87.26	-3.86	-29.85	-16.48	-70.15
	24	-4.96	93.12	24.10	143.58	0.61	0.13	-9.44	87.85	-8.49	-28.32	-8.15	-80.20
	25	-4.96	96.11	23.71	142.42	0.60	0.13	-6.85	84.39	-11.82	-20.15	6.84	-78.94
	26	-4.96	99.10	23.80	142.70	0.60	0.13	-2.41	82.07	-12.77	-13.49	20.79	-76.01
	27	-4.96	102.09	23.79	142.68	0.60	0.13	1.68	81.92	-14.39	-11.00	34.51	-79.28
	28	-4.97	105.08	23.82	142.77	0.60	0.13	3.88	84.14	-16.51	-13.97	45.44	-84.04
	29	-4.95	108.16	23.62	142.15	0.60	0.13	8.05	82.92	-18.70	-11.66	55.93	-84.03
	30	-4.96	111.15	23.70	142.39	0.60	0.13	11.38	85.52	-23.10	-16.52	63.71	-85.91
	31	-4.95	120.12	23.71	142.43	0.60	0.13	18.78	82.04	-22.33	16.29	58.65	-70.49
	32	-4.95	135.07	23.53	141.89	0.60	0.13	6.93	69.90	-15.00	32.09	11.94	-60.30
	33	-4.96	150.11	23.45	141.63	0.60	0.13	13.97	56.43	-11.71	25.66	-1.12	-54.81
	34	-4.95	159.17	23.75	142.55	0.60	0.13	17.78	54.57	-9.21	31.70	-3.64	-44.81
	35	-4.96	162.16	23.93	143.09	0.60	0.13	20.18	53.77	-9.65	37.29	-0.48	-41.72

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R365	36	-4.96	165.14	23.90	142.98	0.60	0.13	24.74	52.74	-8.37	47.95	5.96	-35.18
	37	-4.95	168.14	23.50	141.80	0.60	0.13	27.00	51.01	-7.55	54.45	6.30	-30.32
	38	-4.96	171.12	23.89	142.97	0.60	0.13	29.60	50.90	-7.68	61.95	6.00	-28.72
	39	-4.96	174.12	23.56	141.98	0.60	0.13	32.34	49.88	-8.86	67.58	7.84	-30.55
	40	-4.96	177.10	23.36	141.36	0.60	0.13	34.67	48.57	-6.80	72.54	3.57	-22.59
	41	-4.95	178.84	24.11	143.66	0.61	0.13	36.60	51.09	0.23	73.84	-13.59	3.17
	42	-4.96	-0.01	23.56	141.85	0.60	0.13	12.56	50.13	-0.75	45.26	-0.78	2.89
	43	-4.95	-0.01	5.81	70.20	0.30	0.06	3.51	12.67	-0.52	6.87	1.12	7.90
	44	-4.95	-0.01	5.83	70.33	0.30	0.06	3.49	12.74	-0.50	6.87	0.96	7.84
	45	-4.96	-0.01	0.02	3.68	0.02	0.00	1.77	-0.39	-1.08	-7.23	-6.81	13.88
	2	5.06	0.08	0.00	0.00	0.00	0.00	-0.70	-2.57	0.77	9.69	4.70	15.58

Table 12: L85E Helicopter Mode Corrected Data (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R372	3	5.05	0.08	22.95	138.96	0.60	0.12	62.10	49.60	-1.14	11.48	-9.01	3.01
	4	5.05	3.06	22.77	138.55	0.60	0.12	61.26	49.78	-0.47	19.49	-9.65	2.69
	5	5.05	6.05	22.66	138.21	0.60	0.12	59.44	50.28	0.59	18.06	-11.63	1.69
	6	5.04	9.03	22.68	138.25	0.60	0.12	57.43	50.92	1.69	14.86	-13.84	0.93
	7	5.04	12.03	23.01	139.29	0.60	0.13	56.44	51.89	2.57	14.89	-15.26	0.03
	8	5.04	15.01	23.01	139.42	0.60	0.13	53.17	52.66	3.93	13.58	-16.70	-1.75
	9	5.04	18.00	23.07	139.61	0.60	0.13	50.34	52.82	5.46	14.03	-17.35	-2.55
	10	5.06	20.99	23.12	139.75	0.60	0.13	47.07	52.59	7.44	17.81	-18.83	-4.04
	11	5.05	24.08	22.99	139.34	0.60	0.12	44.53	52.41	8.74	16.15	-17.73	-3.99
	12	5.06	27.07	23.07	139.61	0.60	0.13	42.47	53.36	10.21	10.09	-14.41	-3.88
	13	5.05	30.05	23.33	140.40	0.60	0.13	39.88	56.23	11.66	0.73	-9.53	-4.24
	14	5.06	45.04	23.39	140.70	0.60	0.13	17.81	72.43	13.71	-31.92	4.09	-19.84
	15	5.06	60.05	23.22	140.19	0.60	0.13	-9.50	70.31	15.29	-20.91	23.57	-13.20
	16	5.05	69.11	23.36	140.62	0.60	0.13	-9.55	76.13	15.32	-29.36	38.06	-17.73
	17	5.05	72.10	23.16	140.01	0.60	0.13	-6.06	77.35	11.41	-30.91	34.24	-26.28
	18	5.05	75.09	23.29	140.54	0.60	0.13	-8.87	77.09	8.98	-29.38	28.59	-37.19
	19	5.05	78.08	23.20	140.27	0.60	0.13	-9.61	77.78	7.75	-28.80	23.34	-40.56
	20	5.06	81.07	23.23	140.35	0.60	0.13	-9.69	79.71	6.46	-28.13	10.86	-43.02
	21	5.05	84.06	22.97	139.55	0.60	0.12	-10.07	81.90	5.20	-28.33	-4.29	-47.04
	22	5.06	87.05	23.27	140.47	0.60	0.13	-12.72	85.54	2.50	-34.57	-13.97	-58.61
	23	5.04	90.05	23.39	140.85	0.60	0.13	-12.58	87.56	-0.51	-39.64	-15.14	-66.50
	24	5.04	93.13	23.32	140.63	0.60	0.13	-9.31	86.07	-4.57	-38.30	-9.18	-72.30
	25	5.06	96.11	23.33	140.69	0.60	0.13	-11.06	84.14	-8.55	-34.00	3.01	-74.35
	26	5.05	99.10	23.34	140.79	0.60	0.13	-8.03	81.73	-9.83	-27.56	15.05	-71.35
	27	5.04	102.10	23.39	140.98	0.60	0.13	-5.13	80.16	-11.15	-23.14	24.57	-71.58
	28	5.03	105.08	23.51	141.34	0.60	0.13	-3.71	82.13	-13.22	-25.37	33.45	-77.16
	29	5.06	108.07	23.24	140.51	0.60	0.13	-1.27	81.36	-16.09	-25.05	46.02	-78.98
	30	5.05	111.06	23.38	140.95	0.60	0.13	2.73	82.95	-20.87	-27.73	54.73	-77.23
	31	5.04	120.12	23.16	140.27	0.60	0.13	5.26	79.41	-23.73	0.15	38.04	-82.67
	32	5.07	135.17	23.41	141.03	0.60	0.13	-13.34	78.20	-15.74	-1.02	1.59	-69.59
	33	5.04	150.11	23.34	140.95	0.60	0.13	-7.25	57.98	-10.95	-12.51	-8.81	-49.18
	34	5.05	159.17	23.26	140.71	0.60	0.13	-13.14	54.99	-5.91	-15.37	-3.34	-48.41
	35	5.05	162.16	23.39	141.11	0.60	0.13	-13.09	55.01	-5.29	-13.73	-3.64	-48.23

Table 12: L85E Helicopter Mode Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R372	36	5.05	165.14	23.46	141.31	0.60	0.13	-14.69	54.88	-6.25	-14.31	-7.03	-43.96
	37	5.05	168.14	23.57	141.65	0.60	0.13	-14.26	53.90	-5.75	-14.67	-5.60	-40.89
	38	5.05	171.13	23.13	140.30	0.60	0.13	-12.47	52.03	-5.75	-12.81	-4.09	-37.59
	39	5.05	174.12	23.31	140.83	0.60	0.13	-10.99	52.00	-6.76	-14.01	0.40	-35.41
	40	5.05	177.11	23.17	140.42	0.60	0.13	-10.56	51.39	-7.76	-13.91	4.78	-31.00
	41	5.06	178.84	23.66	141.91	0.60	0.13	-13.45	52.70	-1.52	-27.40	-7.17	-0.92
	42	5.04	0.07	5.65	69.10	0.29	0.06	15.39	11.42	-0.28	8.77	2.80	9.66
	43	5.03	0.05	0.01	3.00	0.01	0.00	1.58	-2.34	0.61	9.50	-3.67	16.43

Table 13: L95E Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R358	2	0.06	0.00	0.00	0.00	0.00	0.00	0.01	-0.11	0.26	-4.62	-0.77	0.11
	3	0.05	-0.01	21.93	134.82	0.60	0.12	30.81	45.73	0.26	17.61	-3.62	3.04
	4	0.05	15.01	22.33	136.23	0.60	0.12	22.65	48.94	2.98	23.13	-7.57	4.07
	5	0.06	30.05	22.44	136.72	0.60	0.12	9.87	49.81	7.99	14.17	-8.07	4.27
	6	0.05	45.11	22.29	136.25	0.60	0.12	-9.56	64.26	9.41	-19.40	6.39	-24.64
	7	0.05	60.04	22.29	136.37	0.60	0.12	-20.13	66.80	15.38	-34.54	3.77	-23.04
	8	0.05	75.08	22.36	136.61	0.60	0.12	-17.77	72.08	8.37	-23.95	13.18	-37.86
	9	0.05	90.04	22.67	137.55	0.60	0.12	-11.44	83.28	-0.12	-34.53	-28.08	-64.66
	10	0.06	105.07	22.37	136.73	0.60	0.12	0.11	76.18	-12.12	-21.08	27.30	-71.32
	11	0.05	120.11	22.43	136.97	0.60	0.12	14.31	72.65	-21.05	6.32	34.36	-68.19
	12	0.05	135.06	22.77	137.99	0.60	0.12	5.56	67.83	-16.22	10.83	-1.36	-61.91
	13	0.05	150.09	22.61	137.64	0.60	0.12	9.61	54.02	-12.06	-7.16	-7.82	-58.49
	14	0.05	165.13	22.69	137.90	0.60	0.12	9.07	50.33	-9.21	-0.90	-2.30	-49.35
	15	0.04	178.84	22.74	138.04	0.60	0.12	20.28	47.98	2.12	18.03	-14.46	5.24
	16	0.05	0.08	5.62	68.49	0.30	0.06	8.01	12.11	0.43	1.99	-3.01	0.14
	17	0.05	0.08	0.03	4.77	0.02	0.00	1.91	-0.03	0.17	-3.98	-6.17	0.46

Table 14: L60 Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R342	2	0.05	0.00	0.00	1.06	0.00	0.00	-0.02	-0.11	0.23	-3.57	-0.85	0.11
	3	0.05	-0.01	23.17	140.14	0.60	0.13	48.86	29.24	0.69	9.11	-1.02	3.98
	4	0.04	15.01	23.19	140.23	0.60	0.13	38.91	29.79	10.16	16.09	-1.14	-8.13
	5	0.05	30.05	23.55	141.34	0.61	0.13	23.53	33.86	20.46	16.53	-1.76	-11.73
	6	0.05	45.11	23.14	140.07	0.60	0.13	4.22	50.29	29.44	-11.78	11.50	-20.24
	7	0.07	60.05	23.29	140.64	0.60	0.13	-7.89	62.13	25.97	-33.76	11.09	-24.10
	8	0.05	75.09	23.43	141.10	0.60	0.13	-13.01	71.44	15.22	-27.89	15.54	-34.84
	9	0.06	90.14	23.27	140.61	0.60	0.13	-10.65	84.73	-0.54	-33.15	-27.88	-63.79
	10	0.03	105.08	23.05	139.95	0.60	0.13	-2.02	75.35	-18.13	-20.59	27.32	-79.38
	11	0.05	120.12	23.23	140.48	0.60	0.13	3.59	66.76	-26.22	6.98	32.64	-73.84
	12	0.05	135.08	23.01	139.81	0.60	0.13	-15.59	53.14	-27.31	0.07	6.09	-59.94
	13	0.05	150.19	22.94	139.45	0.60	0.12	-11.49	35.91	-22.66	-23.03	-3.83	-46.38
	14	0.03	165.14	23.16	140.13	0.60	0.13	-8.09	28.17	-14.44	-12.45	6.10	-41.08
	15	0.05	178.84	22.63	138.50	0.59	0.12	4.03	24.28	1.13	8.94	-12.32	2.21
	16	0.05	178.84	23.11	139.98	0.60	0.13	3.97	24.79	1.29	9.71	-12.20	2.51
	17	0.05	0.06	5.56	68.39	0.30	0.06	11.91	7.37	0.64	0.26	-1.55	0.04
	18	0.04	0.08	0.02	4.30	0.02	0.00	1.58	0.09	0.28	-3.11	-6.75	0.19

Table 15: L75 Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R340	2	0.05	0.00	0.00	0.00	0.00	0.00	-0.02	-0.11	0.26	-3.58	-1.16	0.11
	3	0.07	0.00	24.65	146.48	0.60	0.13	50.88	31.26	0.66	6.69	-4.19	0.91
	4	0.06	15.02	25.12	148.20	0.60	0.13	37.40	32.30	11.71	25.29	-4.62	-4.62
	5	0.05	30.06	24.94	147.73	0.60	0.13	23.76	36.33	23.97	16.74	-5.76	-11.47
	6	0.05	45.02	24.95	147.84	0.60	0.13	3.69	54.64	29.85	-9.70	7.55	-21.66
	7	0.06	60.05	25.22	148.50	0.60	0.13	-13.03	67.99	27.46	-33.02	9.61	-23.36
	8	0.04	75.09	25.50	149.33	0.61	0.13	-14.68	78.71	16.67	-23.08	14.46	-31.67
	9	0.07	90.11	25.38	148.96	0.60	0.13	-9.40	91.76	-0.33	-36.74	-30.79	-70.26
	10	0.03	105.08	25.41	149.01	0.61	0.13	-0.24	84.79	-17.75	-25.54	28.81	-88.44
	11	0.05	120.12	24.89	147.37	0.60	0.13	5.83	73.86	-26.21	8.15	34.37	-76.09
	12	0.07	135.07	25.46	149.09	0.61	0.13	-12.48	60.85	-29.27	8.87	4.20	-64.73
	13	0.05	150.11	24.99	147.69	0.60	0.13	-5.92	40.55	-21.46	-17.33	-5.40	-54.96
	14	0.03	165.14	25.09	147.87	0.60	0.13	-3.50	33.33	-13.31	-6.64	2.15	-43.05
	15	0.04	178.84	24.45	145.94	0.60	0.13	11.56	28.14	-7.39	17.39	4.40	-22.43
	16	0.05	0.00	6.14	72.74	0.30	0.06	12.67	8.59	0.47	0.28	-4.74	-1.07
	17	0.05	0.00	0.01	2.73	0.01	0.00	2.42	-0.01	0.26	-3.00	-12.00	0.11

Table 16: L85 Helicopter Mode Corrected Data—Without Grit

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R322	2	0.04	0.00	0.00	1.06	0.00	0.00	0.00	-0.11	0.27	-10.16	-2.07	0.09
	3	0.05	0.00	5.71	69.16	0.30	0.06	11.61	7.78	0.55	-16.52	-4.04	-0.40
	4	0.04	15.02	5.62	68.70	0.30	0.06	9.34	8.22	1.84	-9.64	0.43	-0.16
	5	0.02	30.05	5.43	67.49	0.29	0.06	5.63	8.89	2.92	-13.55	1.59	-1.29
	6	0.01	45.11	5.58	68.46	0.30	0.06	2.08	12.01	3.66	-17.75	2.31	-0.14
	7	0.04	60.05	5.76	69.52	0.30	0.06	-1.45	17.77	5.88	-23.54	5.27	-2.56
	8	0.02	75.09	5.81	69.81	0.30	0.06	0.57	23.00	4.84	-28.09	11.43	-5.76
	9	0.01	90.14	5.65	68.84	0.30	0.06	-2.31	25.88	-1.71	-23.64	-4.53	-16.84
	10	0.00	105.08	5.63	68.75	0.30	0.06	-3.07	21.49	-5.37	-19.43	-1.15	-16.05
	11	0.06	105.08	5.62	68.69	0.30	0.06	-3.28	21.41	-5.34	-19.18	-1.68	-15.85
	12	0.04	120.12	5.98	70.83	0.31	0.06	-2.47	17.68	-5.56	-12.10	0.21	-17.82
	13	0.05	135.17	5.69	69.09	0.30	0.06	0.14	13.46	-5.48	-6.17	-6.85	-15.86
	14	0.05	150.20	5.67	68.98	0.30	0.06	-2.00	9.36	-4.41	-6.91	-8.69	-10.55
	15	0.05	160.14	5.95	70.66	0.31	0.06	-1.32	8.54	-3.15	-6.82	-7.35	-10.98
	16	0.04	165.15	5.74	69.40	0.30	0.06	-0.28	7.82	-3.74	-3.95	-3.60	-10.70
	17	0.04	178.84	5.68	69.01	0.30	0.06	3.35	6.81	-4.78	-2.46	-1.25	-1.96
	18	0.16	0.08	5.83	69.97	0.30	0.06	8.56	7.89	0.41	5.46	-2.12	0.00
	19	0.16	0.08	0.02	4.49	0.02	0.00	-0.44	-0.12	0.19	6.48	-11.04	0.51

Table 16: L85 Helicopter Mode Corrected Data—Without Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R323	2	0.16	0.07	0.00	0.75	0.00	0.00	0.01	-0.10	0.25	-10.41	-1.95	0.11
	3	0.17	0.08	12.98	104.46	0.45	0.09	25.75	17.12	0.92	-28.08	6.49	-0.73
	4	0.16	15.02	12.79	103.81	0.45	0.09	19.23	17.80	5.81	-16.40	8.53	-0.95
	5	0.14	30.05	13.02	104.74	0.45	0.09	10.43	20.23	10.99	-18.75	9.37	-3.25
	6	0.12	45.10	13.10	105.07	0.45	0.09	2.87	26.59	12.66	-32.46	12.30	-5.07
	7	0.11	60.05	12.90	104.27	0.45	0.09	-4.62	32.16	13.93	-38.38	10.56	-11.52
	8	0.09	75.09	12.34	101.97	0.44	0.09	-19.45	39.18	7.72	-27.50	8.44	-16.17
	9	0.09	75.09	13.15	105.26	0.45	0.09	-18.97	40.56	8.30	-28.51	5.87	-18.39
	10	0.12	90.14	13.23	105.56	0.46	0.09	-21.82	49.42	-2.49	-38.42	-49.65	-38.13
	11	0.06	105.08	12.87	104.14	0.45	0.09	-3.64	40.39	-7.69	-27.34	20.28	-32.90
	12	0.05	120.12	13.00	104.65	0.45	0.09	-5.63	35.67	-10.69	-15.39	11.89	-41.55
	13	0.05	135.17	12.87	104.13	0.45	0.09	-9.62	27.92	-13.35	-13.08	-0.56	-33.04
	14	0.06	150.11	12.94	104.40	0.45	0.09	-4.88	21.61	-9.59	-15.60	0.92	-24.94
	15	0.05	165.15	13.11	105.07	0.45	0.09	-0.18	18.53	-7.77	-5.52	7.50	-22.98
	16	0.05	178.84	12.70	103.50	0.45	0.09	6.03	16.05	-2.62	4.17	4.45	-1.26
	17	0.18	-0.01	13.15	105.33	0.45	0.09	21.34	17.34	1.00	-0.97	7.96	-0.45
	18	0.17	-0.01	5.79	69.74	0.30	0.06	8.03	7.89	0.37	-5.03	8.56	-0.05
	19	0.17	-0.01	0.00	1.84	0.01	0.00	-0.29	-0.08	0.10	-9.79	0.13	0.50

Table 16: L85 Helicopter Mode Corrected Data—Without Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R324	2	0.17	0.00	0.00	0.00	0.00	0.00	0.01	-0.11	0.26	-10.19	-2.49	0.09
	3	0.19	-0.01	23.10	139.86	0.60	0.13	43.41	29.36	-1.04	-12.09	8.51	2.43
	4	0.18	15.02	22.78	138.88	0.60	0.12	33.32	30.27	7.25	1.81	8.39	-1.30
	5	0.15	30.05	23.15	140.00	0.60	0.13	19.98	32.90	25.62	-1.19	8.13	-8.20
	6	0.12	45.02	23.50	141.20	0.60	0.13	4.13	50.82	29.19	-35.05	16.27	-9.92
	7	0.11	60.05	23.47	141.09	0.60	0.13	-11.37	55.26	24.32	-18.37	5.94	-20.30
	8	0.10	75.00	23.12	140.03	0.60	0.13	-9.43	60.43	10.30	-23.48	-8.94	-36.90
	9	0.11	90.05	23.46	141.08	0.60	0.13	-19.88	81.05	-1.33	-34.58	-39.62	-65.83
	10	0.05	105.08	23.05	139.82	0.60	0.13	-0.75	70.61	-9.42	-21.92	29.22	-62.75
	11	0.03	120.03	23.51	141.23	0.60	0.13	-10.24	62.56	-14.88	-4.78	28.03	-57.77
	12	0.05	134.99	23.30	140.59	0.60	0.13	-18.07	49.24	-18.69	-5.49	1.30	-48.67
	13	0.06	150.02	22.90	139.34	0.60	0.12	-5.54	37.55	-11.04	-9.85	0.21	-36.32
	14	0.05	165.15	23.75	141.95	0.61	0.13	2.12	33.01	-11.24	4.07	8.96	-40.37
	15	0.04	178.84	23.52	141.37	0.60	0.13	13.89	29.97	-1.02	24.27	3.06	-3.94
	16	0.19	-0.01	23.70	141.90	0.60	0.13	42.05	30.08	-1.09	5.06	9.52	2.32
	17	0.18	0.00	13.18	105.63	0.45	0.09	22.09	17.46	0.99	-0.78	6.27	-0.36
	18	0.17	0.00	5.90	70.58	0.30	0.06	8.71	8.05	0.37	-4.98	7.10	0.10
	19	0.17	-0.01	0.01	3.09	0.01	0.00	-0.67	-0.02	0.17	-9.01	1.98	0.66

Table 16: L85 Helicopter Mode Corrected Data—Without Grit (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R325	2	-9.94	-0.01	0.00	1.50	0.01	0.00	-1.21	-2.22	0.13	-20.19	0.50	26.43
	3	-9.98	-0.01	23.24	140.50	0.60	0.13	-15.51	35.05	-2.09	41.48	11.27	5.65
	4	-9.94	15.02	23.33	140.76	0.60	0.13	-18.73	36.60	4.02	43.71	1.23	2.78
	5	-9.96	30.05	22.88	139.38	0.59	0.12	-29.22	37.99	16.99	55.93	-8.13	-3.40
	6	-9.98	45.02	23.67	141.95	0.60	0.13	-30.83	53.85	21.37	22.79	-5.51	-14.67
	7	-9.99	60.05	23.80	142.33	0.60	0.13	-23.68	56.00	18.01	13.30	-12.74	-15.94
	8	-10.01	75.00	24.05	143.09	0.61	0.13	-19.43	62.88	7.04	-5.02	-28.42	-30.01
	9	-9.94	90.05	23.45	141.29	0.60	0.13	-18.66	80.36	-5.00	-21.23	-45.20	-61.90
	10	-9.97	105.08	23.61	141.76	0.60	0.13	6.41	72.92	-10.30	-9.41	29.42	-68.29
	11	-9.95	120.03	23.98	142.89	0.61	0.13	8.27	66.92	-18.19	8.44	33.58	-67.22
	12	-9.94	134.99	22.85	139.44	0.59	0.12	7.57	52.06	-18.34	15.85	9.37	-45.43
	13	-9.93	150.02	23.92	142.70	0.61	0.13	24.28	43.62	-12.08	19.11	11.06	-29.92
	14	-9.96	164.97	23.69	141.99	0.60	0.13	39.20	36.65	-9.92	60.01	26.84	-9.92
	15	-9.97	178.84	23.45	141.26	0.60	0.13	50.49	32.83	-8.87	81.74	18.93	-29.93
	16	-9.95	0.00	23.30	140.86	0.60	0.13	-15.42	35.15	-2.06	46.78	12.99	5.56
	17	-9.98	-0.01	0.02	3.68	0.02	0.00	0.05	-1.96	0.74	-15.17	-5.03	24.54
R326	2	10.07	-0.01	0.01	2.12	0.01	0.00	-1.25	-1.32	0.44	5.38	9.14	6.36
	3	10.07	-0.01	0.00	0.00	0.00	0.00	-1.25	-1.32	0.46	5.40	9.04	6.37
	4	10.06	-0.01	23.63	141.92	0.60	0.13	79.81	34.69	-0.62	-5.57	0.70	-0.50
	5	10.05	15.02	23.23	140.87	0.59	0.13	72.54	40.46	7.78	-9.77	-7.92	-8.29
	6	10.05	30.05	23.88	142.96	0.60	0.13	65.58	46.93	23.23	-20.92	-2.46	-9.61
	7	10.03	45.01	23.99	143.43	0.60	0.13	46.77	62.60	35.96	-45.75	5.63	-3.60
	8	10.02	60.05	23.34	141.48	0.59	0.13	16.82	60.28	24.98	-27.59	8.07	-19.27
	9	10.05	75.00	23.53	142.04	0.60	0.13	1.43	63.79	9.98	-30.85	-5.68	-33.86
	10	10.05	89.96	23.76	142.76	0.60	0.13	-17.45	81.46	-0.34	-51.10	-44.64	-63.80
	11	10.05	105.00	23.45	141.81	0.59	0.13	-8.58	71.67	-7.64	-43.92	11.97	-62.34
	12	10.03	120.03	24.12	143.82	0.60	0.13	-23.42	65.39	-8.61	-27.88	7.40	-61.22
	13	10.06	134.99	24.27	144.28	0.60	0.13	-38.85	60.51	-2.80	-36.90	-22.50	-57.29
	14	10.08	150.02	23.77	142.78	0.60	0.13	-22.43	49.14	-8.99	-37.37	-20.75	-43.04
	15	10.08	165.03	24.14	143.89	0.60	0.13	-28.73	40.95	-2.31	-51.06	-15.77	-23.86
	16	10.07	178.84	24.56	145.14	0.61	0.13	-31.12	39.26	-4.77	-74.78	5.63	-14.91
	17	10.13	-0.01	23.85	142.91	0.60	0.13	81.26	34.95	-0.60	-5.33	1.18	-0.29
	18	10.11	-0.01	0.01	3.37	0.01	0.00	1.56	-1.21	0.50	5.95	-3.22	6.21

Table 17: L85 Helicopter Mode Corrected Data—With Grit

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R327	2	0.04	-0.01	0.00	0.72	0.00	0.00	-0.02	-0.11	0.26	-10.18	-1.93	0.11
	3	0.04	-0.01	5.33	65.91	0.30	0.06	9.55	7.17	0.46	-5.71	-4.09	-0.42
	4	0.03	15.01	5.23	65.31	0.30	0.06	7.20	7.33	2.52	-2.65	-1.90	-1.07
	5	0.04	30.05	5.36	66.07	0.30	0.06	3.11	8.62	2.23	-4.86	0.97	0.62
	6	0.06	45.10	5.25	65.38	0.30	0.06	0.72	11.72	3.21	-14.34	4.92	-0.18
	7	0.04	60.04	5.35	66.05	0.30	0.06	-2.69	14.34	4.49	-20.32	3.84	-1.07
	8	0.05	75.07	5.23	65.26	0.30	0.06	-0.05	16.05	2.11	-13.77	0.51	-3.84
	9	0.04	90.07	5.21	65.14	0.30	0.06	-6.50	17.64	-1.61	-12.46	-14.99	-13.86
	10	0.04	105.06	5.33	65.91	0.30	0.06	-1.17	16.80	-3.43	-12.81	3.70	-14.11
	11	0.05	120.10	5.48	66.91	0.30	0.06	-0.62	15.74	-5.31	-7.89	-0.50	-19.47
	12	0.05	135.05	5.30	65.78	0.30	0.06	-2.40	11.84	-6.04	-10.18	-7.76	-16.11
	13	0.05	150.08	5.48	66.91	0.30	0.06	0.15	9.10	-4.56	-13.88	-8.08	-11.42
	14	0.04	165.12	5.27	65.59	0.30	0.06	0.75	7.12	-3.54	-12.08	-3.96	-9.62
	15	0.04	178.84	5.33	65.96	0.30	0.06	3.87	6.23	-6.45	-10.41	2.87	-6.94
	16	0.05	-0.01	5.42	66.55	0.30	0.06	9.65	7.30	0.34	-11.09	-4.21	0.31
	17	0.04	-0.01	0.02	4.05	0.02	0.00	1.90	-0.11	0.15	-15.36	-10.20	0.82
R328	2	0.04	-0.01	0.00	0.00	0.00	0.00	-0.02	-0.10	0.23	-10.22	-1.77	0.11
	3	0.05	-0.01	12.27	100.38	0.45	0.09	20.65	15.54	0.68	-4.18	2.91	-0.20
	4	0.05	15.01	12.10	99.66	0.45	0.09	15.00	16.09	5.63	11.15	5.59	-3.28
	5	0.04	30.05	12.32	100.63	0.45	0.09	9.00	18.75	9.90	5.21	8.89	-6.23
	6	0.05	45.10	12.14	99.92	0.45	0.09	1.22	26.54	13.60	-11.13	17.53	-5.52
	7	0.03	60.04	12.13	99.89	0.45	0.09	-9.27	30.80	11.42	-22.65	15.96	-8.39
	8	0.06	75.08	12.36	100.81	0.45	0.09	-12.62	35.52	5.25	-7.46	17.45	-11.49
	9	0.05	90.04	12.14	99.89	0.45	0.09	-10.63	40.77	-0.23	-5.17	-4.61	-28.83
	10	0.04	105.07	12.05	99.52	0.45	0.09	-2.40	37.22	-6.27	-3.80	21.63	-36.77
	11	0.04	105.07	12.02	99.42	0.45	0.09	-2.29	37.31	-6.26	-3.74	21.90	-36.93
	12	0.05	120.11	12.30	100.55	0.45	0.09	2.97	33.82	-12.55	7.70	22.44	-40.64
	13	0.06	135.16	12.42	101.17	0.45	0.09	-4.51	27.79	-13.90	1.92	6.32	-33.47
	14	0.05	150.09	12.34	100.85	0.45	0.09	-0.70	20.51	-8.91	-9.22	2.47	-26.08
	15	0.04	165.13	12.47	101.39	0.45	0.09	0.76	16.77	-7.08	-3.51	6.56	-23.72
	16	0.05	178.84	12.30	100.67	0.45	0.09	6.95	14.83	-5.96	5.97	12.18	-14.33
	17	0.04	-0.01	5.49	67.18	0.30	0.06	8.50	7.42	0.43	-6.45	3.80	-0.30
	18	0.04	-0.01	0.02	3.99	0.02	0.00	0.22	-0.10	0.27	-10.26	-1.80	0.22

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R329	2	0.04	-0.01	0.01	2.77	0.01	0.00	-0.01	-0.12	0.27	-10.16	-1.90	0.10
	3	0.06	-0.01	21.96	134.86	0.60	0.12	38.73	26.68	1.05	0.57	3.87	0.71
	4	0.06	15.01	21.17	132.37	0.59	0.12	27.06	27.87	8.30	19.95	4.84	-3.45
	5	0.05	30.05	21.98	135.05	0.60	0.12	16.93	32.35	18.64	10.49	8.58	-9.19
	6	0.06	45.10	21.72	134.23	0.60	0.12	-1.66	47.48	26.10	-14.56	20.48	-10.16
	7	0.05	60.05	22.07	135.32	0.60	0.12	-16.14	57.51	22.10	-31.52	20.98	-16.76
	8	0.04	75.08	21.62	133.91	0.59	0.12	-17.03	62.55	10.35	-20.41	22.25	-21.02
	9	0.04	90.14	22.43	136.53	0.60	0.12	-13.55	77.27	0.51	-29.93	-20.33	-52.14
	10	0.06	105.07	22.21	135.86	0.60	0.12	-2.62	70.00	-13.64	-17.95	34.71	-68.74
	11	0.05	120.11	22.29	136.09	0.60	0.12	6.35	62.57	-22.99	1.62	42.19	-66.47
	12	0.05	120.11	22.30	136.14	0.60	0.12	5.73	62.64	-23.19	0.61	42.01	-66.39
	13	0.05	135.16	22.33	136.36	0.60	0.12	-5.55	50.83	-26.26	7.62	12.77	-61.76
	14	0.05	150.10	22.05	135.50	0.60	0.12	-1.15	36.61	-17.79	-10.05	6.38	-47.14
	15	0.04	165.14	22.38	136.52	0.60	0.12	3.22	30.83	-13.20	0.52	13.87	-43.39
	16	0.05	178.84	22.19	135.99	0.60	0.12	14.37	27.47	1.45	21.84	-3.16	2.27
	17	0.04	-0.01	5.60	68.21	0.30	0.06	8.49	7.59	0.24	-1.90	5.95	0.02
	18	0.04	-0.01	0.02	4.33	0.02	0.00	0.28	-0.10	0.13	-5.68	-0.70	0.52
R330	2	-9.96	-0.01	0.01	2.68	0.01	0.00	-0.31	-2.08	0.92	-20.98	-5.55	24.03
	3	-9.96	-0.01	23.25	140.41	0.60	0.13	-14.24	33.71	-1.15	40.93	5.39	3.68
	4	-9.97	15.01	23.47	141.23	0.60	0.13	-17.79	36.20	5.69	38.60	-4.92	-0.08
	5	-9.96	30.05	23.57	141.53	0.60	0.13	-28.26	38.04	15.09	47.36	-18.45	-4.36
	6	-9.96	45.01	23.19	140.36	0.60	0.13	-33.33	53.86	16.33	15.52	-7.27	-27.11
	7	-9.97	60.05	23.44	141.13	0.60	0.13	-34.85	60.05	11.06	-30.57	7.27	-16.94
	8	-9.96	75.08	23.59	141.58	0.60	0.13	-24.69	68.31	5.44	-22.76	10.88	-18.13
	9	-9.95	90.06	23.38	140.95	0.60	0.13	-13.62	80.10	-4.11	-21.17	-27.45	-53.45
	10	-9.95	105.07	23.02	139.85	0.59	0.13	8.53	73.78	-16.15	-4.48	38.92	-72.47
	11	-9.97	120.11	23.17	140.29	0.60	0.13	26.41	68.67	-21.19	21.82	53.92	-69.84
	12	-9.95	135.16	23.31	140.74	0.60	0.13	22.27	53.96	-23.59	34.19	16.20	-57.72
	13	-9.93	150.10	24.25	143.56	0.61	0.13	32.59	42.38	-19.46	26.49	3.53	-43.27
	14	-9.95	150.10	23.55	141.45	0.60	0.13	32.14	41.33	-18.89	26.07	3.75	-42.21
	15	-9.97	165.14	23.69	141.88	0.60	0.13	40.34	36.01	-13.95	56.77	20.71	-11.98
	16	-9.96	178.84	23.12	140.16	0.60	0.13	74.12	30.60	-9.34	74.02	131.25	-30.74
	17	-9.96	0.07	5.72	69.40	0.30	0.06	-1.97	7.88	-0.25	-4.26	-0.52	14.49
	18	-9.96	0.07	0.03	4.85	0.02	0.00	1.48	-2.07	0.89	-20.46	-12.00	23.49

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R331	2	10.06	0.07	0.00	0.00	0.00	0.00	-0.15	-0.63	0.30	10.86	8.90	6.91
	3	10.07	0.07	23.34	140.80	0.60	0.13	76.82	32.88	-0.69	0.83	4.66	1.58
	4	10.06	15.01	23.60	141.92	0.60	0.13	73.17	39.23	9.70	-3.84	-2.46	-8.95
	5	10.07	30.05	23.77	142.43	0.60	0.13	63.12	46.00	21.22	-18.67	0.00	-10.06
	6	10.05	45.10	23.83	142.74	0.60	0.13	34.43	63.90	30.04	-42.50	10.92	0.54
	7	10.05	60.04	23.58	142.00	0.60	0.13	-0.78	67.04	27.86	-40.98	38.17	-5.35
	8	10.06	75.08	23.73	142.31	0.60	0.13	-4.50	73.75	13.67	-36.11	33.93	-28.46
	9	10.05	90.04	23.81	142.55	0.60	0.13	-11.75	85.54	1.16	-46.82	-20.91	-63.01
	10	10.06	105.07	23.85	142.66	0.60	0.13	-11.61	76.79	-11.51	-38.15	20.11	-79.77
	11	10.05	120.11	24.10	143.43	0.61	0.13	-23.14	69.62	-17.95	-28.01	7.45	-73.06
	12	10.05	120.11	23.79	142.48	0.60	0.13	-22.60	68.72	-17.78	-26.55	8.79	-71.98
	13	10.06	135.07	23.60	141.92	0.60	0.13	-34.15	64.85	-19.97	-26.35	1.45	-69.18
	14	10.05	150.10	23.78	142.45	0.60	0.13	-24.04	47.77	-14.32	-31.60	-3.57	-43.20
	15	10.06	165.14	23.95	142.96	0.60	0.13	-29.65	39.76	-7.17	-45.18	-4.33	-30.46
	16	10.07	178.84	23.54	141.73	0.60	0.13	-30.97	37.21	-4.54	-65.92	6.13	-13.98
	17	10.06	-0.01	5.91	70.79	0.30	0.06	18.39	8.56	-0.41	5.47	6.02	3.81
	18	10.05	-0.01	0.01	3.00	0.01	0.00	0.85	-1.15	0.40	9.05	-0.20	6.89

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R332	2	-4.95	-0.01	0.00	0.74	0.00	0.00	-1.89	-0.58	-1.16	-10.82	10.59	14.29
	3	-4.95	-0.01	0.00	0.00	0.00	0.00	-1.97	-0.58	-1.29	-10.31	11.36	14.74
	4	-4.95	-0.01	22.48	136.83	0.60	0.12	10.55	28.19	-0.78	37.49	14.22	3.11
	5	-4.96	15.01	21.73	134.49	0.59	0.12	5.50	30.40	7.85	33.07	8.18	-4.48
	6	-4.95	30.05	22.58	137.25	0.60	0.12	-8.22	33.91	16.33	38.61	2.95	-6.05
	7	-4.96	45.09	22.81	137.93	0.60	0.12	-16.72	48.13	23.68	11.26	10.79	-24.59
	8	-4.96	60.04	22.36	136.55	0.60	0.12	-28.07	58.13	19.94	-20.44	13.52	-17.99
	9	-4.95	75.08	22.43	136.78	0.60	0.12	-21.57	66.95	9.20	-16.29	21.64	-25.90
	10	-4.94	90.04	22.48	136.95	0.60	0.12	-13.73	79.23	-1.74	-21.53	-13.89	-58.07
	11	-4.97	105.07	22.15	135.93	0.60	0.12	0.55	72.28	-15.76	-6.11	44.34	-76.74
	12	-4.97	120.11	22.38	136.61	0.60	0.12	13.58	64.60	-23.45	21.85	57.15	-71.61
	13	-4.95	135.16	22.24	136.19	0.60	0.12	4.85	50.55	-24.40	31.76	19.08	-58.32
	14	-4.96	150.10	22.42	136.73	0.60	0.12	11.58	36.73	-16.36	20.89	6.66	-41.78
	15	-4.96	165.13	22.26	136.23	0.60	0.12	20.85	30.39	-8.32	38.62	19.34	-19.83
	16	-4.95	178.84	22.60	137.28	0.60	0.12	33.42	27.39	-9.64	63.72	24.57	-26.66
	17	-4.95	-0.01	22.81	137.90	0.61	0.12	11.01	28.43	-0.33	36.21	13.62	1.49
	18	-4.97	-0.01	5.50	67.49	0.30	0.06	1.29	7.24	-0.58	6.10	11.42	8.18
	19	-4.95	-0.01	0.02	4.33	0.02	0.00	-1.43	-0.45	-1.02	-5.31	4.52	13.82

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R333	2	5.06	-0.01	0.01	2.10	0.01	0.00	-0.85	-2.55	0.91	9.76	3.84	15.22
	3	5.06	-0.01	0.01	2.46	0.01	0.00	-1.34	-2.63	0.74	9.89	6.44	15.70
	4	5.08	-0.01	22.48	136.89	0.60	0.12	59.20	27.94	-0.70	5.32	10.35	1.26
	5	5.07	15.01	22.33	136.42	0.60	0.12	50.44	29.86	8.63	16.59	2.45	-6.76
	6	5.03	30.05	22.38	136.72	0.60	0.12	39.71	35.57	21.12	-6.19	11.57	-11.44
	7	5.04	45.01	22.46	136.97	0.60	0.12	20.28	52.54	31.73	-26.74	11.17	-9.42
	8	5.03	60.04	22.34	136.59	0.60	0.12	-8.99	59.73	27.33	-27.72	27.81	-9.75
	9	5.05	75.08	22.76	137.87	0.60	0.12	-11.45	69.19	13.92	-25.45	27.64	-26.19
	10	5.06	90.04	22.52	137.12	0.60	0.12	-12.09	80.28	2.07	-37.20	-19.94	-58.81
	11	5.03	105.07	22.39	136.73	0.60	0.12	-7.53	73.35	-10.60	-30.69	22.55	-78.85
	12	5.03	120.11	22.71	137.72	0.60	0.12	-8.87	65.02	-21.67	-12.64	27.38	-78.41
	13	5.07	135.16	23.12	138.98	0.61	0.13	-22.11	58.24	-23.33	-8.54	6.92	-72.87
	14	5.05	150.10	22.89	138.41	0.60	0.12	-12.83	41.99	-14.54	-23.58	-2.29	-46.23
	15	5.04	165.14	23.30	139.67	0.61	0.13	-14.46	34.37	-9.59	-21.09	4.03	-38.30
	16	5.05	178.84	22.72	137.88	0.60	0.12	-13.22	31.02	-7.82	-32.40	20.00	-23.88
	17	5.05	-0.01	5.47	67.41	0.30	0.06	13.10	6.11	-0.37	7.91	12.33	9.84
	18	5.05	-0.01	0.01	3.24	0.01	0.00	-0.91	-2.60	0.42	9.76	6.39	16.38

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R334	2	0.05	-0.01	0.00	0.74	0.00	0.00	-0.09	-0.15	-0.12	-9.96	-0.06	1.23
	3	0.06	-179.97	0.00	1.29	0.01	0.00	-1.89	0.32	-10.80	-24.02	18.50	-9.22
	4	0.03	-179.97	22.82	138.22	0.60	0.12	14.81	29.90	-8.08	13.64	18.54	-23.96
	5	0.06	-165.08	23.33	139.98	0.61	0.13	-0.20	32.23	6.57	-17.06	8.10	28.88
	6	-0.02	-150.05	22.67	137.97	0.60	0.12	-0.51	37.24	13.64	-15.18	10.46	37.28
	7	0.03	-135.06	22.61	137.92	0.60	0.12	12.93	53.09	23.00	-3.36	130.05	64.49
	8	0.01	-120.06	22.91	138.84	0.60	0.12	8.85	64.99	20.59	9.42	-34.77	70.70
	9	0.02	-105.02	23.12	139.48	0.60	0.13	6.77	74.26	12.38	-22.73	-39.83	77.79
	10	0.07	-89.98	23.22	139.77	0.60	0.13	-14.10	79.32	-4.04	-33.22	25.75	54.38
	11	0.05	-75.04	23.68	141.16	0.61	0.13	-13.98	72.21	-16.92	-33.29	-21.37	28.54
	12	0.04	-60.00	23.46	140.49	0.61	0.13	-12.57	61.32	-26.82	-46.96	-19.70	14.78
	13	0.05	-44.95	23.17	139.60	0.60	0.13	8.97	51.57	-31.59	-36.68	-17.79	15.40
	14	0.09	-30.01	23.55	140.90	0.61	0.13	23.99	35.42	-22.05	2.49	4.08	15.50
	15	0.06	-14.97	22.94	139.05	0.60	0.12	32.13	29.92	-10.03	14.66	5.38	10.58
	16	0.05	-0.01	23.57	140.95	0.61	0.13	42.91	29.14	0.35	10.93	6.96	2.90
	17	0.05	3.06	23.39	140.43	0.60	0.13	42.34	29.37	2.08	10.88	7.80	1.81
	18	0.05	6.04	23.40	140.44	0.60	0.13	41.24	29.45	4.33	11.52	8.93	-0.79
	19	0.05	9.03	23.36	140.31	0.60	0.13	38.76	29.63	6.14	14.11	8.16	-2.56
	20	0.04	12.03	23.19	139.81	0.60	0.13	34.64	29.85	7.47	18.32	6.89	-2.61
	21	0.05	15.01	22.84	138.73	0.60	0.12	29.99	30.27	8.86	21.85	4.22	-3.73
	22	0.04	18.00	23.10	139.54	0.60	0.13	27.12	30.94	10.84	23.24	3.49	-5.42
	23	0.04	20.99	23.05	139.37	0.60	0.12	25.05	30.77	13.27	26.06	2.75	-7.02
	24	0.01	30.05	22.87	138.83	0.60	0.12	18.48	33.95	19.29	10.20	8.31	-9.76
	25	0.04	45.01	23.40	140.56	0.60	0.13	-1.46	51.38	29.66	-15.36	14.99	-13.16
	26	0.03	60.04	22.98	139.30	0.60	0.12	-16.41	61.11	27.27	-35.78	18.32	-16.84
	27	0.04	69.07	23.36	140.45	0.60	0.13	-19.41	68.63	20.69	-31.25	32.20	-22.22
	28	0.04	72.10	23.09	139.64	0.60	0.13	-18.36	69.73	15.71	-30.21	27.74	-26.79
	29	0.04	75.08	22.93	139.15	0.60	0.12	-15.80	70.03	12.16	-31.20	24.39	-31.54
	30	0.04	78.07	22.89	139.01	0.60	0.12	-14.30	71.93	10.28	-32.55	19.25	-35.73
	31	0.05	81.07	22.98	139.31	0.60	0.12	-12.92	74.32	8.85	-32.94	10.47	-39.40
	32	0.04	84.06	23.29	140.25	0.60	0.13	-12.02	78.96	7.55	-36.13	-4.32	-46.23
	33	0.04	87.04	22.96	139.35	0.60	0.12	-12.85	81.08	3.93	-37.50	-15.08	-55.46
	34	0.04	90.04	23.49	141.00	0.60	0.13	-10.50	83.96	0.56	-39.24	-15.92	-63.51

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R334	35	0.03	93.12	23.54	141.14	0.60	0.13	-6.65	83.67	-3.17	-39.76	-7.78	-70.93
	36	0.04	96.10	24.01	142.55	0.61	0.13	-4.96	82.68	-8.86	-37.91	10.77	-76.39
	37	0.03	99.09	23.60	141.33	0.60	0.13	-4.33	78.32	-10.55	-29.60	19.94	-72.81
	38	0.05	102.09	23.32	140.53	0.60	0.13	-2.19	76.59	-13.51	-25.86	31.65	-75.22
	39	0.05	105.07	23.20	140.25	0.60	0.13	-2.68	73.66	-14.06	-19.07	33.04	-72.57
	40	0.04	108.06	23.03	139.74	0.59	0.12	-1.63	71.91	-15.62	-15.52	37.90	-74.73
	41	0.03	111.05	22.87	139.24	0.59	0.12	0.41	69.61	-18.22	-13.88	43.80	-74.47
	42	0.04	120.11	23.49	141.12	0.60	0.13	3.61	66.89	-24.77	-4.41	39.56	-70.35
	43	0.06	135.07	23.87	142.27	0.61	0.13	-8.52	55.33	-28.91	2.90	13.23	-65.80
	44	0.06	150.10	24.88	145.28	0.62	0.13	-0.45	41.41	-20.01	-9.13	6.07	-52.18
	45	0.06	150.10	23.43	140.96	0.60	0.13	-0.99	39.00	-18.66	-10.84	4.21	-49.38
	46	0.05	159.10	23.22	140.47	0.60	0.13	-1.32	33.94	-13.95	-10.12	5.02	-42.92
	47	0.05	162.15	23.39	140.99	0.60	0.13	1.60	33.53	-13.02	-5.65	7.99	-43.06
	48	0.05	165.14	23.58	141.54	0.60	0.13	4.49	32.52	-13.49	0.30	10.66	-41.79
	49	0.04	168.13	23.52	141.44	0.60	0.13	7.58	31.00	-13.13	6.53	11.95	-40.55
	50	0.04	171.12	23.63	141.85	0.60	0.13	9.48	30.81	-11.78	9.65	13.77	-41.27
	51	0.03	174.11	23.68	142.00	0.60	0.13	14.17	30.35	-8.54	22.21	17.15	-33.38
	52	0.03	177.19	23.90	142.65	0.60	0.13	16.44	30.53	-7.91	24.25	16.85	-29.09
	53	0.04	178.84	23.95	142.82	0.60	0.13	17.04	29.90	-4.99	24.64	11.13	-18.62
	54	0.04	-0.01	6.08	71.68	0.31	0.06	9.99	8.29	0.22	-7.08	3.16	0.01
	55	0.04	0.03	0.01	3.18	0.01	0.00	0.32	-0.04	0.13	-11.15	-2.63	0.46

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R335	2	-4.96	0.00	0.00	0.00	0.00	0.00	-0.43	-0.48	-1.17	-9.13	3.42	14.10
	3	-4.96	-0.01	23.55	141.67	0.60	0.13	13.44	29.68	-0.92	34.62	10.97	2.72
	4	-4.96	3.05	23.98	143.33	0.60	0.13	12.95	30.41	1.00	43.79	11.99	1.16
	5	-4.96	6.04	23.75	142.69	0.60	0.13	11.83	30.73	3.32	42.70	10.57	-2.77
	6	-4.96	9.03	24.16	144.02	0.60	0.13	10.80	31.74	6.19	42.23	8.75	-6.70
	7	-4.96	12.03	24.02	143.60	0.60	0.13	10.06	33.08	7.54	37.11	6.74	-6.01
	8	-4.96	15.01	24.31	144.48	0.60	0.13	8.64	33.88	8.71	34.36	5.95	-8.26
	9	-4.96	18.00	23.99	143.50	0.60	0.13	5.62	33.26	10.48	35.32	-0.13	-6.42
	10	-4.97	21.08	24.16	144.03	0.60	0.13	3.17	33.26	12.56	39.07	-1.81	-6.82
	11	-4.97	23.99	24.13	143.94	0.60	0.13	0.80	33.78	14.93	39.91	-2.15	-8.27
	12	-4.98	27.06	24.21	144.19	0.60	0.13	-2.34	34.91	16.62	39.81	-1.89	-8.64
	13	-4.98	30.05	24.08	143.80	0.60	0.13	-7.04	36.52	17.49	38.18	-2.54	-8.36
	14	-4.95	45.01	24.38	144.71	0.60	0.13	-15.62	51.26	23.81	9.65	8.85	-24.08
	15	-4.98	60.04	24.07	143.75	0.60	0.13	-27.34	63.50	21.58	-29.27	10.95	-21.54
	16	-4.96	69.11	24.58	145.44	0.60	0.13	-24.58	72.27	17.91	-27.65	26.25	-21.04
	17	-4.96	72.09	24.09	143.96	0.60	0.13	-20.30	72.42	12.66	-22.53	22.66	-25.00
	18	-4.96	75.08	24.06	143.87	0.60	0.13	-19.70	73.55	9.70	-25.60	22.71	-31.59
	19	-4.96	78.07	24.16	144.18	0.60	0.13	-17.36	75.70	7.90	-27.43	18.30	-35.63
	20	-4.96	81.07	24.22	144.38	0.60	0.13	-15.65	78.24	6.68	-28.46	12.11	-40.38
	21	-4.96	84.06	24.61	145.52	0.60	0.13	-13.79	83.86	5.11	-29.99	-0.99	-49.85
	22	-4.95	87.05	24.41	144.93	0.60	0.13	-14.60	86.42	1.50	-24.13	-12.53	-58.92
	23	-4.95	90.14	24.13	144.09	0.60	0.13	-11.16	86.29	-2.26	-22.50	-11.44	-66.01
	24	-4.96	93.09	24.12	144.12	0.60	0.13	-6.80	86.02	-6.09	-21.61	-1.23	-74.74
	25	-4.97	96.10	24.57	145.57	0.60	0.13	-3.87	84.92	-11.35	-18.95	18.28	-80.93
	26	-4.96	99.09	24.25	144.61	0.60	0.13	-1.93	81.32	-13.14	-12.35	28.93	-79.15
	27	-4.97	102.09	24.74	146.07	0.60	0.13	2.05	82.22	-16.23	-12.06	41.24	-82.90
	28	-4.95	105.07	24.53	145.43	0.60	0.13	4.08	79.66	-20.20	-5.28	53.89	-88.64
	29	-4.96	108.06	24.31	144.77	0.60	0.13	5.40	78.78	-20.62	-3.68	56.47	-90.38
	30	-4.97	111.14	24.34	144.89	0.60	0.13	8.75	76.01	-22.67	1.58	62.28	-90.09
	31	-4.96	120.11	24.07	144.07	0.60	0.13	17.96	69.61	-26.43	29.93	55.43	-76.87
	32	-4.93	135.07	24.14	144.26	0.60	0.13	7.59	55.18	-26.94	33.64	18.56	-63.79
	33	-4.94	150.10	24.04	143.97	0.60	0.13	13.54	39.41	-18.41	21.31	4.13	-47.05
	34	-4.95	159.16	24.12	144.22	0.60	0.13	15.14	35.32	-11.29	23.10	7.16	-31.06

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R335	35	-4.96	162.15	24.57	145.56	0.60	0.13	17.85	34.70	-10.86	29.11	9.15	-26.41
	36	-4.96	165.14	24.84	146.38	0.61	0.13	23.83	33.91	-10.69	39.72	17.53	-23.78
	37	-4.97	168.13	24.97	146.74	0.61	0.13	27.77	32.31	-11.12	49.21	21.01	-23.41
	38	-4.94	171.12	24.37	144.97	0.60	0.13	30.49	30.58	-11.58	55.14	23.53	-25.19
	39	-4.94	174.11	24.53	145.44	0.60	0.13	34.11	29.91	-11.87	62.92	24.96	-29.13
	40	-4.95	177.10	24.35	144.92	0.60	0.13	37.18	29.64	-10.19	67.44	26.13	-33.52
	41	-4.95	178.84	24.58	145.59	0.60	0.13	38.94	29.78	-8.14	69.61	20.61	-26.30
	42	-4.96	-0.01	6.06	72.02	0.30	0.06	3.05	8.02	-0.50	5.17	8.21	6.98
	43	-4.96	0.00	0.02	4.27	0.02	0.00	-0.03	-0.45	-1.09	-7.07	0.98	13.42

Table 17: L85 Helicopter Mode Corrected Data—With Grit (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R337	2	5.06	-0.01	0.00	0.00	0.00	0.00	-0.75	-2.57	0.77	9.56	5.22	15.55
	3	5.05	0.00	22.13	135.52	0.60	0.12	60.88	27.98	-1.28	4.62	2.00	1.57
	4	5.05	3.06	21.95	134.95	0.60	0.12	60.49	28.03	1.26	11.96	1.21	-2.66
	5	5.05	6.05	21.91	134.84	0.60	0.12	59.31	28.24	2.90	13.05	-0.84	-4.28
	6	5.05	9.03	21.81	134.51	0.60	0.12	56.66	28.30	4.69	14.15	-3.23	-5.54
	7	5.04	12.03	21.77	134.39	0.60	0.12	53.89	28.72	6.52	14.74	-5.17	-6.78
	8	5.04	15.01	22.35	136.18	0.60	0.12	52.33	30.03	9.37	14.32	-7.02	-8.46
	9	5.04	18.01	21.84	134.62	0.60	0.12	48.46	30.02	12.31	12.39	-7.99	-10.80
	10	5.03	20.99	21.94	135.06	0.60	0.12	46.19	30.37	15.69	13.67	-9.83	-14.48
	11	5.04	24.07	22.01	135.30	0.60	0.12	45.21	31.70	18.85	8.50	-8.40	-16.34
	12	5.06	27.06	22.20	135.87	0.60	0.12	44.19	33.44	21.31	0.44	-5.06	-16.50
	13	5.05	30.05	21.92	135.00	0.60	0.12	40.33	35.85	21.85	-8.02	-1.18	-14.49
	14	5.05	45.10	22.30	136.17	0.60	0.12	22.70	53.18	30.96	-32.75	4.50	-9.92
	15	5.06	60.04	22.05	135.40	0.60	0.12	-6.21	60.09	26.29	-34.76	21.37	-11.89
	16	5.04	69.10	22.58	137.04	0.60	0.12	-10.57	67.38	20.05	-25.20	34.93	-21.05
	17	5.04	72.00	22.29	136.16	0.60	0.12	-10.66	68.31	15.94	-24.86	31.45	-24.89
	18	5.04	75.08	22.09	135.53	0.60	0.12	-8.23	68.76	12.06	-25.28	26.33	-29.01
	19	5.05	78.07	22.16	135.76	0.60	0.12	-7.11	70.26	9.75	-26.15	18.40	-33.23
	20	5.06	81.06	22.23	135.96	0.60	0.12	-6.93	72.58	8.01	-27.63	10.92	-36.59
	21	5.07	84.05	22.34	136.30	0.60	0.12	-7.78	76.82	6.71	-31.63	-5.25	-43.43
	22	5.04	87.04	22.05	135.41	0.60	0.12	-10.06	78.65	3.38	-34.24	-15.59	-53.46
	23	5.04	90.04	22.05	135.40	0.60	0.12	-8.95	79.46	-0.29	-36.72	-16.38	-60.30
	24	5.05	93.02	22.13	135.66	0.60	0.12	-6.02	79.43	-3.64	-38.05	-9.19	-67.30
	25	5.06	96.10	22.46	136.67	0.60	0.12	-5.99	77.82	-8.61	-36.00	6.76	-73.12
	26	5.05	99.08	22.22	135.94	0.60	0.12	-4.81	74.14	-10.25	-29.04	16.01	-71.68
	27	5.04	102.08	22.07	135.46	0.60	0.12	-4.84	72.40	-12.17	-25.64	22.93	-73.48
	28	5.04	105.06	21.92	135.01	0.60	0.12	-5.32	71.40	-14.33	-24.60	28.99	-78.10
	29	5.05	108.06	22.04	135.36	0.60	0.12	-4.24	70.39	-16.06	-21.74	34.00	-81.31
	30	5.04	111.05	21.89	134.91	0.60	0.12	-3.59	68.26	-18.75	-17.91	37.82	-81.92
	31	5.05	120.10	22.18	135.82	0.60	0.12	-8.08	63.29	-21.25	-8.48	18.01	-74.09
	32	5.06	135.06	22.29	136.16	0.60	0.12	-17.89	56.10	-23.06	-5.41	0.62	-70.08
	33	5.04	150.09	22.13	135.65	0.60	0.12	-9.63	39.47	-15.21	-20.34	-6.39	-44.18
	34	5.05	159.15	22.42	136.56	0.60	0.12	-12.53	34.31	-10.49	-22.76	-4.18	-38.84

Table 17: L85 Helicopter Mode Corrected Data—With Grit (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R337	35	5.05	162.13	22.35	136.34	0.60	0.12	-11.42	33.44	-10.53	-21.40	-2.13	-38.83
	36	5.05	165.12	22.46	136.68	0.60	0.12	-11.80	33.08	-9.40	-22.65	-2.64	-37.17
	37	5.05	168.11	22.58	137.05	0.60	0.12	-11.62	32.37	-8.96	-22.75	-1.36	-34.73
	38	5.05	171.10	22.10	135.58	0.60	0.12	-9.84	30.88	-8.18	-20.90	0.46	-32.73
	39	5.05	174.10	22.07	135.47	0.60	0.12	-8.49	30.44	-8.34	-21.40	4.57	-33.09
	40	5.05	177.08	22.17	135.79	0.60	0.12	-8.15	30.46	-8.91	-22.34	8.97	-32.96
	41	5.06	178.84	22.29	136.15	0.60	0.12	-10.89	30.68	-7.56	-34.42	11.81	-23.61
	42	5.05	0.08	5.49	67.37	0.30	0.06	15.33	6.42	0.01	6.78	2.26	8.30
	43	5.05	0.08	0.00	1.82	0.01	0.00	1.14	-2.38	0.81	9.27	-2.94	15.24

Table 18: L95 Helicopter Mode Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R339	2	0.05	-0.01	0.00	0.00	0.00	0.00	-0.02	-0.11	0.26	-3.76	-0.91	0.11
	3	0.05	-0.01	24.52	146.04	0.60	0.13	38.26	29.29	-0.40	9.36	-2.49	1.39
	4	0.05	15.01	25.30	148.65	0.60	0.13	27.48	32.29	8.57	21.54	-5.65	-6.23
	5	0.05	30.05	25.09	148.18	0.60	0.13	14.99	36.24	23.26	4.51	-5.89	-12.82
	6	0.05	45.01	25.30	148.79	0.60	0.13	-9.00	53.92	30.68	-11.97	4.01	-16.43
	7	0.05	60.05	25.45	149.25	0.60	0.13	-18.29	67.04	28.50	-40.63	12.01	-17.39
	8	0.04	75.09	25.21	148.53	0.60	0.13	-15.88	78.67	14.80	-35.42	18.27	-32.11
	9	0.04	89.54	25.34	148.92	0.60	0.13	-11.85	91.87	1.88	-34.56	-29.13	-68.02
	10	0.04	89.60	25.29	148.77	0.60	0.13	-12.40	91.88	1.87	-30.95	-27.30	-68.26
	11	0.04	90.05	25.31	148.96	0.60	0.13	-10.89	91.71	1.52	-33.50	-27.01	-69.27
	12	0.05	105.08	25.55	149.69	0.60	0.13	0.59	83.63	-16.05	-21.36	29.08	-88.68
	13	0.06	120.11	25.33	149.04	0.60	0.13	10.14	73.55	-26.83	8.98	37.87	-78.33
	14	0.05	135.17	25.24	148.76	0.60	0.13	-2.81	60.65	-31.20	10.85	3.15	-70.49
	15	0.07	150.10	25.36	149.13	0.60	0.13	5.23	43.33	-24.18	-12.28	-4.78	-57.97
	16	0.05	165.14	24.80	147.47	0.59	0.13	9.00	35.53	-14.86	-1.19	0.49	-47.80
	17	0.04	178.84	25.42	149.32	0.60	0.13	22.13	32.93	-6.09	23.21	7.90	-24.63
	18	0.05	0.00	6.29	73.86	0.30	0.07	9.66	8.46	0.85	0.24	-1.74	-1.20
	19	0.05	0.00	0.02	4.62	0.02	0.00	2.38	0.01	0.30	-3.94	-9.65	-0.12

Wing-Only Data

Table 19: WC Wing-Only 55% Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R401	2	0.00	0.08	0.00	0.00	0.00	0.00	0.03	-0.06	-0.02	-0.28	-0.15	0.03
	3	0.00	0.08	5.69	69.15	0.30	0.06	12.37	0.88	-0.01	-6.28	5.38	0.04
	4	0.00	0.07	12.92	104.32	0.45	0.09	31.10	1.78	-0.03	-11.84	4.16	0.06
	5	0.00	0.07	23.09	139.86	0.60	0.13	56.59	2.94	-0.05	-18.44	4.92	0.10
	6	0.00	0.08	40.99	186.95	0.80	0.17	100.61	5.06	-0.06	-27.08	4.84	0.12
	7	0.00	0.08	93.79	286.26	1.20	0.26	229.33	11.46	-0.08	-41.85	2.40	0.31
	8	0.00	0.08	130.02	339.88	1.40	0.31	316.03	15.90	-0.18	-48.16	0.31	0.41
	9	0.00	0.08	0.00	1.99	0.01	0.00	-1.67	0.02	-0.02	7.88	1.87	0.01
R402	2	0.00	5.00	0.00	1.34	0.01	0.00	-0.06	-0.02	0.01	-1.95	0.03	-0.01
	3	0.00	5.00	94.76	288.21	1.20	0.26	227.88	11.77	-0.07	-43.41	-5.58	-1.15
	4	0.00	5.00	130.42	341.22	1.40	0.31	313.47	16.29	-0.11	-54.46	-6.97	-1.46
	5	0.00	5.00	0.02	4.50	0.02	0.00	-0.44	0.00	0.04	3.63	-0.24	-0.19
R409	2	0.00	10.01	0.00	0.00	0.00	0.00	0.02	-0.02	-0.07	-1.53	1.31	-0.08
	3	0.00	10.01	92.35	282.99	1.20	0.26	222.00	10.89	-0.92	-44.95	-11.00	-1.48
	4	0.00	10.00	126.58	333.91	1.40	0.30	304.98	14.75	-0.78	-58.63	-15.93	-2.04
	5	0.00	10.01	0.02	4.44	0.02	0.00	0.64	0.03	0.00	-0.67	0.74	-0.25
R410	2	0.00	-4.94	0.00	0.00	0.00	0.00	-0.05	-0.04	-0.01	0.33	0.18	0.03
	3	0.00	-4.94	92.03	282.41	1.20	0.26	227.28	10.58	-0.24	-40.91	1.91	1.53
	4	0.00	-4.94	126.86	334.22	1.40	0.30	314.14	14.52	-0.06	-53.68	0.92	2.14
	5	0.00	-4.94	0.02	4.33	0.02	0.00	0.50	-0.03	-0.07	0.84	-0.75	0.03
R419	2	6.00	0.00	0.01	2.25	0.01	0.00	0.04	-0.06	-0.01	-0.25	-0.14	-0.02
	3	6.00	-0.01	5.76	69.89	0.30	0.06	22.02	1.19	0.01	-2.73	-5.07	-0.07
	4	6.00	0.00	13.24	106.32	0.45	0.09	78.69	2.75	-1.48	-6.20	-153.80	0.08
	5	6.00	0.00	13.21	106.23	0.45	0.09	47.06	2.75	-0.01	-6.53	-4.02	0.11
	6	6.00	0.00	24.27	144.40	0.60	0.13	83.44	5.14	0.02	-13.22	-4.57	0.09
	7	6.00	-0.01	41.98	190.57	0.79	0.17	141.69	9.11	0.02	-23.56	-3.66	0.09
	8	6.00	-0.01	97.83	294.41	1.20	0.26	319.82	22.07	0.03	-47.79	-13.03	0.45
	9	6.00	-0.01	133.96	347.50	1.40	0.31	434.54	30.86	-0.05	-52.06	-16.16	0.59
	10	6.00	-0.01	0.02	3.95	0.02	0.00	1.93	0.04	-0.01	0.21	-6.85	-0.02

Table 19: WC Wing-Only 55% Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R425	2	8.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.06	-0.01	-0.29	-0.15	-0.03
	3	8.00	-0.01	5.60	68.24	0.30	0.06	19.90	1.38	0.01	-0.39	-0.79	-0.04
	4	8.00	-0.01	12.77	103.21	0.45	0.09	44.19	3.29	0.02	-0.91	-0.28	0.00
	5	8.00	-0.01	22.54	137.47	0.60	0.12	78.47	5.88	0.04	-2.03	-2.32	0.03
	6	8.00	-0.01	40.75	185.51	0.80	0.17	141.80	10.90	0.09	-4.38	-2.56	-0.05
	7	8.00	0.00	91.98	281.81	1.20	0.25	324.58	25.34	0.13	-33.67	-7.15	0.64
	8	8.00	0.00	127.41	334.54	1.40	0.30	452.50	35.66	0.08	-48.40	-12.44	0.76
	9	8.00	-0.01	0.02	3.88	0.02	0.00	1.44	0.02	0.00	-0.14	-5.72	-0.03
R435	2	-6.00	0.00	0.00	1.44	0.01	0.00	0.04	-0.06	-0.02	-0.25	-0.11	0.00
	3	-6.00	-0.01	5.60	67.73	0.30	0.06	7.69	0.85	-0.02	-8.41	-1.51	0.07
	4	-6.00	0.00	12.48	101.22	0.45	0.09	11.95	1.80	-0.02	-3.25	-1.76	0.03
	5	-6.00	0.00	22.04	134.85	0.60	0.12	19.15	2.87	0.03	-5.09	-1.46	0.06
	6	-6.00	-0.01	39.04	180.10	0.80	0.16	35.22	4.24	0.10	-9.98	-1.73	-0.09
	7	-6.00	0.00	89.86	276.29	1.20	0.25	76.01	9.19	0.23	-23.93	-0.93	0.10
	8	-6.00	-0.01	124.25	327.59	1.40	0.30	97.82	12.77	0.29	-32.90	0.63	0.24
	9	-6.00	0.00	0.02	4.41	0.02	0.00	1.05	-0.04	0.02	-0.49	-3.36	0.00
R437	2	-3.00	0.00	0.00	2.01	0.01	0.00	0.04	-0.06	-0.01	-0.24	-0.14	0.00
	3	-3.00	0.00	5.81	69.22	0.31	0.06	9.81	0.80	-0.01	-1.32	-2.02	0.02
	4	-3.00	0.00	12.70	102.60	0.45	0.09	21.22	1.66	0.00	-2.10	-4.16	0.04
	5	-3.00	0.00	22.62	137.18	0.60	0.12	37.85	2.61	0.01	-4.81	-3.63	0.04
	6	-3.00	0.00	40.14	183.47	0.80	0.17	67.52	4.26	0.10	-9.43	-4.87	0.12
	7	-3.00	0.00	91.79	280.60	1.20	0.25	152.13	9.36	-0.04	-23.02	-2.46	0.24
	8	-3.00	0.00	127.32	333.37	1.40	0.30	205.52	12.91	-0.03	-31.99	-4.75	0.34
	9	-3.00	-0.01	0.02	4.27	0.02	0.00	1.84	-0.01	-0.01	0.02	-7.71	-0.04

Table 20: WC Wing-Only 5% Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R442	2	0.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.06	-0.01	-0.26	-0.14	0.00
	3	0.00	0.00	5.93	70.98	0.30	0.06	10.94	0.82	0.01	-0.92	3.62	-0.09
	4	0.00	0.00	13.65	108.20	0.45	0.10	26.19	1.72	0.01	-2.22	2.66	-0.03
	5	0.00	0.00	24.52	145.51	0.60	0.13	45.84	3.15	-0.08	-3.54	1.59	-0.10
	6	0.00	0.00	43.83	195.38	0.80	0.17	80.62	5.74	-0.07	-6.46	2.09	-0.03
	7	0.00	0.00	99.78	298.12	1.20	0.27	177.30	13.57	-0.10	-15.29	3.89	0.08
	8	0.00	0.00	137.41	353.01	1.40	0.31	241.42	19.28	-0.04	-20.79	0.03	0.39
	9	0.00	0.00	0.03	4.91	0.02	0.00	0.74	0.02	0.01	0.39	-1.77	-0.12
R447	2	0.00	-4.98	0.00	0.00	0.00	0.00	-0.05	-0.03	0.00	0.28	0.15	0.00
	3	0.00	-4.95	91.21	279.62	1.20	0.25	160.81	12.42	0.49	-13.78	0.39	1.44
	4	0.00	-4.94	125.85	331.25	1.40	0.30	218.83	17.41	0.97	-18.76	-2.31	2.13
	5	0.00	-4.95	0.02	4.14	0.02	0.00	0.85	0.04	-0.01	-0.11	-2.33	0.03
R448	2	0.00	5.00	0.00	1.84	0.01	0.00	-0.05	-0.03	-0.01	-1.91	0.08	0.03
	3	0.00	5.00	91.45	280.31	1.20	0.25	159.70	12.46	-0.72	-16.35	3.61	-0.92
	4	0.00	5.00	125.95	331.78	1.40	0.30	218.77	17.38	-1.03	-21.19	1.20	-1.25
	5	0.00	5.00	0.02	3.72	0.02	0.00	0.83	-0.03	0.00	-1.39	-2.89	0.02
R453	2	0.00	10.01	0.00	0.00	0.00	0.00	0.02	-0.03	-0.05	-1.50	1.20	-0.03
	3	0.00	10.01	93.55	284.88	1.20	0.26	159.40	12.48	-1.49	-16.51	1.94	-1.29
	4	0.00	10.01	130.03	339.20	1.40	0.30	218.86	17.91	-2.27	-21.77	0.57	-2.14
	5	0.00	10.01	0.02	4.11	0.02	0.00	1.63	0.03	-0.06	-1.81	-5.42	-0.06
R456	2	8.00	0.00	0.00	0.00	0.00	0.00	0.02	-0.06	-0.01	-0.27	-0.22	0.00
	3	8.00	0.00	5.98	70.93	0.30	0.06	19.45	1.51	0.00	-0.79	-0.86	0.01
	4	8.00	0.00	13.31	106.22	0.45	0.09	43.87	3.46	-0.01	-1.30	-0.82	0.03
	5	8.00	0.00	24.30	143.93	0.61	0.13	80.23	6.45	-0.03	-2.34	-1.57	0.03
	6	8.00	0.01	42.83	191.93	0.80	0.17	142.45	11.58	-0.08	-4.30	-0.48	0.12
	7	8.00	0.00	97.77	293.43	1.20	0.26	328.20	27.43	-0.13	-10.03	-8.29	0.58
	8	8.00	0.00	134.30	346.97	1.40	0.31	453.86	38.60	-0.04	-24.58	-11.55	0.75
	9	8.00	0.00	0.02	3.83	0.02	0.00	0.70	0.06	-0.01	-0.94	-0.83	-0.03

Table 20: WC Wing-Only 5% Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R457	2	6.00	0.00	0.01	2.62	0.01	0.00	0.04	-0.06	-0.01	-0.25	-0.15	-0.01
	3	6.00	0.00	6.00	71.28	0.30	0.06	17.90	1.20	0.01	-7.35	1.60	-0.04
	4	6.00	0.00	13.49	107.41	0.45	0.10	39.26	2.84	0.00	-1.96	0.74	-0.03
	5	6.00	0.00	24.12	144.20	0.60	0.13	71.07	5.17	-0.04	-3.02	1.00	0.04
	6	6.00	0.01	43.35	194.06	0.80	0.17	128.59	9.52	-0.05	-5.35	1.79	0.11
	7	6.00	0.00	99.42	297.48	1.20	0.26	294.83	22.83	-0.15	-11.69	-3.26	0.35
	8	6.00	0.00	137.04	352.24	1.40	0.31	406.57	32.42	-0.37	-19.47	-6.49	0.40
	9	6.00	0.00	0.03	5.04	0.02	0.00	0.88	0.03	-0.01	-0.21	-1.46	-0.02
R465	2	-3.00	-0.01	0.00	1.99	0.01	0.00	0.04	-0.06	-0.02	-0.28	-0.10	0.02
	3	-3.00	0.00	5.83	69.92	0.30	0.06	8.62	0.66	-0.04	-1.67	0.89	0.03
	4	-3.00	0.03	13.01	104.58	0.45	0.09	18.35	1.50	-0.05	-2.34	-1.13	0.08
	5	-3.00	0.00	23.34	140.46	0.60	0.13	29.82	2.71	-0.06	-4.16	-0.52	0.11
	6	-3.00	0.00	41.17	187.13	0.80	0.17	50.60	4.85	0.01	-7.18	-0.62	-0.06
	7	-3.00	0.00	93.84	285.79	1.20	0.26	111.99	11.23	0.01	-16.55	-0.26	0.49
	8	-3.00	0.02	129.63	338.75	1.40	0.30	152.33	15.81	-0.02	-22.55	0.67	0.71
	9	-3.00	0.00	0.03	4.92	0.02	0.00	1.21	0.02	-0.02	-0.17	-5.48	0.02
R466	2	-6.00	-0.01	0.00	0.00	0.00	0.00	0.04	-0.06	-0.02	-0.26	-0.13	0.01
	3	-6.00	0.01	5.91	70.37	0.30	0.06	5.09	0.60	-0.06	-2.01	4.16	-0.01
	4	-6.00	0.00	13.20	105.42	0.45	0.09	9.94	1.51	-0.04	-2.91	0.03	0.04
	5	-6.00	0.00	23.14	139.83	0.60	0.13	15.32	2.74	-0.05	-4.54	0.77	0.08
	6	-6.00	0.01	41.53	188.12	0.80	0.17	24.02	5.00	-0.03	-7.92	1.01	-0.21
	7	-6.00	0.00	94.63	287.28	1.20	0.26	50.31	11.75	0.12	-17.17	2.55	0.51
	8	-6.00	0.02	130.16	339.78	1.40	0.31	66.00	16.57	0.10	-22.75	5.30	0.80
	9	-6.00	-0.01	0.02	4.36	0.02	0.00	0.94	0.01	-0.02	0.45	-3.63	-0.04

Table 21: WN Wing-Only 55% Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R403	2	0.00	5.00	0.00	0.00	0.00	0.00	-0.05	-0.02	0.01	-1.95	-0.04	-0.01
	3	0.00	5.00	94.94	288.57	1.20	0.26	236.32	14.48	0.60	-42.68	-3.50	0.86
	4	0.00	5.00	132.06	343.35	1.41	0.31	330.29	20.26	0.87	-53.03	-4.59	1.35
	5	0.00	5.00	0.02	4.22	0.02	0.00	-0.16	0.06	0.07	4.50	-3.89	-0.13
R408	2	0.00	10.01	0.00	0.00	0.00	0.00	0.01	-0.03	-0.04	-1.50	1.01	-0.06
	3	0.00	10.01	94.98	289.36	1.19	0.26	231.71	14.38	0.56	-45.41	-3.56	2.41
	4	0.00	10.01	131.67	343.55	1.40	0.31	327.84	19.52	1.03	-58.79	-7.97	2.85
	5	0.00	10.01	0.03	4.88	0.02	0.00	0.77	0.04	0.04	-0.56	-1.52	-0.08
R411	2	0.00	-4.94	0.00	1.36	0.01	0.00	-0.05	-0.04	-0.01	0.32	0.18	0.02
	3	0.00	-4.94	91.96	282.33	1.20	0.26	227.37	13.88	-0.03	-41.32	2.79	-0.91
	4	0.00	-4.94	91.96	282.57	1.20	0.26	227.57	13.91	-0.01	-41.28	2.78	-0.97
	5	0.00	-4.94	127.18	334.87	1.40	0.30	317.23	19.19	0.26	-57.65	5.47	-0.98
	6	0.00	-4.94	0.02	4.49	0.02	0.00	0.33	0.03	-0.06	0.51	0.11	0.01
R416	2	0.00	0.00	0.00	1.34	0.01	0.00	0.04	-0.06	-0.02	-0.25	-0.12	0.05
	3	0.00	0.00	5.88	70.48	0.30	0.06	14.93	0.99	0.04	-2.40	-0.11	0.05
	4	0.00	0.00	5.75	69.74	0.30	0.06	14.49	0.97	0.03	-2.21	-0.21	0.07
	5	0.00	0.00	12.98	104.89	0.45	0.09	32.34	2.02	0.04	-5.18	0.79	0.11
	6	0.00	0.00	23.31	140.85	0.60	0.13	58.12	3.52	0.06	-10.98	2.47	0.03
	7	0.00	-0.01	41.60	188.88	0.80	0.17	103.35	6.20	0.11	-20.46	2.80	0.01
	8	0.00	0.00	94.58	287.93	1.20	0.26	236.29	14.36	0.17	-43.72	1.82	0.46
	9	0.00	0.00	130.63	341.37	1.40	0.31	326.58	20.17	0.13	-58.93	2.53	0.45
	10	0.00	-0.01	0.02	4.00	0.02	0.00	0.17	-0.03	-0.02	-0.41	2.16	0.10
R420	2	6.00	-0.01	0.00	0.61	0.00	0.00	0.04	-0.06	-0.02	-0.26	-0.10	0.04
	3	6.00	-0.01	6.09	71.88	0.31	0.06	22.38	1.44	-0.01	-0.77	-0.78	0.00
	4	6.00	-0.01	13.63	107.90	0.45	0.10	48.07	3.27	0.01	-1.14	-1.50	0.15
	5	6.00	0.00	24.17	144.09	0.60	0.13	83.75	5.90	0.05	-3.05	-3.73	0.14
	6	6.00	0.00	42.91	192.62	0.80	0.17	147.46	10.92	0.10	-12.90	-2.15	0.22
	7	6.00	0.00	97.69	294.12	1.20	0.26	330.82	25.89	0.22	-38.51	-10.05	0.51
	8	6.00	0.00	134.33	347.98	1.40	0.31	454.32	36.63	0.24	-45.43	-15.57	0.79
	9	6.00	0.00	0.03	4.67	0.02	0.00	1.91	0.02	-0.01	-0.17	-5.36	-0.04

Table 21: WN Wing-Only 55% Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R430	2	8.00	0.00	0.00	0.00	0.00	0.00	0.11	-0.06	-0.03	-0.27	-0.41	0.06
	3	8.00	0.00	5.76	69.70	0.30	0.06	19.53	1.62	-0.01	-0.39	-10.97	0.07
	4	8.00	0.00	13.14	105.59	0.45	0.09	43.99	3.92	0.02	-0.66	-19.08	0.20
	5	8.00	0.00	23.70	142.12	0.60	0.13	80.78	7.28	0.07	-1.19	-23.56	0.53
	6	8.00	0.00	42.12	190.27	0.80	0.17	147.96	13.27	0.17	-2.16	-22.68	0.80
	7	8.00	-0.01	96.94	291.93	1.20	0.26	350.35	31.80	0.35	-4.16	-21.50	1.53
	8	8.00	0.00	132.65	344.45	1.40	0.31	487.55	44.55	0.32	-21.59	-28.15	1.64
	9	8.00	0.00	0.01	3.28	0.01	0.00	2.12	0.04	-0.03	-0.83	4.56	0.23
R431	2	-6.00	-0.01	0.00	0.00	0.00	0.00	0.04	-0.06	-0.03	-0.24	-0.06	0.04
	3	-6.00	-0.01	5.91	70.89	0.30	0.06	6.71	1.10	0.09	-1.41	-0.82	-0.10
	4	-6.00	-0.01	13.57	107.84	0.45	0.10	12.77	2.45	0.16	-2.48	-1.98	-0.12
	5	-6.00	-0.01	24.07	144.12	0.60	0.13	20.49	4.03	0.22	-5.00	-1.36	-0.09
	6	-6.00	-0.01	43.47	194.47	0.80	0.17	38.05	6.37	0.41	-10.75	-0.64	0.04
	7	-6.00	-0.01	99.54	298.01	1.20	0.27	79.37	14.29	0.98	-26.86	3.42	0.44
	8	-6.00	-0.01	133.86	348.38	1.38	0.31	102.31	19.61	1.33	-36.83	7.12	0.45
	9	-6.00	-0.01	0.04	5.76	0.02	0.01	1.44	-0.01	0.07	0.02	-6.15	-0.07
	10	-6.00	-0.01	0.00	1.07	0.00	0.00	-1.24	-0.09	0.08	-0.09	-1.01	-0.11
R441	2	-3.00	-0.01	0.00	0.00	0.00	0.00	0.09	-0.06	-0.03	-0.58	-0.05	0.03
	3	-3.00	-0.01	5.70	69.03	0.30	0.06	10.25	0.94	-0.01	-1.20	-2.50	-0.01
	4	-3.00	-0.01	12.93	104.23	0.45	0.09	21.82	2.06	-0.01	-2.34	-3.47	0.02
	5	-3.00	-0.01	23.35	140.35	0.60	0.13	39.11	3.38	-0.01	-4.98	-2.79	0.11
	6	-3.00	-0.01	41.73	188.43	0.80	0.17	68.80	5.64	0.05	-9.90	-3.37	-0.01
	7	-3.00	0.00	95.63	288.59	1.20	0.26	154.54	12.79	-0.16	-23.48	-0.89	0.37
	8	-3.00	-0.01	130.63	340.19	1.40	0.31	210.23	17.68	-0.09	-32.44	-2.30	0.36
	9	-3.00	0.00	0.02	3.65	0.02	0.00	1.83	0.00	-0.07	-0.56	-7.85	0.25

Table 22: WN Wing-Only 5% Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R443	2	0.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.05	-0.01	-0.30	-0.11	0.00
	3	0.00	0.00	5.97	71.26	0.30	0.06	12.11	1.00	0.03	-0.81	-1.32	-0.03
	4	0.00	0.00	13.52	107.68	0.45	0.10	28.70	2.12	0.02	-1.80	-3.20	-0.02
	5	0.00	0.00	24.57	145.67	0.60	0.13	47.28	3.87	-0.01	-3.12	-3.19	0.07
	6	0.00	0.00	43.36	194.22	0.80	0.17	80.35	6.92	0.03	-5.66	-2.10	0.16
	7	0.00	0.00	99.27	297.35	1.20	0.26	178.57	16.28	0.12	-12.54	0.01	0.50
	8	0.00	0.00	136.72	352.19	1.40	0.31	246.16	22.82	0.13	-17.08	-3.50	0.60
	9	0.00	0.00	0.03	4.92	0.02	0.00	1.37	0.04	-0.02	-0.26	-5.99	0.01
R446	2	0.00	-4.94	0.00	0.00	0.00	0.00	-0.05	-0.04	0.00	0.34	0.14	-0.01
	3	0.00	-4.94	90.56	278.41	1.20	0.25	161.80	14.46	0.15	-10.66	0.87	-0.50
	4	0.00	-4.95	90.60	278.66	1.20	0.25	162.33	14.46	0.14	-10.66	0.78	-0.50
	5	0.00	-4.96	125.93	331.05	1.40	0.30	224.06	20.39	0.66	-14.37	-2.16	-0.54
	6	0.00	-4.94	0.03	4.90	0.02	0.00	0.85	-0.01	0.00	0.76	-2.88	-0.01
R449	2	0.00	5.00	0.00	0.00	0.00	0.00	-0.05	-0.03	0.01	-1.94	-0.06	0.04
	3	0.00	5.00	91.72	280.92	1.20	0.25	162.66	15.02	-0.01	-13.76	1.95	1.10
	4	0.00	5.00	126.89	333.25	1.40	0.30	223.18	21.21	-0.20	-17.70	0.06	1.47
	5	0.00	5.00	0.02	4.48	0.02	0.00	1.42	0.05	0.09	-2.33	-5.96	0.05
R452	2	0.00	10.00	0.00	0.00	0.00	0.00	0.02	-0.03	-0.05	-1.49	1.16	-0.06
	3	0.00	10.00	93.70	285.02	1.20	0.26	162.09	15.19	-0.31	-13.27	4.32	2.42
	4	0.00	10.00	128.98	337.42	1.40	0.30	221.44	21.34	-0.65	-17.19	3.21	3.36
	5	0.00	10.00	0.02	4.46	0.02	0.00	1.52	0.01	-0.06	-1.17	-4.77	0.05
R460	2	6.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.06	-0.02	-0.28	-0.12	0.02
	3	6.00	0.00	6.01	71.69	0.30	0.06	18.96	1.43	0.02	-0.12	-3.97	-0.06
	4	6.00	0.00	14.00	109.79	0.45	0.10	43.08	3.45	0.01	-0.50	-3.29	-0.02
	5	6.00	0.00	24.59	146.01	0.60	0.13	75.81	6.17	0.02	-0.99	-3.25	-0.06
	6	6.00	0.00	44.45	197.25	0.80	0.17	137.40	11.47	0.00	-2.03	-1.55	-0.04
	7	6.00	0.01	101.49	301.61	1.20	0.27	314.92	27.62	-0.08	-4.33	-5.20	0.14
	8	6.00	0.00	135.09	350.50	1.38	0.31	423.47	37.87	-0.09	-17.63	-7.68	0.26
	9	6.00	0.02	0.03	4.63	0.02	0.00	1.34	0.03	0.00	-0.20	-5.21	-0.10

Table 22: WN Wing-Only 5% Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R463	2	-3.00	0.00	0.00	0.00	0.00	0.00	0.07	-0.06	-0.01	-0.26	0.05	-0.01
	3	-3.00	0.03	5.86	70.01	0.30	0.06	9.13	0.85	-0.01	-1.20	-0.64	-0.01
	4	-3.00	0.01	13.05	104.64	0.45	0.09	18.89	1.95	0.01	-2.09	-2.06	-0.01
	5	-3.00	0.01	23.03	139.24	0.60	0.12	29.87	3.43	0.01	-3.66	-1.35	-0.02
	6	-3.00	0.00	41.16	186.73	0.80	0.17	51.44	6.14	0.06	-6.71	-1.38	-0.04
	7	-3.00	0.00	93.53	284.73	1.20	0.26	114.73	13.98	0.20	-15.68	-1.62	0.43
	8	-3.00	0.00	129.36	337.80	1.40	0.30	157.23	19.73	0.20	-21.56	-0.46	0.74
	9	-3.00	0.00	0.02	4.22	0.02	0.00	1.60	0.03	-0.01	-0.23	-6.92	-0.05

Table 23: WNE2L Wing-Only Corrected Data

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R413	2	0.00	-4.94	0.00	0.00	0.00	0.00	-0.05	-0.03	0.00	0.31	0.16	0.01
	3	0.00	-4.94	92.37	283.19	1.20	0.26	279.49	13.66	-0.21	-36.68	8.88	-0.45
	4	0.00	-4.94	128.36	336.77	1.40	0.30	391.62	19.19	0.04	-49.26	11.97	-0.39
	5	0.00	-4.94	0.02	4.43	0.02	0.00	0.66	0.02	0.00	-0.02	-1.33	-0.02
R414	2	0.00	0.00	0.00	1.88	0.01	0.00	0.04	-0.07	-0.01	-0.23	-0.15	-0.02
	3	0.00	0.00	92.70	283.97	1.20	0.26	286.42	13.04	0.32	-37.23	0.17	0.87
	4	0.00	0.00	128.57	337.38	1.40	0.30	402.27	18.47	0.49	-49.45	0.51	1.25
	5	0.00	0.00	0.03	5.11	0.02	0.00	0.64	0.01	-0.02	-0.10	-1.62	0.03
R405	2	0.00	5.00	0.00	1.12	0.00	0.00	23.08	-0.02	0.00	-1.73	115.08	0.00
	3	0.00	5.00	95.20	289.26	1.20	0.26	294.31	13.73	0.75	-40.78	-11.60	1.04
	4	0.00	5.00	131.22	342.47	1.40	0.31	411.40	19.01	1.24	-49.50	-12.31	1.82
	5	0.00	5.00	0.02	4.22	0.02	0.00	0.95	0.06	0.07	-0.13	-4.41	-0.04
R406	2	0.00	10.00	0.00	0.00	0.00	0.00	0.02	-0.03	-0.05	-1.48	1.15	-0.05
	3	0.00	10.01	95.21	289.46	1.20	0.26	284.99	13.53	0.91	-42.34	-17.97	1.24
	4	0.00	10.00	131.06	342.62	1.40	0.31	398.11	18.83	1.68	-51.70	-21.31	2.27
	5	0.00	10.01	0.04	5.88	0.03	0.01	0.90	-0.01	-0.02	0.12	-0.94	-0.10
R422	2	6.00	-0.01	0.00	1.68	0.01	0.00	0.04	-0.06	-0.01	-0.28	-0.16	-0.02
	3	6.00	0.00	97.21	293.43	1.20	0.26	426.37	25.15	0.54	-20.54	-5.38	1.81
	4	6.00	0.00	133.74	347.20	1.40	0.31	593.98	36.86	0.64	-24.46	-5.84	2.39
	5	6.00	0.00	0.03	4.78	0.02	0.00	2.13	0.02	0.00	-0.17	-6.23	-0.09
R428	2	8.00	-0.01	0.00	0.00	0.00	0.00	0.05	-0.06	-0.03	-0.28	0.07	0.00
	3	8.00	-0.01	5.94	70.66	0.31	0.06	24.24	2.32	0.04	0.30	-1.18	0.01
	4	8.00	-0.01	13.04	104.97	0.45	0.09	59.43	3.56	0.08	1.72	-2.55	0.16
	5	8.00	-0.01	23.41	141.01	0.60	0.13	107.60	6.62	0.14	2.72	-2.24	0.37
	6	8.00	-0.01	42.14	190.04	0.80	0.17	196.37	12.32	0.26	2.90	-1.47	0.79
	7	8.00	-0.01	95.65	289.55	1.20	0.26	459.58	30.47	0.60	-19.01	-9.10	2.01
	8	8.00	-0.01	132.39	343.81	1.40	0.31	635.62	45.71	0.58	-2.51	-9.70	2.37
	9	8.00	-0.01	0.02	3.58	0.02	0.00	7.62	0.07	0.04	-0.38	26.79	0.04
R433	2	-6.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.06	-0.02	-0.25	-0.09	0.05
	3	-6.00	-0.01	97.97	295.22	1.19	0.26	77.20	15.10	0.07	-29.50	0.48	0.09
	4	-6.00	0.00	137.68	353.67	1.40	0.32	99.46	21.68	0.04	-42.45	9.73	-0.01
	5	-6.00	-0.01	0.01	2.99	0.01	0.00	1.33	0.01	-0.05	-0.09	-4.96	0.23

Table 23: WNE2L Wing-Only Corrected Data (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R439	2	-3.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.07	-0.02	-0.23	-0.09	0.03
	3	-3.00	0.00	93.28	283.92	1.20	0.26	179.08	12.27	0.16	-21.30	1.80	0.53
	4	-3.00	0.00	128.80	336.38	1.40	0.30	246.47	17.10	0.28	-29.46	2.96	1.06
	5	-3.00	0.00	0.03	4.75	0.02	0.00	1.84	0.00	-0.01	-0.61	-8.23	0.06

CONCLUSIONS

This data report presents results from the first-ever wind tunnel test of a scale model of the NASA Second-Generation Large Civil Tiltrotor. The preceding sections contain data for test conditions in both airplane and helicopter modes at varying wind speeds, vehicle configurations, and vehicle attitudes. Additional data relating to the wind tunnel model, weight and aerodynamic tares, and flow visualization are contained in appendices to this report. The data gathered as part of this test campaign are available for validation of CFD models, performance predictions for the LCTR2 design, and development of flight dynamics simulation models. These various models will allow researchers to advance the state of the art in large civil tiltrotor design.

REFERENCES

[1] Acree, C. W., Jr.; Yeo, H.; and Sinsay, J. D.: Performance Optimization of the NASA Large Tiltrotor. NASA/TM-2008-215359, 2008.

[2] Theodore, C. R.; Willink, G. C.; Pete, A. E.; Amy, A. R.; and Russel, C. R.: Wind Tunnel Testing of a 6%-Scale Large Civil Tilt Rotor Model in Airplane and Helicopter Modes. American Helicopter Society Fifth Decennial AHS Aeromechanics Specialists' Conference, Jan. 22–24, 2014, San Francisco, Calif., 2014.

[3] Meyn, L. and Betzina, M.: Derivation of NFAC Weight Tare Equations. NASA Ames Research Center, Moffett Field, Calif., 1999.

[4] Pope, A. and Harper, J.: Low-Speed Wind Tunnel Testing. New York: John Wiley & Sons, Inc., 1966.

APPENDIX A

LCTR2 MODEL TECHNICAL DRAWINGS

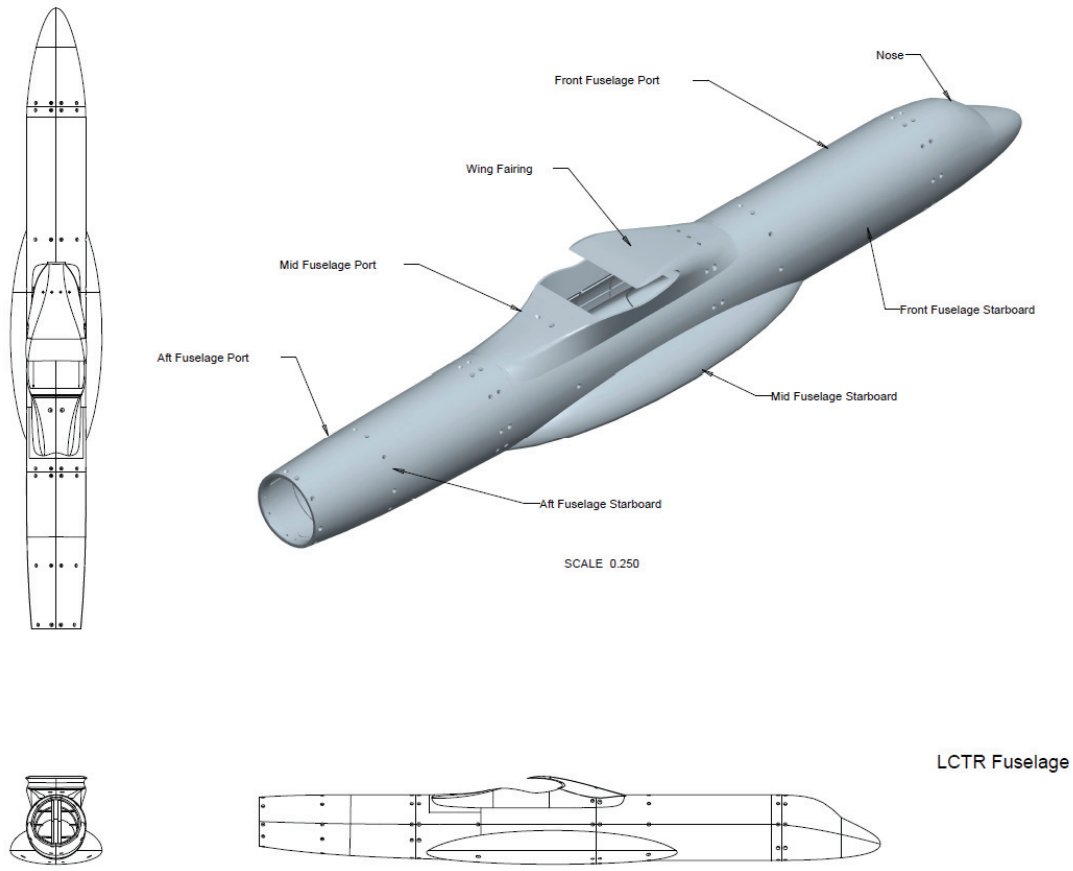

Figure A-1: Technical drawing of the LCTR2 model fuselage.

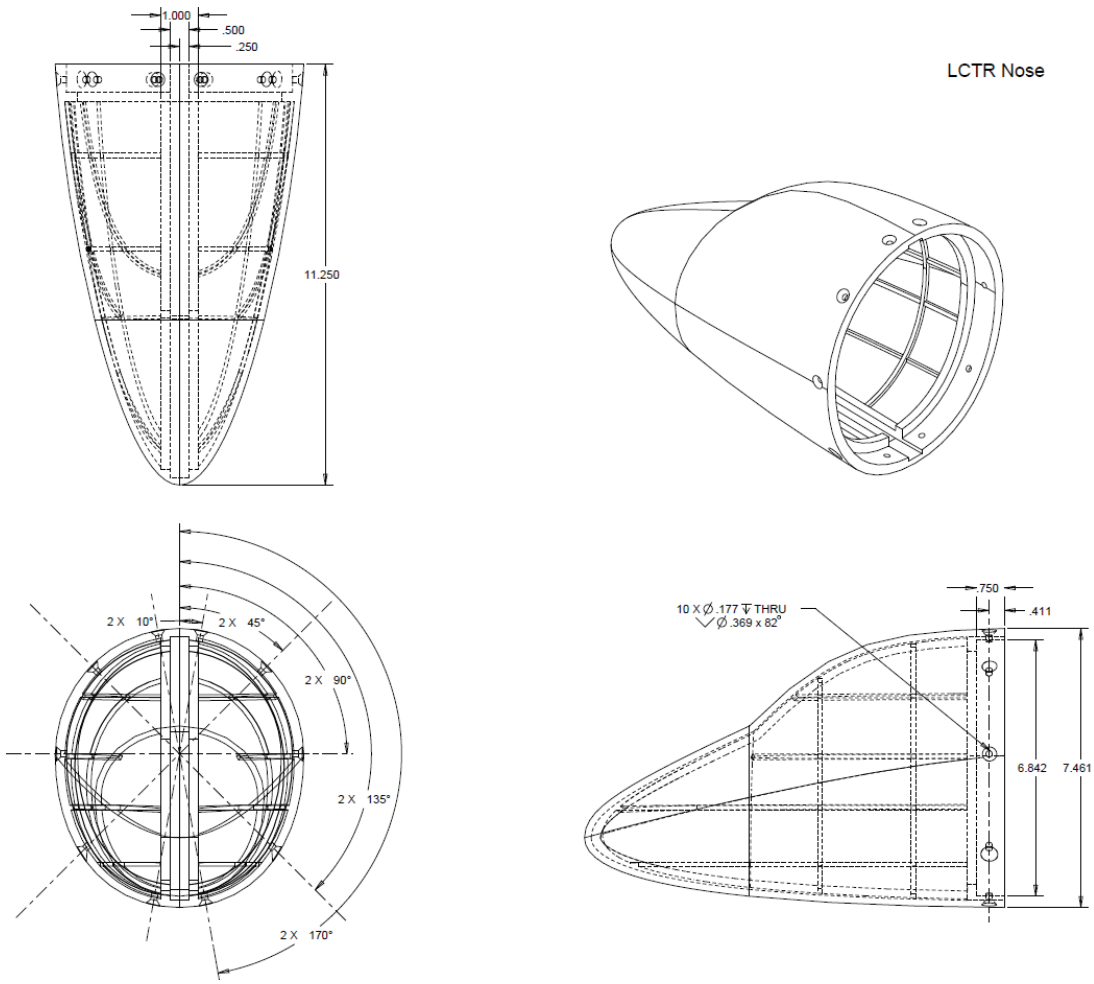

Figure A-2: Technical drawing of the LCTR2 model nose.

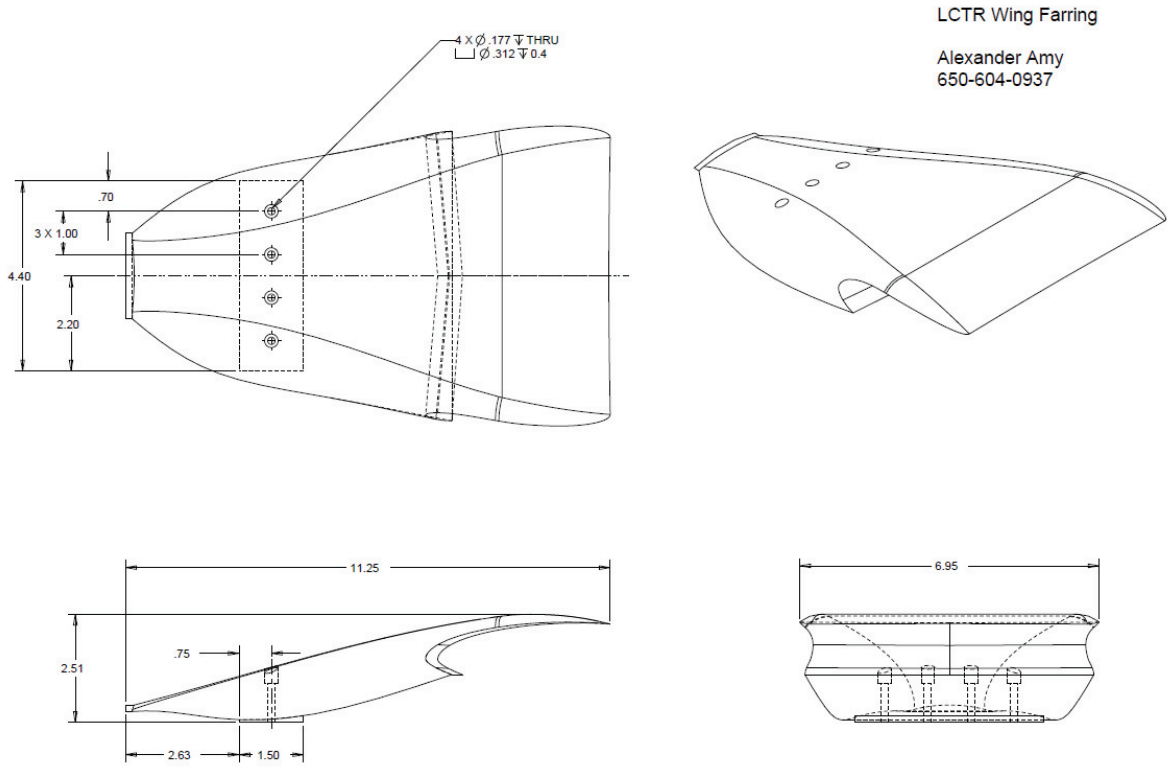

Figure A-3: Technical drawing of the LCTR2 model wing fairing.

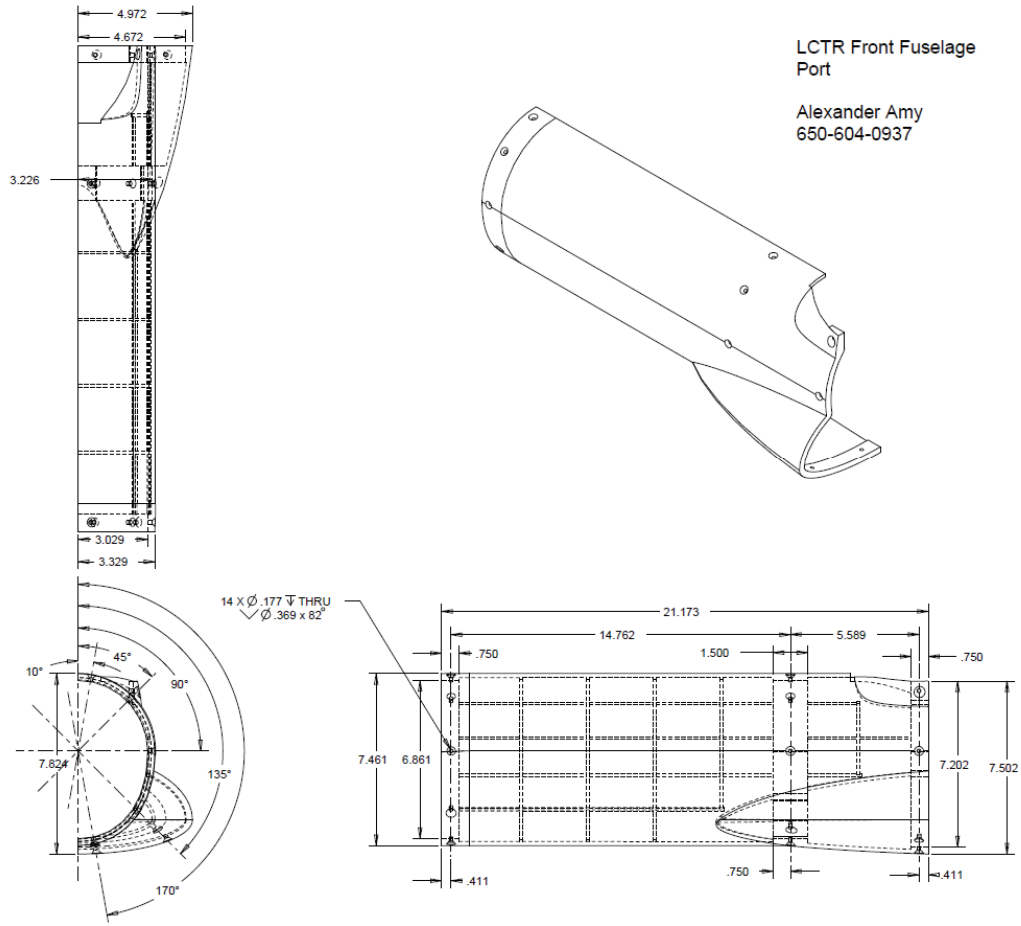

Figure A-4: Technical drawing of the LCTR2 model fuselage (fore-port).

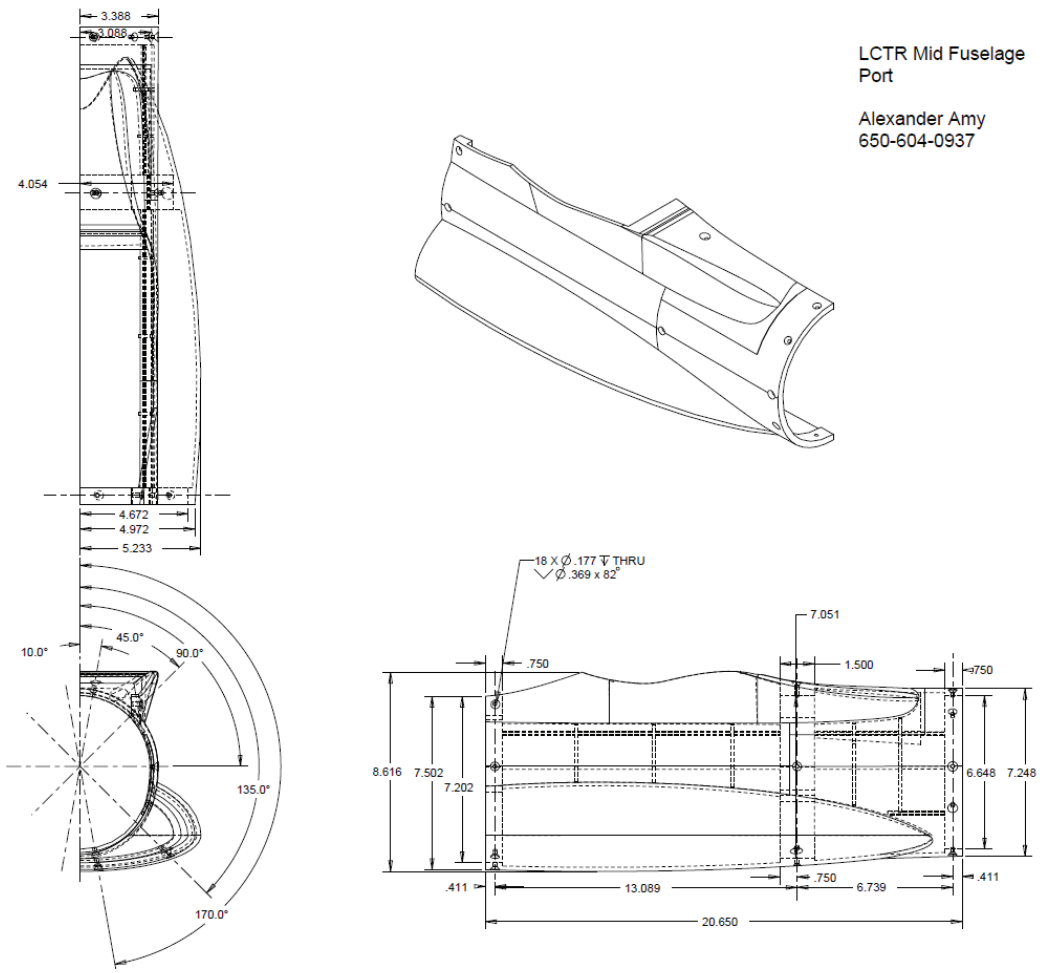

Figure A-5: Technical drawing of the LCTR2 model fuselage (mid-port).

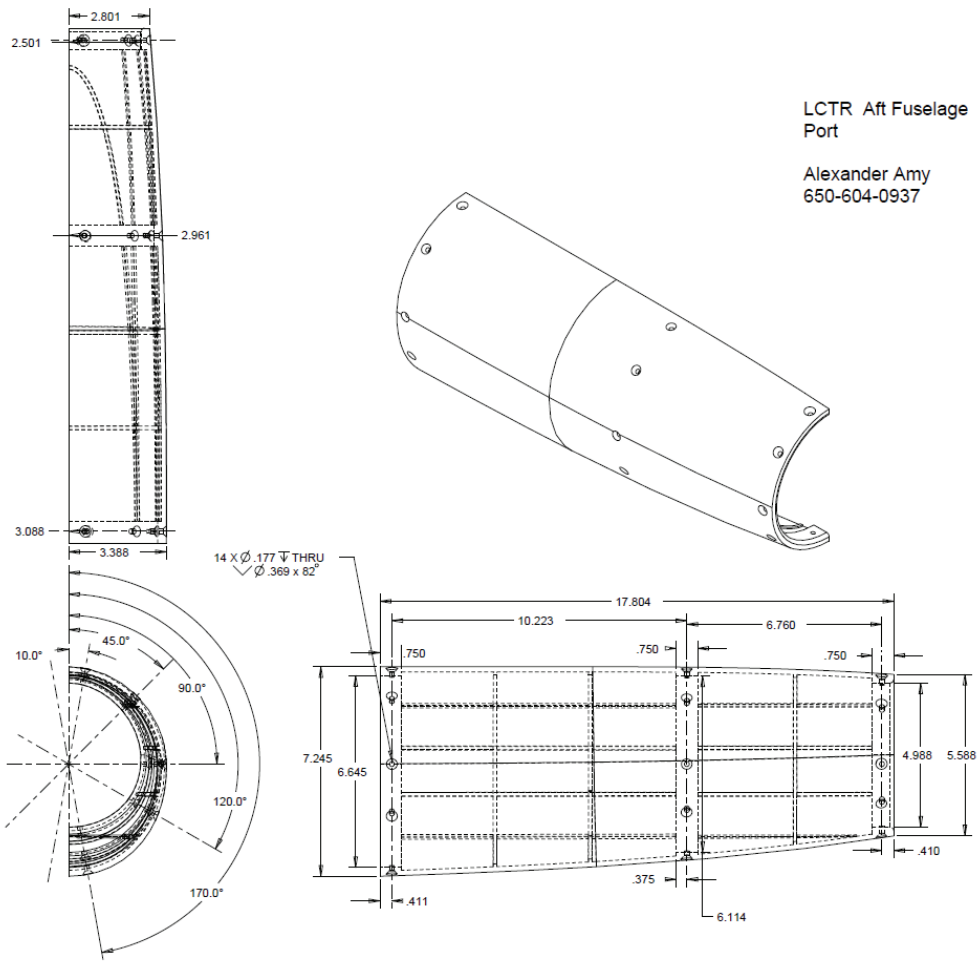

Figure A-6: Technical drawing of the LCTR2 model fuselage (aft-port).

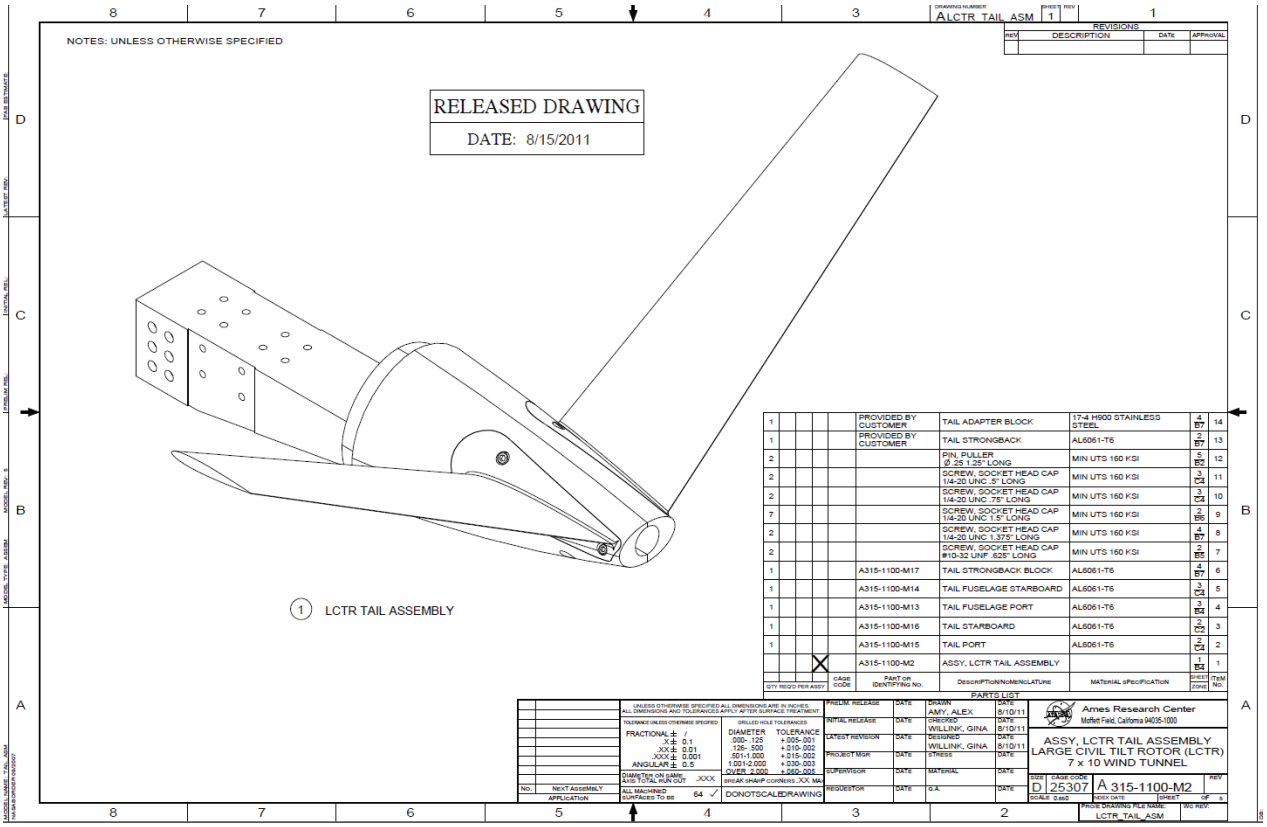

Figure A-7: Technical drawing of the LCTR2 model tail.

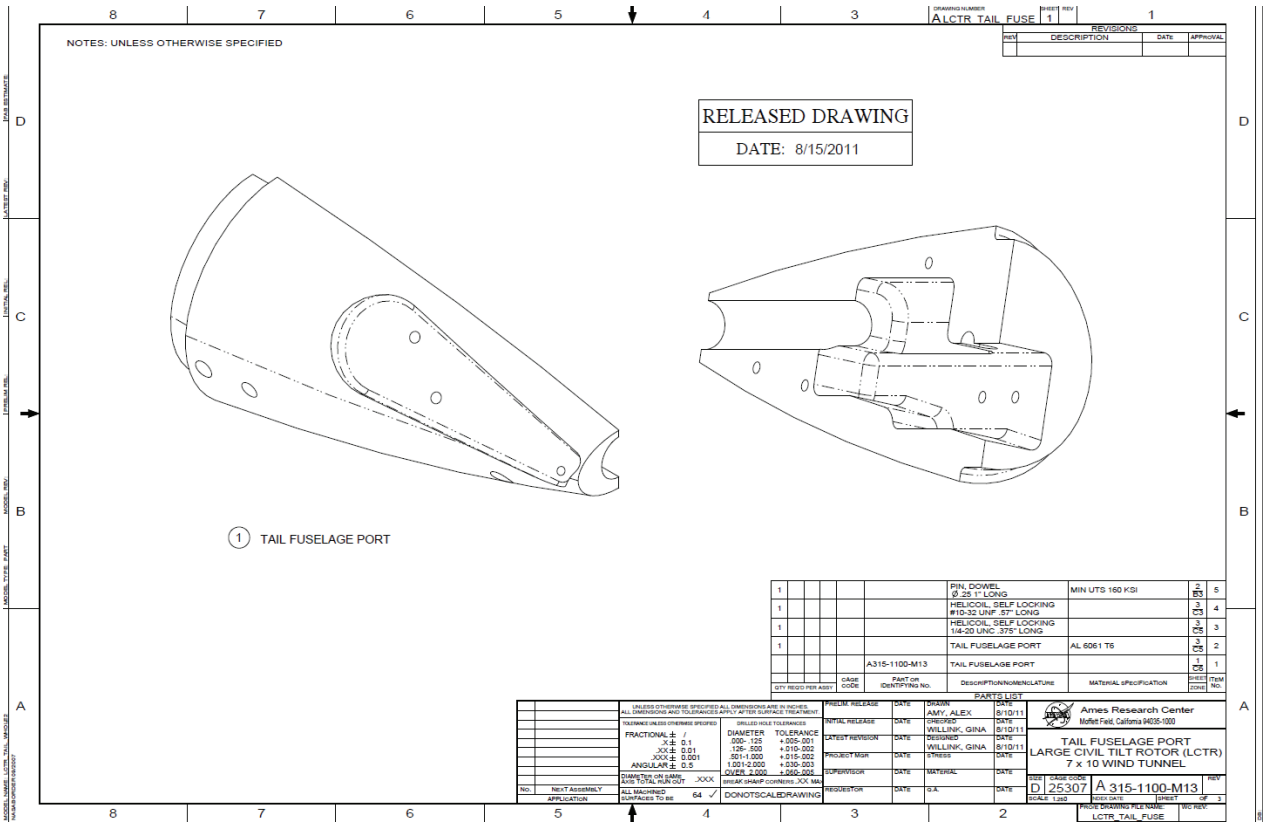

Figure A-8: Technical drawing of the LCTR2 model tail fuselage (port).

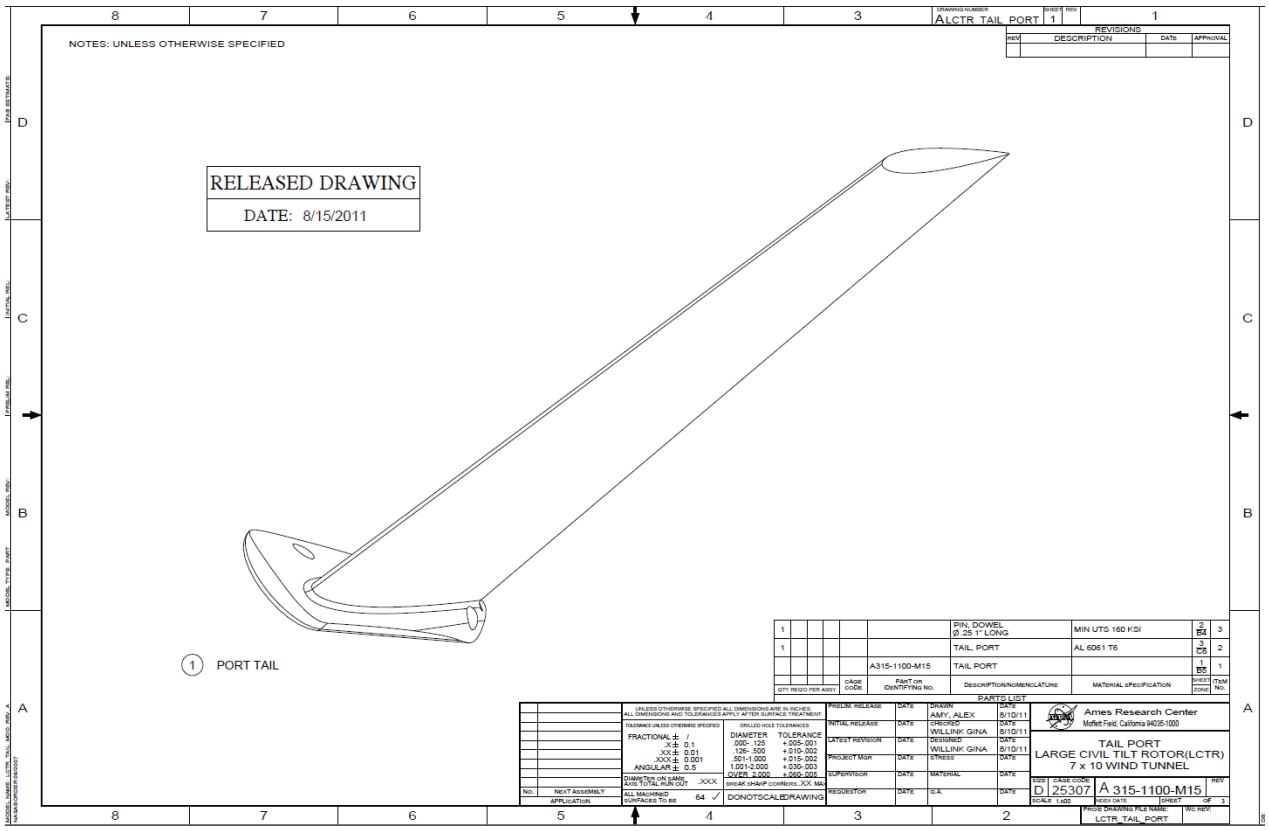

Figure A-9: Technical drawing of the LCTR2 model tail (port).

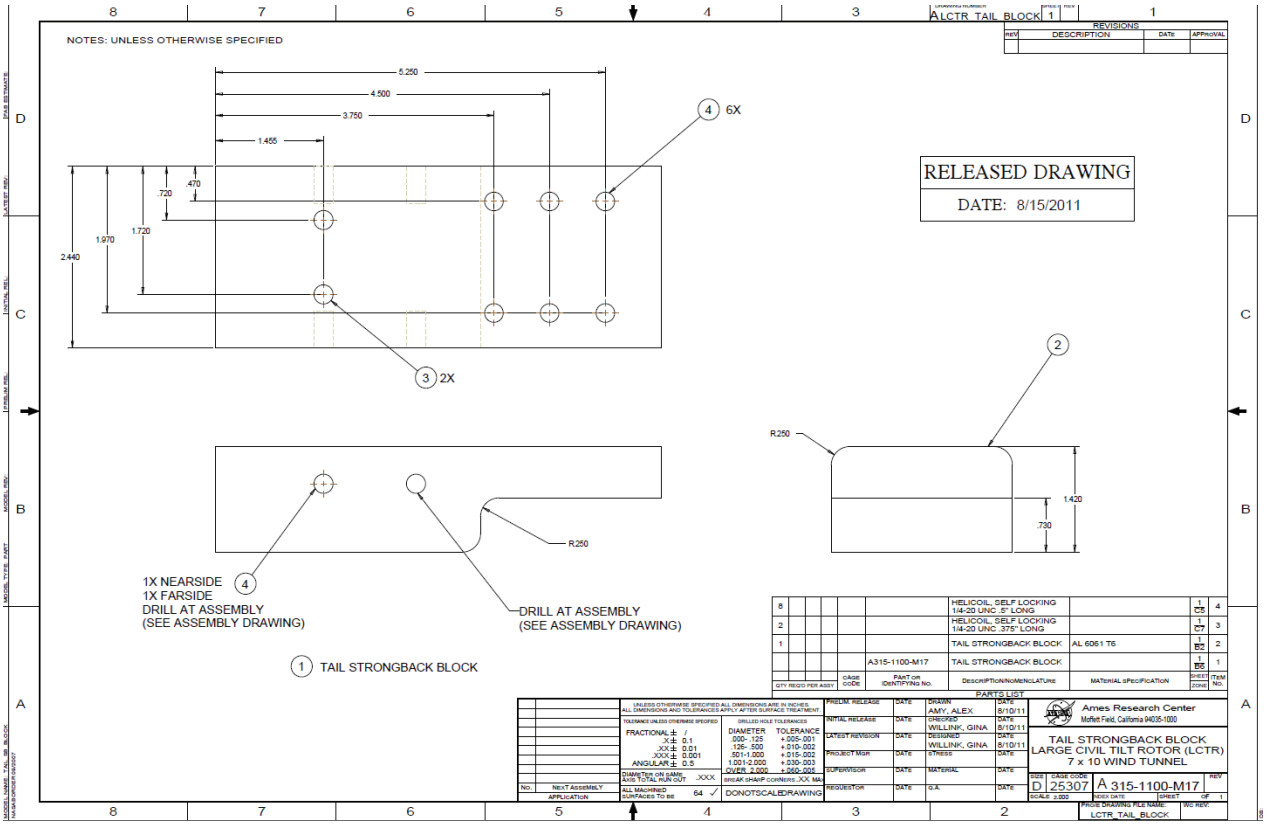

Figure A-10: Technical drawing of the LCTR2 model tail strong back.

APPENDIX B

OIL FLOW TESTING

In order to visualize the flow of air over the craft, oil flow testing was used for a few configurations of interest. The model was mounted inside the wind tunnel and covered in a thin layer of oil. The wind tunnel was then brought up to the full speed to be studied and turned off quickly. The conductors of the experiment then entered the wind tunnel to take photographs of the oil flow patterns, using ultraviolet light.

Oil flow testing was performed at high speeds on the LNNC model configuration and at low speeds on the L85E configuration. A test matrix for the oil flow testing is shown in **Table B-1**. Photos of the corresponding test cases are shown in Figure B-1 through Figure B-123.

Table B-1: Test Case Matrix for Oil Flow Testing

Configuration	Test Case No.	α (deg)	β (deg)	Re (10^6)
LNNC	HS1	0	0	1.20
	HS2	0	+5	1.20
	HS3	0	+10	1.20
	HS4	–5	0	1.20
	HS5	–2	0	1.20
	HS6	+2	0	1.20
	HS7	+5	0	1.20
	HS8	+5	+5	1.20
L85E	LS1	0	0	0.60
	LS2	0	+15	0.60
	LS3	0	+45	0.60
	LS4	0	+75	0.60
	LS5	0	+90	0.60
	LS6	0	+102	0.60
	LS7	0	+135	0.60
	LS8	0	+180	0.60
	LS9	–5	0	0.60
	LS10	–5	+15	0.60
	LS11	+5	0	0.60
	LS12	+5	+15	0.60

Test Case HS1 Photos (α = 0°, β = 0°, Re = 1.2e6)

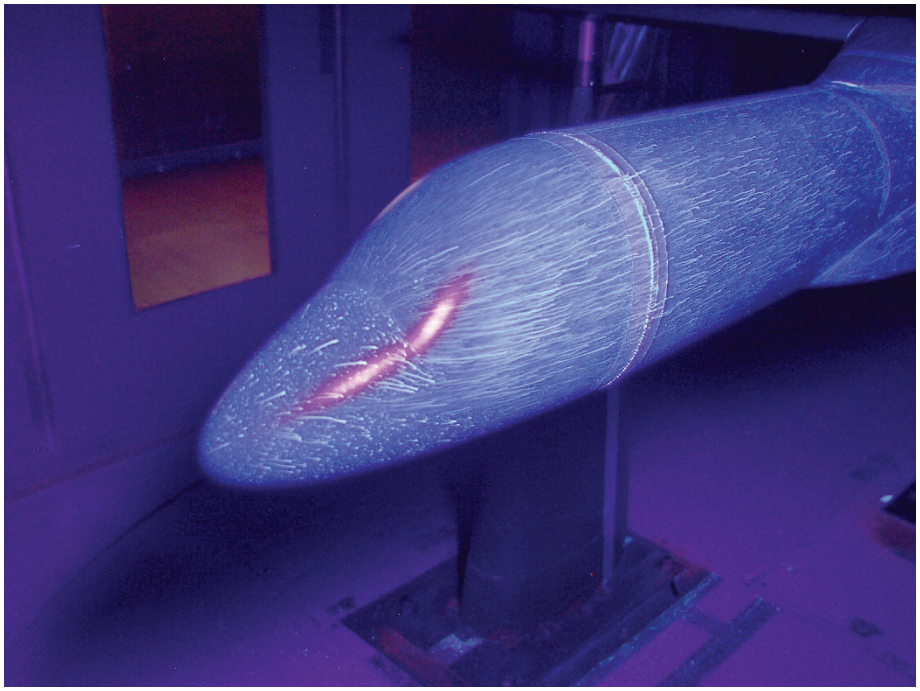

Figure B-1: HS1 flow visualization over nose.

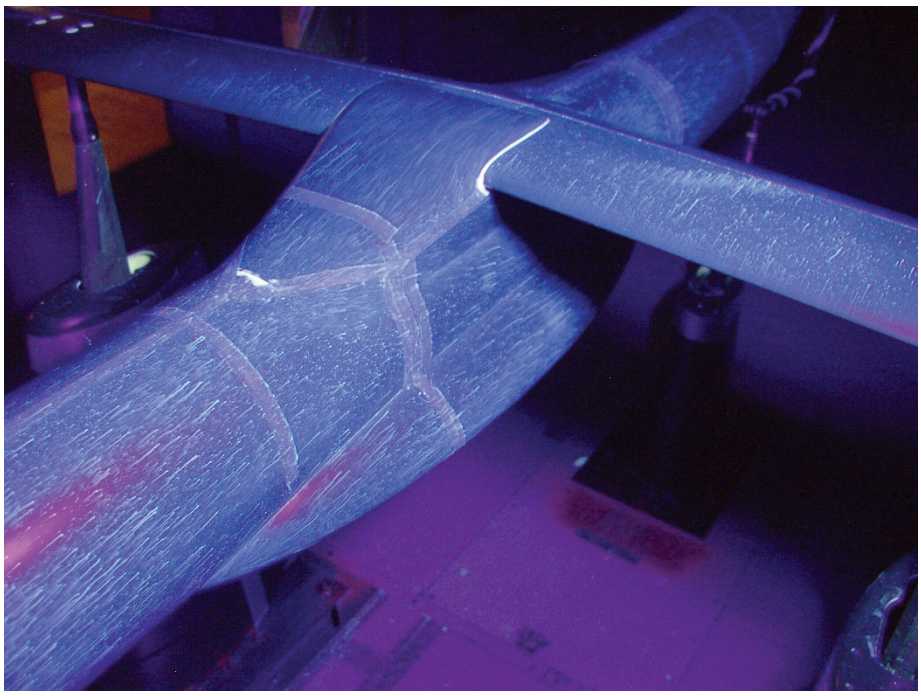

Figure B-2: HS1 flow visualization over fuselage and wing.

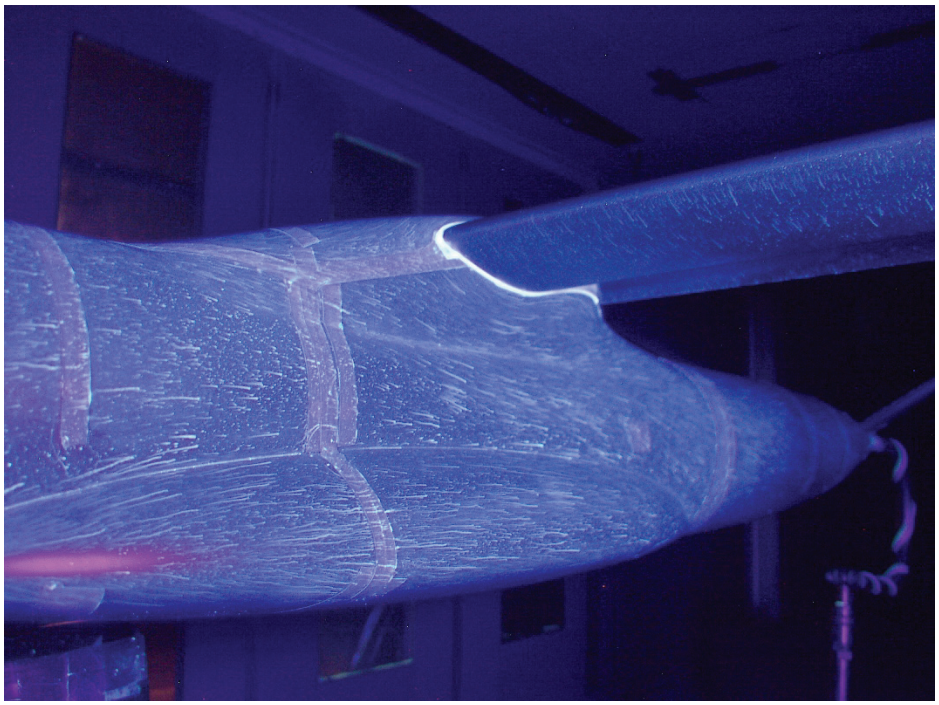

Figure B-3: HS1 flow visualization over fuselage and wing lower surface.

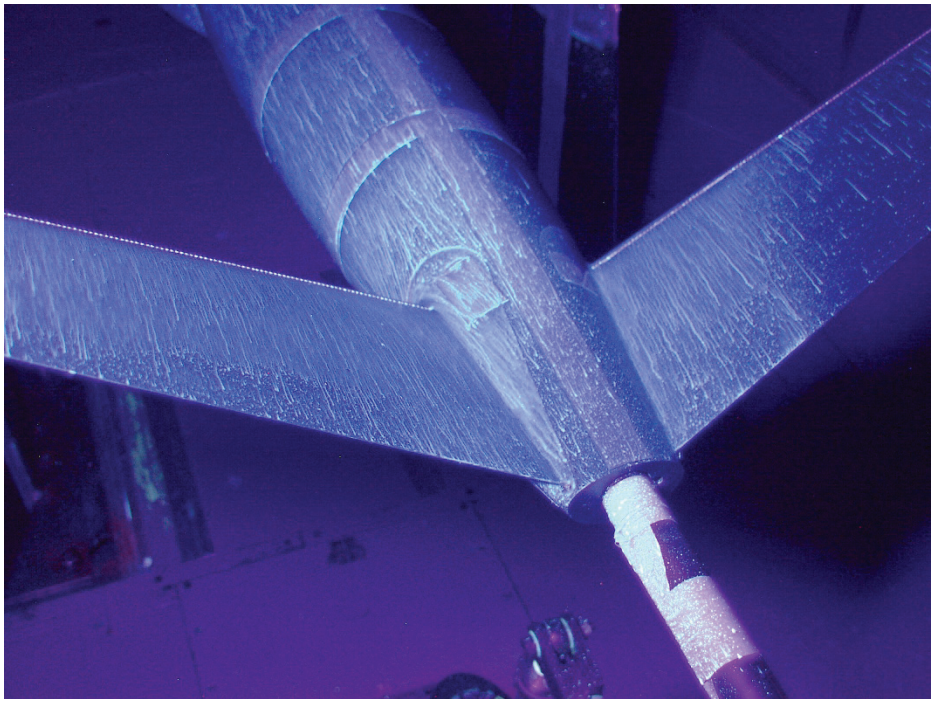

Figure B-4: HS1 flow visualization over tail.

Test Case HS2 Photos (α = 0°, β = +5°, Re = 1.2e6)

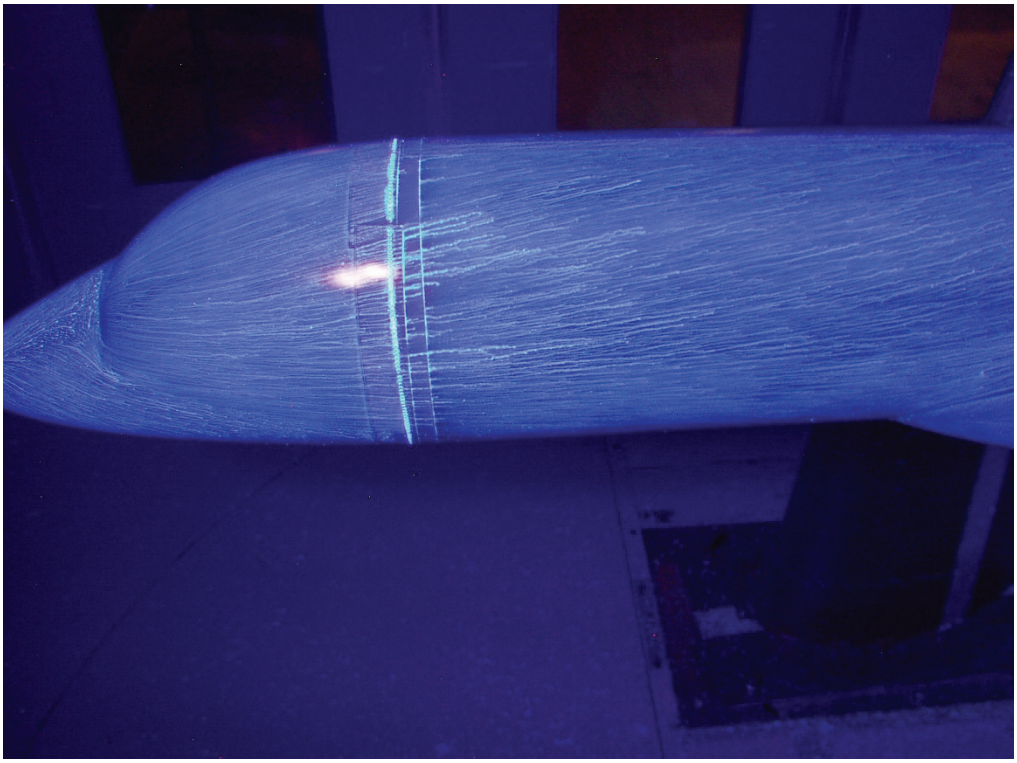

Figure B-5: HS2 flow visualization over nose.

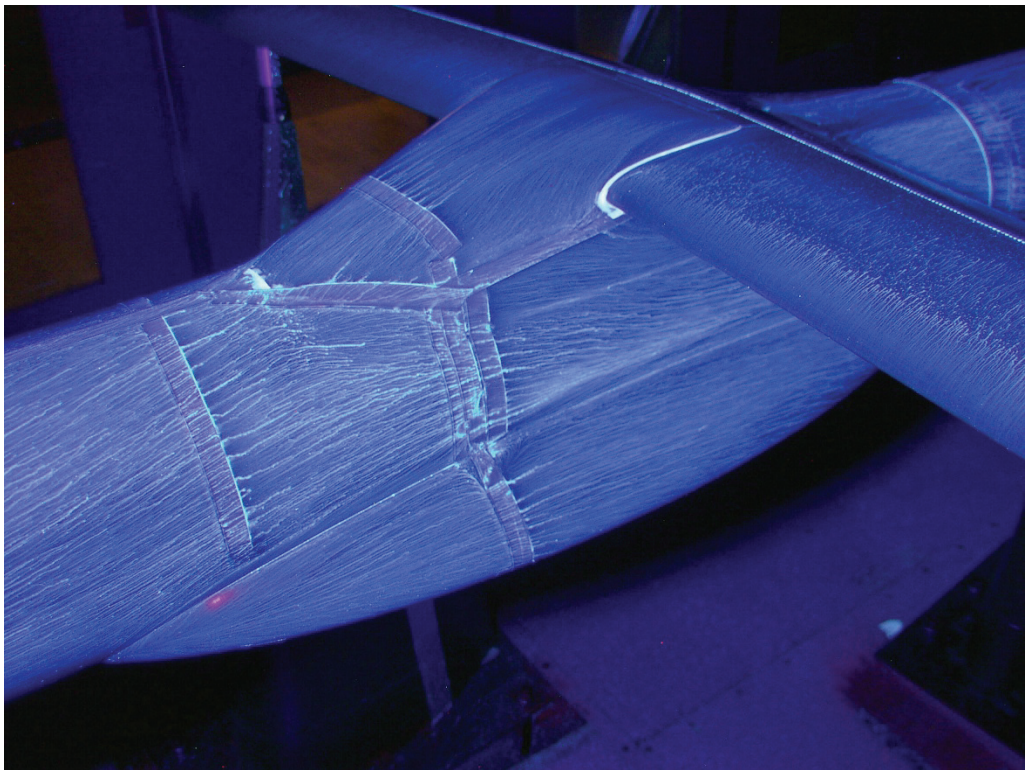

Figure B-6: HS2 flow visualization over wing and fuselage.

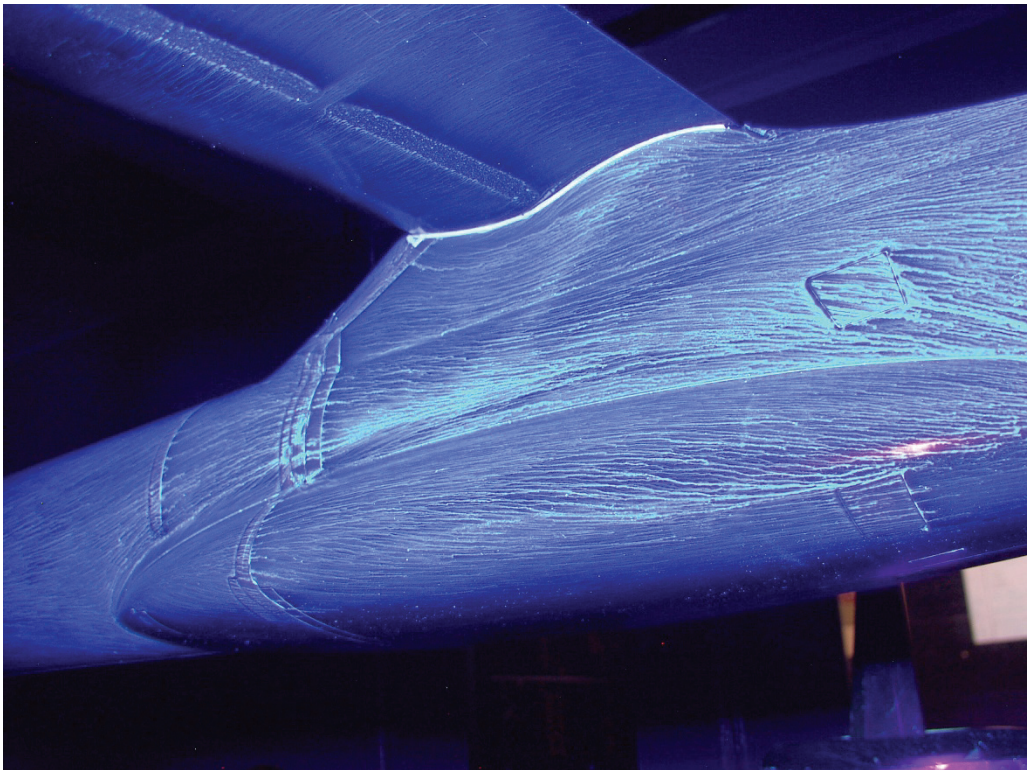

Figure B-7: HS2 flow visualization over fuselage and lower wing surface.

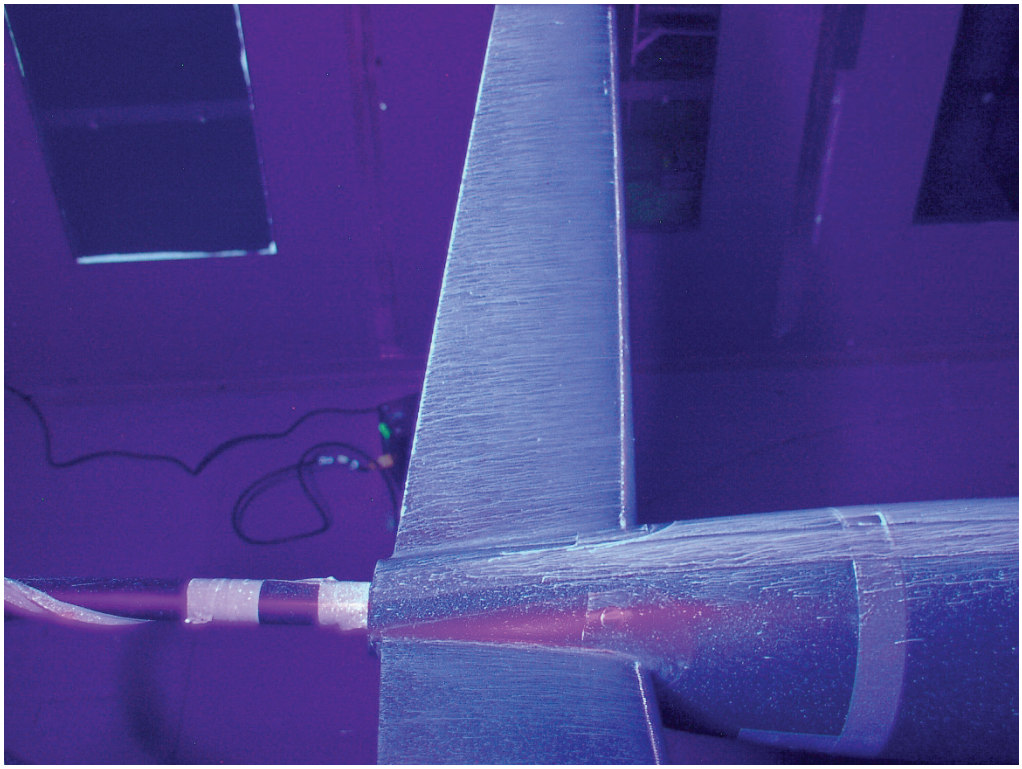

Figure B-8: HS2 flow visualization over tail.

Test Case HS3 Photos (α = 0°, β = +10°, Re = 1.2e6)

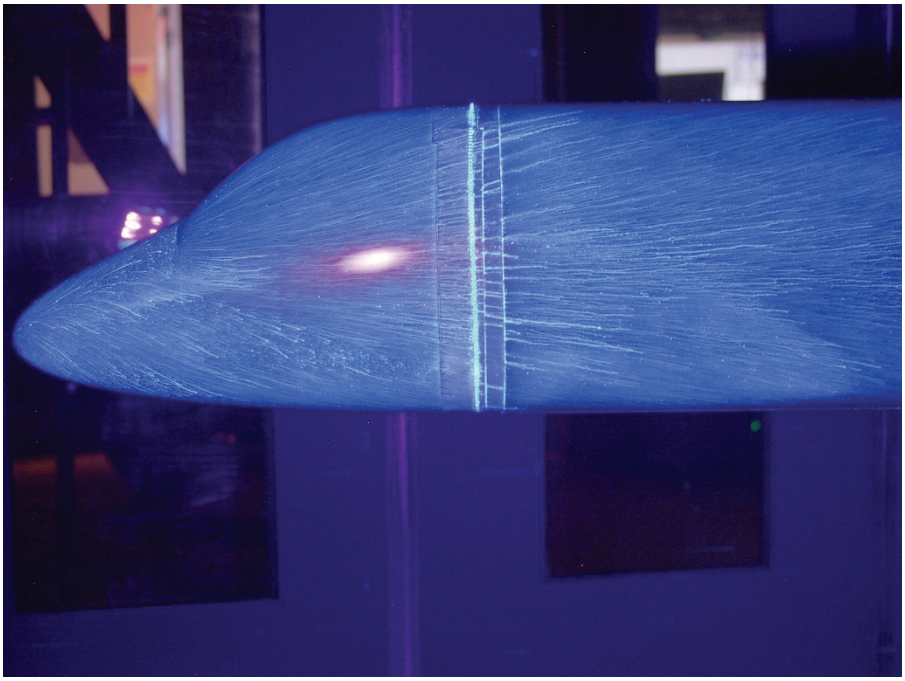

Figure B-9: HS3 flow visualization over nose.

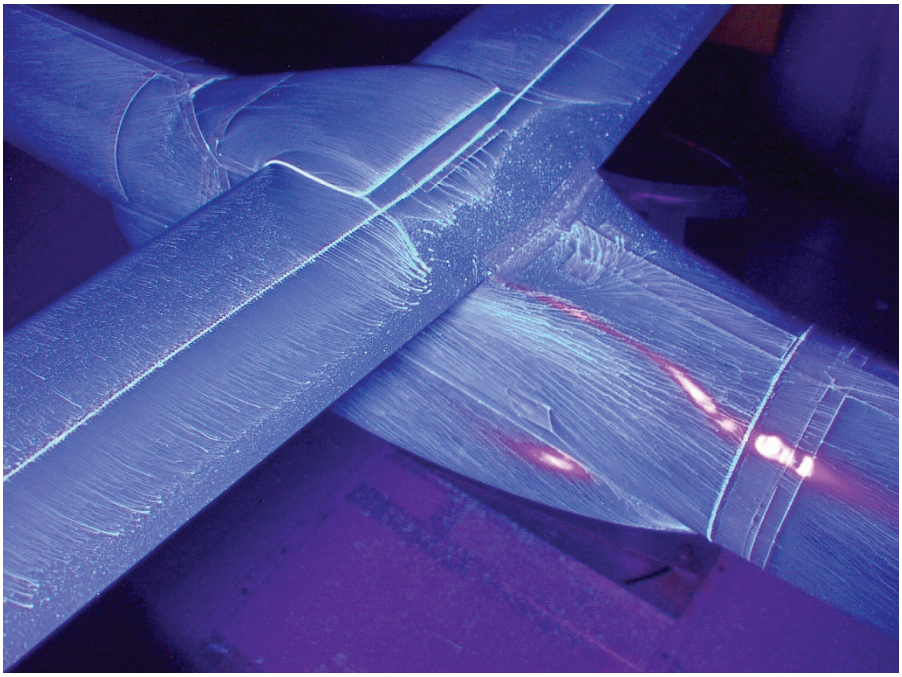

Figure B-10: HS3 flow visualization over fuselage and wing.

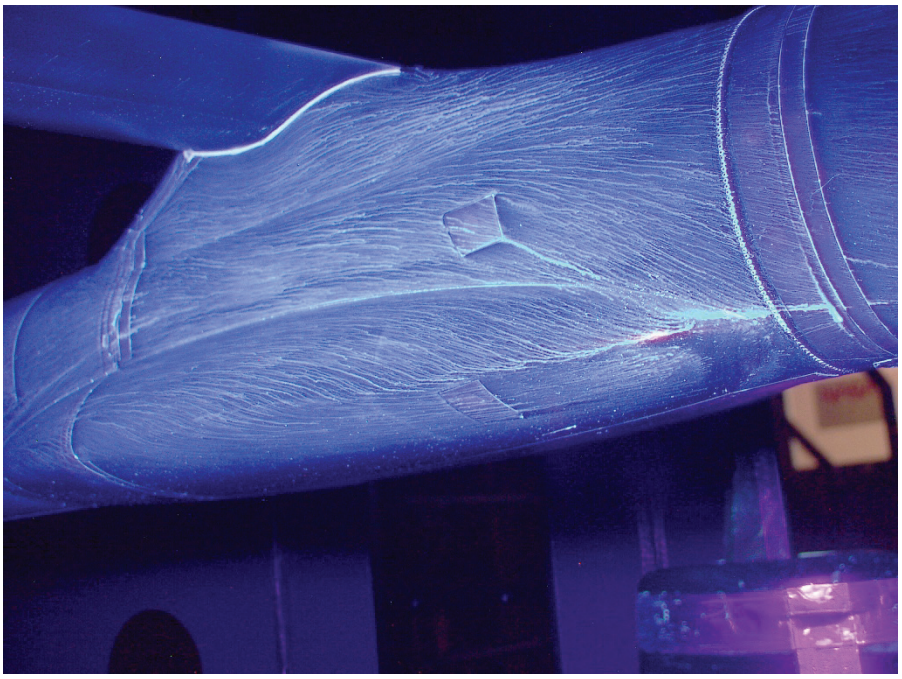

Figure B-11: HS3 flow visualization over fuselage and lower wing surface.

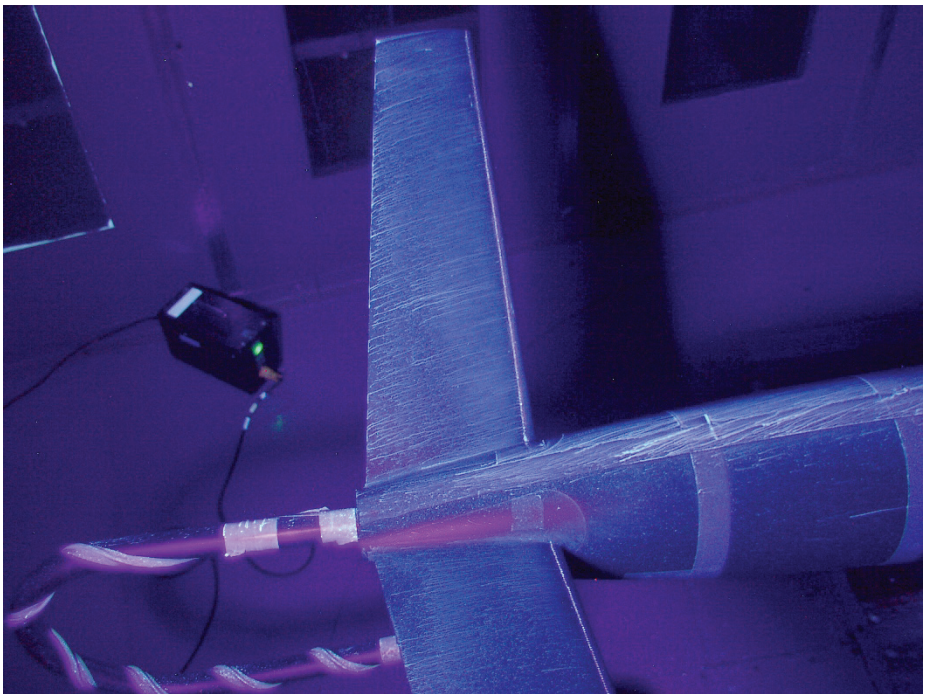

Figure B-12: HS3 flow visualization over tail.

Test Case HS4 Photos (α = –5°, β = 0°, Re = 1.2e6)

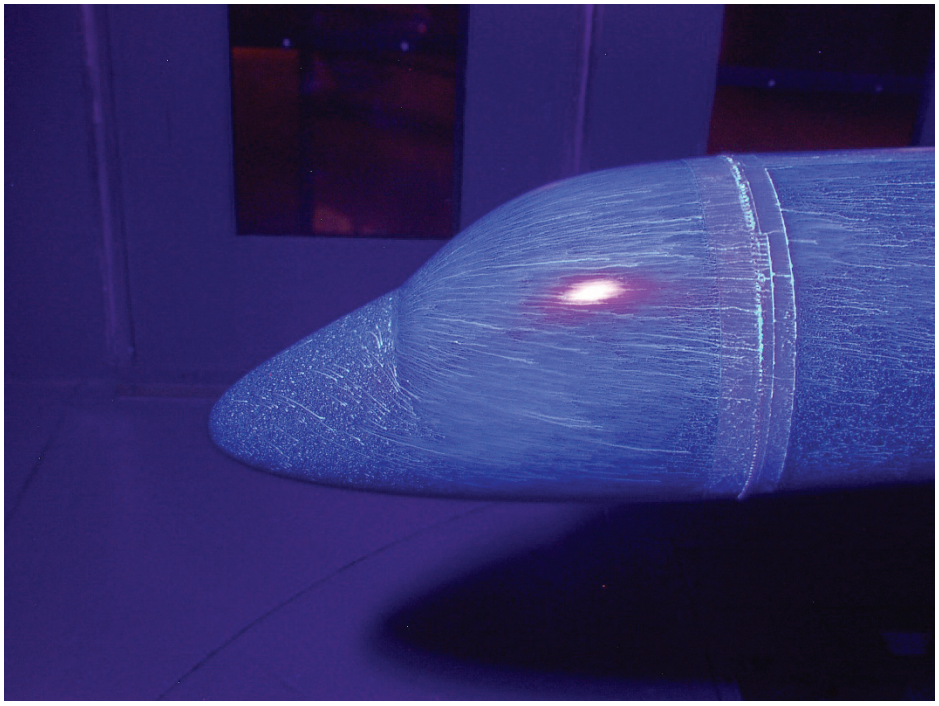

Figure B-13: HS4 flow visualization over nose.

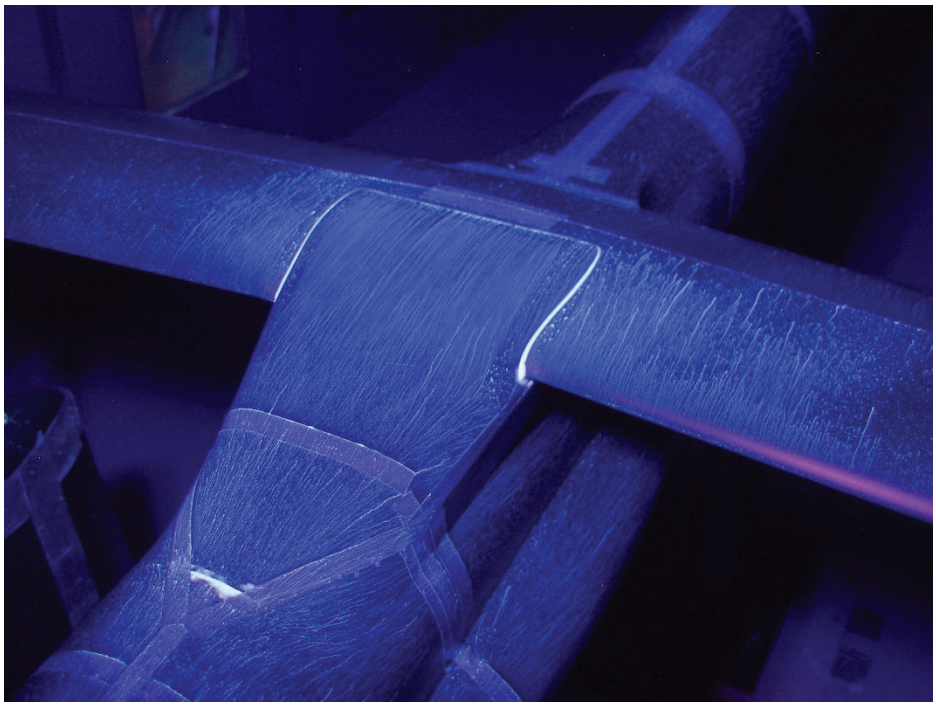

Figure B-14: HS4 flow visualization over fuselage and upper wing surface.

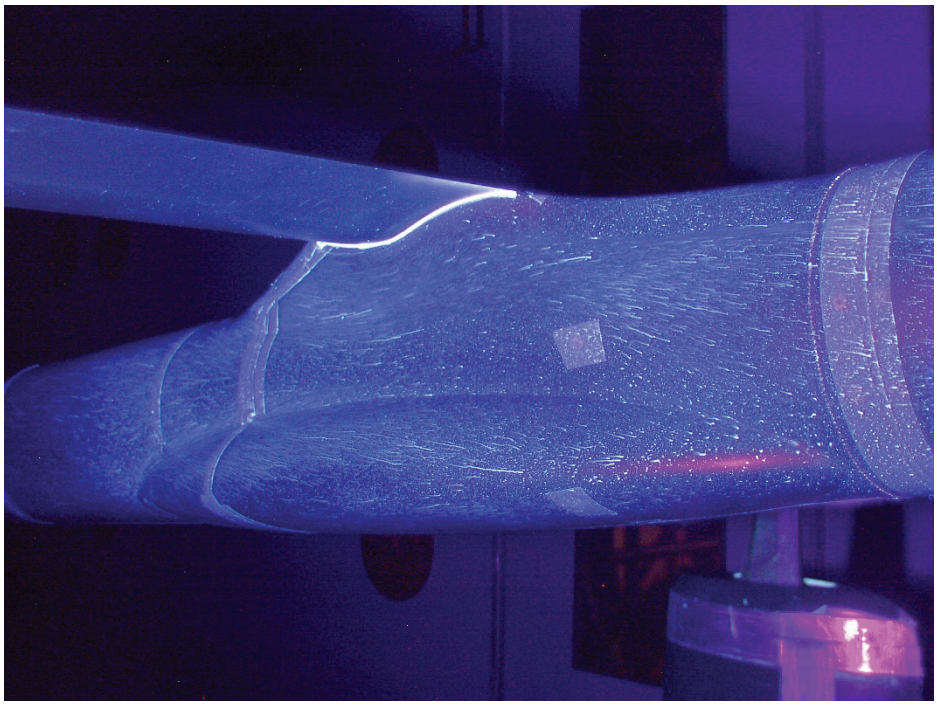

Figure B-15: HS4 flow visualization over fuselage and lower wing surface.

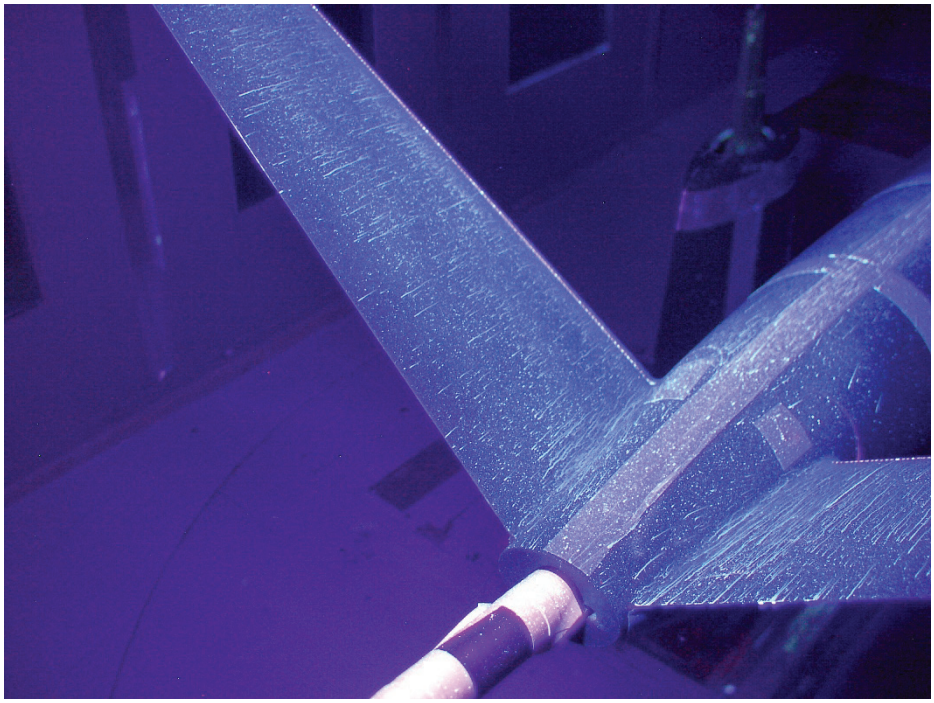

Figure B-16: HS4 flow visualization over tail.

Test Case HS5 Photos (α = –2°, β = 0°, Re = 1.2e6)

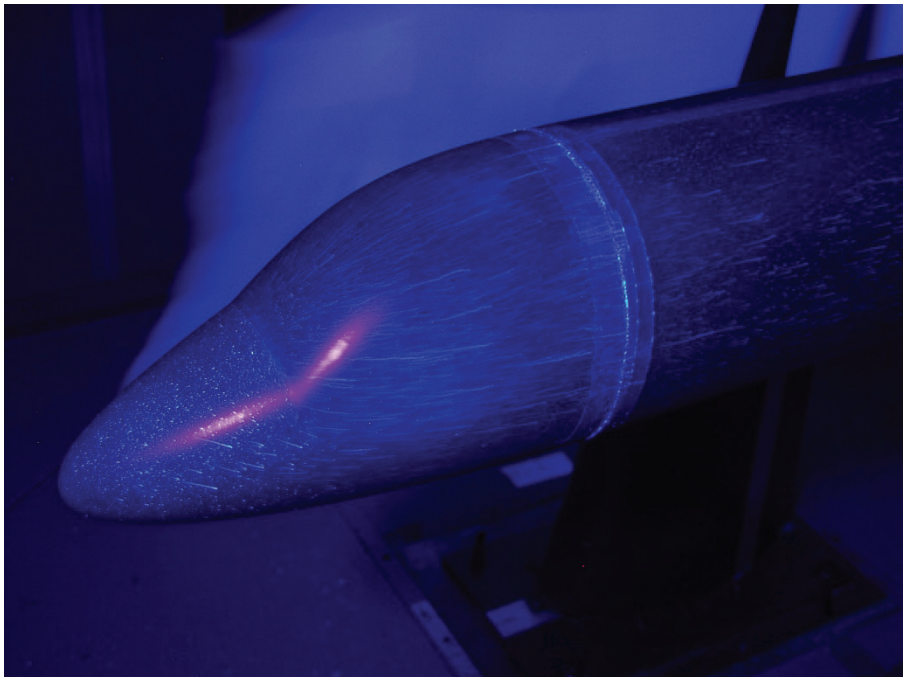

Figure B-17: HS5 flow visualization over nose.

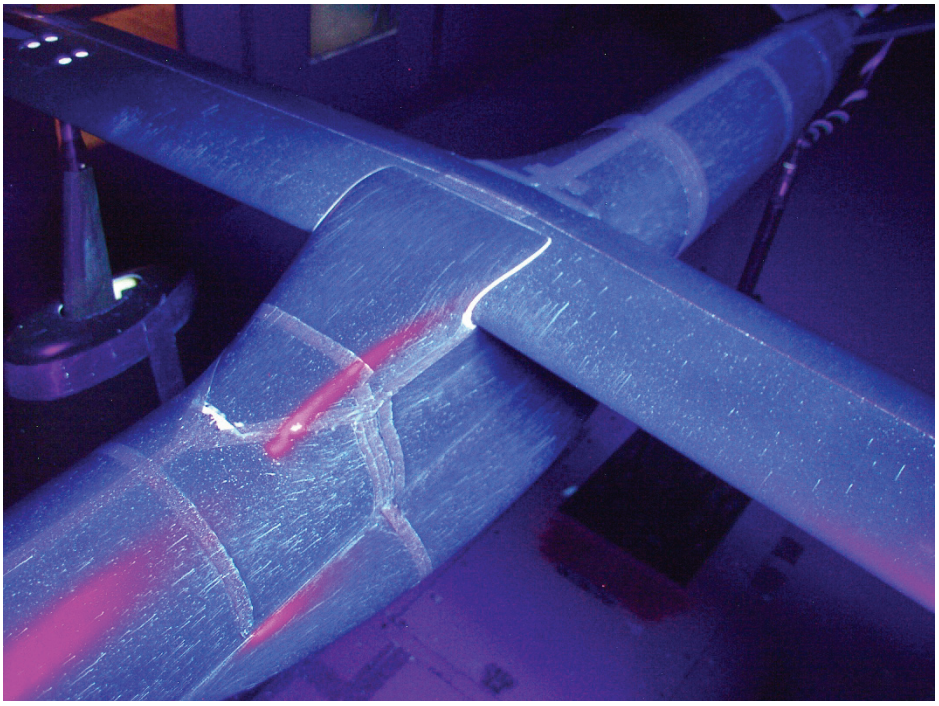

Figure B-18: HS5 flow visualization over fuselage and upper wing surface.

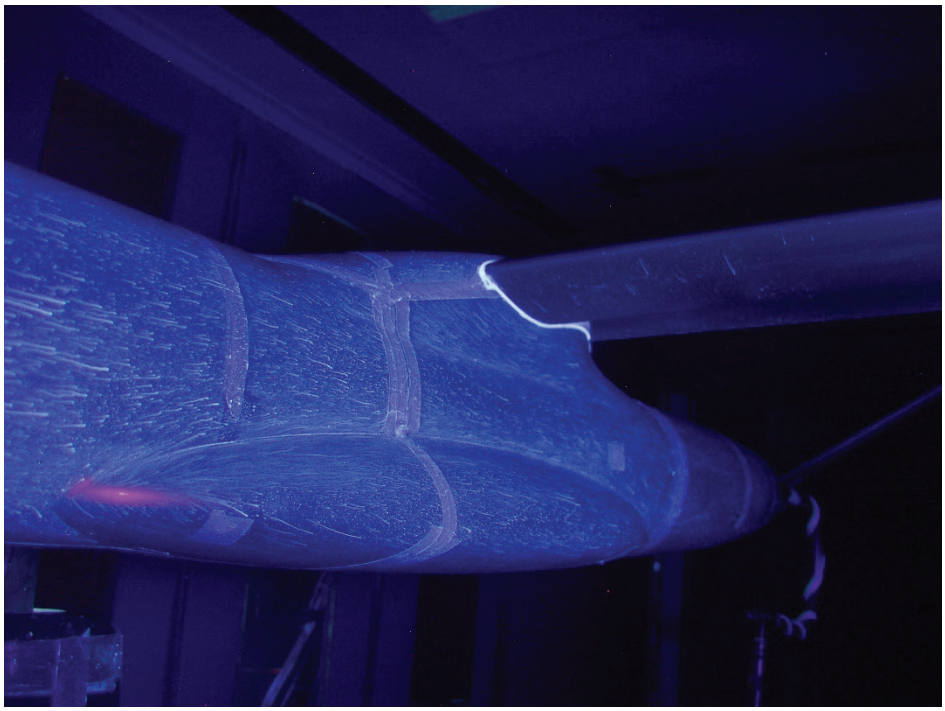

Figure B-19: HS5 flow visualization over fuselage and lower wing surface.

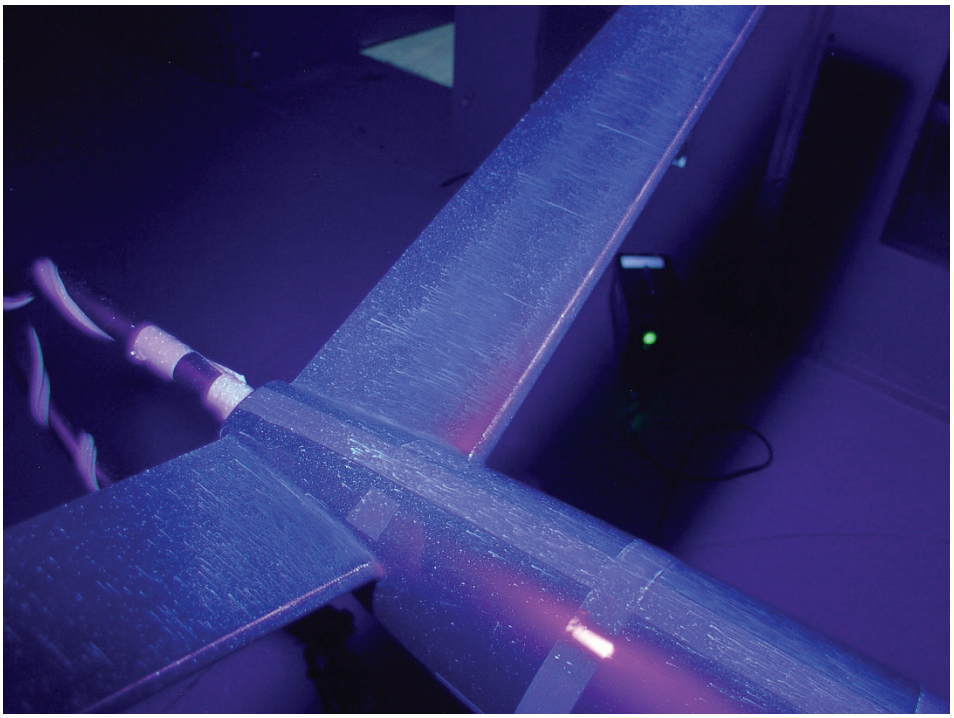

Figure B-20: HS5 flow visualization over tail.

Test Case HS6 Photos (α = +2°, β = 0°, Re = 1.2e6)

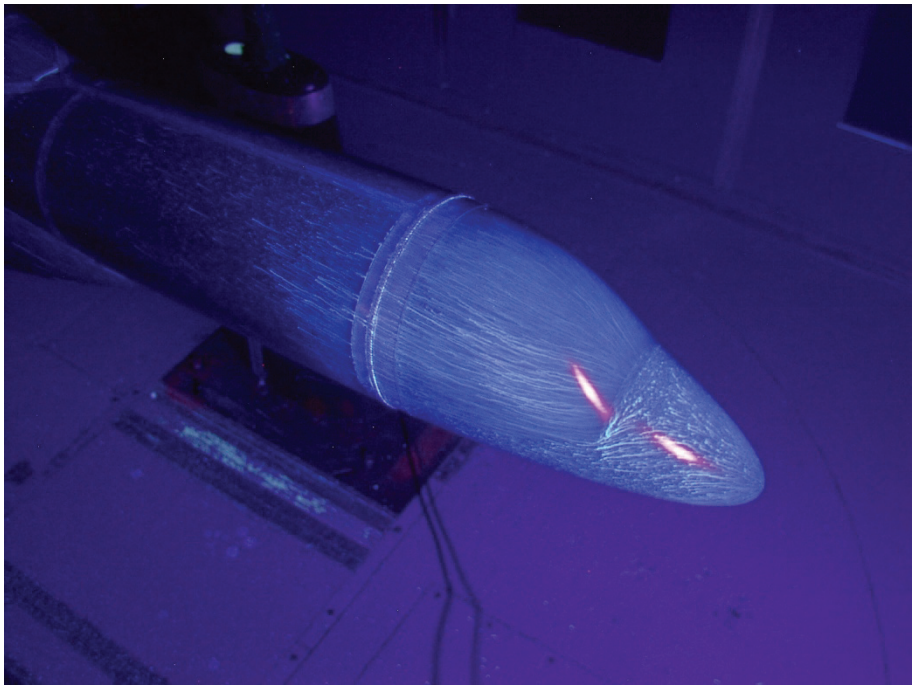

Figure B-21: HS6 flow visualization over nose.

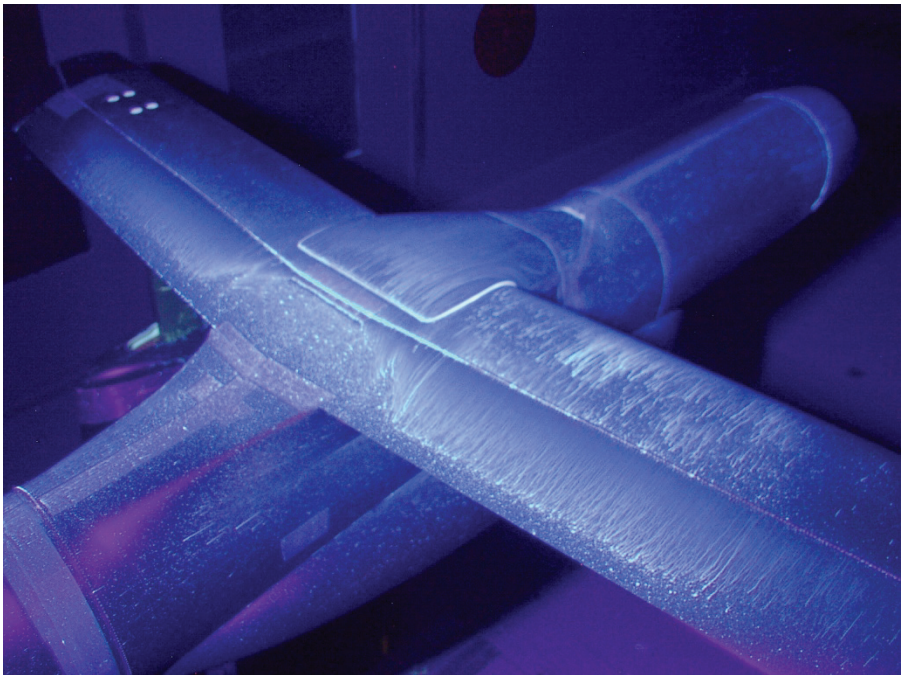

Figure B-22: HS6 flow visualization over fuselage and upper wing surface.

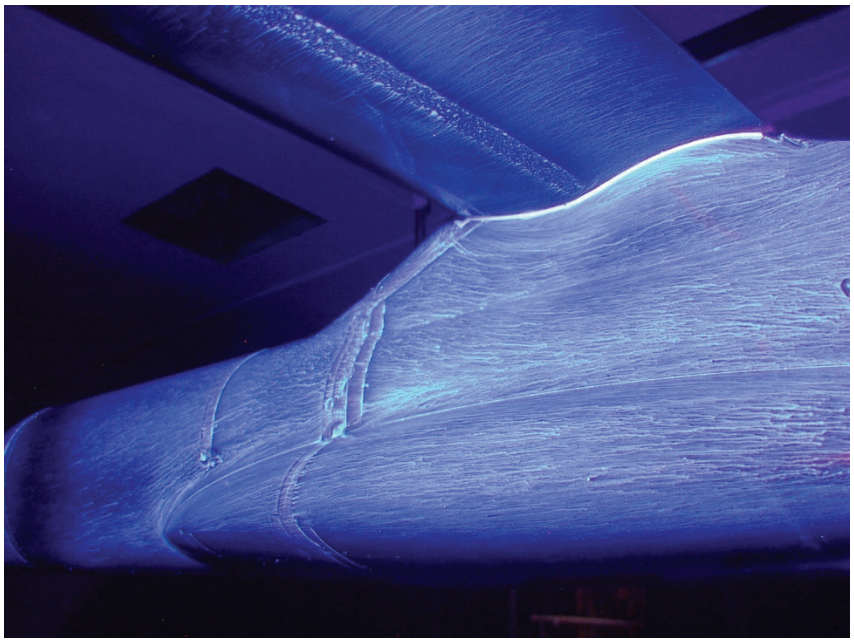

Figure B-23: HS6 flow visualization over fuselage and lower wing surface.

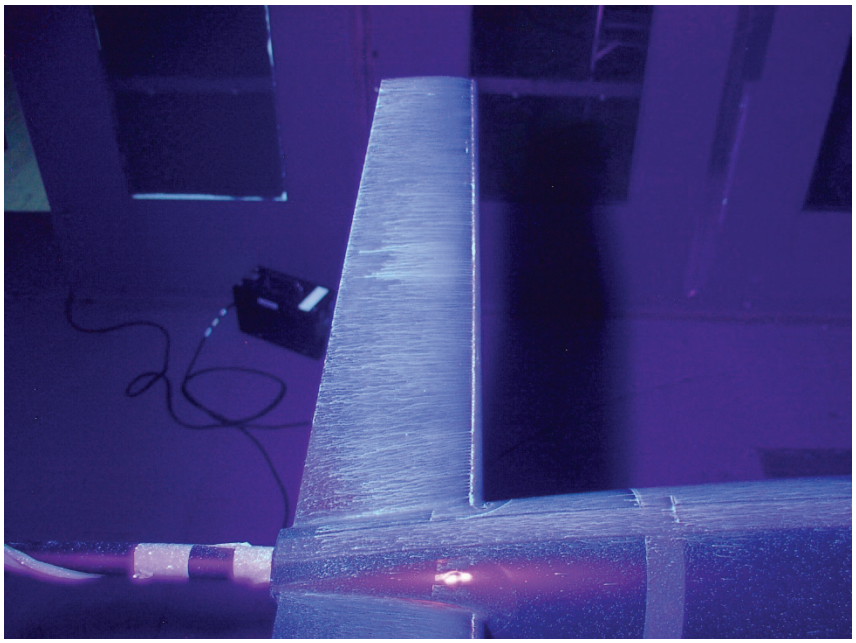

Figure B-24: HS6 flow visualization over tail.

Test Case HS7 Photos (α = +5°, β = 0°, Re = 1.2e6)

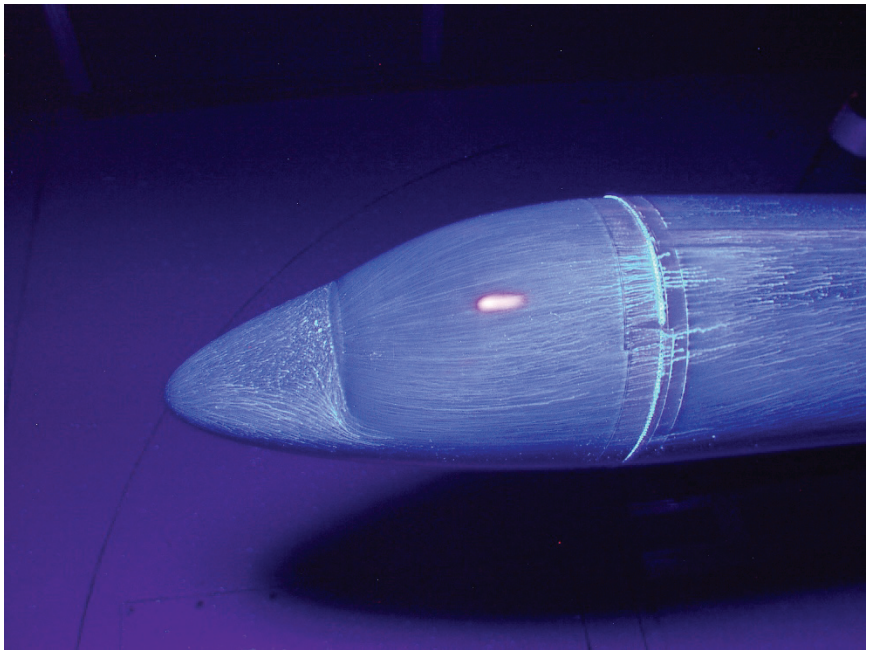

Figure B-25: HS7 flow visualization over nose.

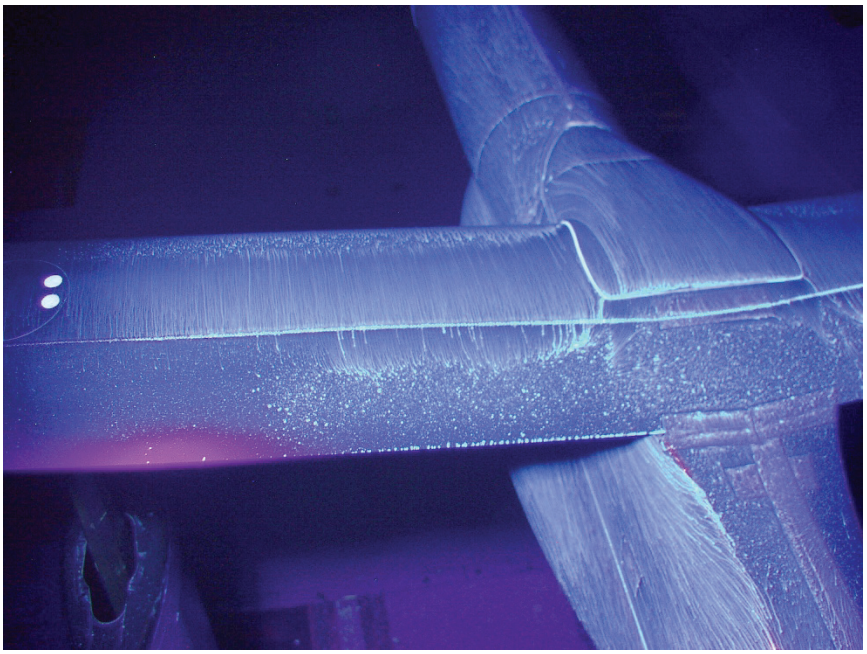

Figure B-26: HS7 flow visualization over fuselage and upper wing surface.

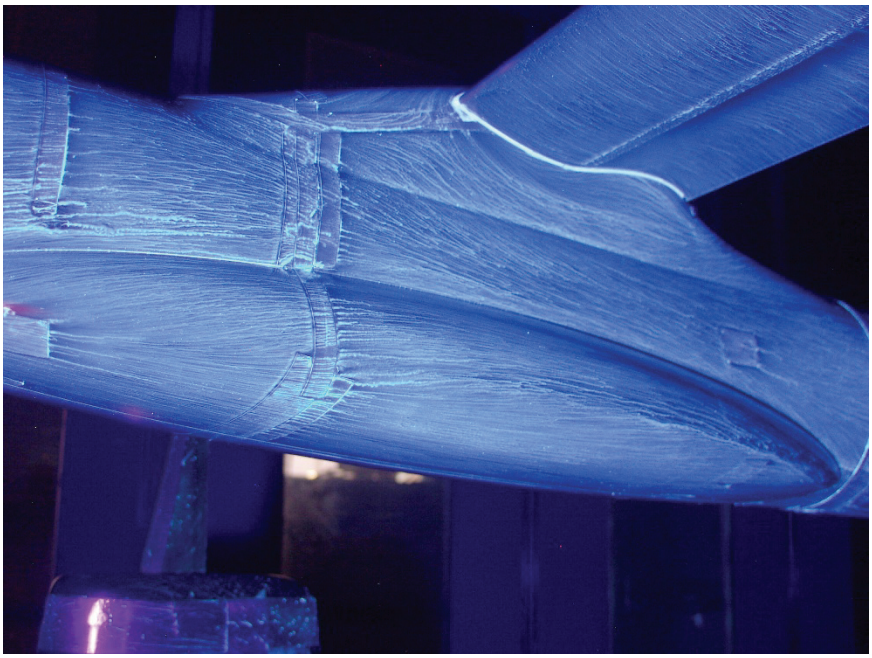

Figure B-27: HS7 flow visualization over fuselage and lower wing surface.

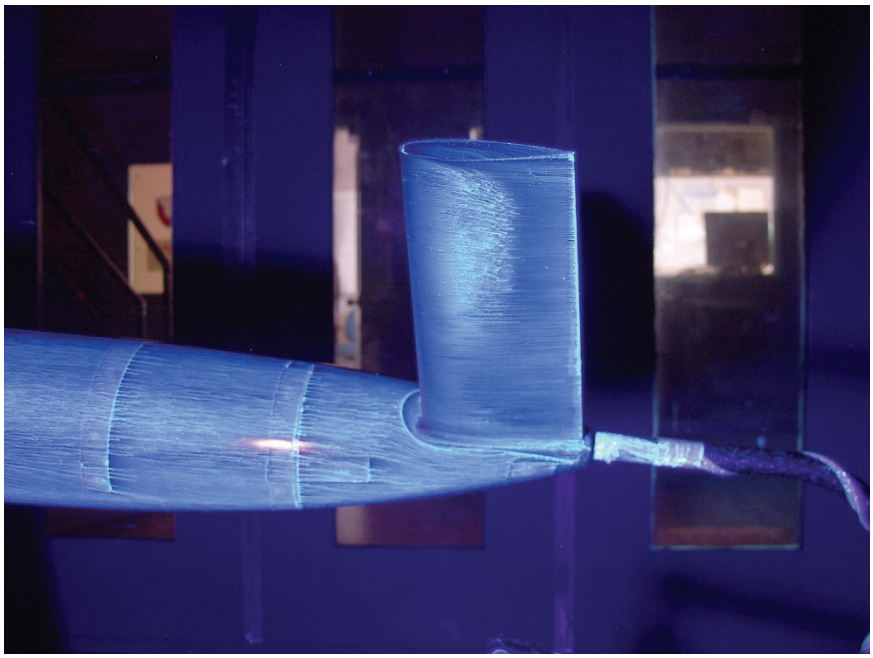

Figure B-28: HS7 flow visualization over tail.

Test Case HS8 Photos (α = +5°, β = +5°, Re = 1.2e6)

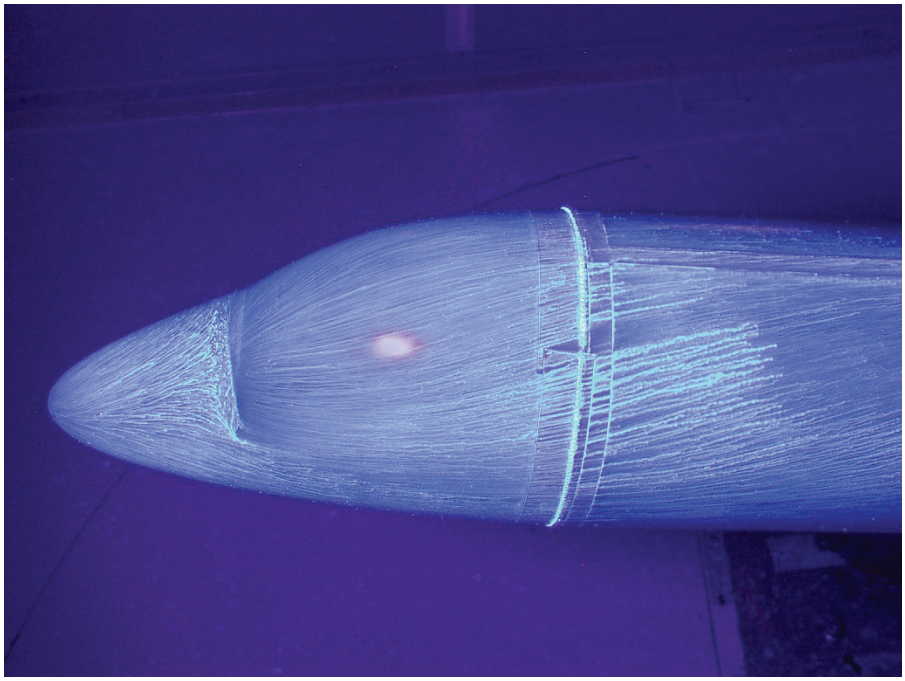

Figure B-29: HS8 flow visualization over nose.

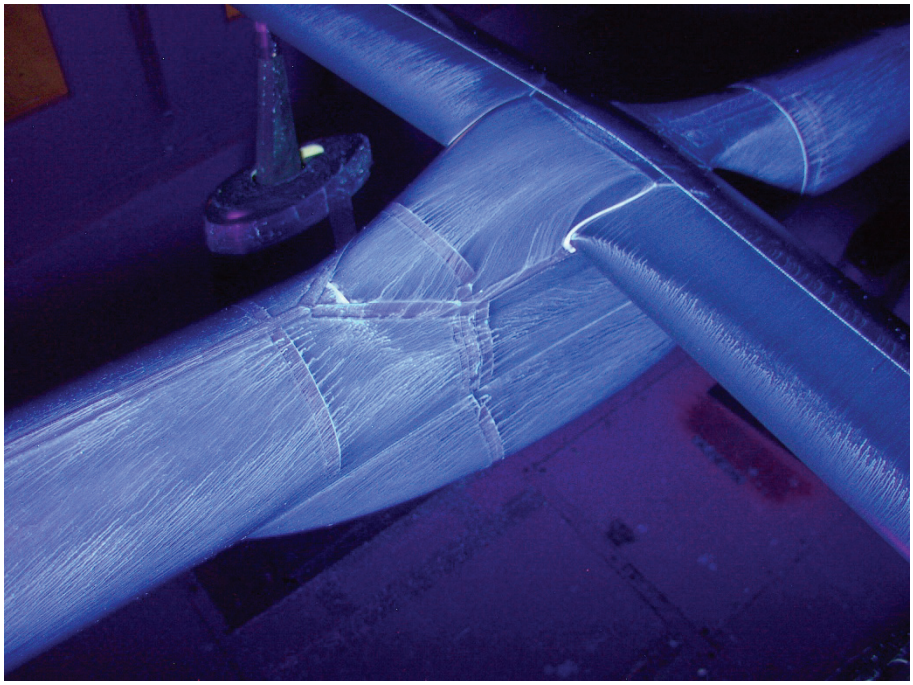

Figure B-30: HS8 flow visualization over fuselage and upper wing surface.

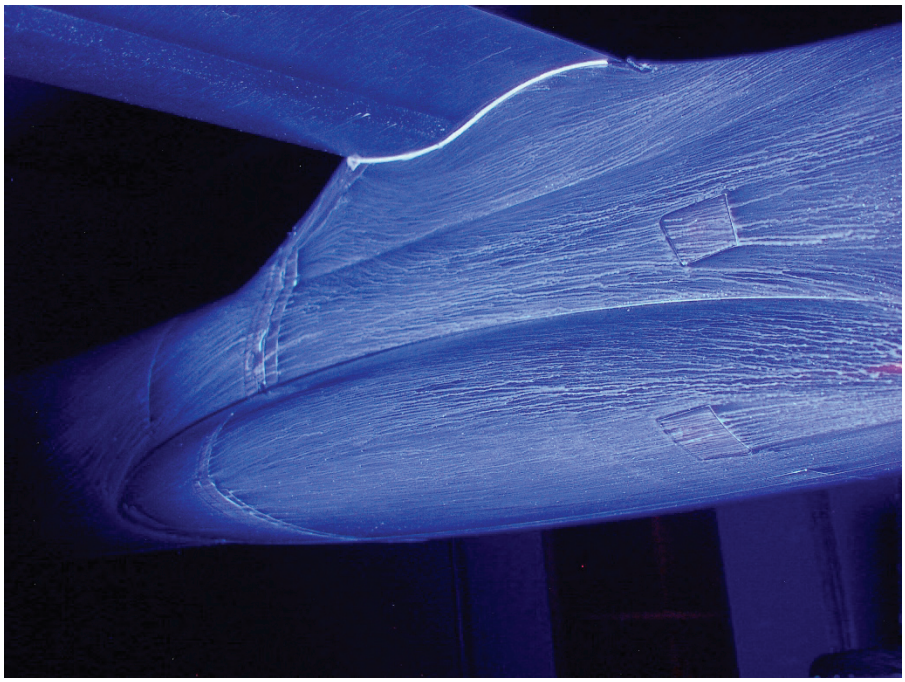

Figure B-31: HS8 flow visualization over fuselage and lower wing surface.

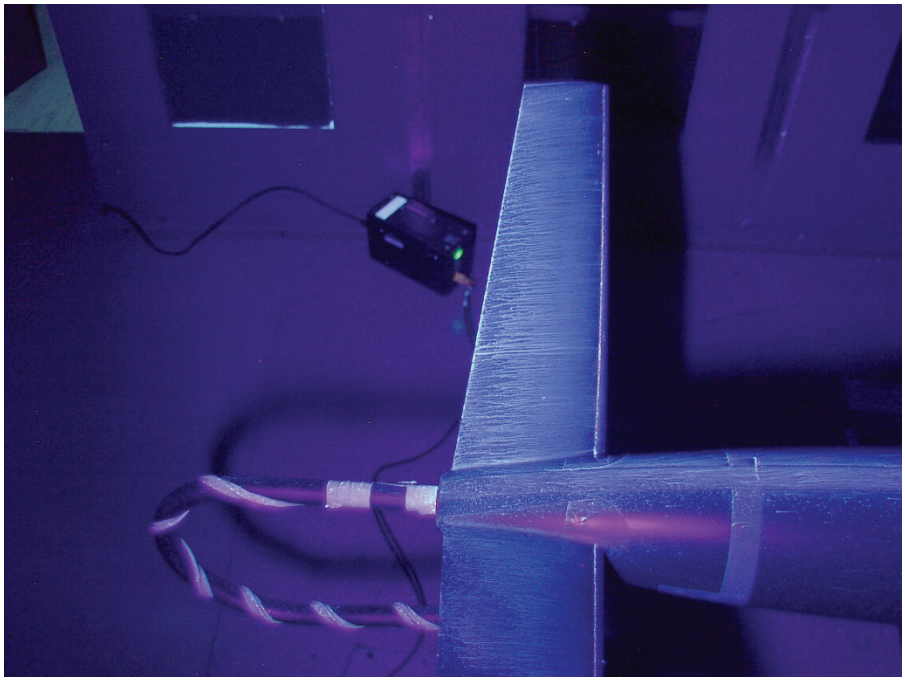

Figure B-32: HS8 flow visualization over tail.

Test Case LS1 Photos (α = 0°, β = 0°, Re = 0.6e6)

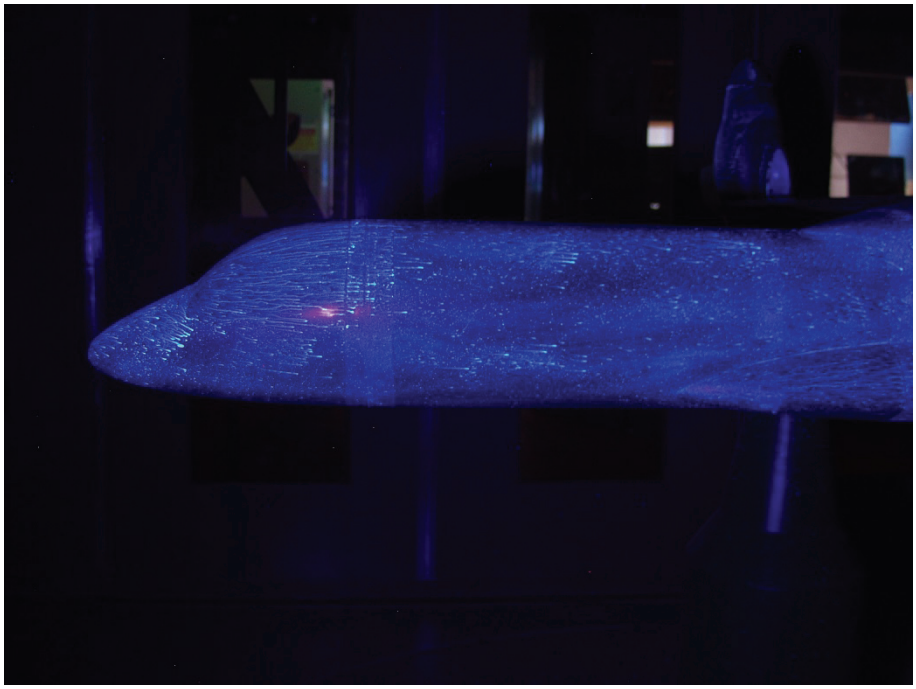

Figure B-33: LS1 flow visualization over nose.

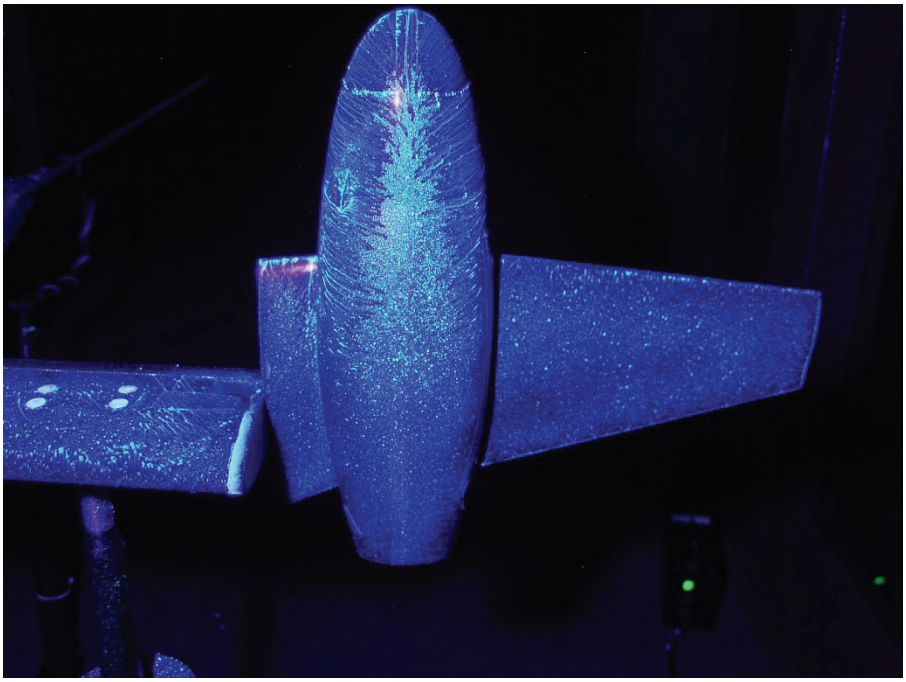

Figure B-34: LS1 flow visualization over nacelle (port-fore).

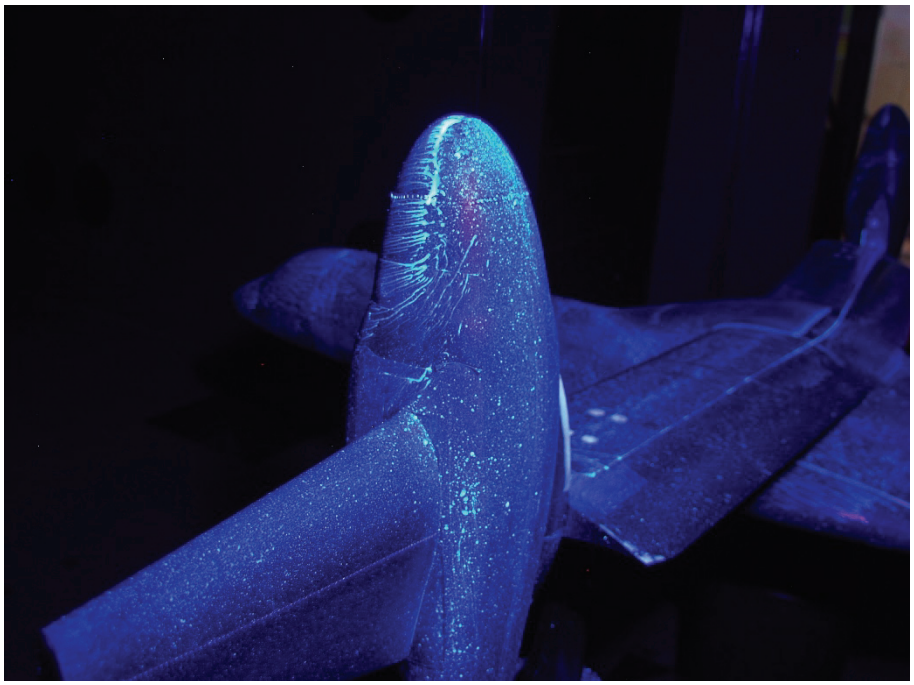

Figure B-35: LS1 flow visualization over nacelle (port-aft).

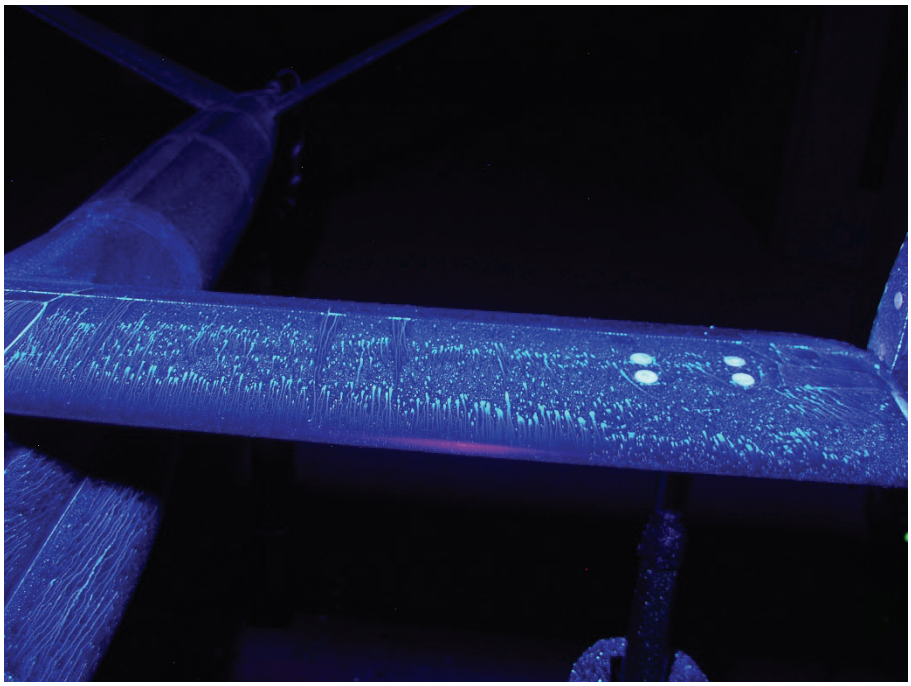

Figure B-36: LS1 flow visualization over upper wing surface (port).

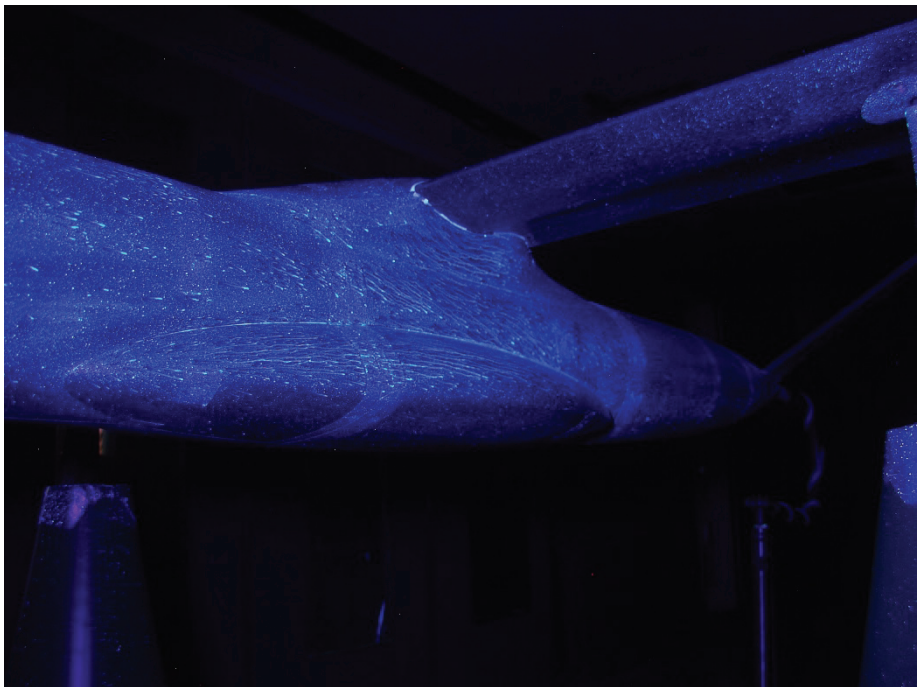

Figure B-37: LS1 flow visualization over fuselage and lower wing surface (port).

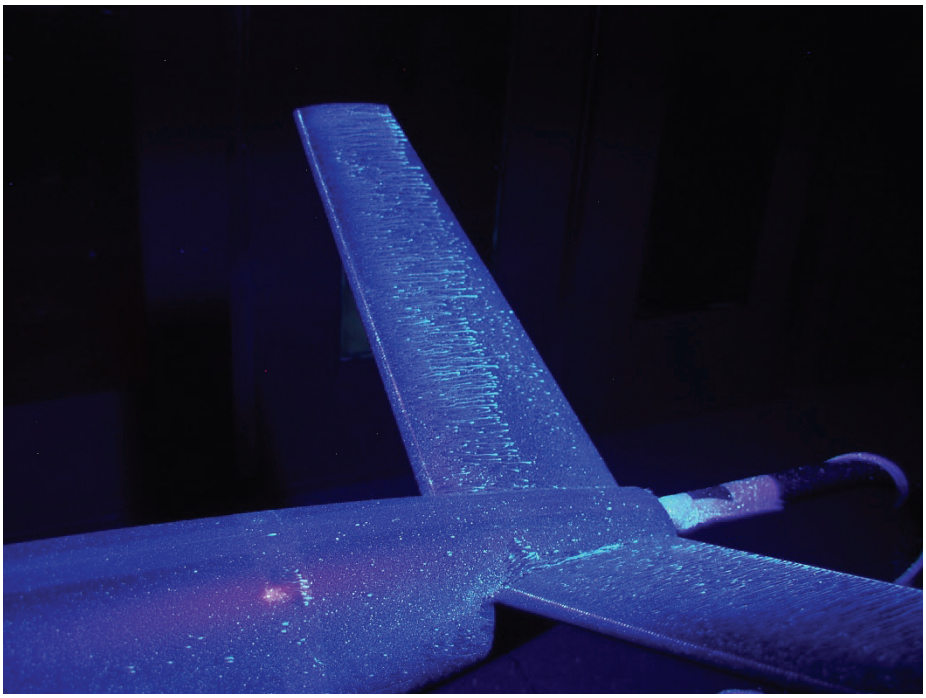

Figure B-38: LS1 flow visualization over tail.

Test Case LS2 Photos (α = 0°, β = +15°, Re = 0.6e6)

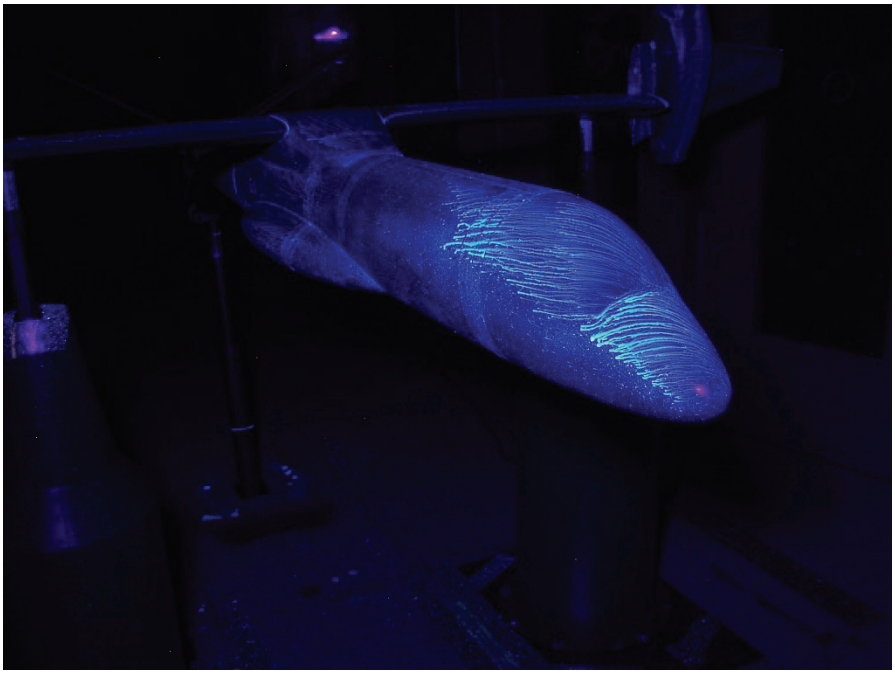

Figure B-39: LS2 flow visualization over nose.

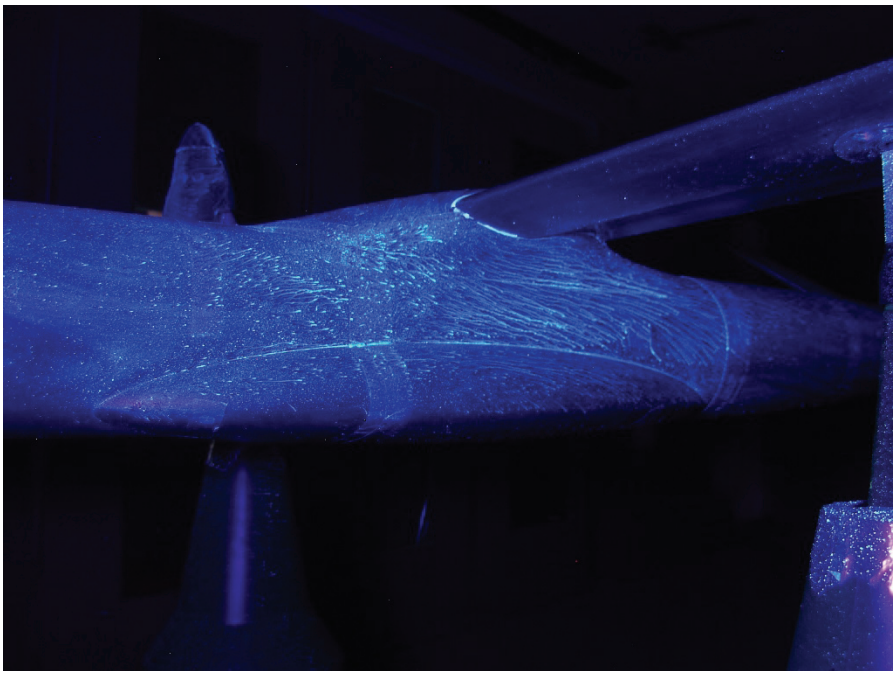

Figure B-40: LS2 flow visualization over fuselage (port).

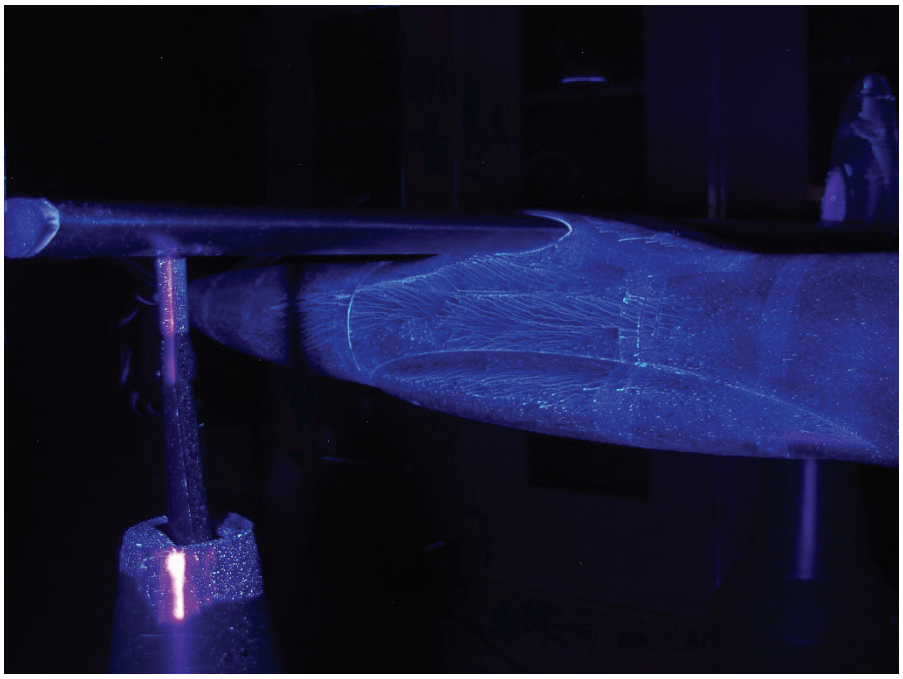

Figure B-41: LS2 flow visualization over fuselage (starboard).

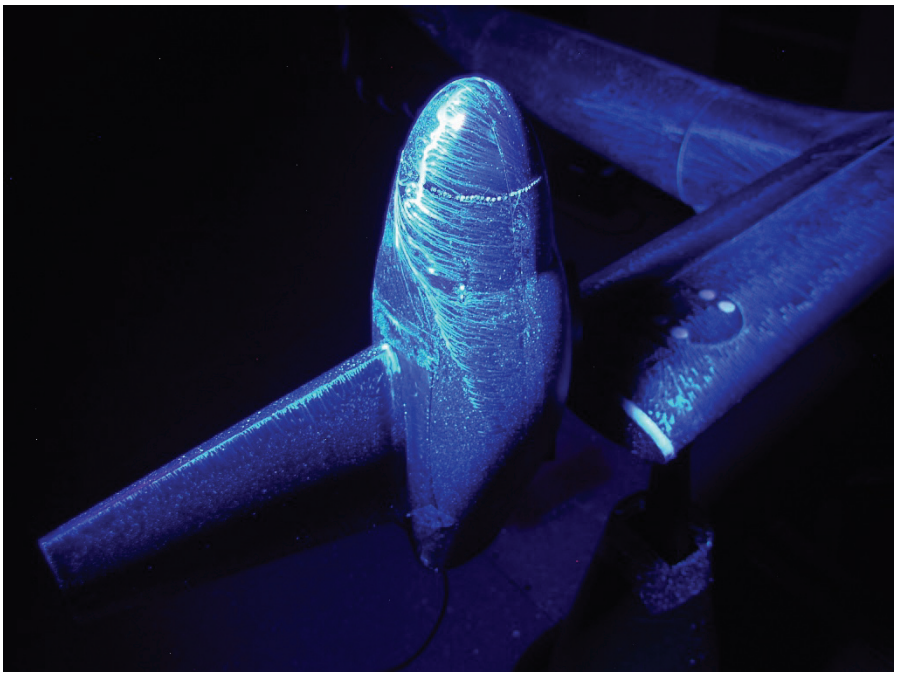

Figure B-42: LS2 flow visualization over nacelle (starboard-fore).

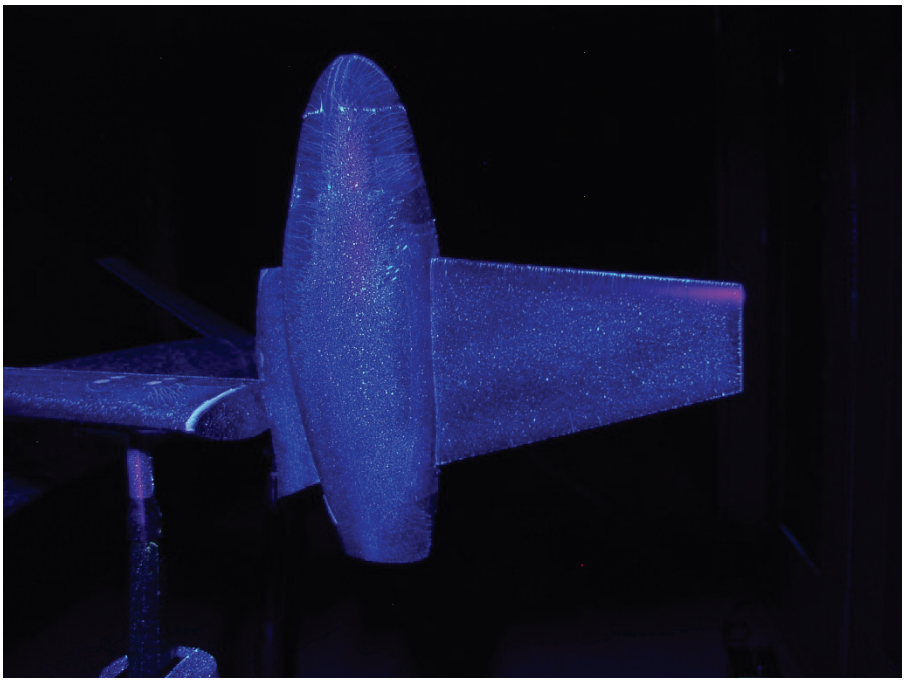

Figure B-43: LS2 flow visualization over nacelle (port-fore).

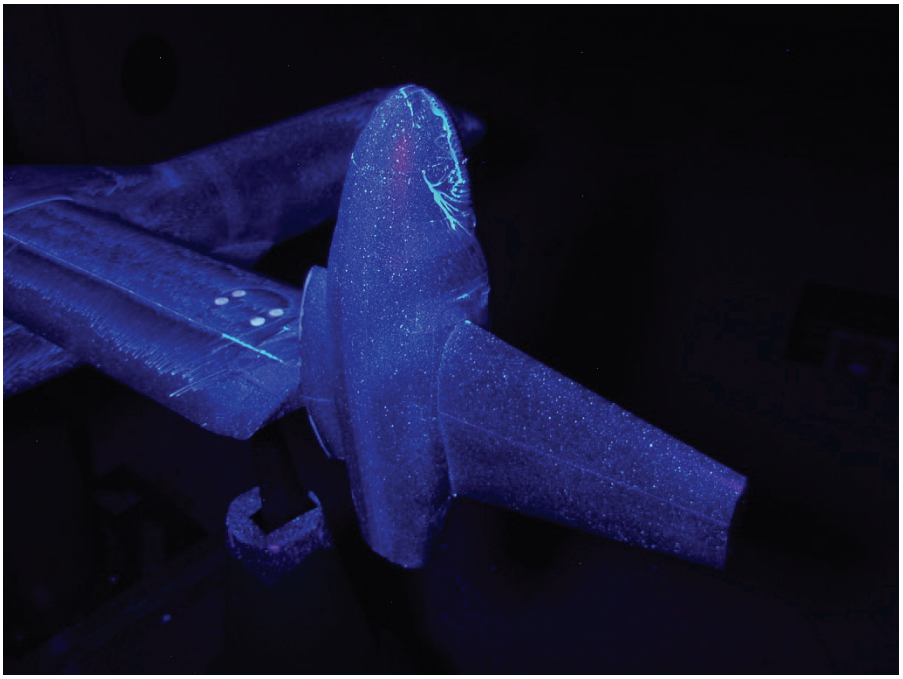

Figure B-44: LS2 flow visualization over nacelle (starboard-aft).

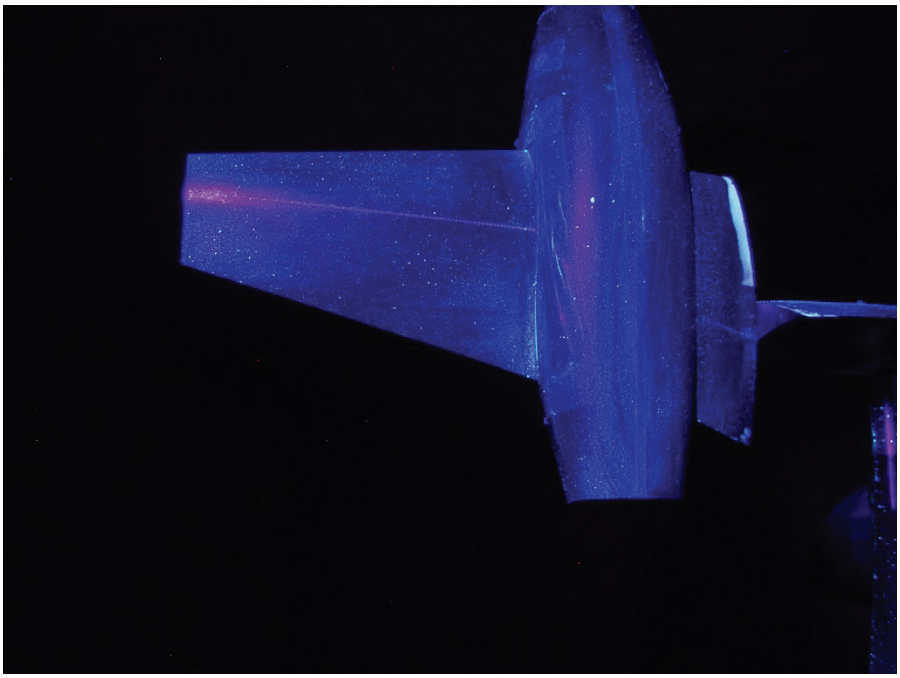

Figure B-45: LS2 flow visualization over nacelle (port-aft).

Test Case LS3 Photos (α = 0°, β = +45°, Re = 0.6e6)

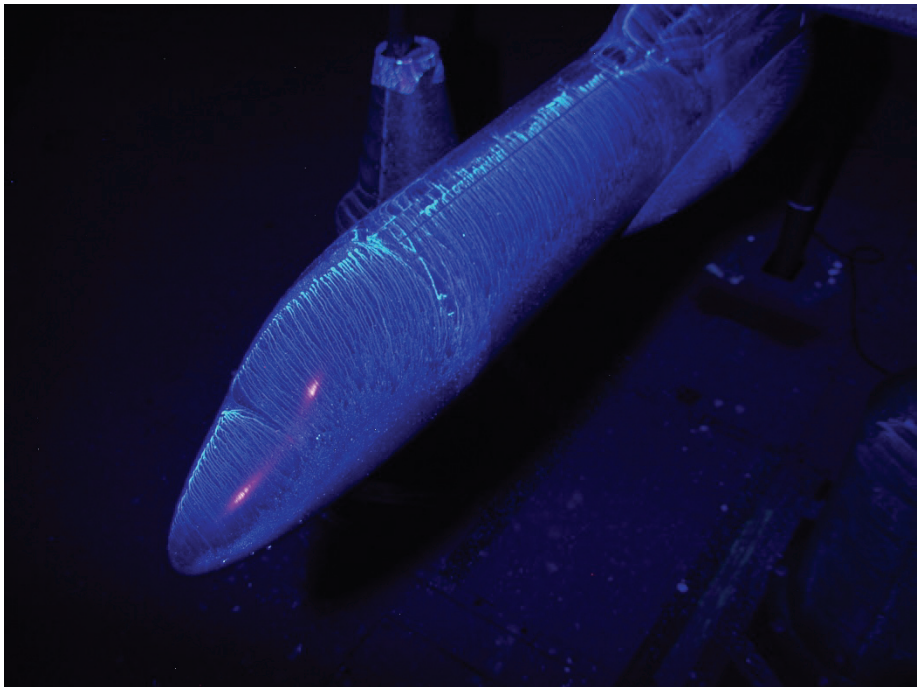

Figure B-46: LS3 flow visualization over nose.

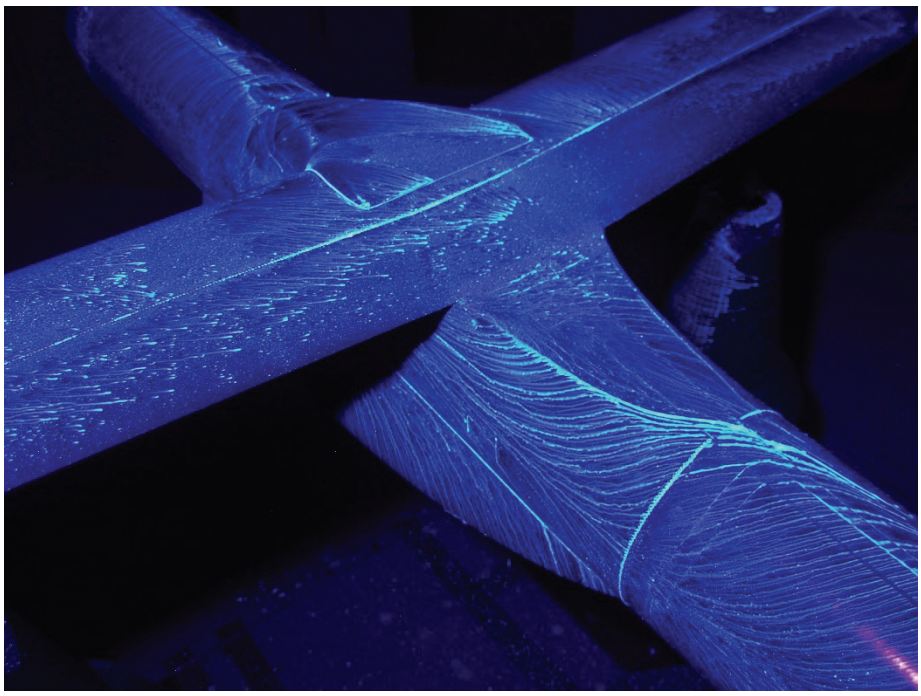

Figure B-47: LS3 flow visualization over fuselage.

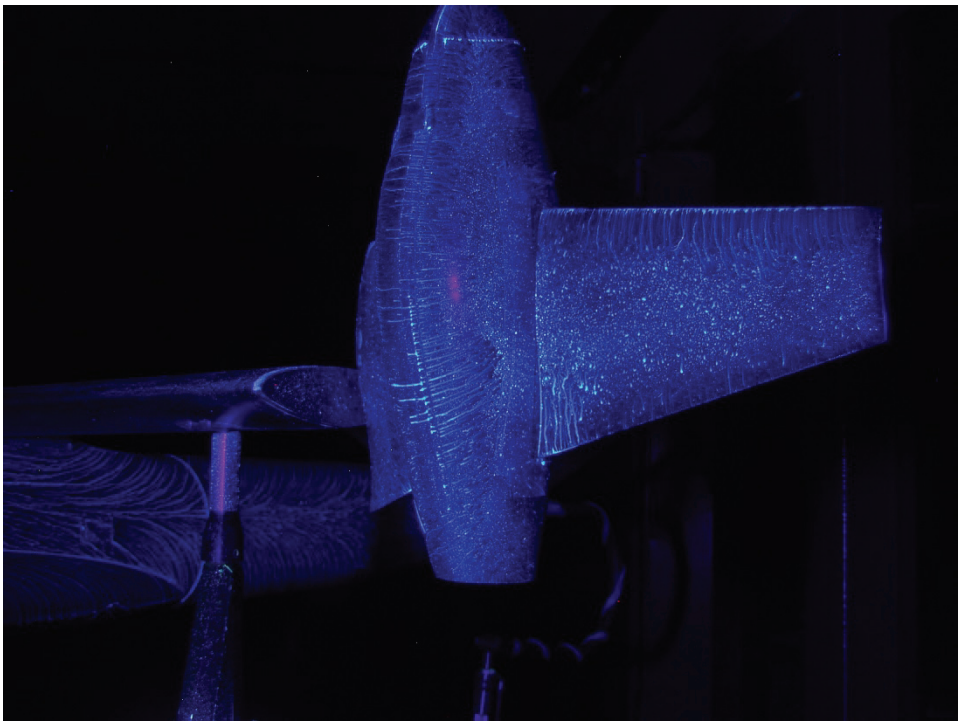

Figure B-48: LS3 flow visualization over nacelle (port-fore).

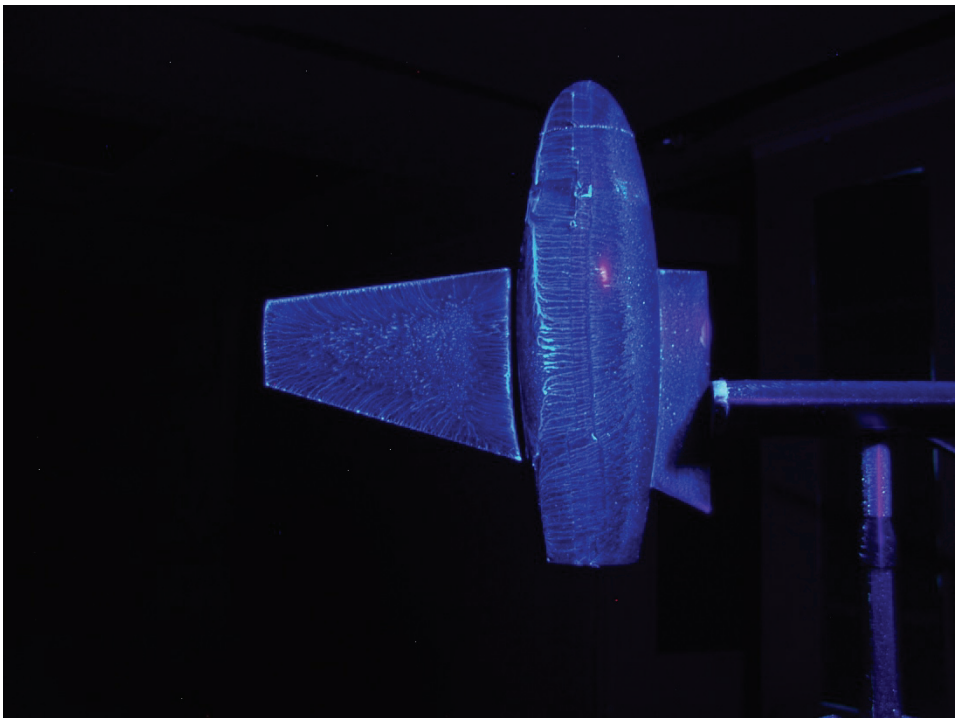

Figure B-49: LS3 flow visualization over nacelle (starboard-fore).

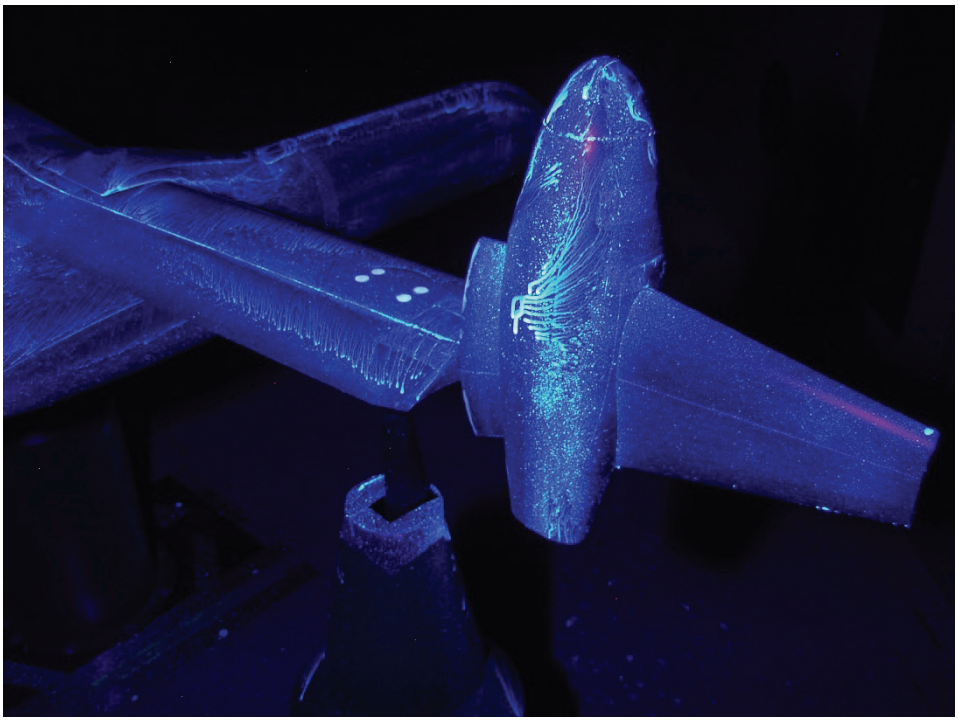

Figure B-50: LS3 flow visualization over nacelle (starboard-aft).

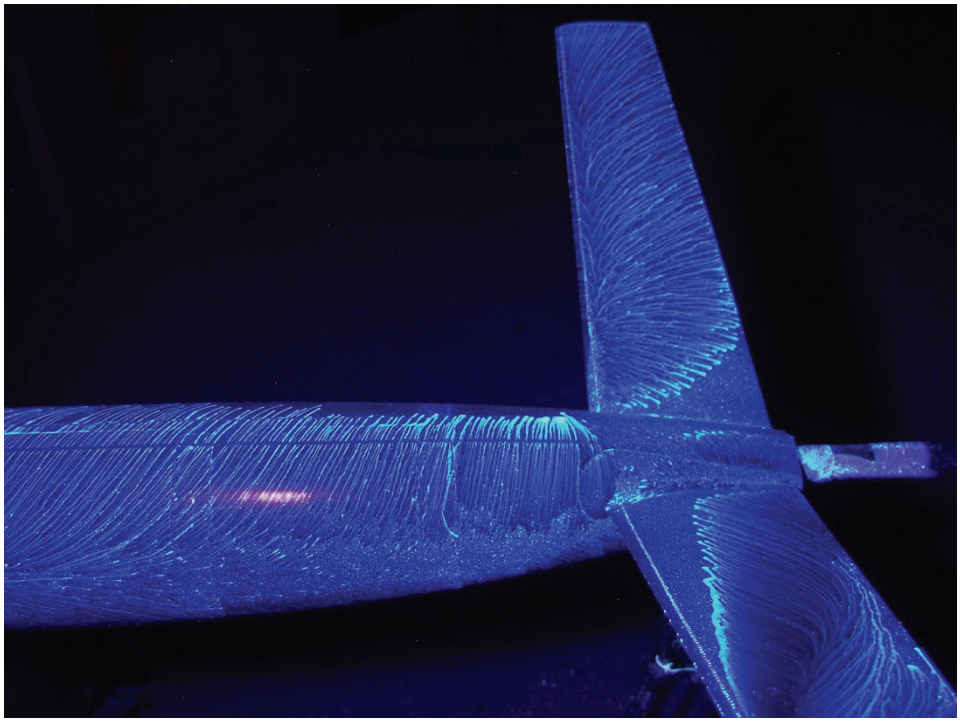

Figure B-51: LS3 flow visualization over tail.

Test Case LS4 Photos (α = 0°, β = +75°, Re = 0.6e6)

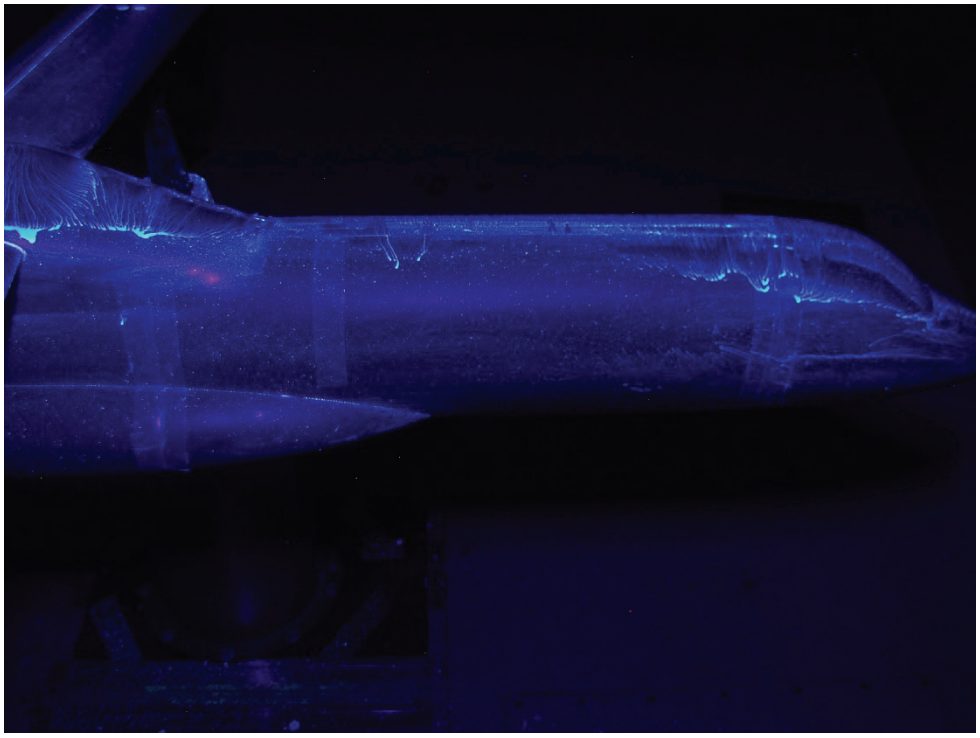

Figure B-52: LS4 flow visualization over nose.

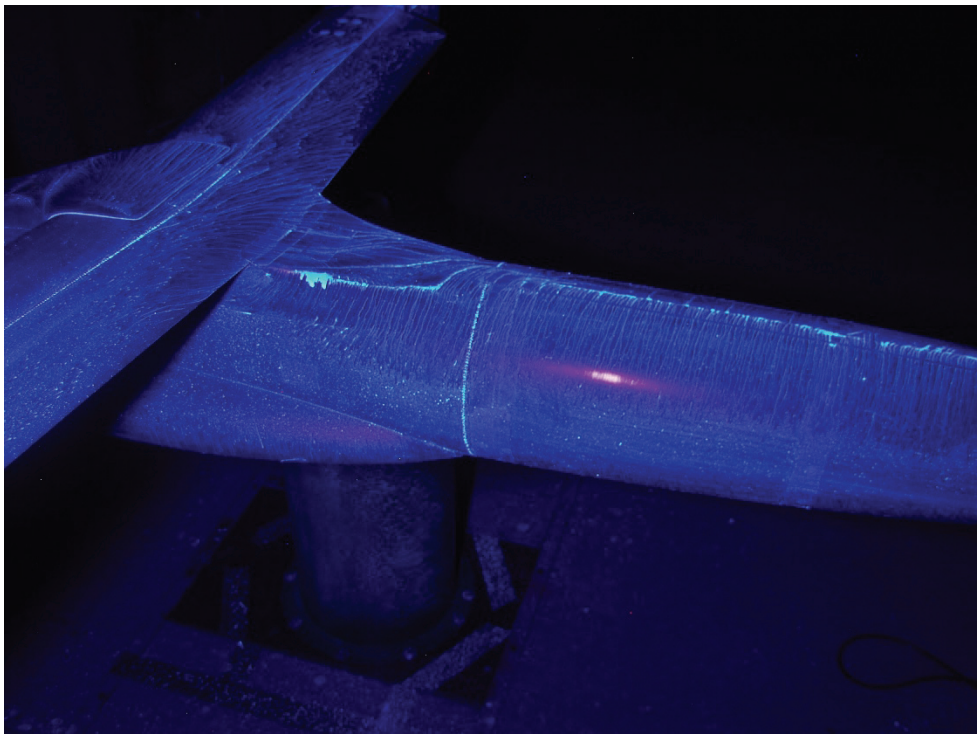

Figure B-53: LS4 flow visualization over fuselage.

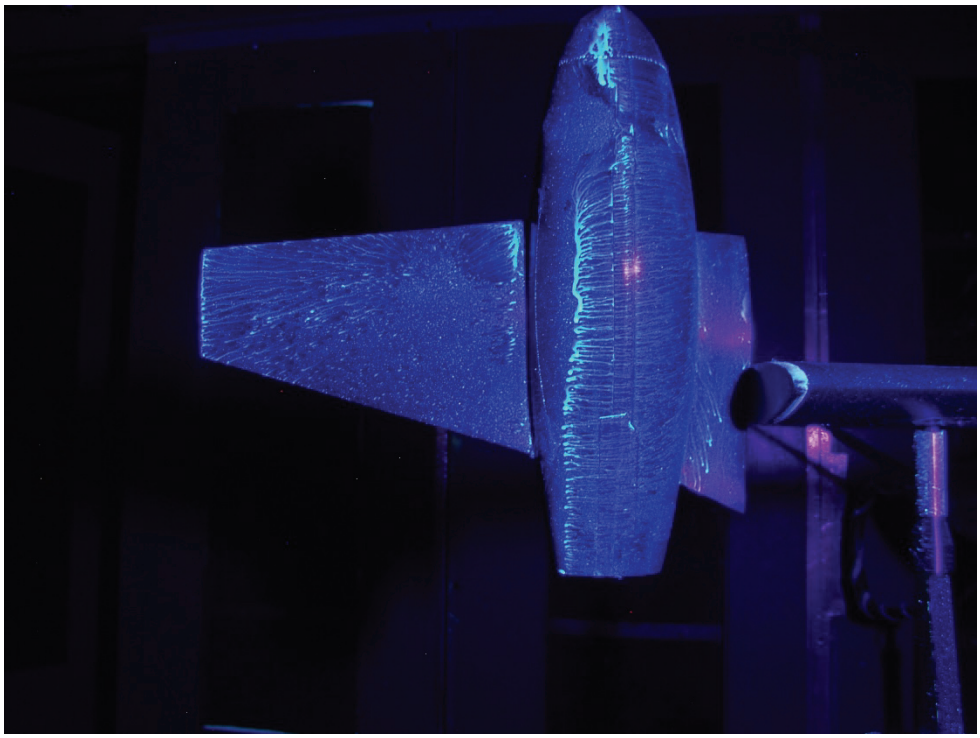

Figure B-54: LS4 flow visualization over nacelle (starboard-fore).

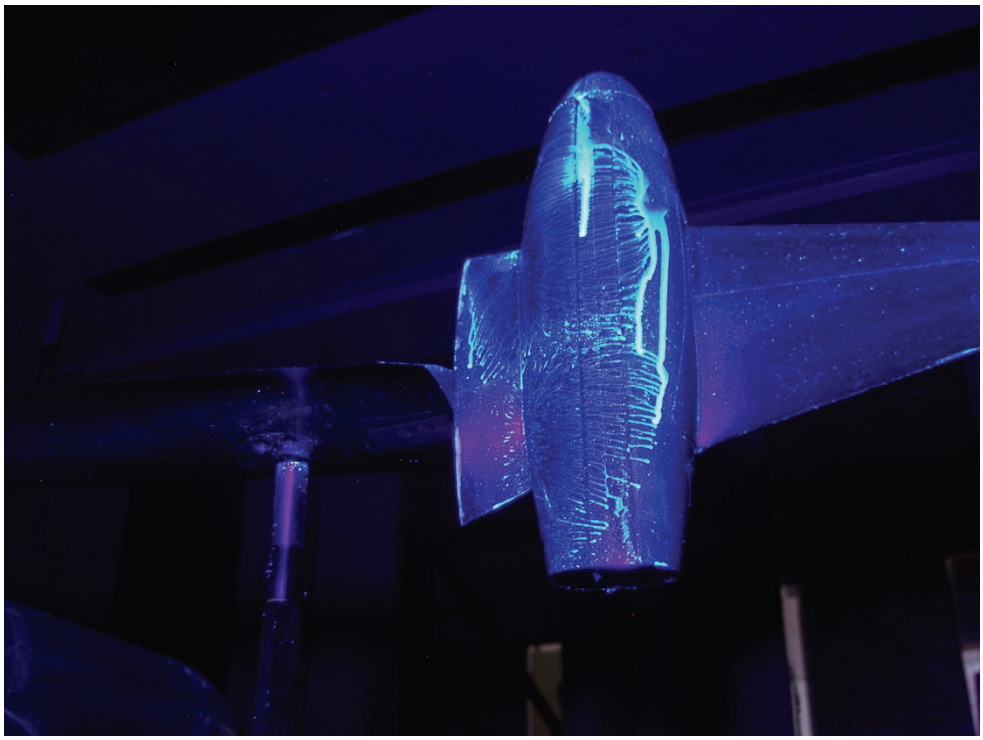

Figure B-55: LS4 flow visualization over nacelle (starboard-aft).

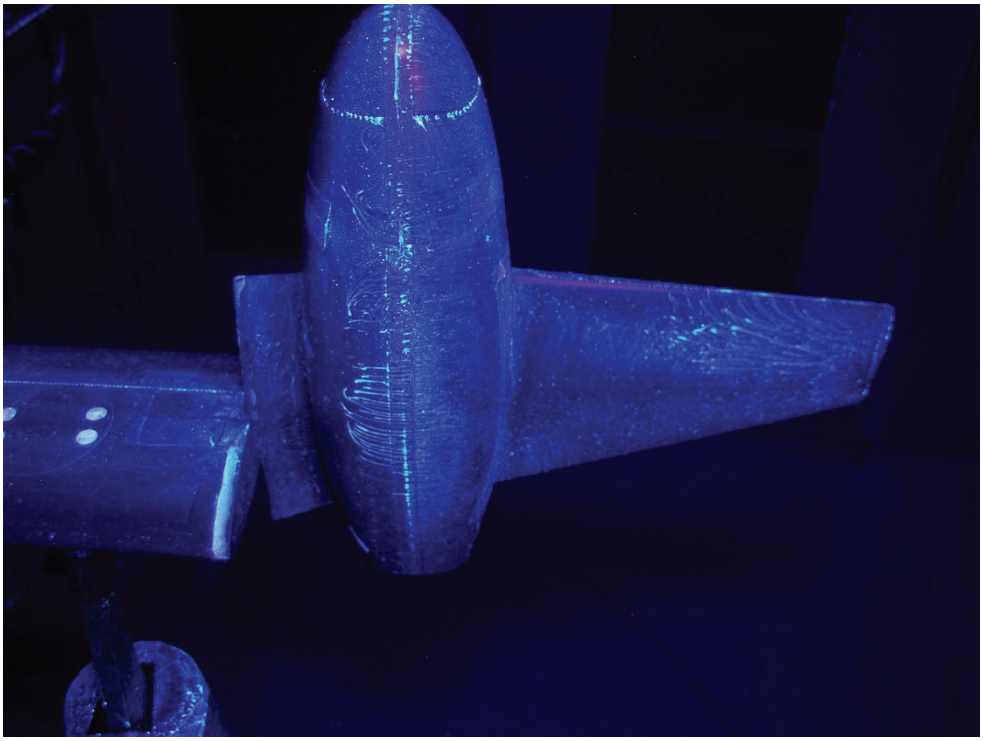

Figure B-56: LS4 flow visualization over nacelle (port-fore).

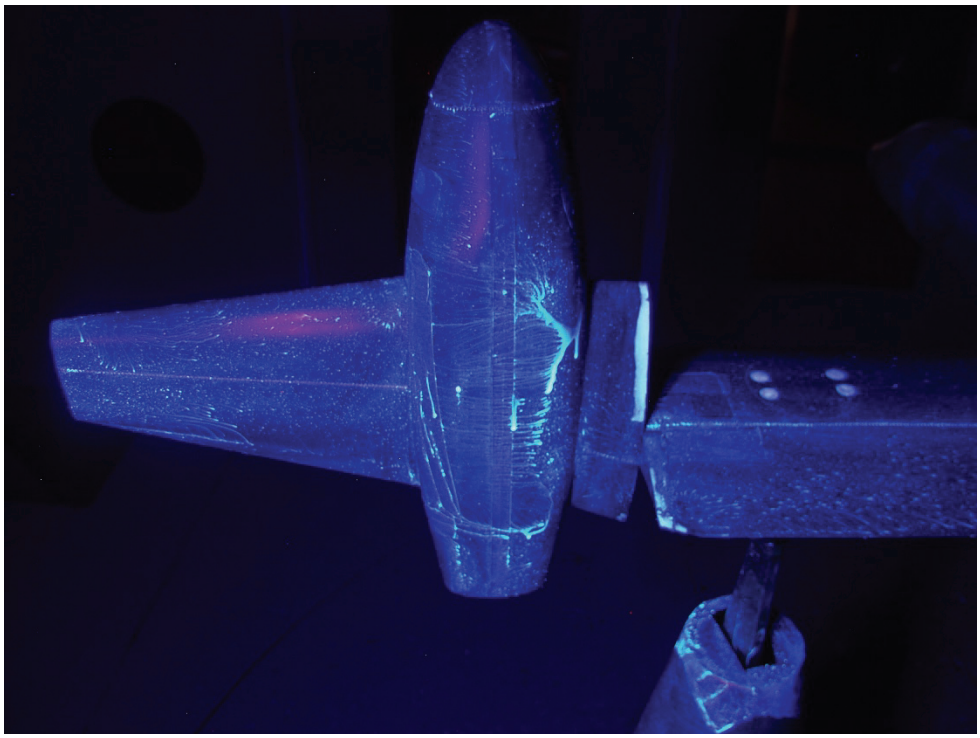

Figure B-57: LS4 flow visualization over nacelle (port-aft).

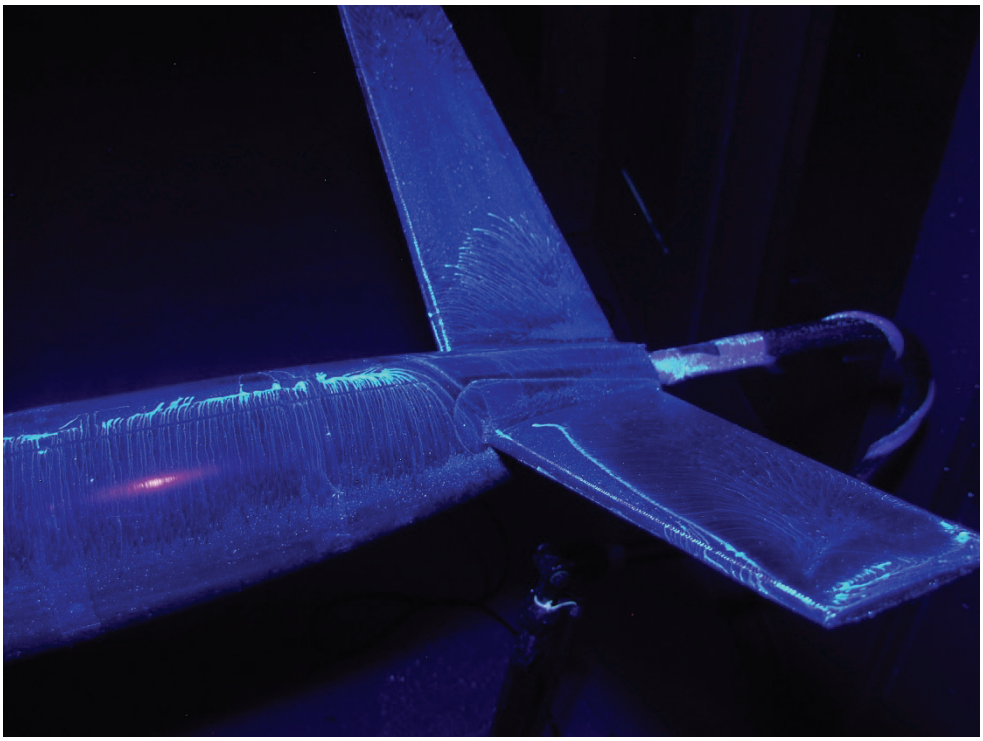

Figure B-58: LS4 flow visualization over tail.

Test Case LS5 Photos (α = 0°, β = +90°, Re = 0.6e6)

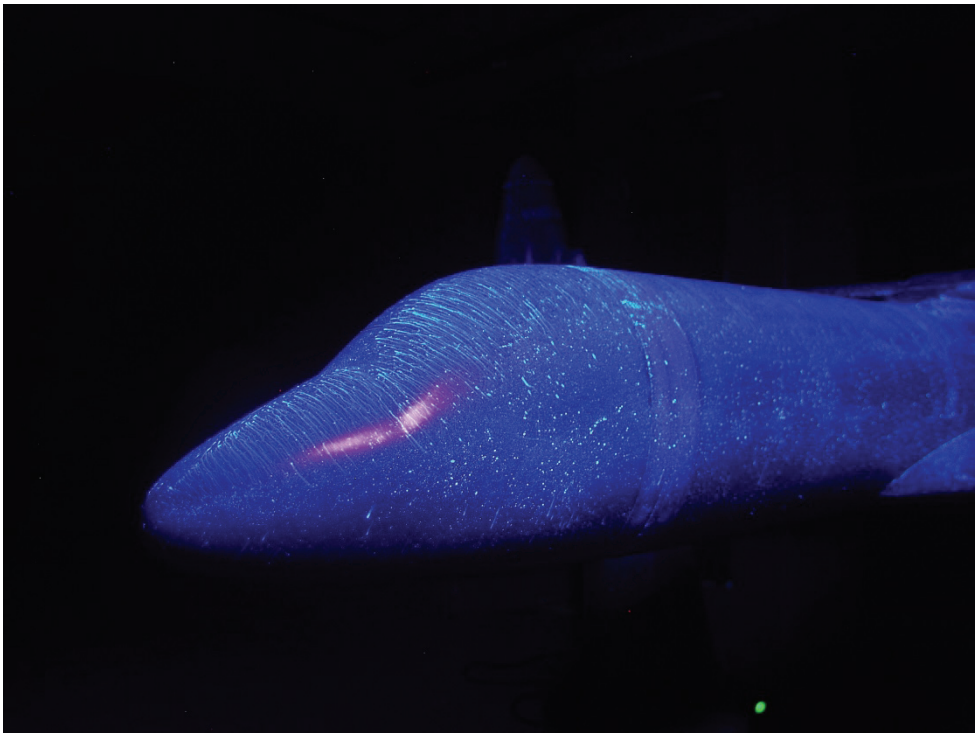

Figure B-59: LS5 flow visualization over nose.

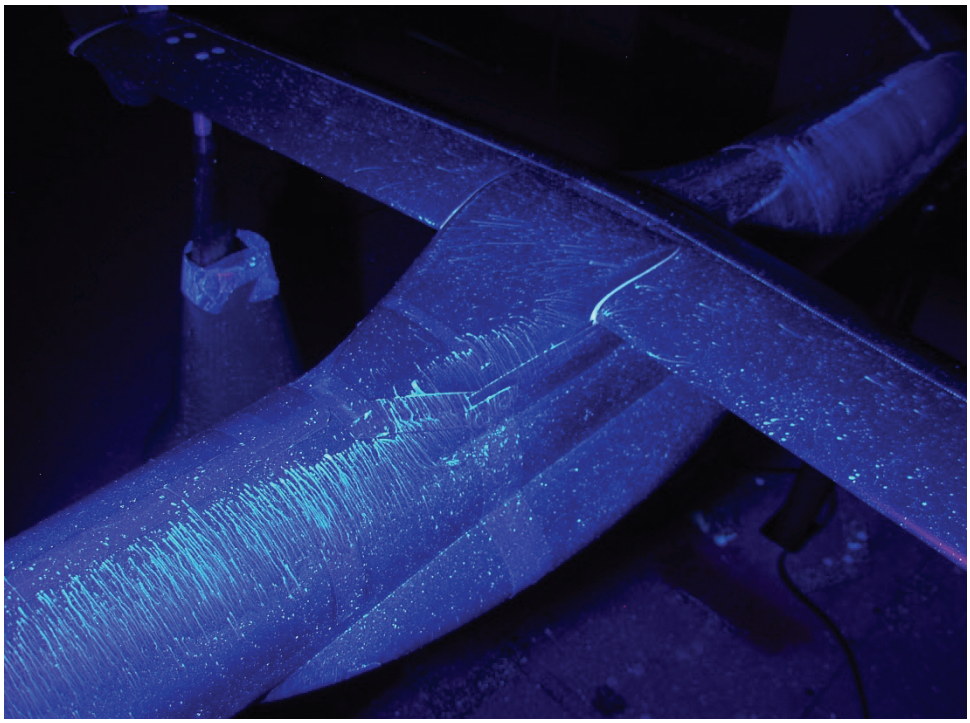

Figure B-60: LS5 flow visualization over fuselage.

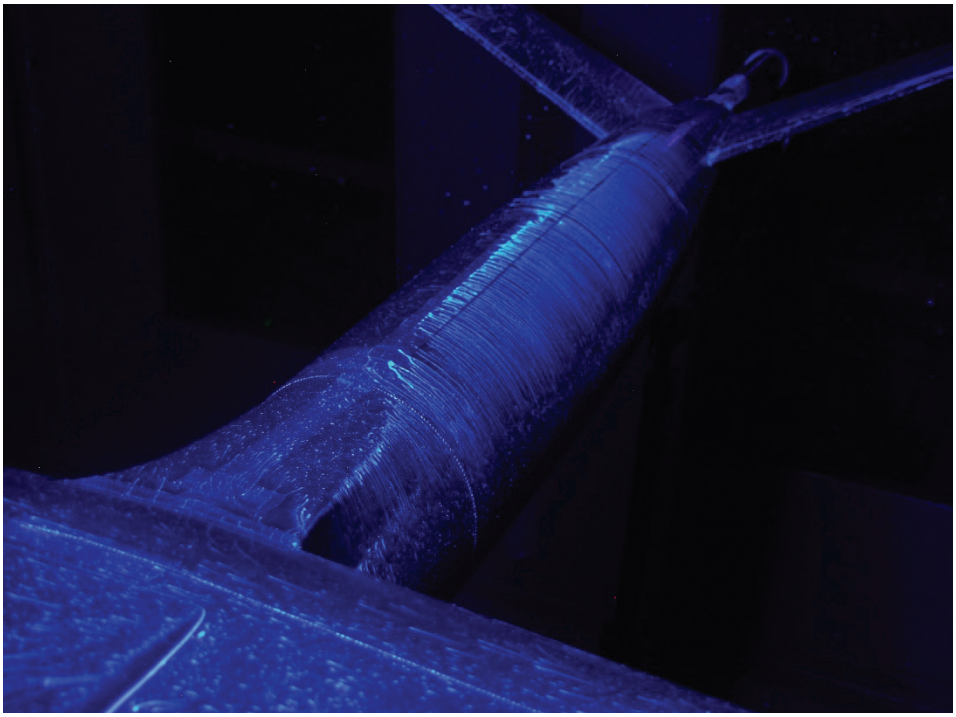

Figure B-61: LS5 flow visualization over fuselage.

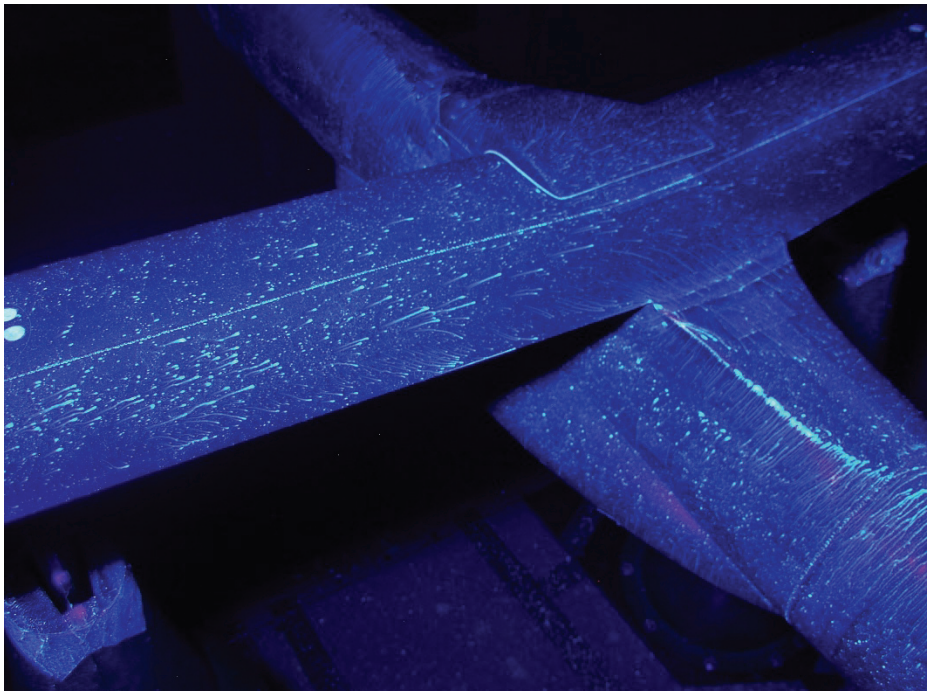

Figure B-62: LS5 flow visualization over wing.

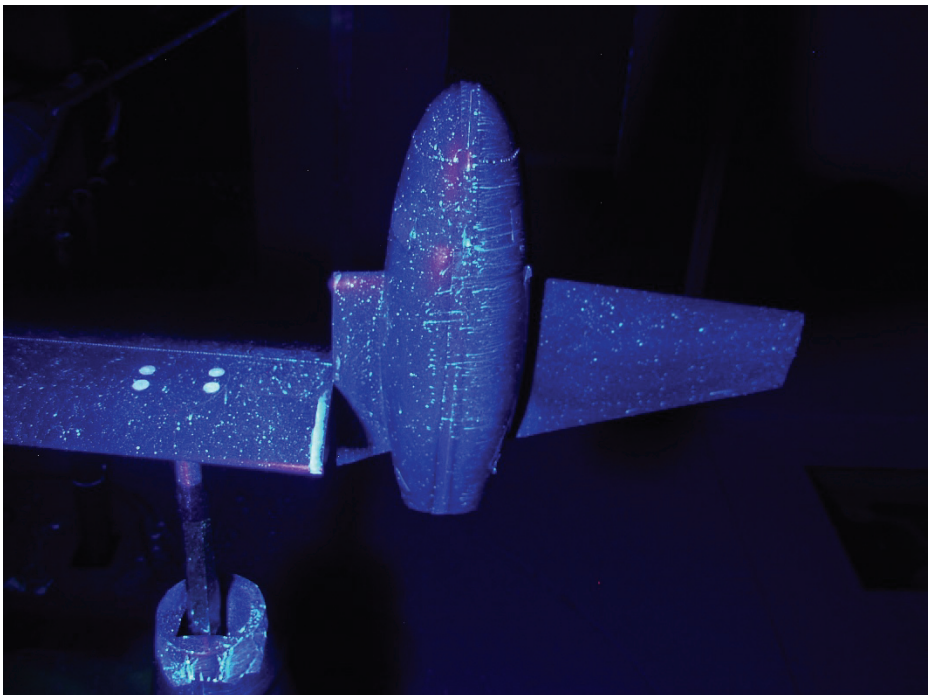

Figure B-63: LS5 flow visualization over nacelle (port-fore).

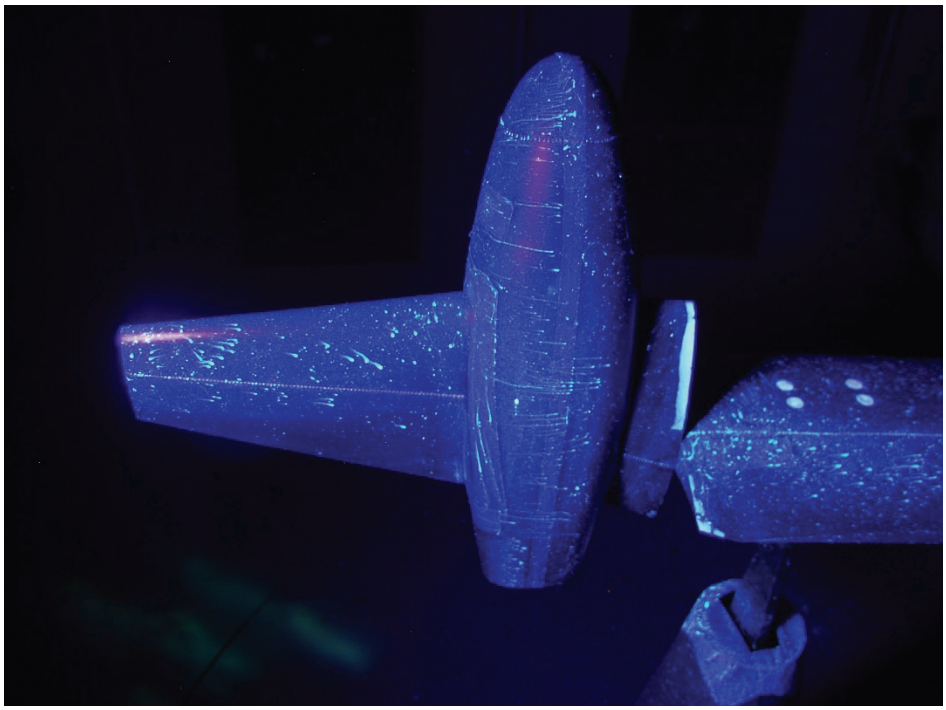

Figure B-64: LS5 flow visualization over nacelle (port-aft).

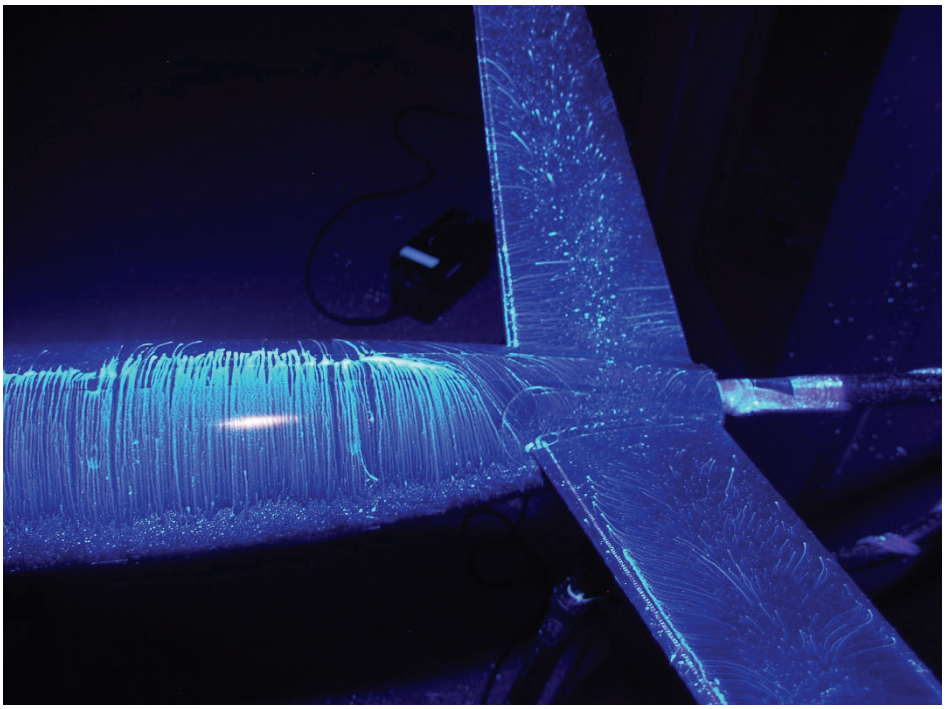

Figure B-65: LS5 flow visualization over tail.

Test Case LS6 Photos (α = 0°, β = +102°, Re = 0.6e6)

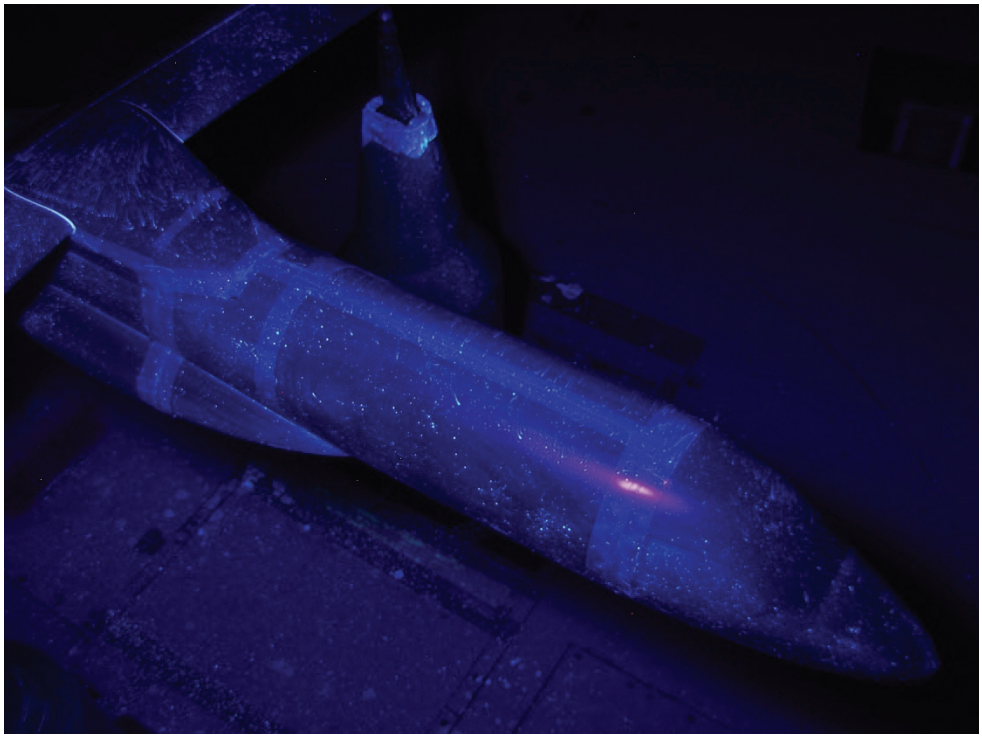

Figure B-66: LS6 flow visualization over nose.

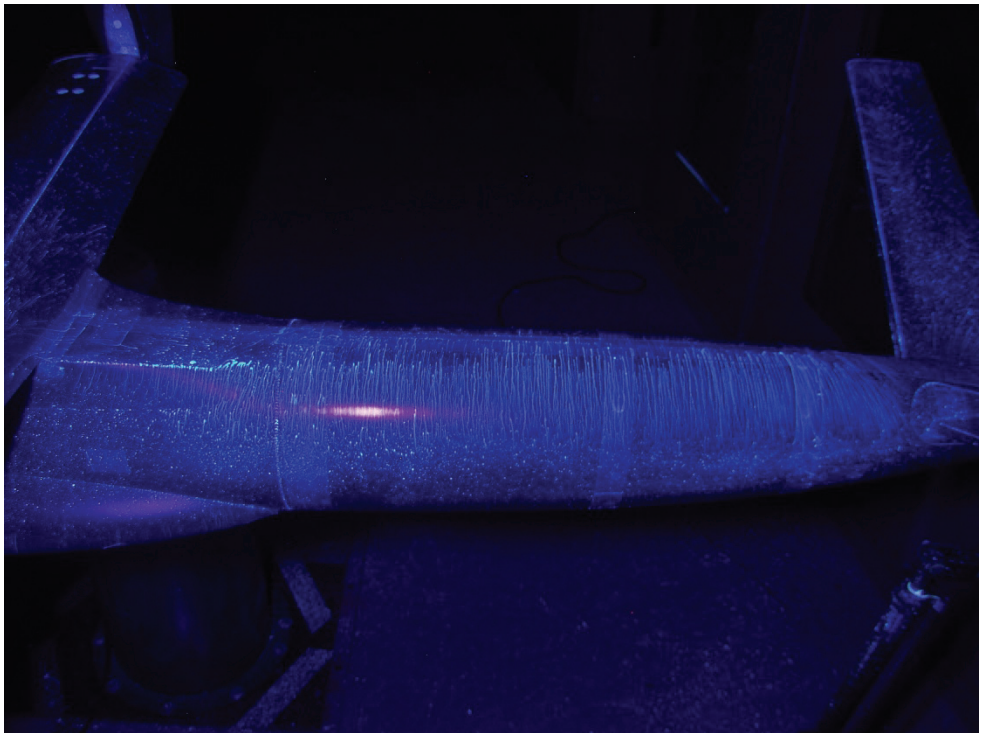

Figure B-67: LS6 flow visualization over fuselage.

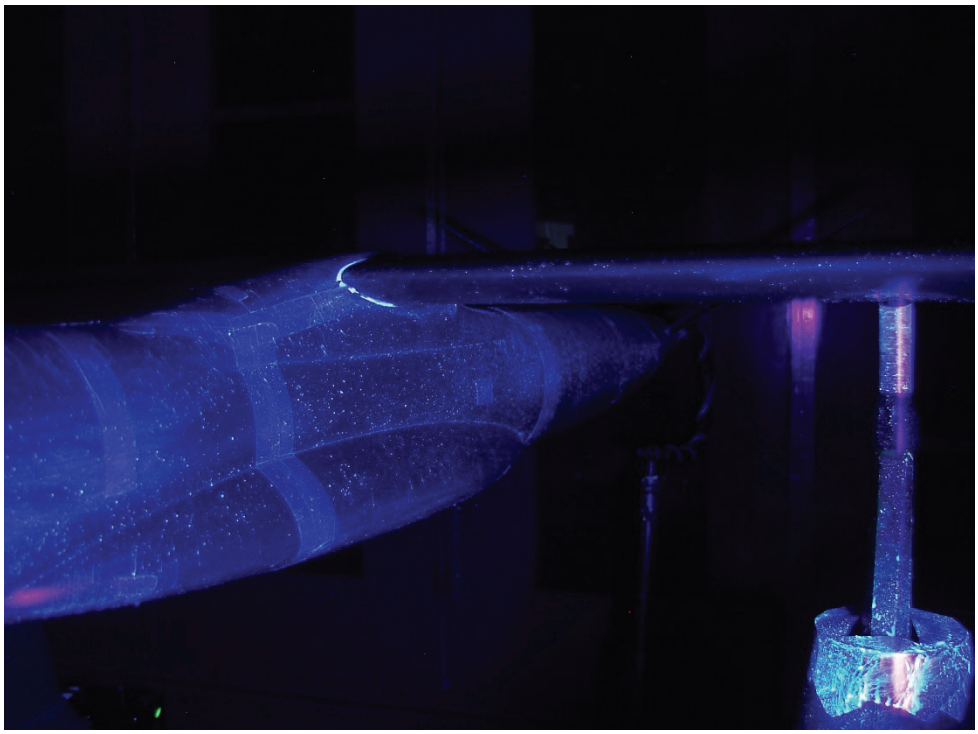

Figure B-68: LS6 flow visualization over fuselage (port).

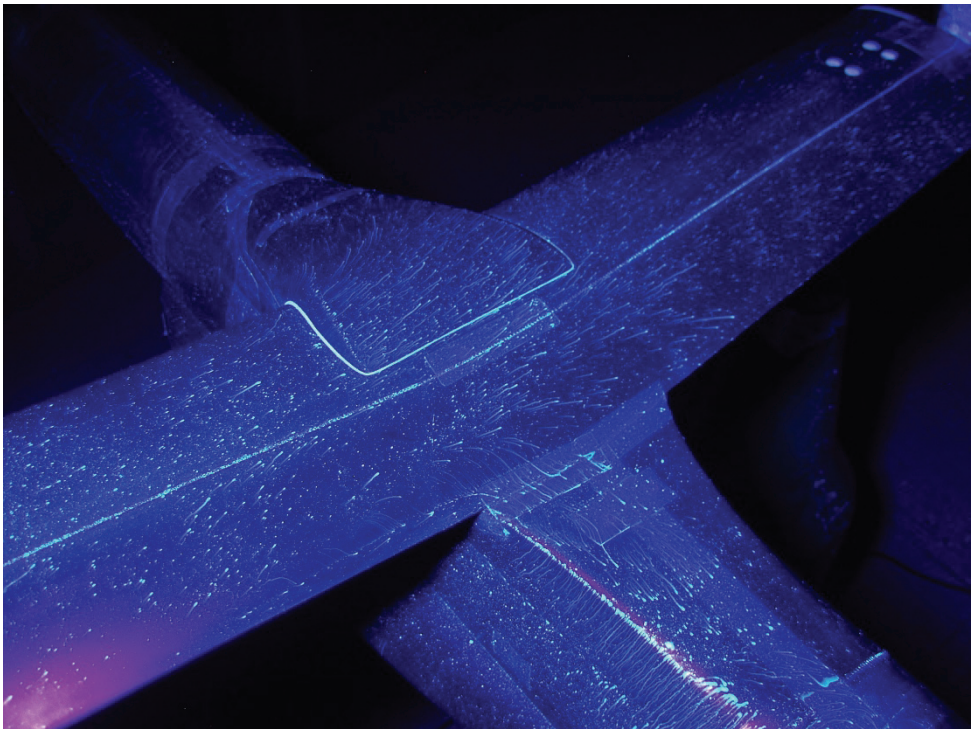

Figure B-69: LS6 flow visualization over wing.

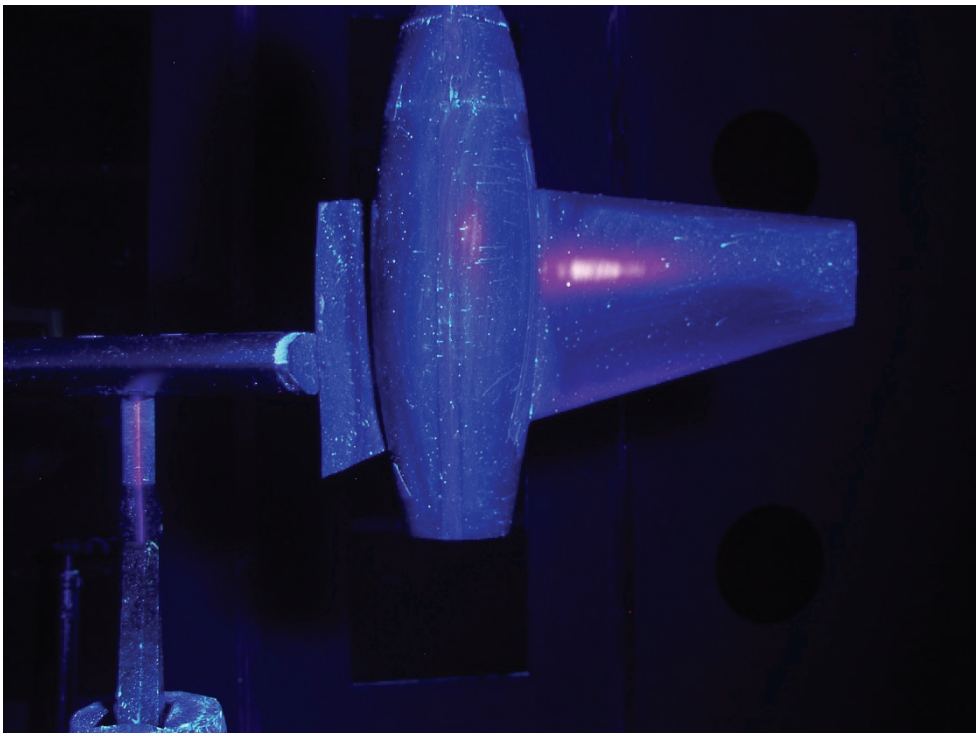

Figure B-70: LS6 flow visualization over nacelle (port-fore).

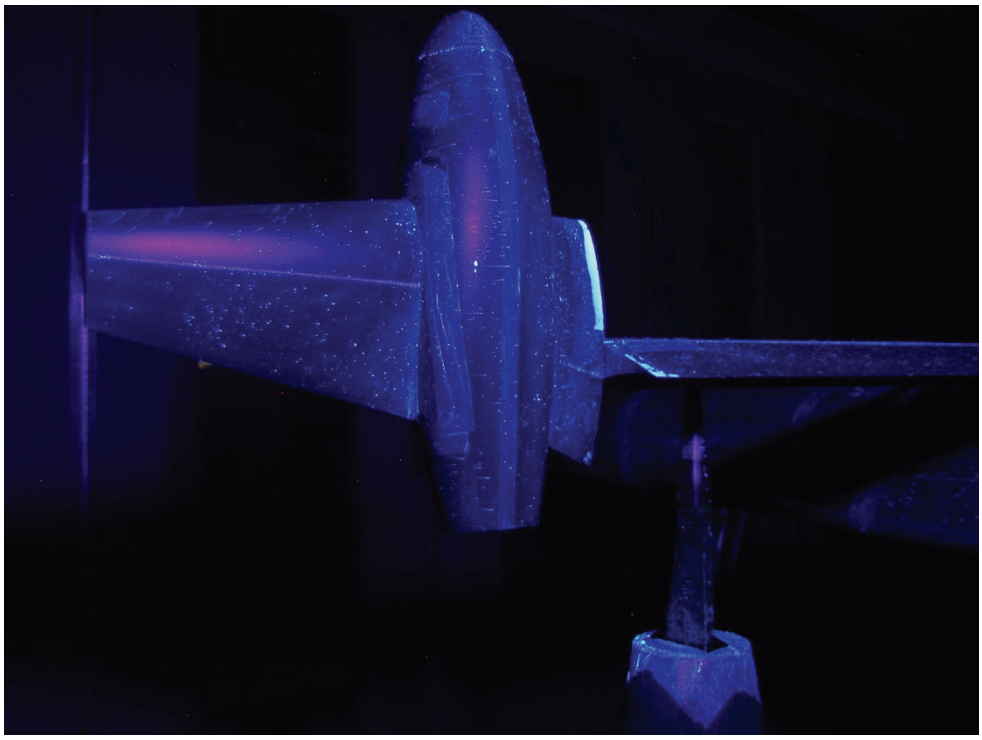

Figure B-71: LS6 flow visualization over nacelle (port-aft).

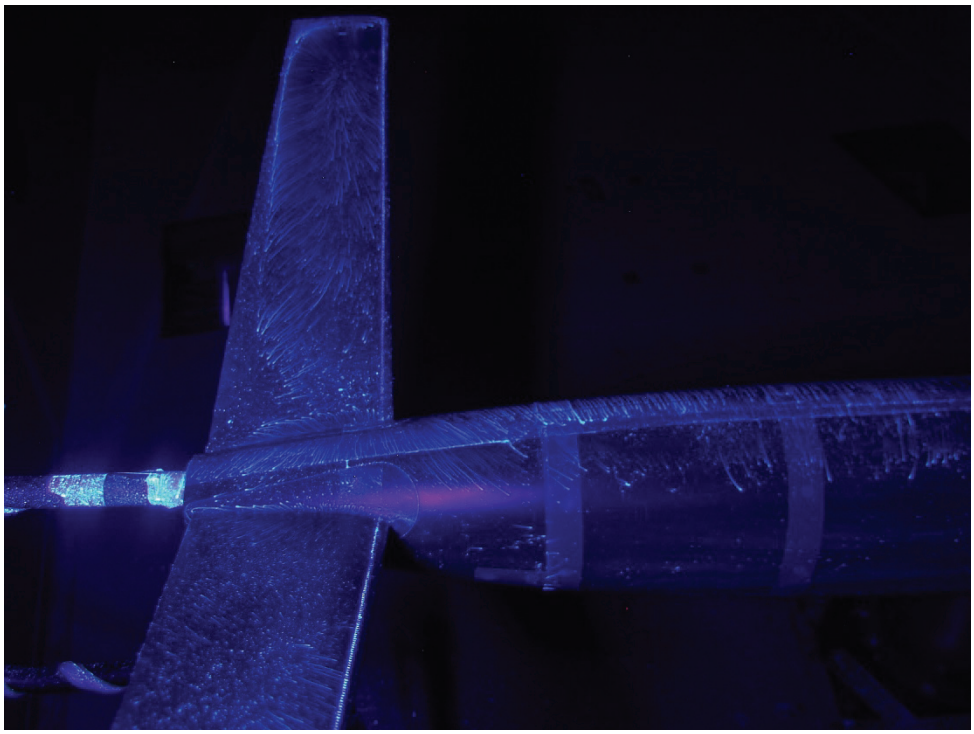

Figure B-72: LS6 flow visualization over tail.

Test Case LS7 Photos (α = 0°, β = +135°, Re = 0.6e6)

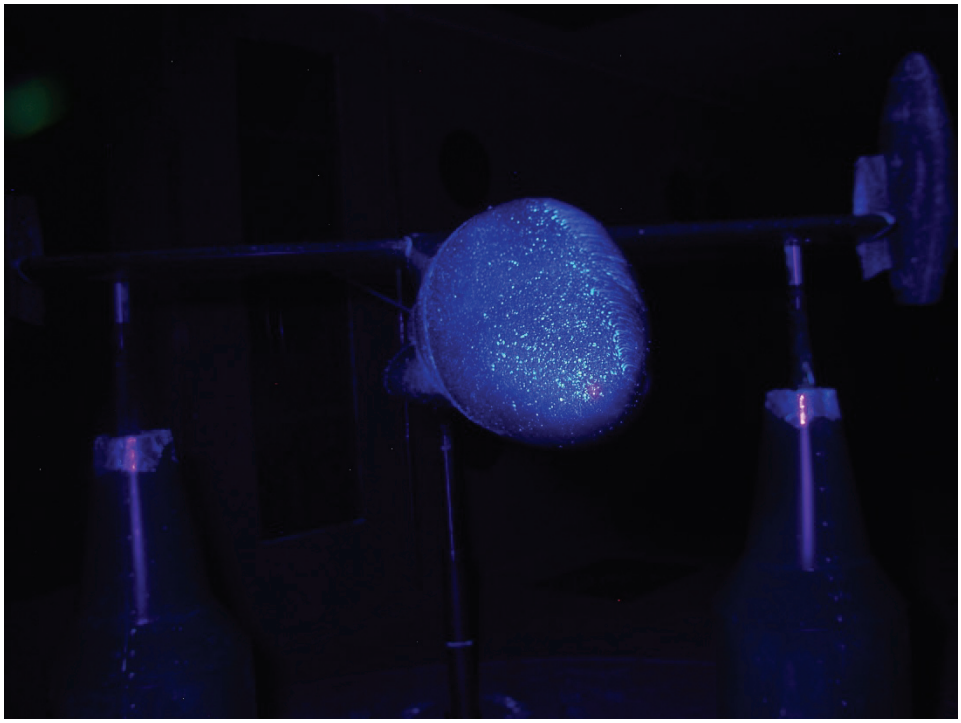

Figure B-73: LS7 flow visualization over nose.

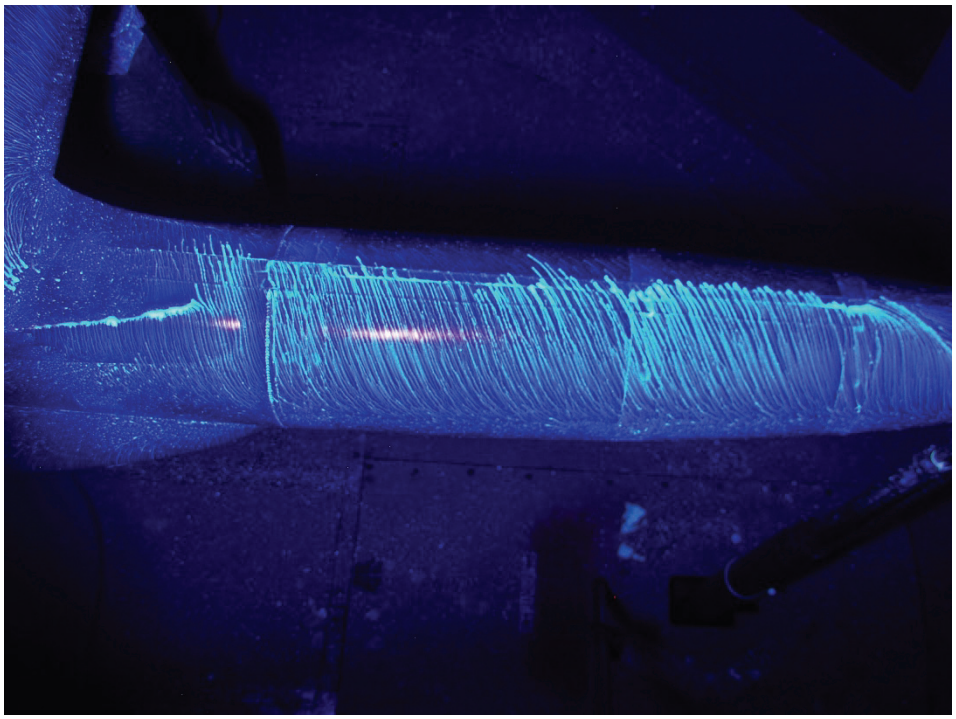

Figure B-74: LS7 flow visualization over fuselage (aft of wing).

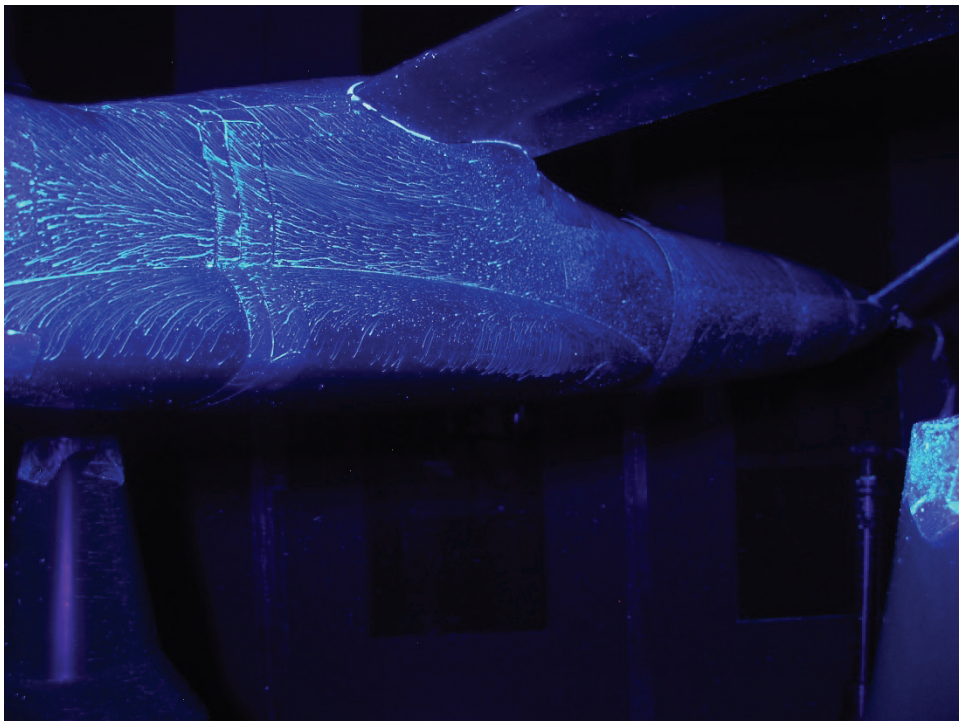

Figure B-75: LS7 flow visualization over fuselage.

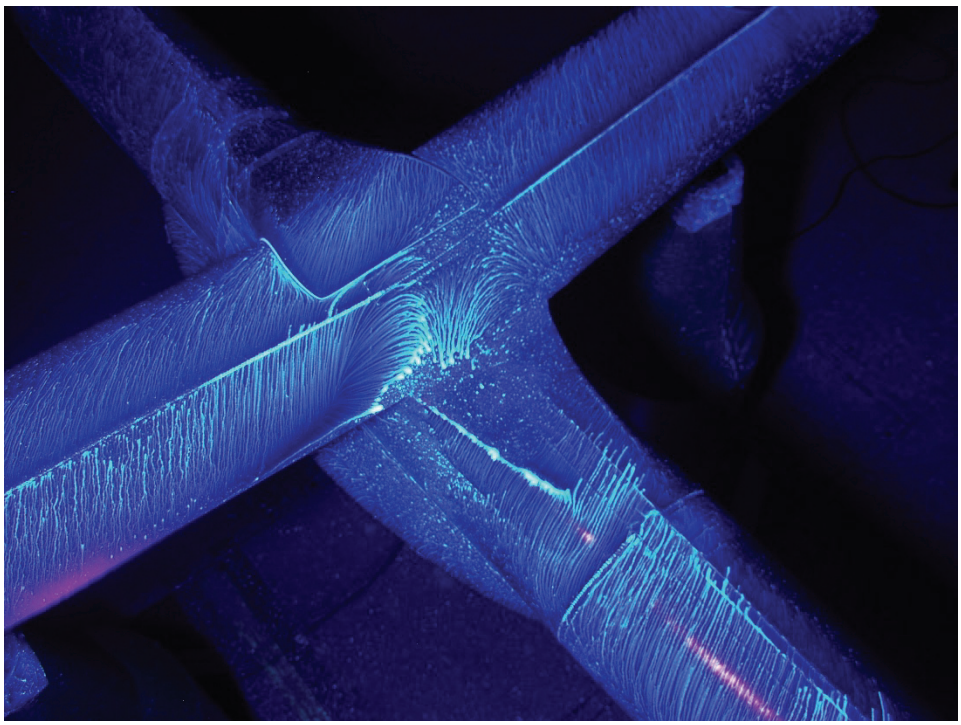

Figure B-76: LS7 flow visualization over wing.

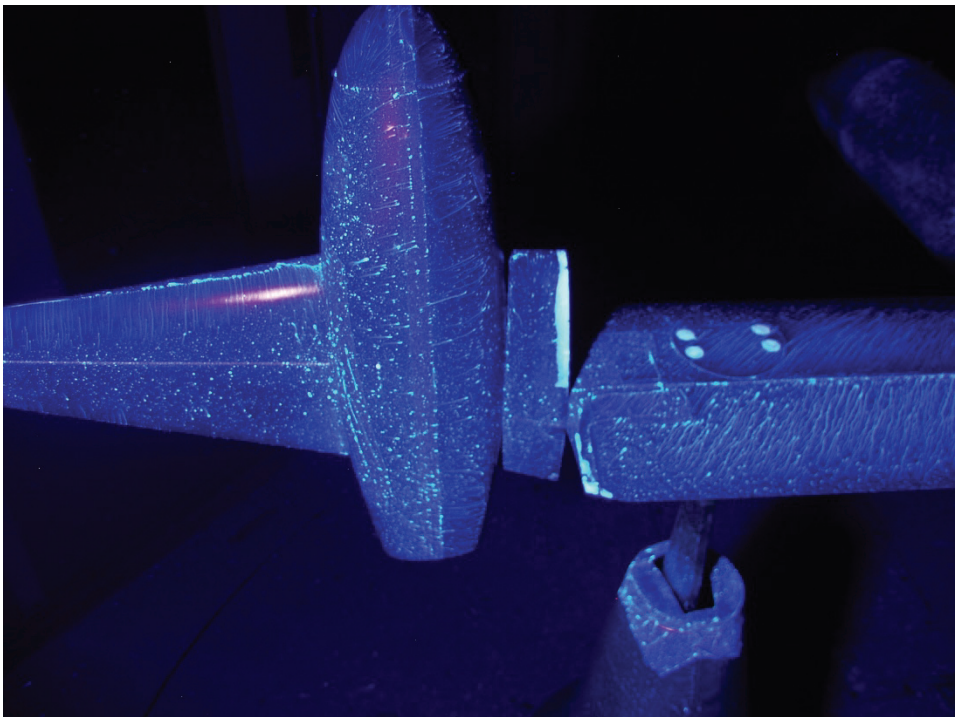

Figure B-77: LS7 flow visualization over nacelle (port-aft).

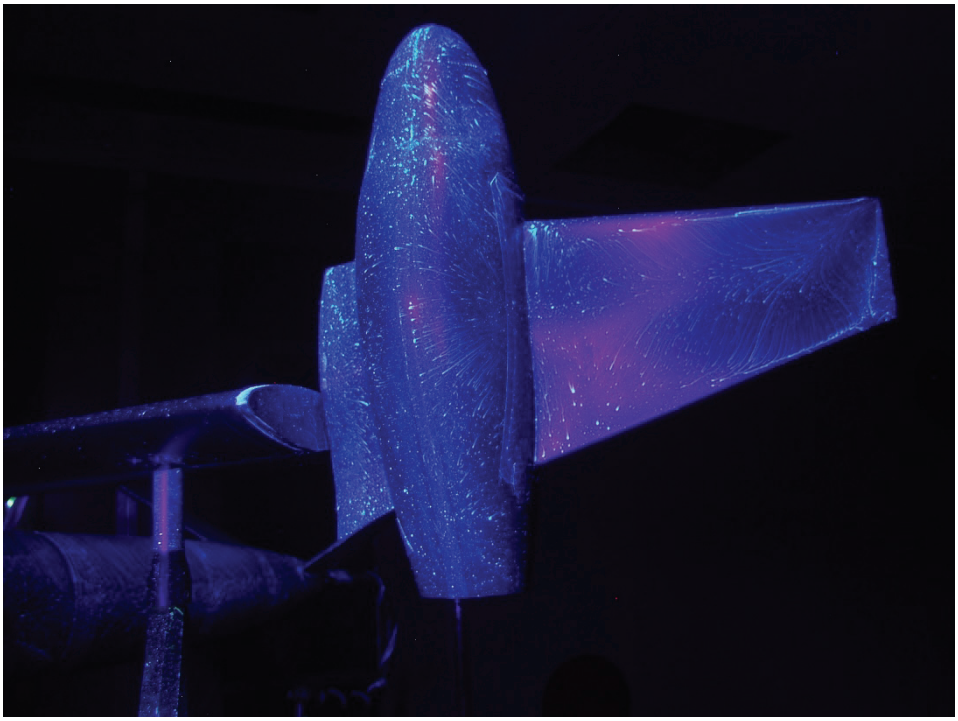

Figure B-78: LS7 flow visualization over nacelle (port-fore).

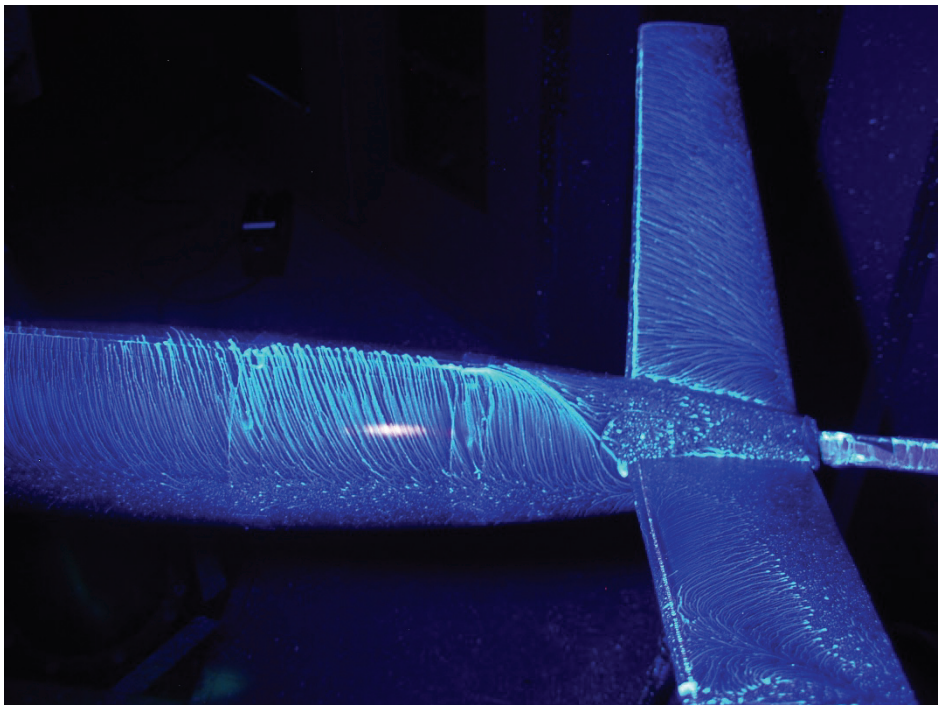

Figure B-79: LS7 flow visualization over upper surface of tail.

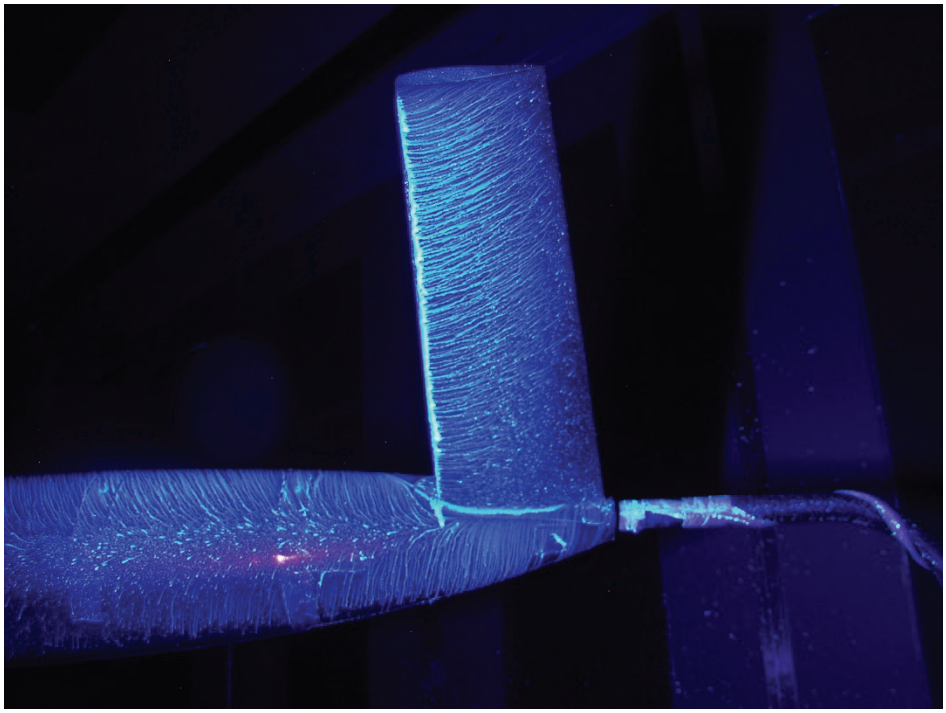

Figure B-80: LS7 flow visualization over lower surface of tail.

Test Case LS8 Photos (α = 0°, β = +180°, Re = 0.6e6)

Figure B-81: LS8 flow visualization over nose.

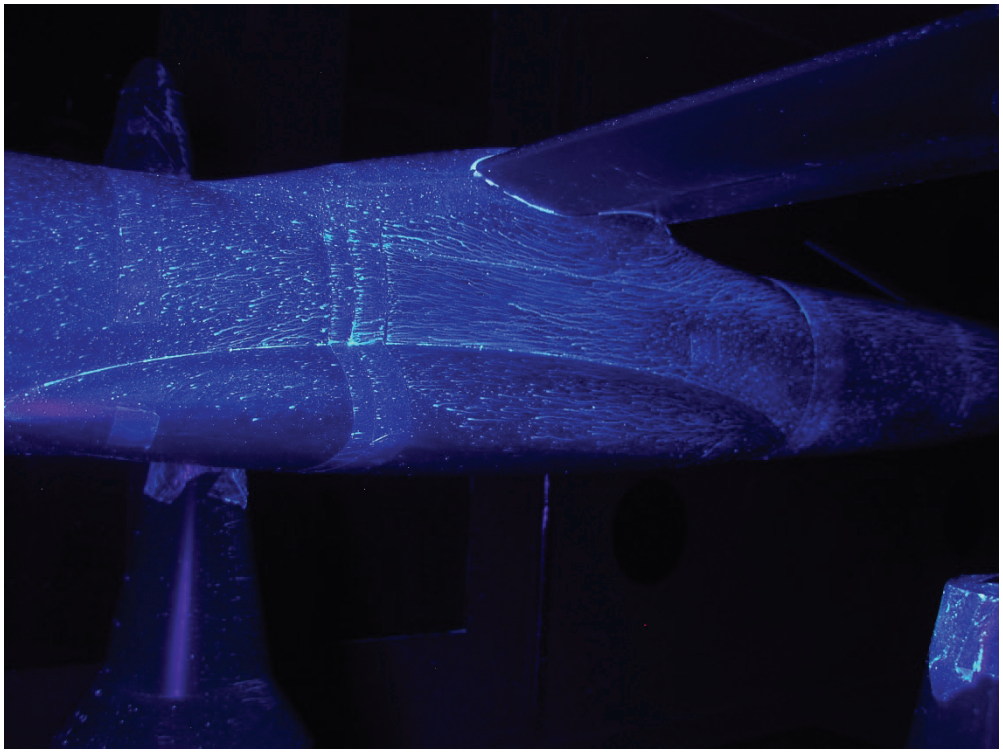

Figure B-82: LS8 flow visualization over fuselage.

Figure B-83: LS8 flow visualization over fuselage.

Figure B-84: LS8 flow visualization over wing.

Figure B-85: LS8 flow visualization over nacelle (port-aft).

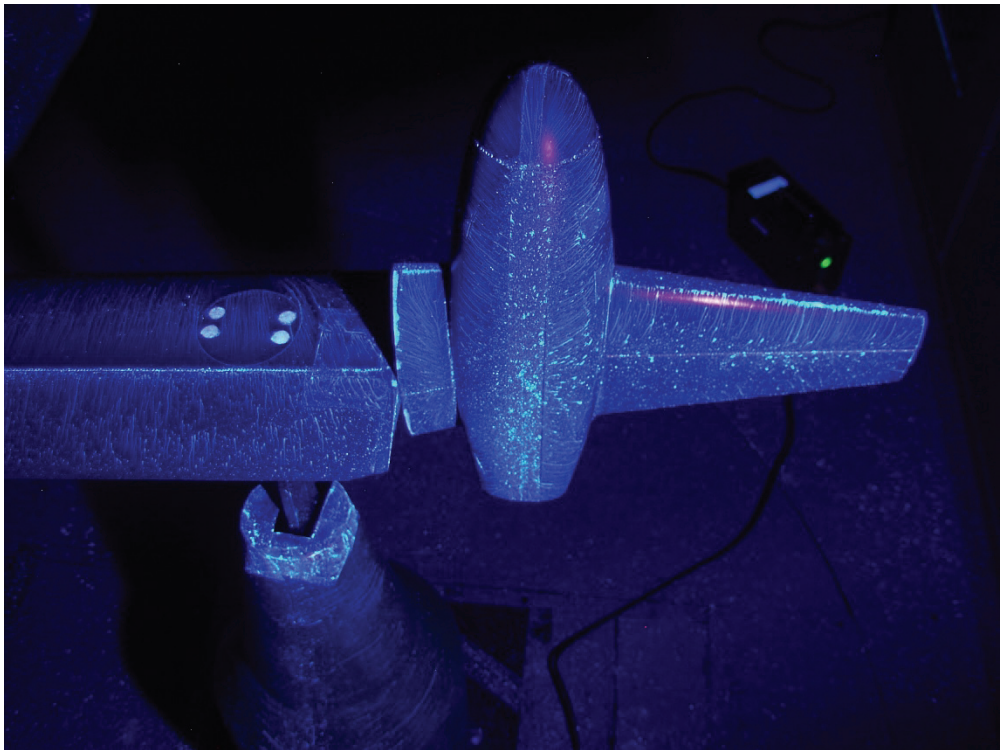

Figure B-86: LS8 flow visualization over nacelle (starboard-aft).

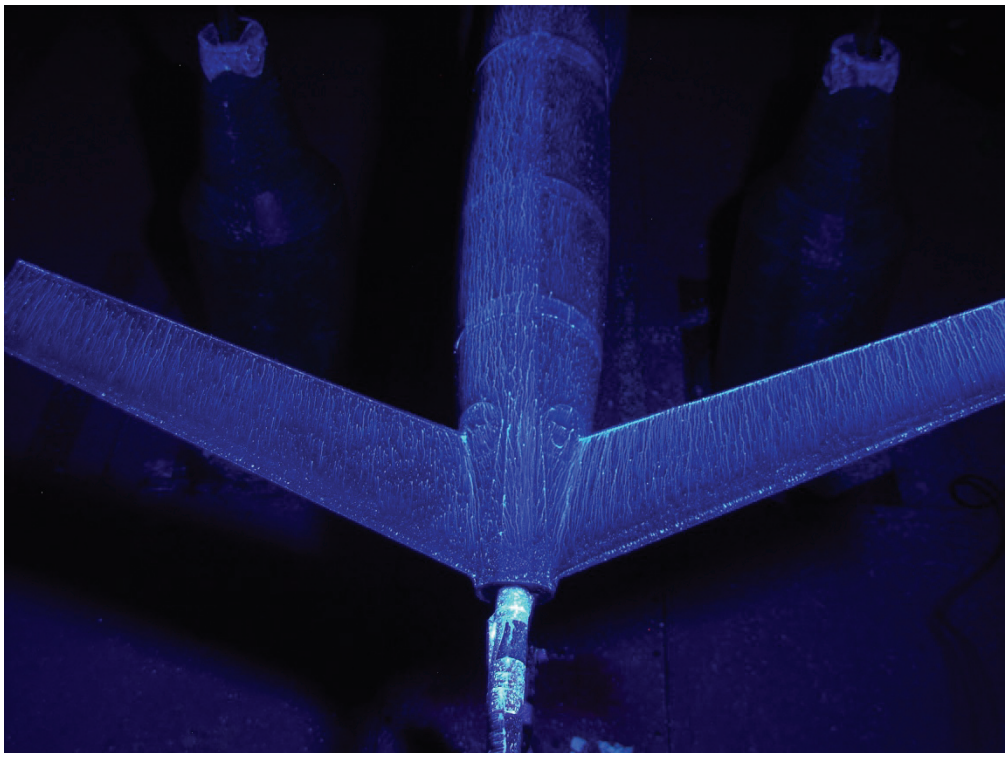

Figure B-87: LS8 flow visualization over upper surface of tail.

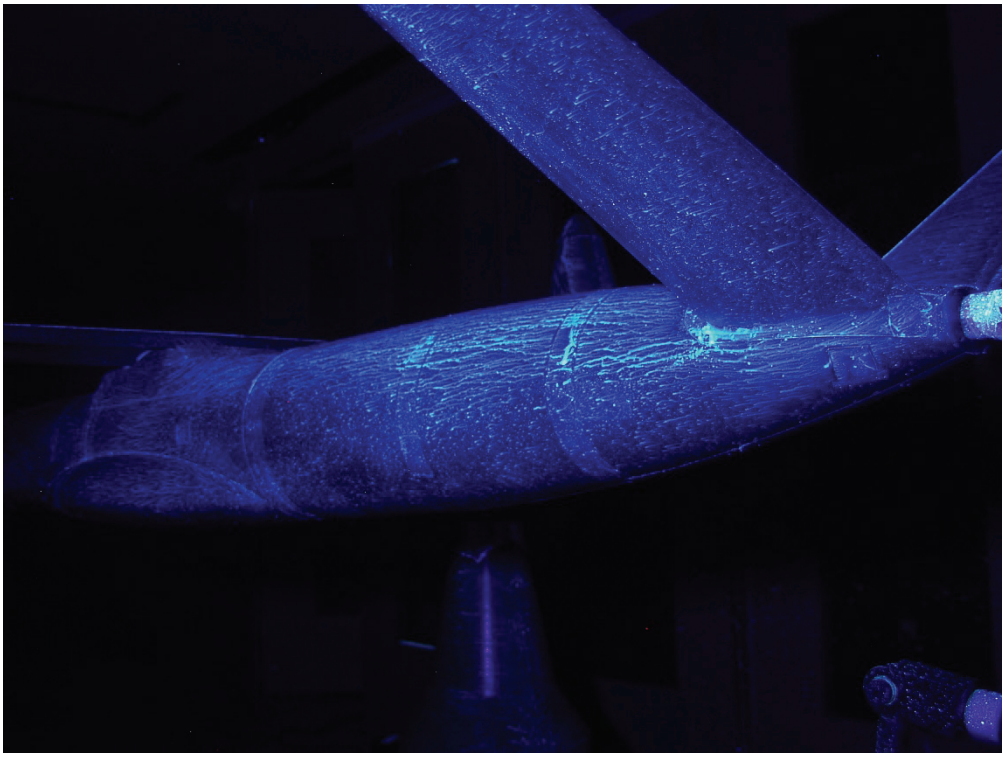

Figure B-88: LS8 flow visualization over lower surface of tail.

Test Case LS9 Photos (α = –5°, β = 0°, Re = 0.6e6)

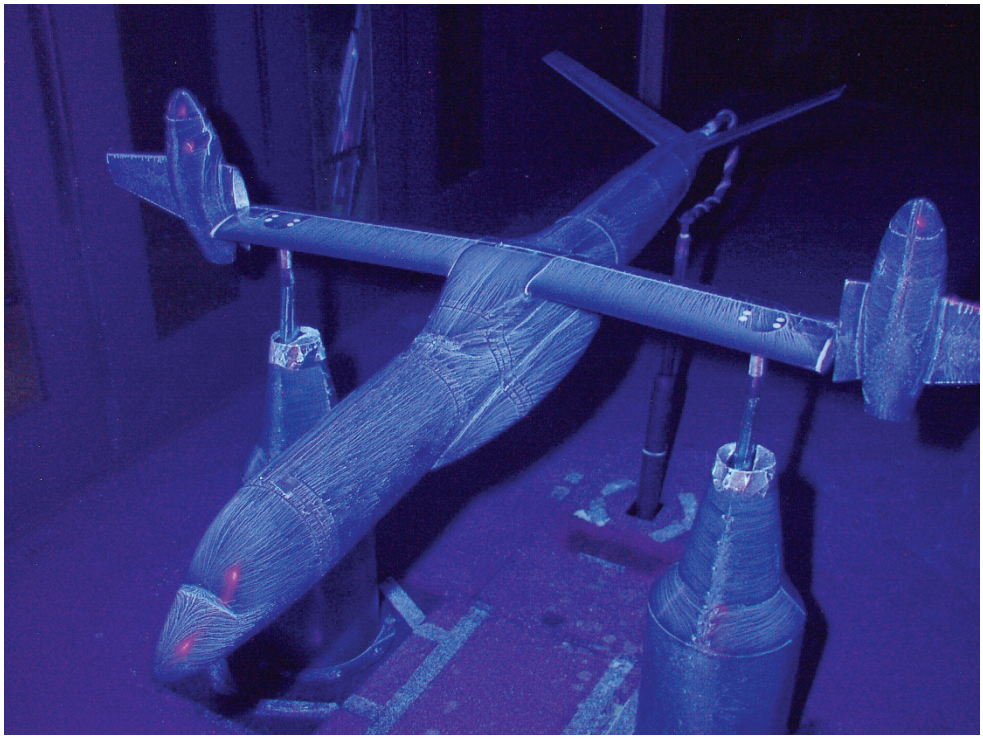

Figure B-89: LS9 flow visualization over airframe.

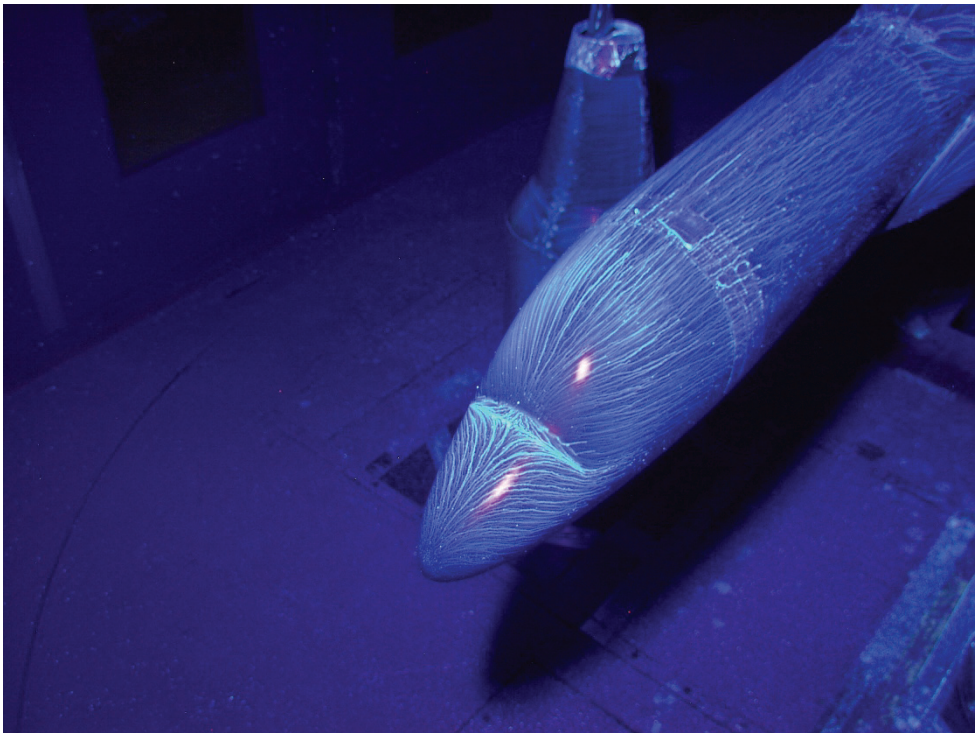

Figure B-90: LS9 flow visualization over nose.

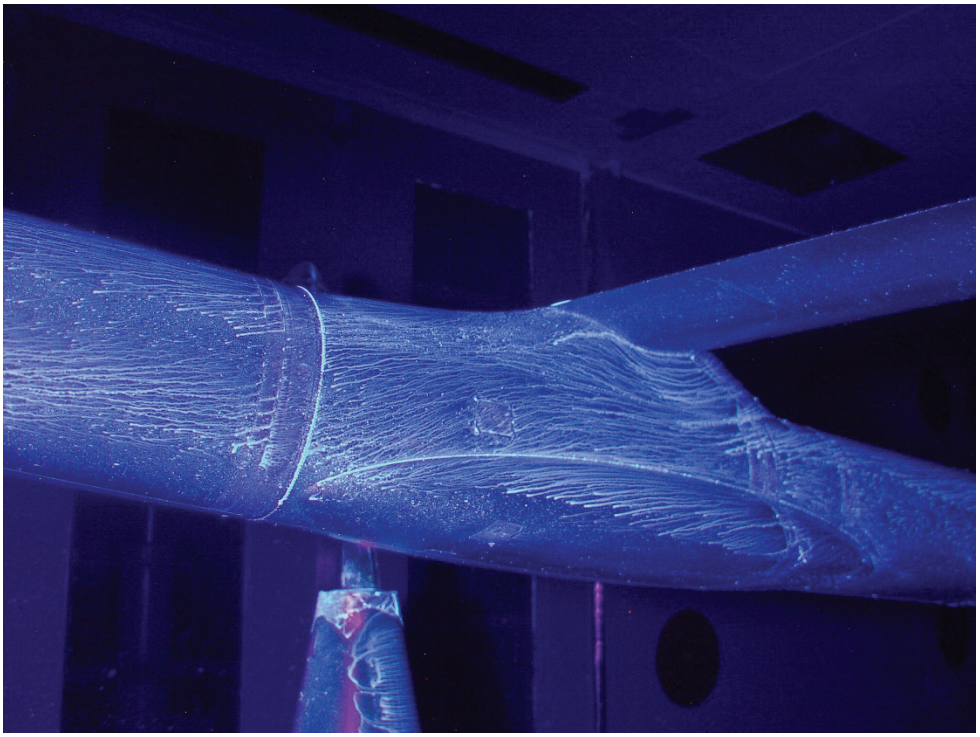

Figure B-91: LS9 flow visualization over fuselage.

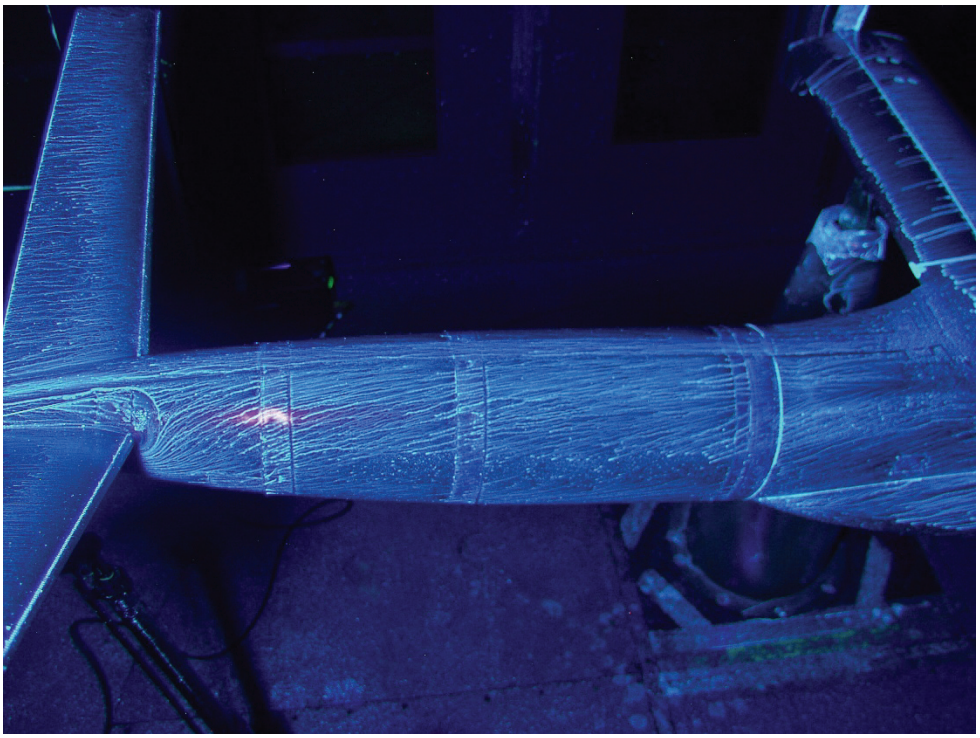

Figure B-92: LS9 flow visualization over fuselage.

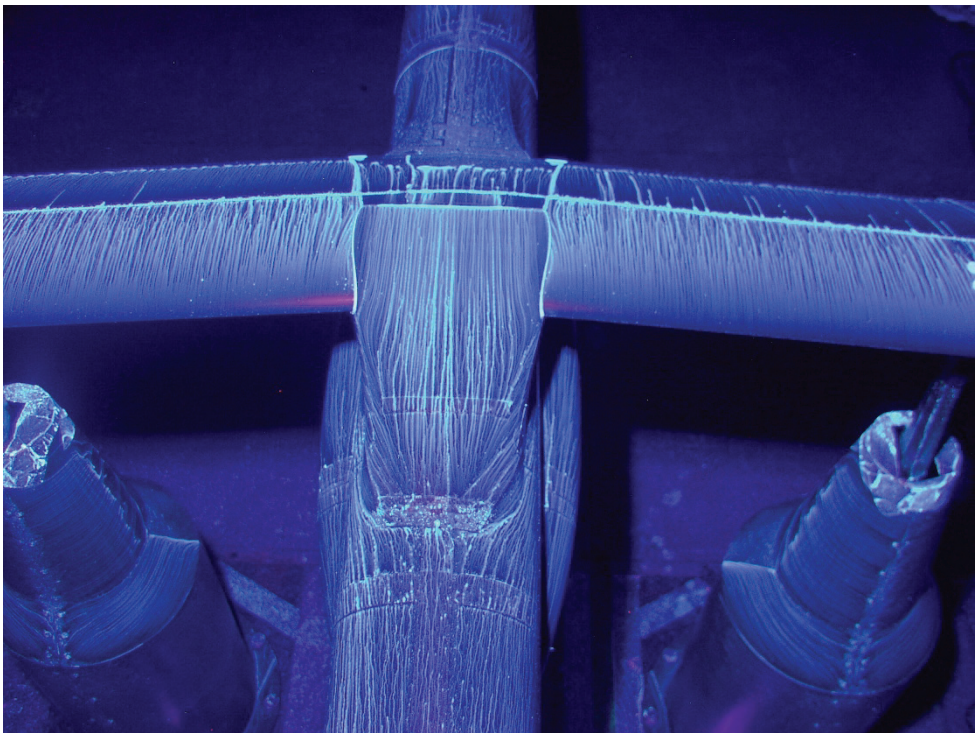

Figure B-93: LS9 flow visualization over wing.

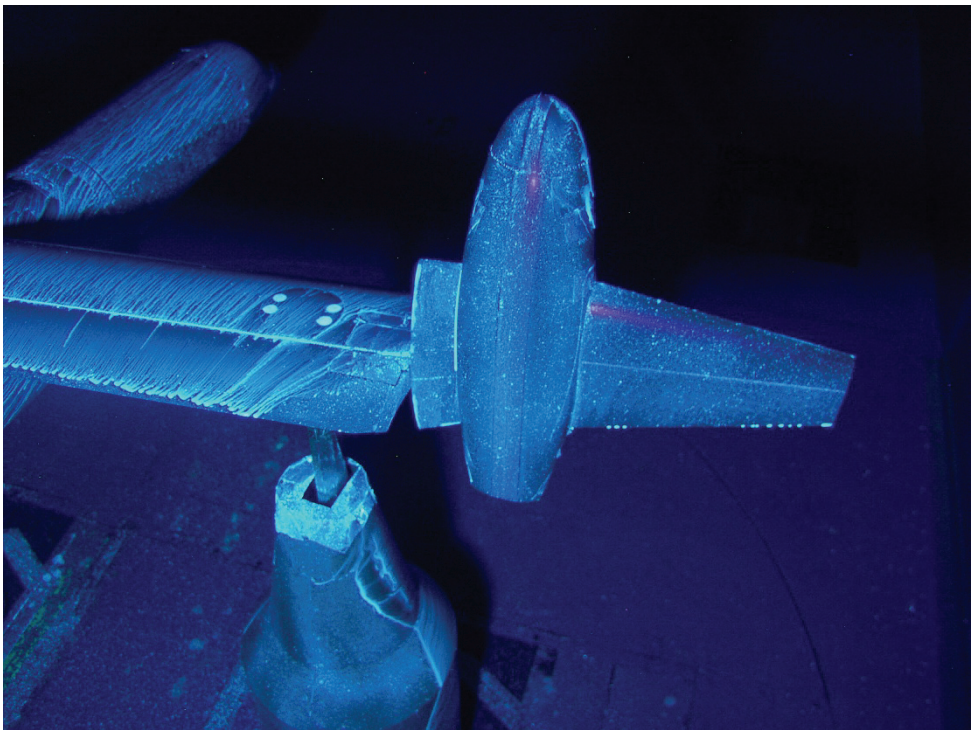

Figure B-94: LS9 flow visualization over nacelle (starboard-aft).

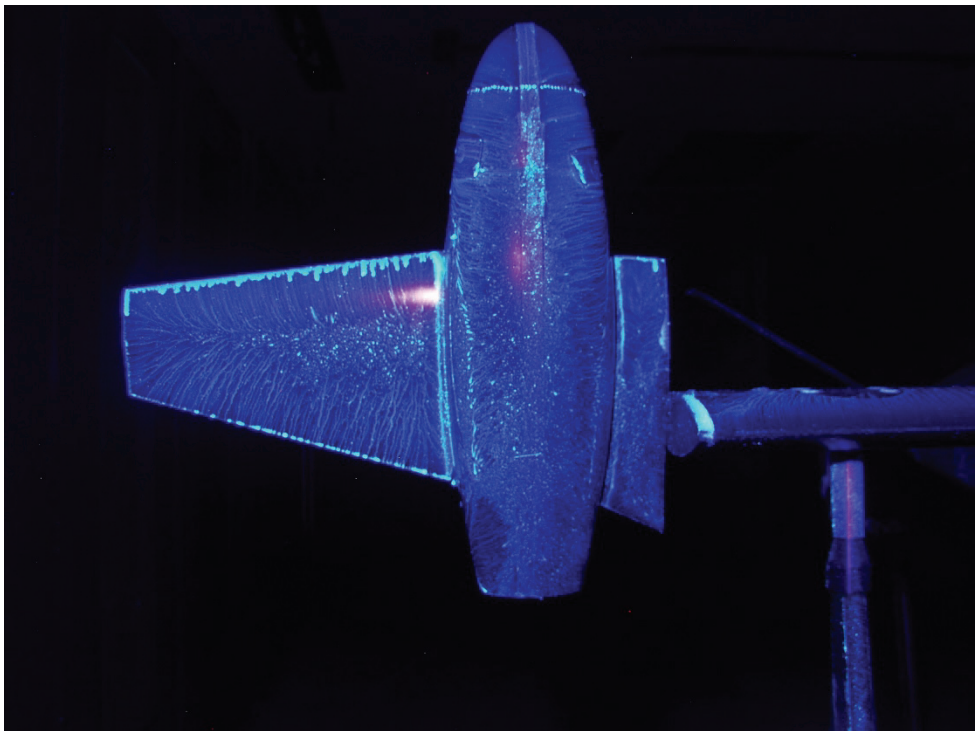

Figure B-95: LS9 flow visualization over nacelle (starboard-fore).

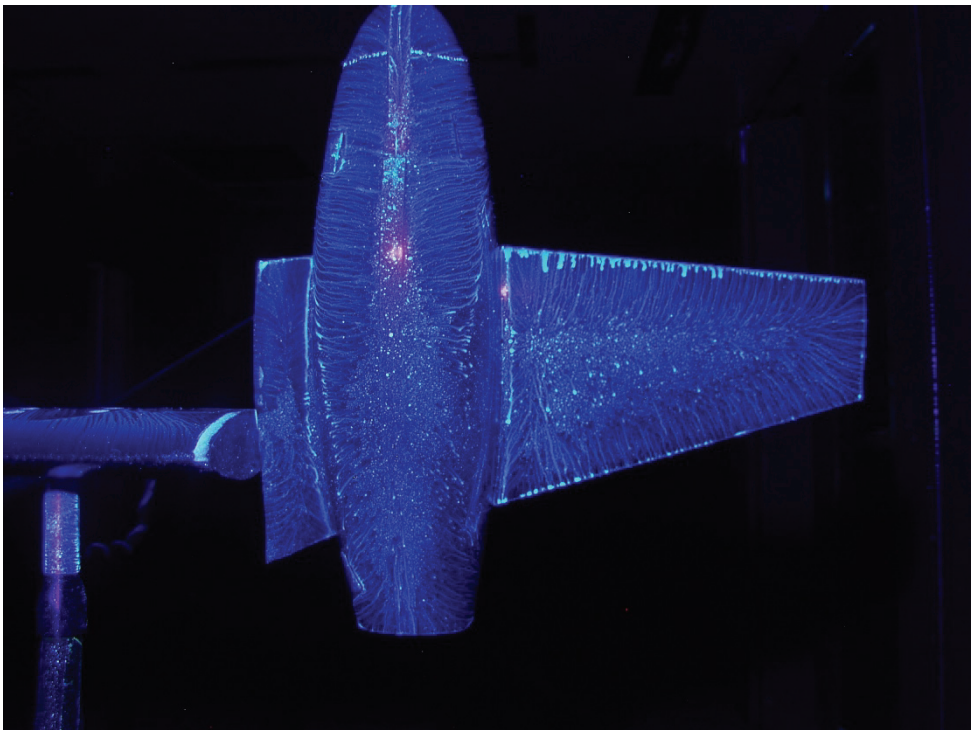

Figure B-96: LS9 flow visualization over nacelle (port-fore).

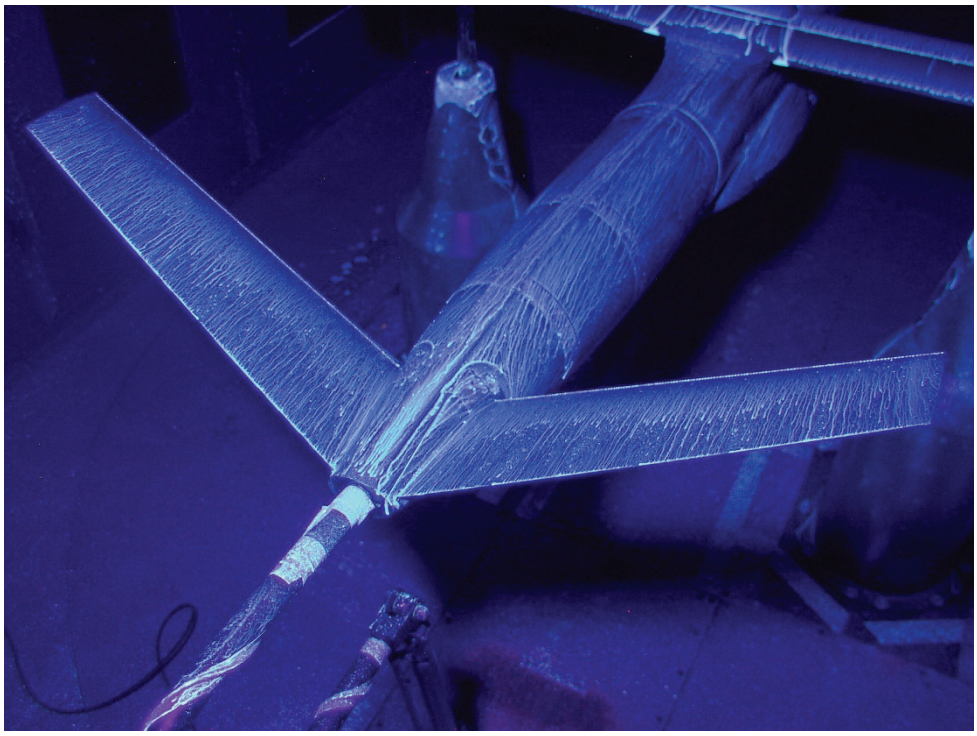

Figure B-97: LS9 flow visualization over tail.

Test Case LS10 Photos (α = –5°, β = +15°, Re = 0.6e6)

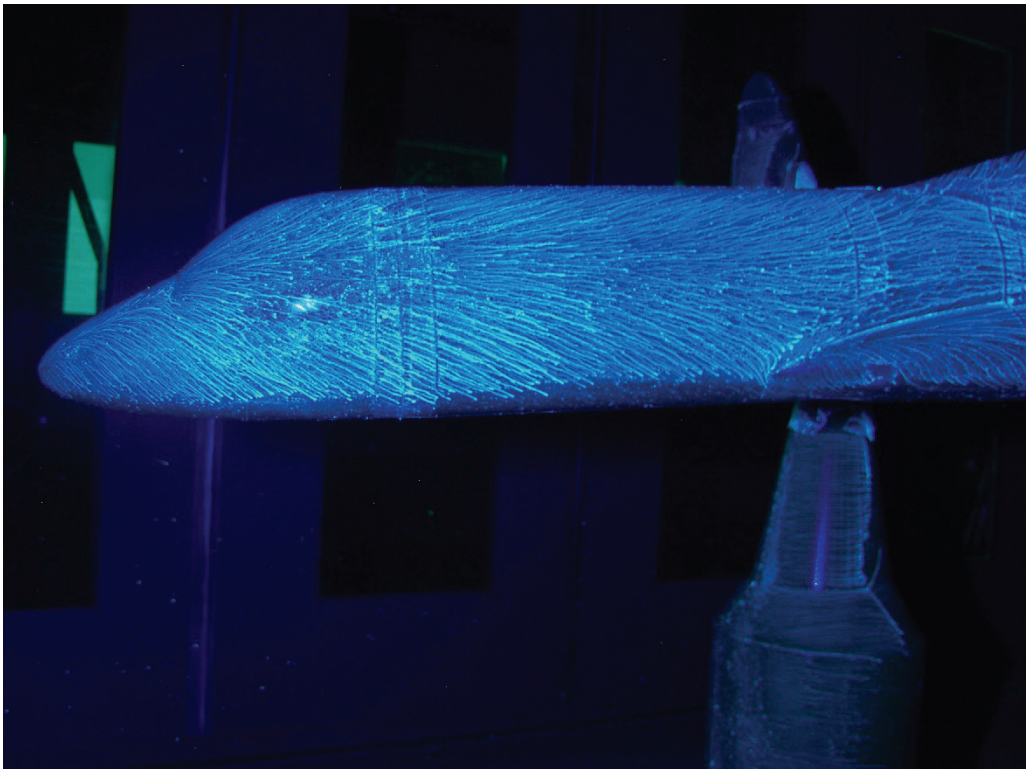

Figure B-98: LS10 flow visualization over nose.

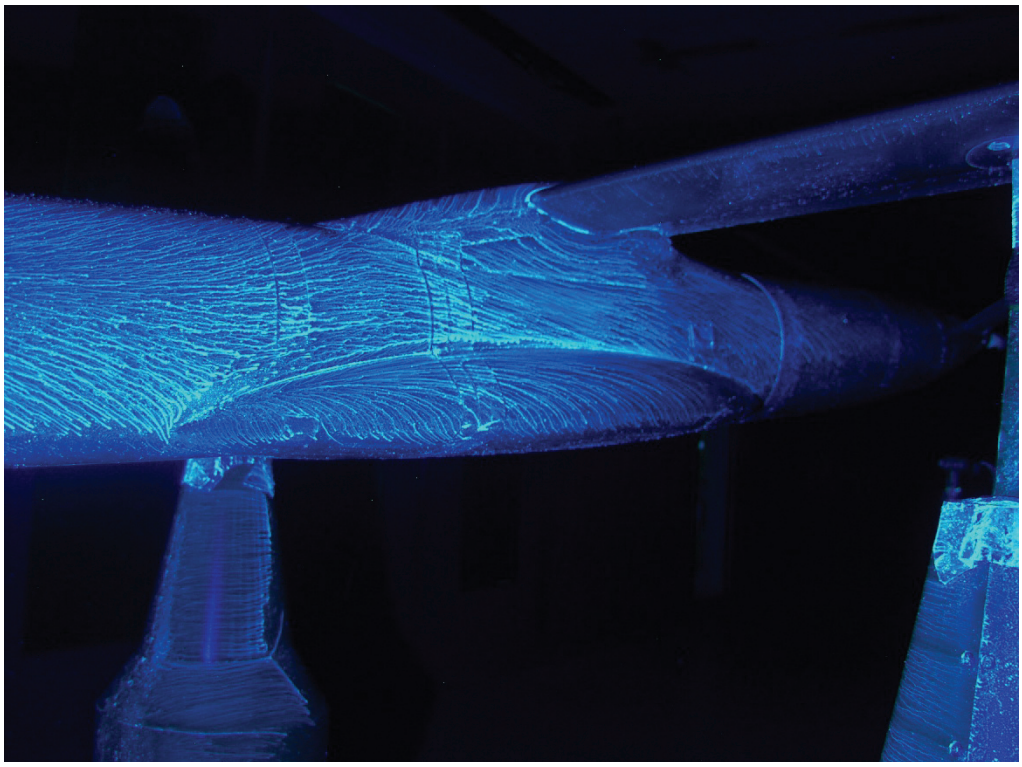

Figure B-99: LS10 flow visualization over fuselage.

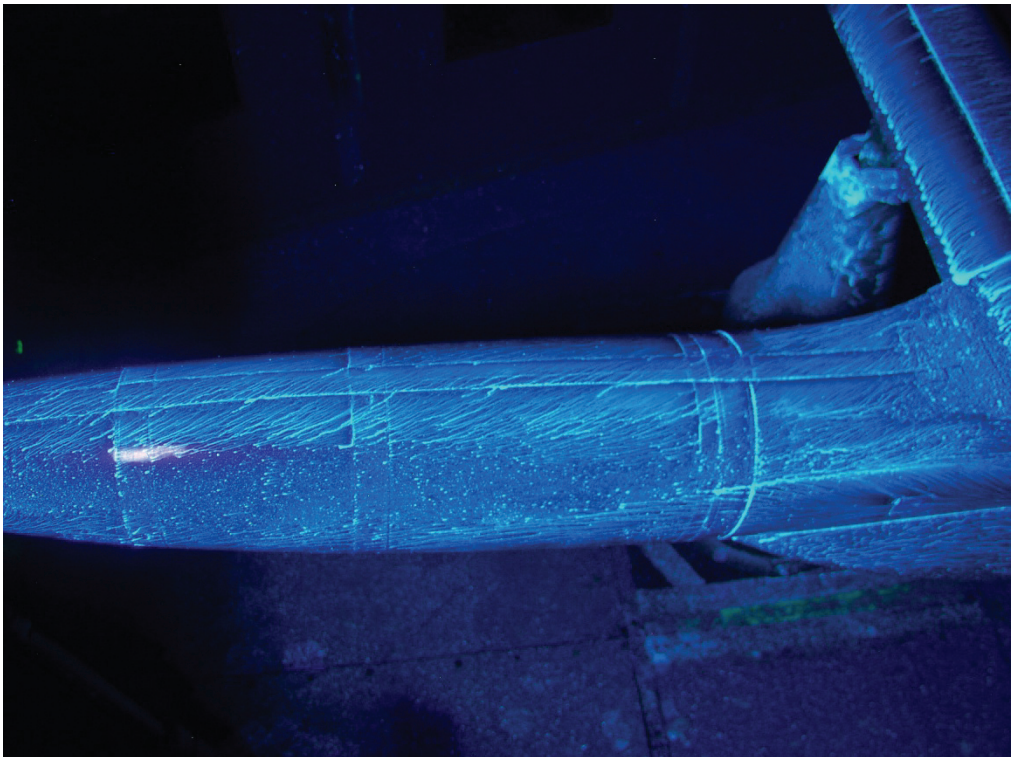

Figure B-100: LS10 flow visualization over fuselage (aft of wing).

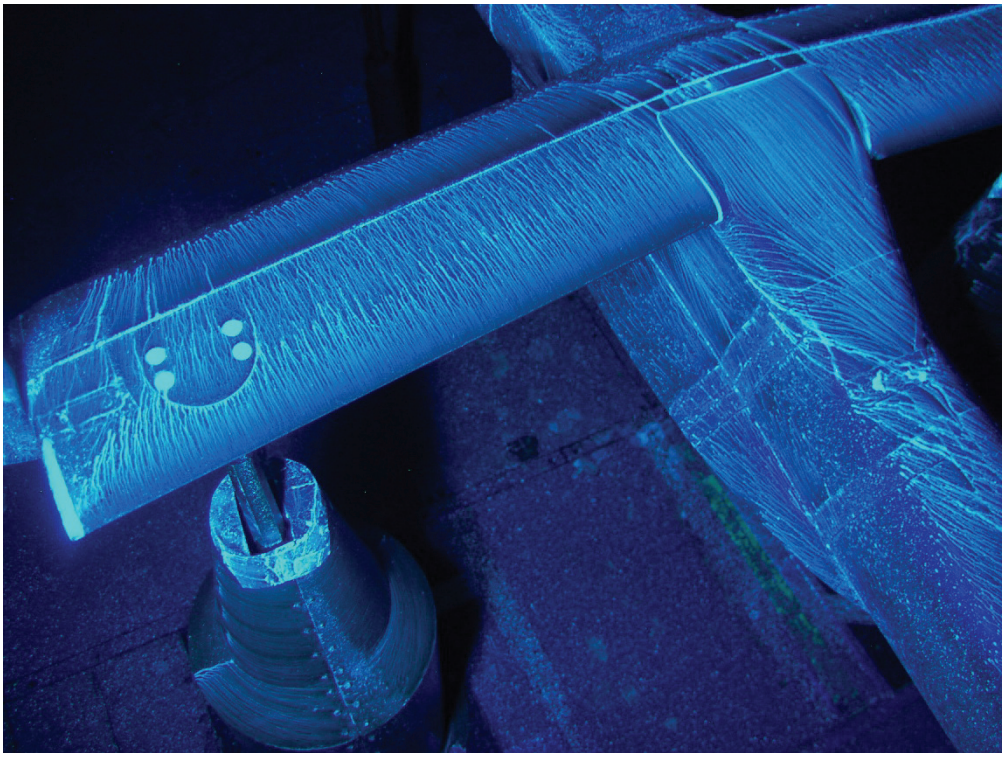

Figure B-101: LS10 flow visualization over wing.

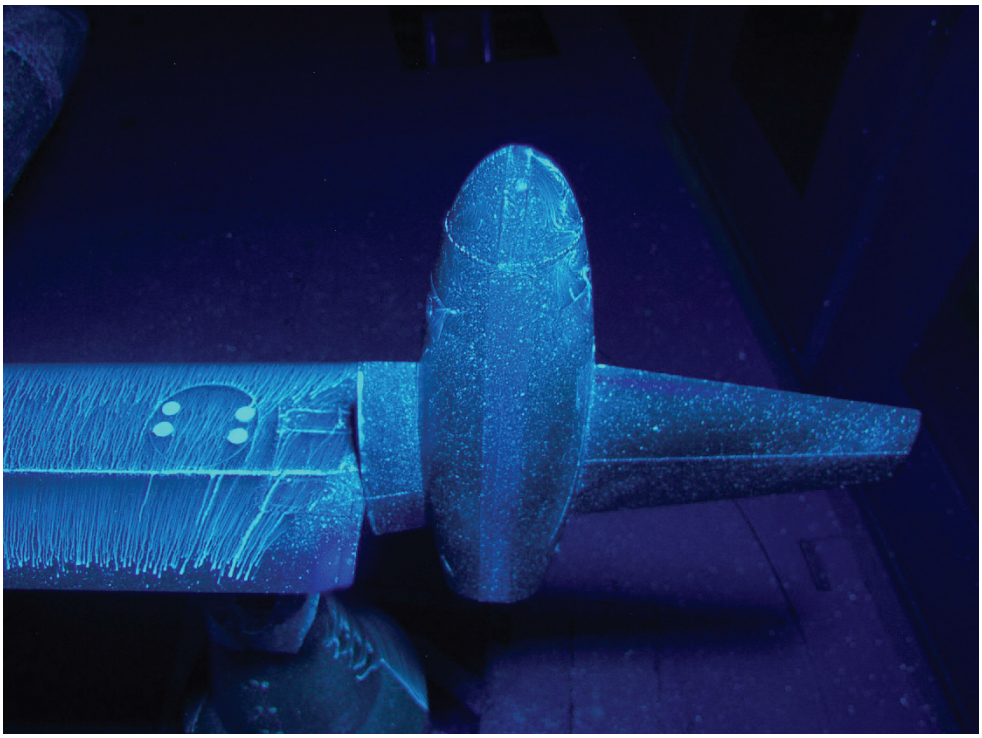

Figure B-102: LS10 flow visualization over nacelle (starboard-aft).

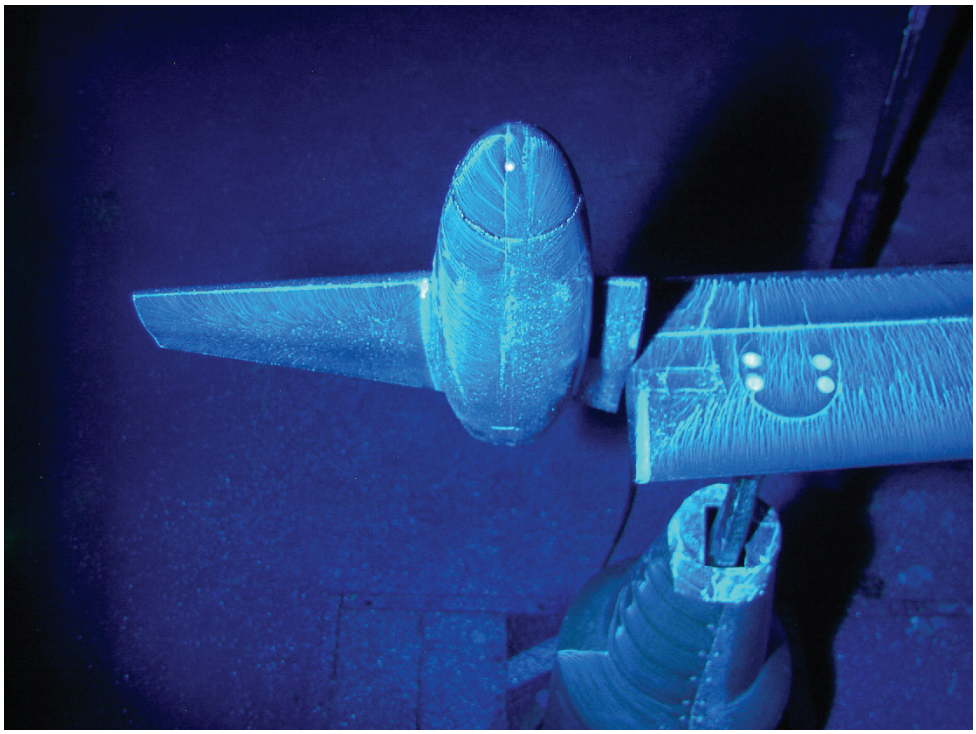

Figure B-103: LS10 flow visualization over nacelle (starboard-fore).

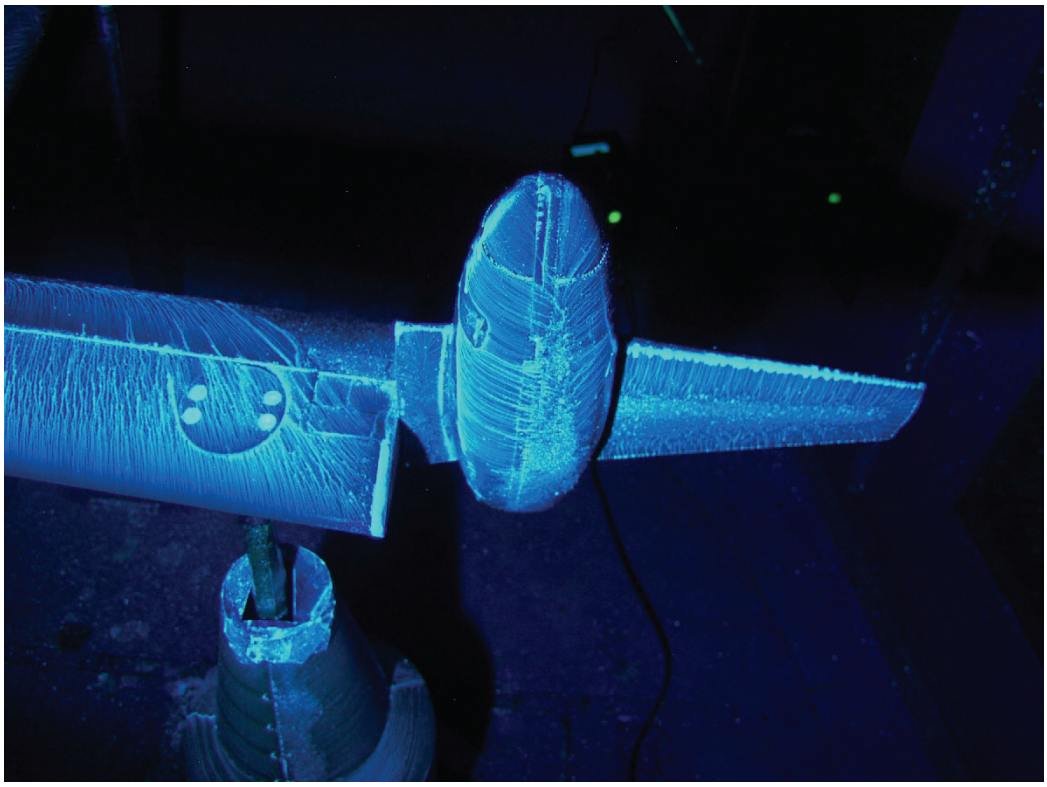

Figure B-104: LS10 flow visualization over nacelle (port-fore).

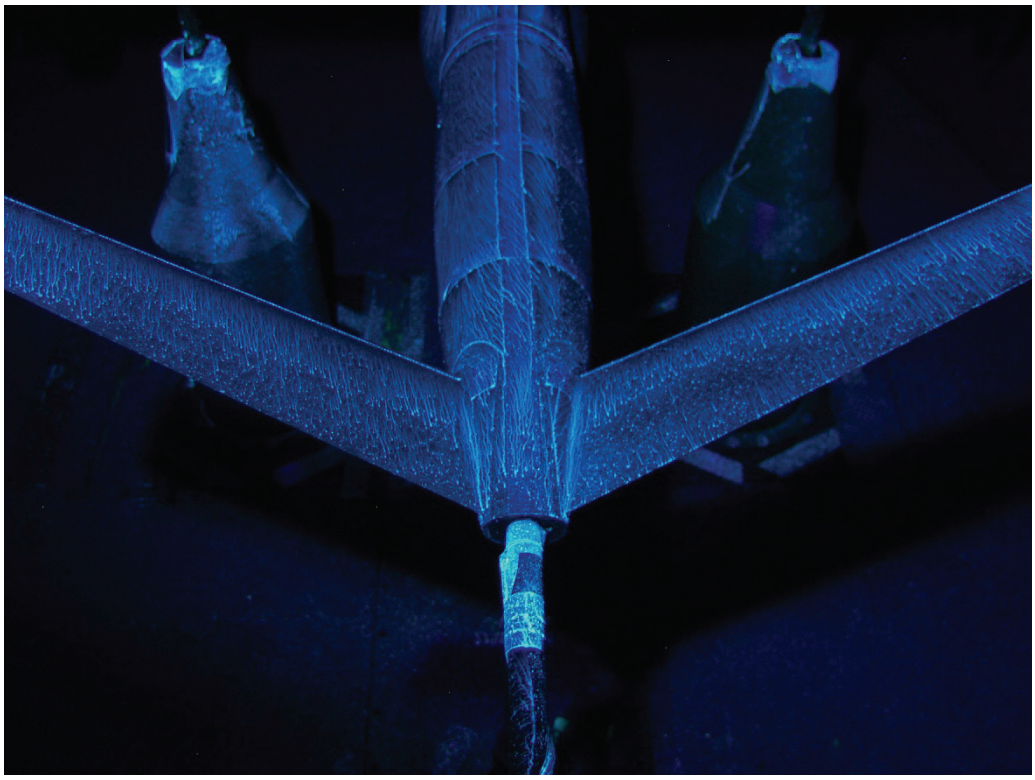

Figure B-105: LS10 flow visualization over tail.

Test Case LS11 Photos (α = +5°, β = 0°, Re = 0.6e6)

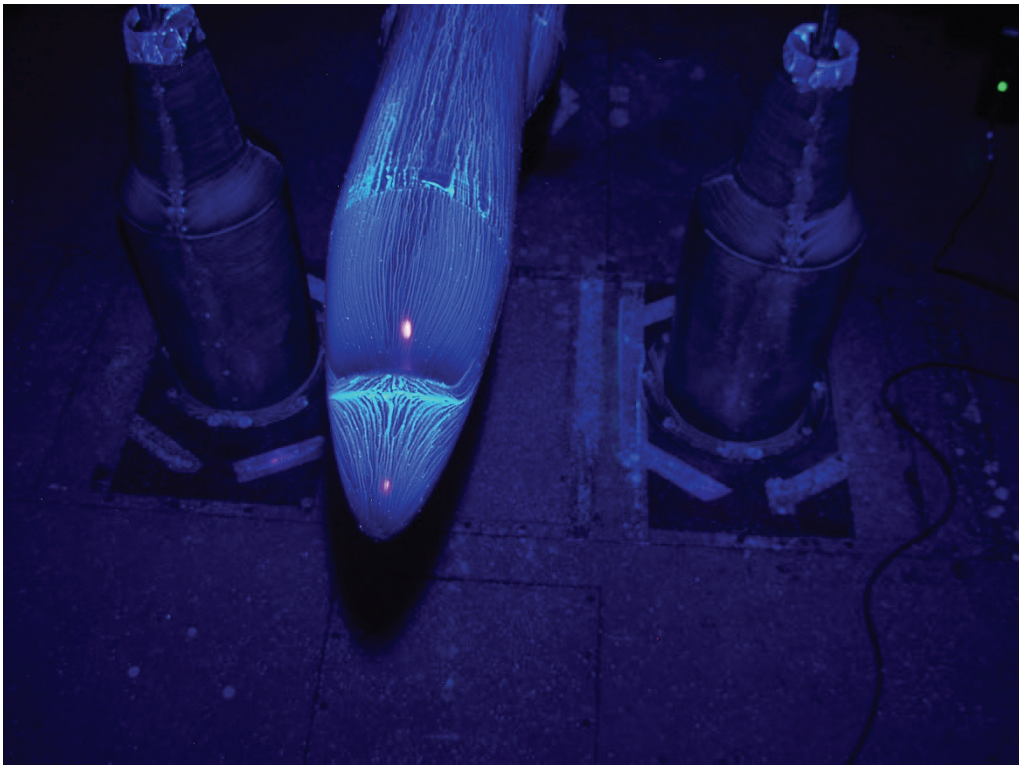

Figure B-106: LS11 flow visualization over nacelle nose.

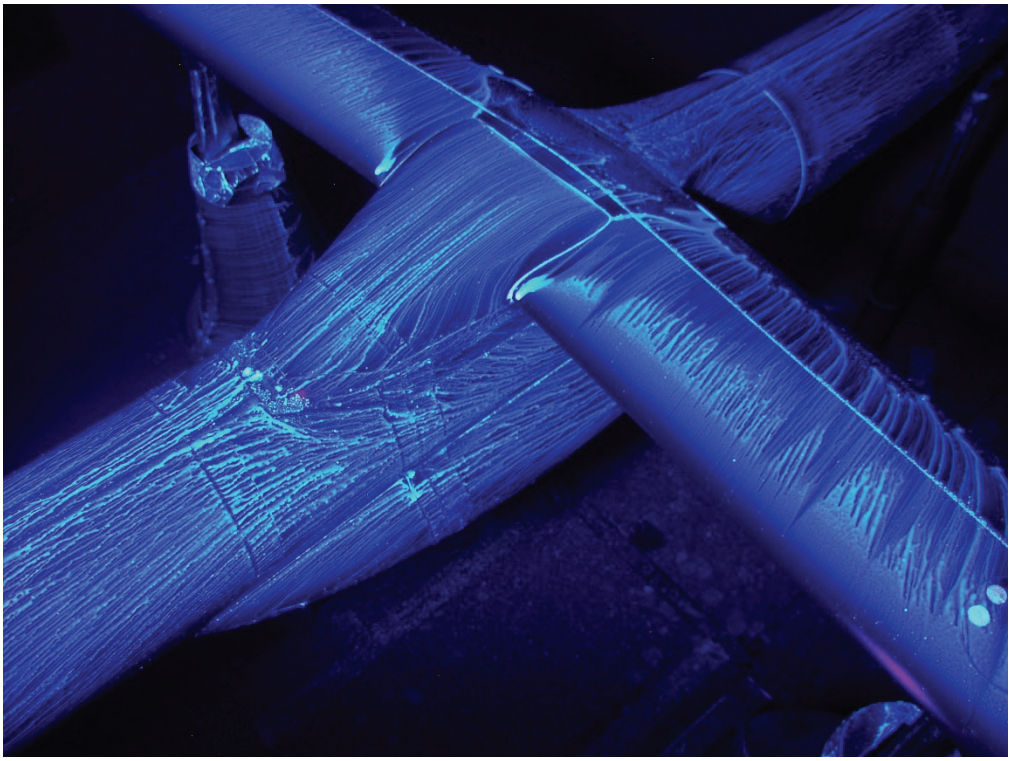

Figure B-107: LS11 flow visualization over wing.

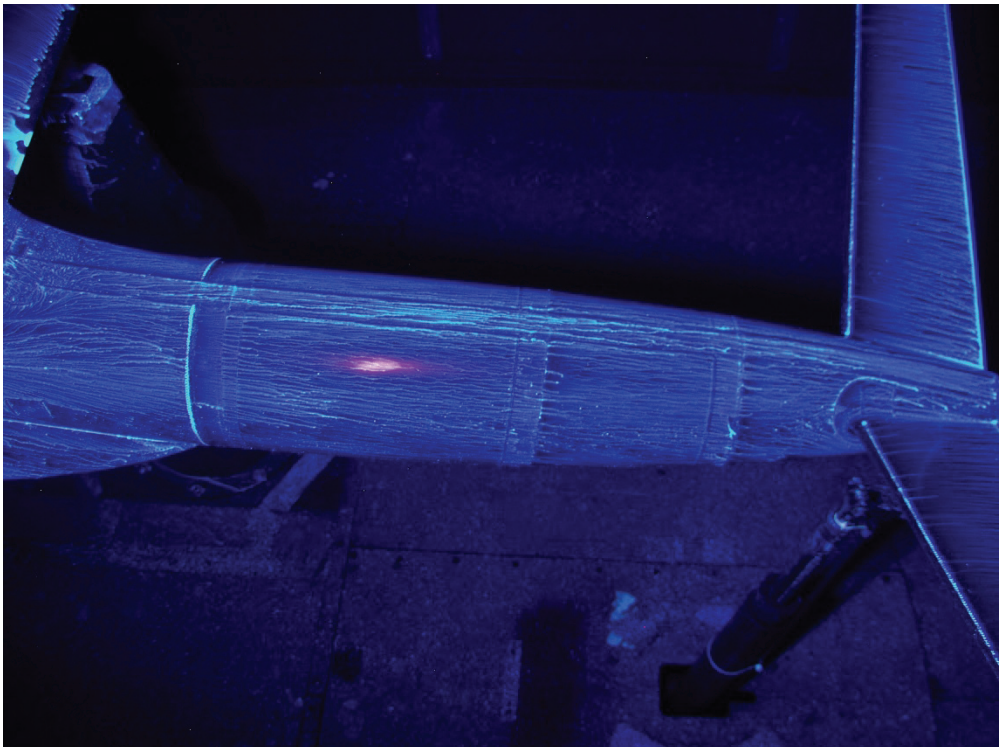

Figure B-108: LS11 flow visualization over fuselage (aft of wing).

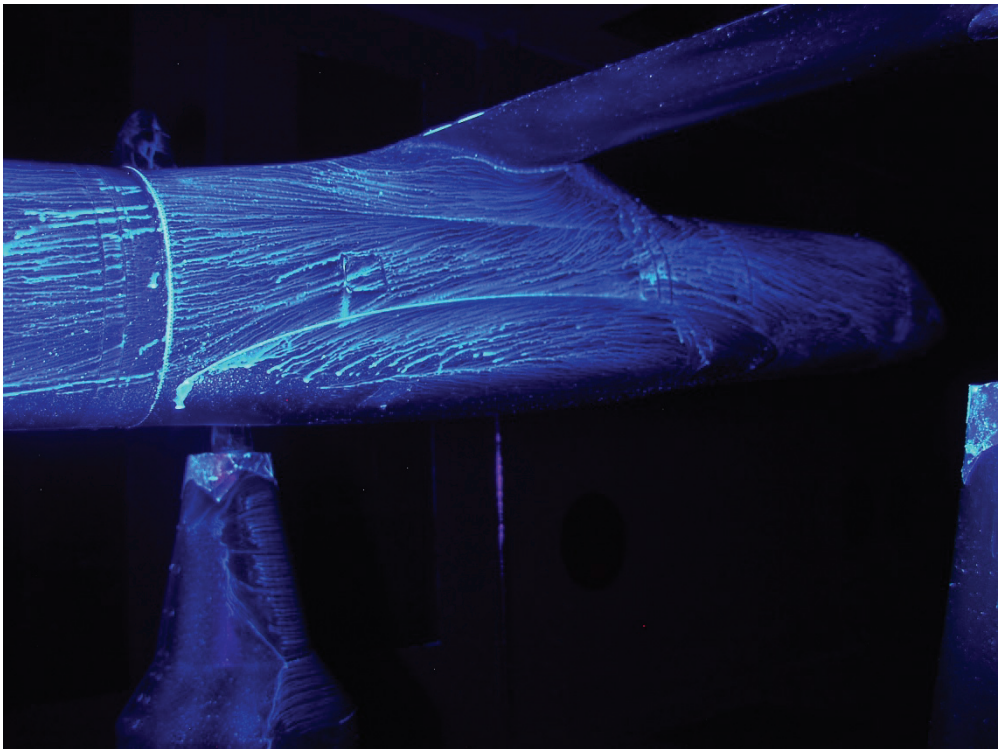

Figure B-109: LS11 flow visualization over fuselage.

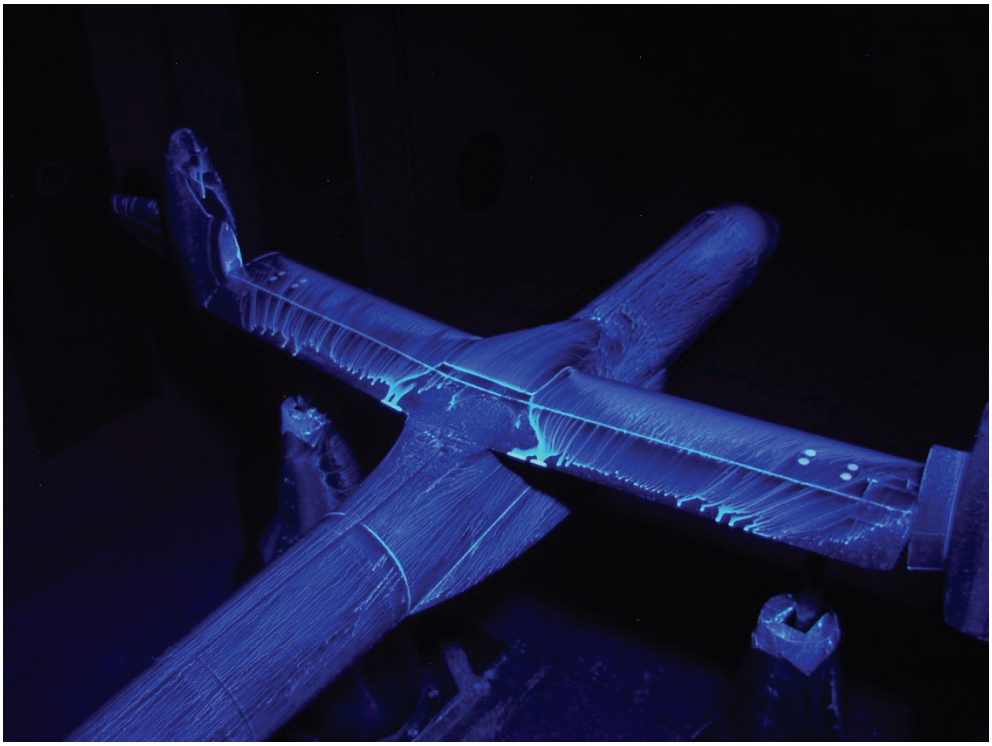

Figure B-110: LS11 flow visualization over wing.

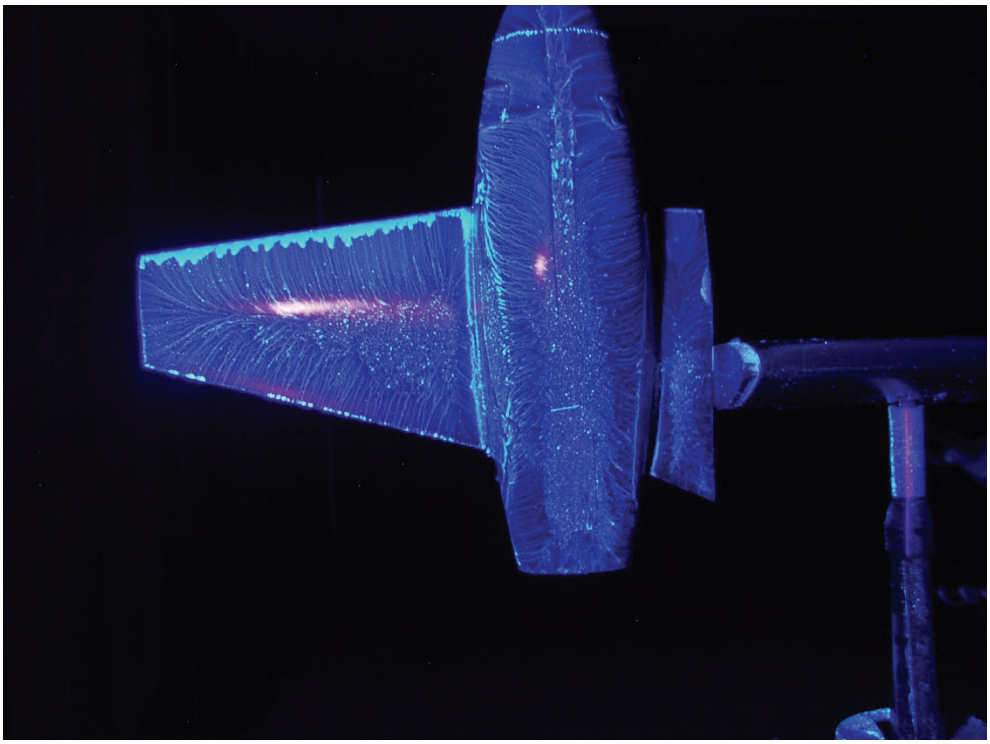

Figure B-111: LS11 flow visualization over nacelle (starboard-fore).

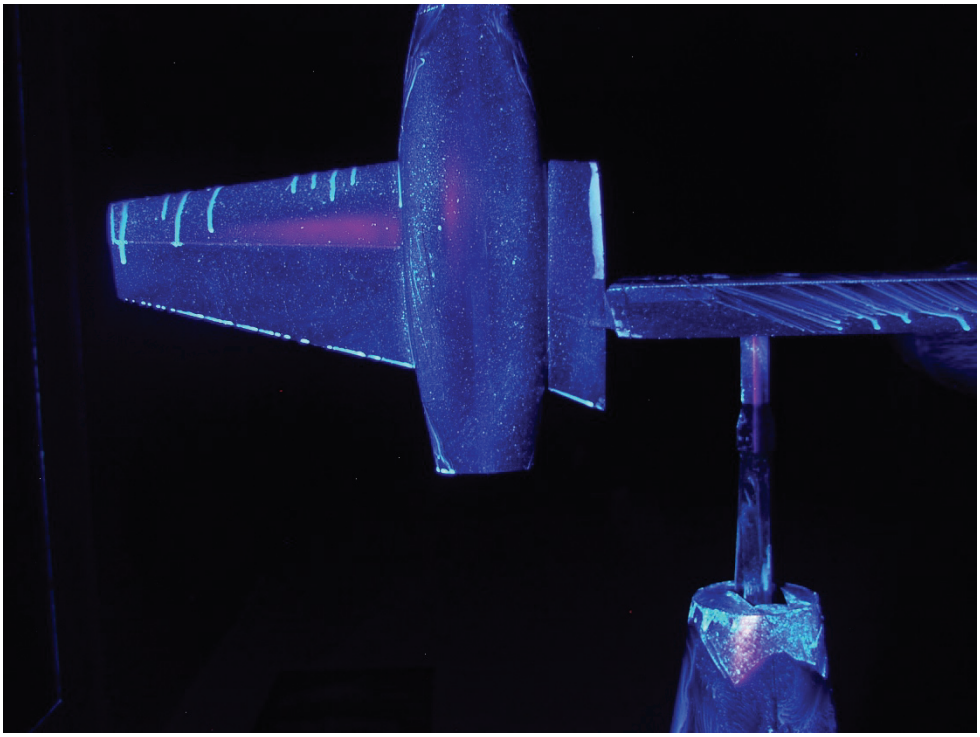

Figure B-112: LS11 flow visualization over nacelle (port-aft).

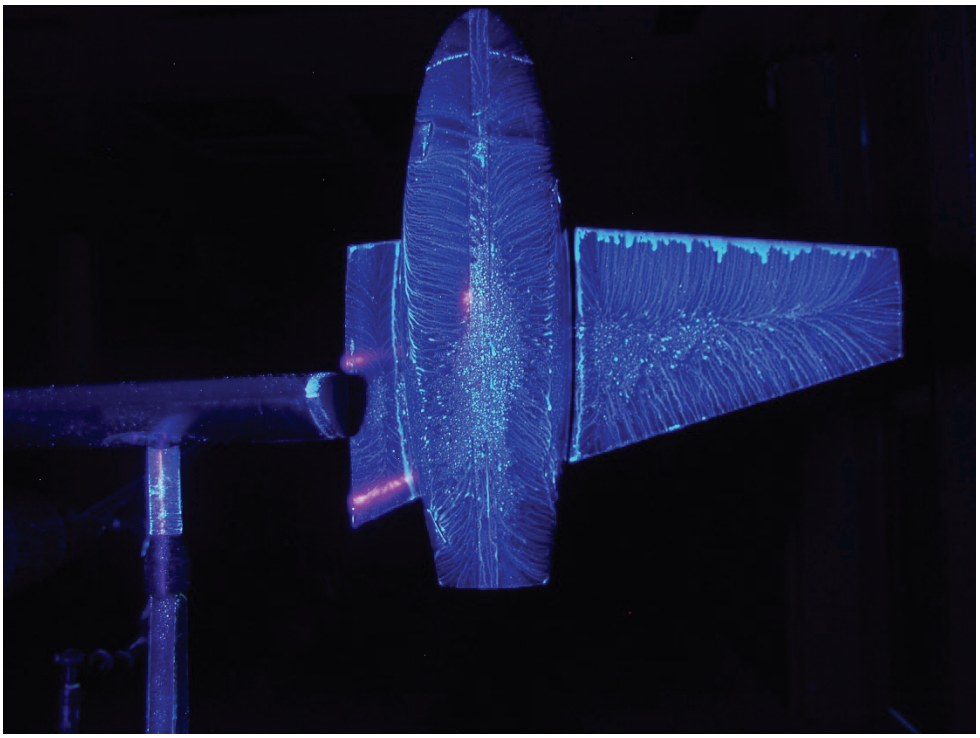

Figure B-113: LS11 flow visualization over nacelle (port-fore).

Figure B-114: LS11 flow visualization over tail.

Test Case LS12 Photos (α = +5°, β = +15°, Re = 0.6e6)

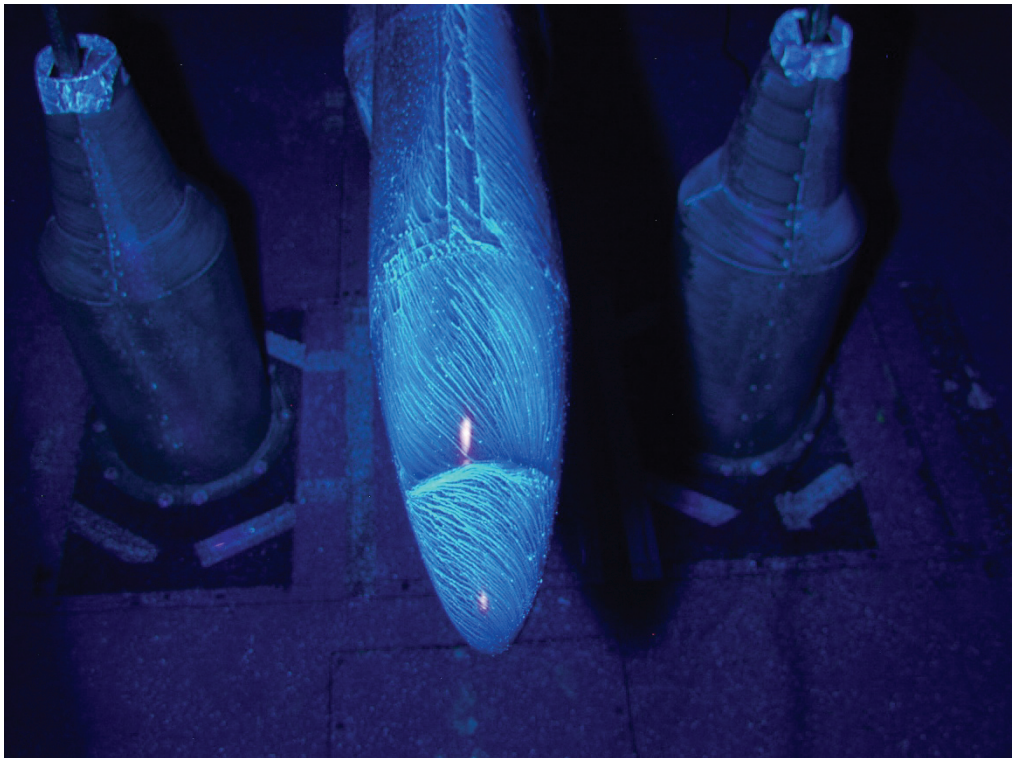

Figure B-115: LS12 flow visualization over nose.

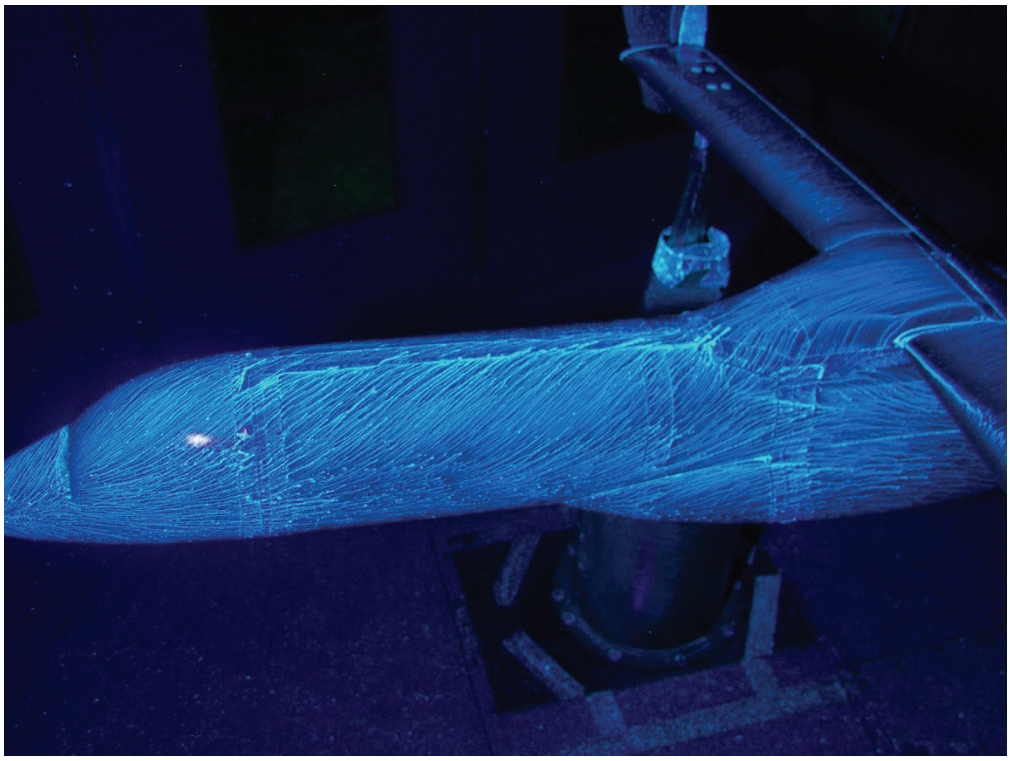

Figure B-116: LS12 flow visualization over fuselage.

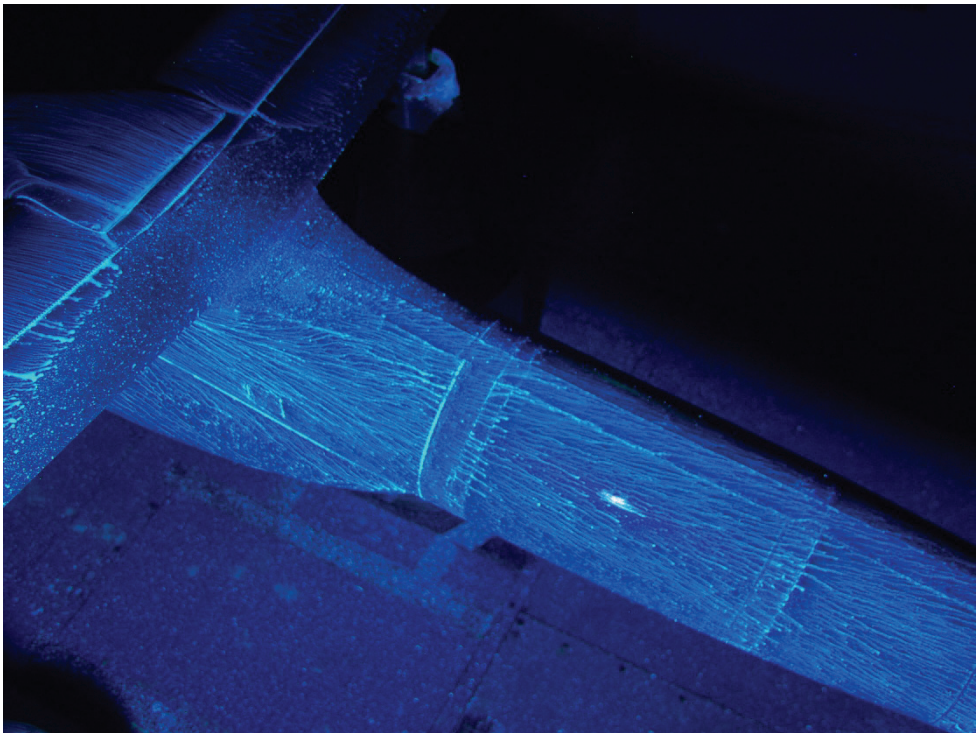

Figure B-117: LS12 flow visualization over fuselage (aft of wing).

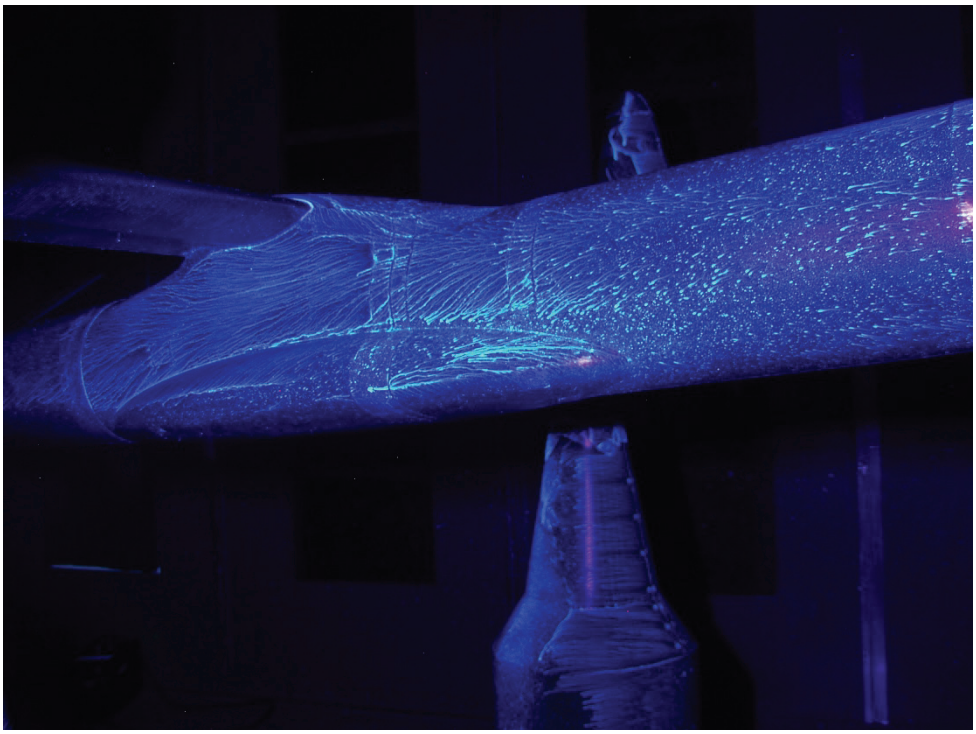

Figure B-118: LS12 flow visualization over fuselage (fore of wing).

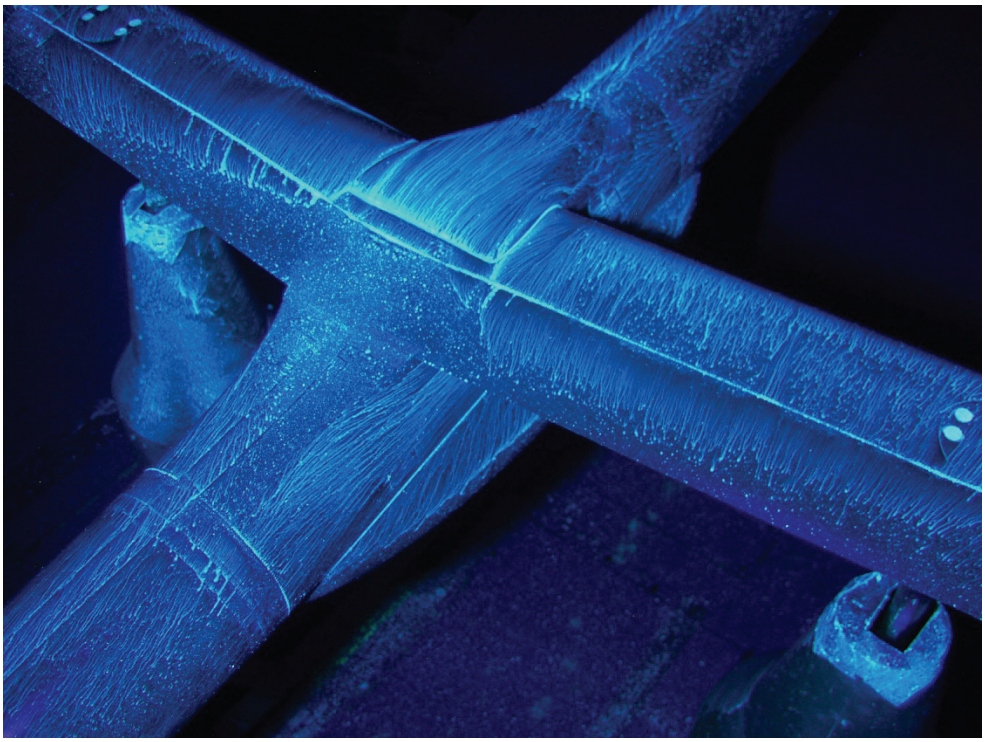

Figure B-119: LS12 flow visualization over wing.

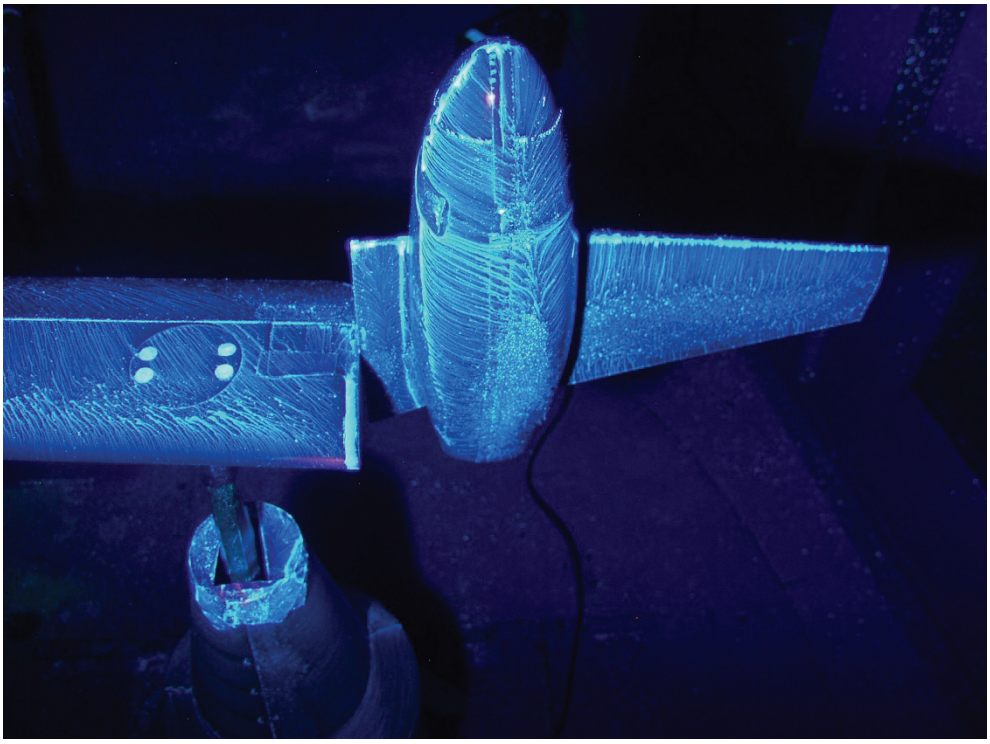

Figure B-120: LS12 flow visualization over nacelle (port-fore).

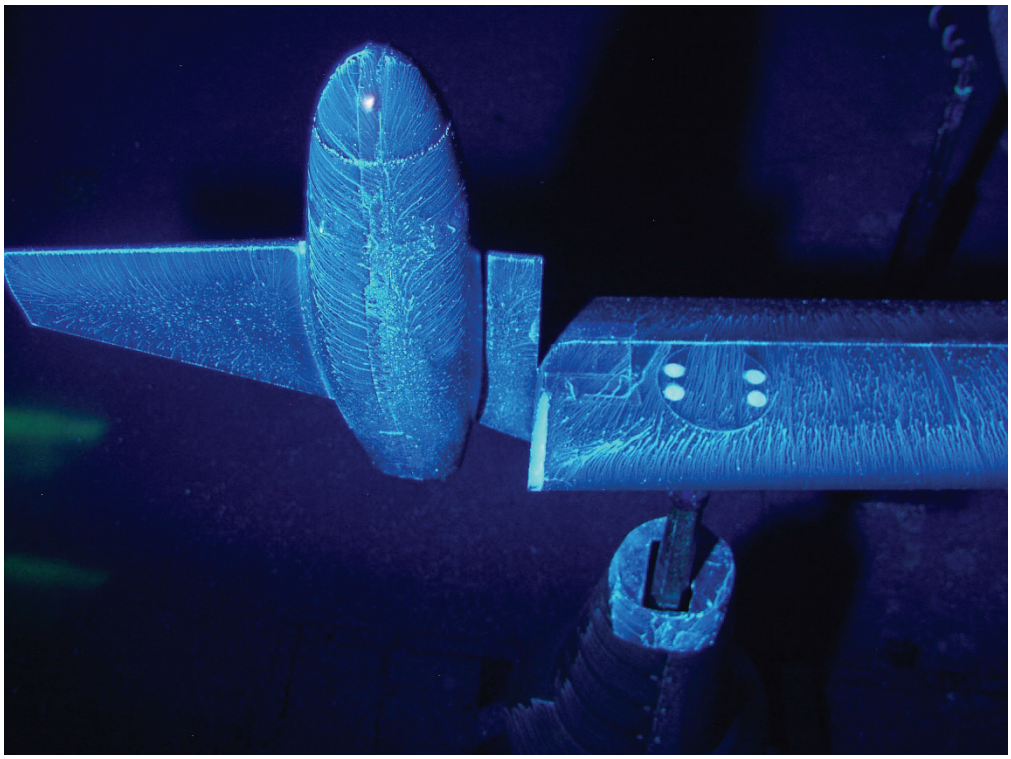

Figure B-121: LS12 flow visualization over nacelle (starboard-fore).

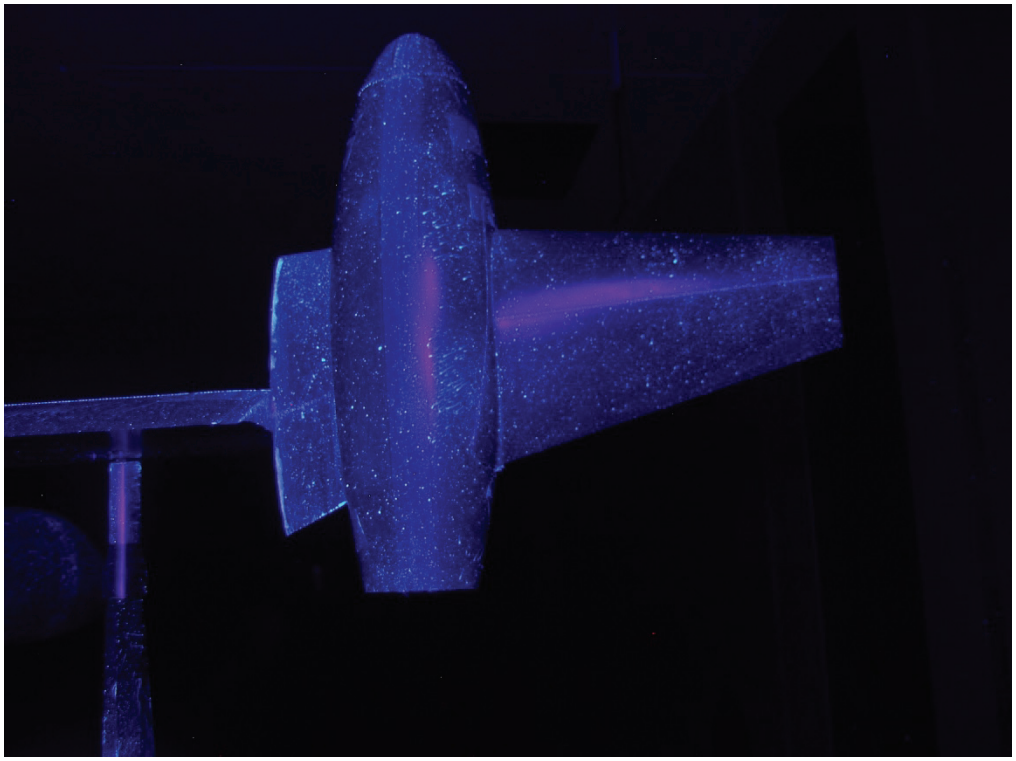

Figure B-122: LS12 flow visualization over nacelle (starboard-aft).

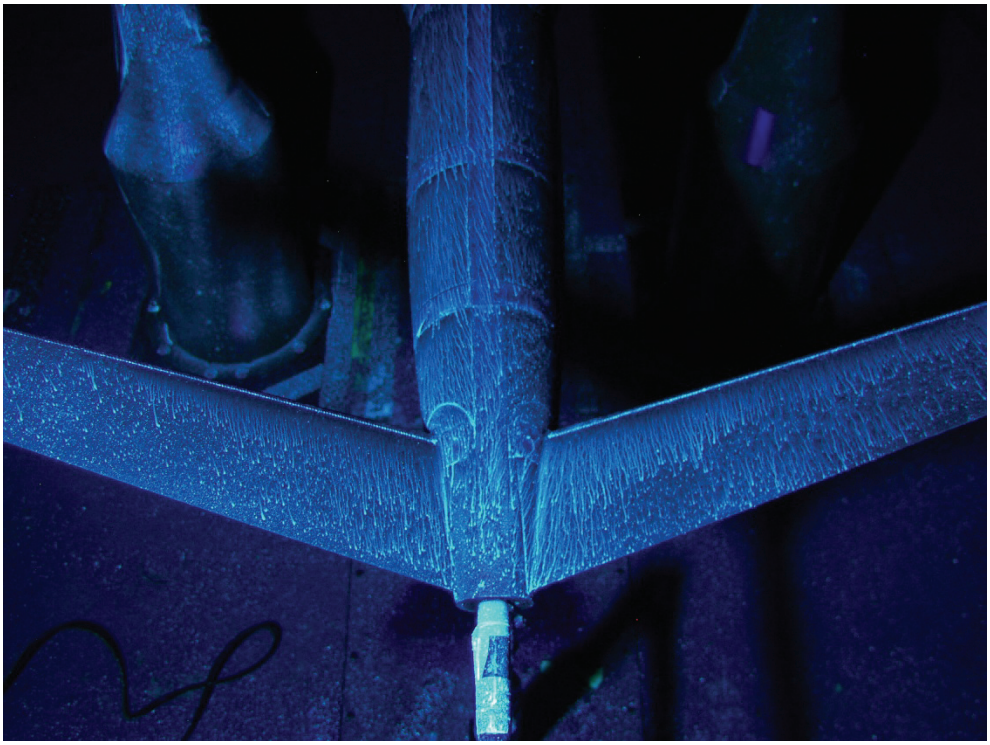

Figure B-123: LS12 flow visualization over tail.

APPENDIX C

WEIGHT TARE DATA

Weight Tare Procedure

The weight tare data is subtracted from the raw data in order to account for the shift in center of gravity due to the change in pitch and yaw of the model. This shift affects the pitching and rolling moments on the full airframe models; the wing-only model was not rotated in pitch or yaw during any run, so weight tares are not necessary.

The weight tares are performed by taking data points on the struts, fairings, and model inside the tunnel with still air. Coefficients for the known tare functions are then fitted to the data, and the functions are used to determine the values to be from each raw data point.

In airplane mode, the coefficients of the weight tare functions vary based on their yaw angle. In these cases, angle of attack is used as the independent variable. Equations C-1 and C-2 provide the corrections for pitch and rolling moments for airplane mode.

$$Pitching\ moment = a_1 \cdot (1 - \cos(\alpha)) + b_1 \cdot \sin(\alpha) + c_1 \quad \text{(C-1)}$$

$$Rolling\ moment = a_2 \cdot (1 - cos(\alpha)) + b_2 \cdot sin(\alpha) + c_2 \quad \text{(C-2)}$$

In helicopter mode, the coefficients of the weight tare functions vary based on their angle of attack and use the yaw angle of the test run as their independent variable. Equations C-3 and C-4 provide the corrections for pitch and rolling moments for helicopter mode.

$$Pitching\ moment = a_3 \cdot (1 - cos(\beta)) + b_3 \cdot sin(\beta) + c_3 \cdot (1 - cos(2 \cdot \beta)) + d_3 \cdot sin(2 \cdot \beta)$$
$$+e_3 \cdot (1 - cos(3 \cdot \beta)) + f_3 \cdot sin(3 \cdot \beta) + g_3 \cdot (1 - cos(4 \cdot \beta)) + h_3 \cdot sin(4 \cdot \beta) + i_3 \quad \text{(C-3)}$$

$$Rolling\ moment = a_4 \cdot (1 - cos(\beta)) + b_4 \cdot sin(\beta) + c_4 \cdot (1 - cos(2 \cdot \beta)) + d_4 \cdot sin(2 \cdot \beta)$$
$$+e_4 \cdot (1 - cos(3 \cdot \beta)) + f_4 \cdot sin(3 \cdot \beta) + g_4 \cdot (1 - cos(4 \cdot \beta)) + h_4 \cdot sin(4 \cdot \beta) + i_4 \quad \text{(C-4)}$$

The calculated coefficients for the weight tare equations are provided in Table C-1 through Table C-12. The raw data collected for the weight tare runs is shown in Table C-13.

Table C-1: L00E Airplane Mode Weight Tare Coefficients

R261 β = 0			
	PM		**RM**
a_1	74.30	a_2	4.32
b_1	–39.27	b_2	–2.43
c_1	–0.09	c_2	–0.10
R262 β = 5			
	PM		**RM**
a_1	75.65	a_2	–18.26
b_1	–39.24	b_2	5.12
c_1	14.31	c_2	4.56
R263 β = 10			
	PM		**RM**
a_1	76.24	a_2	–35.77
b_1	–37.95	b_2	9.83
c_1	8.61	c_2	7.00

Table C-2: L00 Airplane Mode Weight Tare Coefficients

R 277 β = 0			
	PM		**RM**
a_1	61.30	a_2	37.93
b_1	–38.08	b_2	3.50
c_1	0.11	c_2	–0.39
R278 β = 5			
	PM		**RM**
a_1	252.26	a_2	53.32
b_1	–41.18	b_2	4.01
c_1	8.39	c_2	3.65
R279 β = 10			
	PM		**RM**
a_1	74.07	a_2	–16.88
b_1	–38.94	b_2	8.99
c_1	8.47	c_2	6.55

Table C-3: LNNC Airplane Mode Weight Tare Coefficients

R301 β = –5			
	PM		**RM**
a_1	77.76	a_2	1.47
b_1	–38.25	b_2	0.43
c_1	–10.32	c_2	–4.38
R302 β = 0			
	PM		**RM**
a_1	80.25	a_2	–17.87
b_1	–39.30	b_2	0.81
c_1	–0.22	c_2	–1.14
R303 β = 5			
	PM		**RM**
a_1	70.85	a_2	35.19
b_1	–38.20	b_2	2.16
c_1	0.56	c_2	2.59
R304 β = 10			
	PM		**RM**
a_1	80.44	a_2	–28.07
b_1	–37.40	b_2	6.81
c_1	10.98	c_2	8.54

Table C-4: L85 Helicopter Mode Weight Tare Coefficients

R338 α = –10			
	PM		**RM**
a_3	20.885	a_4	–3.330
b_3	4.867	b_4	17.560
c_3	1.233	c_4	–0.147
d_3	0.695	d_4	3.978
e_3	1.278	e_4	0.143
f_3	0.311	f_4	–0.280
g_3	0.593	g_4	1.840
h_3	–0.999	h_4	–0.237
i_3	11.862	i_4	1.579
R345 α = –5			
	PM		**RM**
a_3	29.341	a_4	0.264
b_3	11.975	b_4	160.930
c_3	–0.434	c_4	–88.291
d_3	7.955	d_4	9.414
e_3	–2.452	e_4	–4.164
f_3	2.627	f_4	–36.697
g_3	–1.330	g_4	9.736
h_3	–0.476	h_4	–2.398
i_3	3.410	i_4	–0.257
R336 α = 0			
	PM		**RM**
a_3	27.871	a_4	–3.088
b_3	5.050	b_4	24.228
c_3	1.297	c_4	0.015
d_3	0.470	d_4	4.142
e_3	1.231	e_4	0.070
f_3	0.424	f_4	–0.118
g_3	0.629	g_4	1.869
h_3	–1.097	h_4	–0.169
i_3	6.604	i_4	1.094

Table C-4: L85 Helicopter Mode Weight Tare Coefficients (cont'd)

R346 α = 5			
	PM		**RM**
a_3	36.936	a_4	–1.510
b_3	–52.661	b_4	165.590
c_3	41.463	c_4	–87.175
d_3	8.697	d_4	6.633
e_3	–3.181	e_4	–2.405
f_3	21.315	f_4	–36.808
g_3	–6.269	g_4	9.828
h_3	–0.694	h_4	–1.866
i_3	–3.491	i_4	0.065
R347 α = 10			
	PM		**RM**
a_3	41.873	a_4	–0.486
b_3	–35.539	b_4	216.180
c_3	30.678	c_4	–118.280
d_3	12.255	d_4	7.828
e_3	–5.880	e_4	–3.520
f_3	16.991	f_4	–50.660
g_3	–5.378	g_4	13.237
h_3	–1.746	h_4	–2.410
i_3	–5.362	i_4	0.289

Table C-5: L85E Helicopter Mode Weight Tare Coefficients

R352 α = 0			
	PM		**RM**
a_3	42.729	a_4	3.142
b_3	30.566	b_4	170.820
c_3	–10.524	c_4	–92.285
d_3	20.265	d_4	13.175
e_3	–10.697	e_4	–7.054
f_3	–0.749	f_4	–38.899
g_3	–1.140	g_4	10.344
h_3	–2.994	h_4	–3.375
i_3	–0.078	i_4	–0.649
R353 α = –10			
	PM		**RM**
a_3	33.093	a_4	6.674
b_3	28.890	b_4	216.690
c_3	–9.276	c_4	–126.940
d_3	17.017	d_4	17.357
e_3	–8.437	e_4	–9.751
f_3	0.301	f_4	–54.472
g_3	–1.640	g_4	14.229
h_3	–2.176	h_4	–4.288
i_3	7.807	i_4	–0.165

Table C-5: L85E Helicopter Mode Weight Tare Coefficients (cont'd)

R354 α = –5			
	PM		**RM**
a_3	36.340	a_4	1.560
b_3	20.258	b_4	169.120
c_3	–4.106	c_4	–93.680
d_3	16.716	d_4	10.703
e_3	–8.443	e_4	–5.186
f_3	2.027	f_4	–39.582
g_3	–1.990	g_4	10.364
h_3	–2.318	h_4	–2.770
i_3	3.879	i_4	–0.091
R355 α = 5			
	PM		**RM**
a_3	45.714	a_4	–1.299
b_3	–32.581	b_4	206.510
c_3	30.206	c_4	–113.590
d_3	20.070	d_4	7.119
e_3	–10.663	e_4	–2.759
f_3	17.628	f_4	–48.896
g_3	–5.786	g_4	13.302
h_3	–2.948	h_4	–1.995
i_3	–3.417	i_4	–0.013
R356 α = 10			
	PM		**RM**
a_3	44.124	a_4	–1.391
b_3	1.763	b_4	183.410
c_3	7.699	c_4	–96.692
d_3	14.937	d_4	6.753
e_3	–7.291	e_4	–2.583
f_3	7.410	f_4	–40.545
g_3	–3.076	g_4	10.497
h_3	–1.973	h_4	–1.944
i_3	–4.806	i_4	0.217

Table C-6: L75 Helicopter Mode Weight Tare Coefficients

R368 α = 0			
	PM		**RM**
a_3	43.910	a_4	1.583
b_3	15.161	b_4	174.380
c_3	–1.033	c_4	–91.292
d_3	16.276	d_4	9.701
e_3	–8.391	e_4	–4.072
f_3	3.757	f_4	–38.173
g_3	–2.496	g_4	10.056
h_3	–2.501	h_4	–2.315
i_3	–0.001	i_4	0.307

Table C-7: L75E Helicopter Mode Weight Tare Coefficients

R369 α = 0			
	PM		**RM**
a_3	43.574	a_4	1.159
b_3	27.567	b_4	222.560
c_3	–8.954	c_4	–122.760
d_3	15.919	d_4	9.419
e_3	–8.128	e_4	–4.121
f_3	0.332	f_4	–52.280
g_3	–1.698	g_4	13.647
h_3	–2.261	h_4	–2.376
i_3	0.280	i_4	–0.073

Table C-8: L60 Helicopter Mode Weight Tare Coefficients

R370 α = 0			
	PM		**RM**
a_3	46.198	a_4	–5.858
b_3	–3.727	b_4	80.212
c_3	10.182	c_4	–31.609
d_3	18.909	d_4	–0.748
e_3	–10.248	e_4	3.192
f_3	7.813	f_4	–13.095
g_3	–2.973	g_4	4.623
h_3	–3.266	h_4	0.030
i_3	0.020	i_4	0.177

Table C-9: L60E Helicopter Mode Weight Tare Coefficients

R361 α = 0			
	PM		**RM**
a_3	43.214	a_4	0.669
b_3	19.419	b_4	191.770
c_3	–3.910	c_4	–105.740
d_3	19.714	d_4	9.463
e_3	–10.532	e_4	–4.512
f_3	1.821	f_4	–45.189
g_3	–1.727	g_4	12.004
h_3	–3.331	h_4	–2.560
i_3	0.884	i_4	0.121

Table C-10: L95 Helicopter Mode Weight Tare Coefficients

R367 α = 0			
	PM		**RM**
a_3	42.777	a_4	1.804
b_3	–10.143	b_4	168.580
c_3	14.956	c_4	–87.992
d_3	15.553	d_4	9.958
e_3	–7.850	e_4	–4.432
f_3	10.735	f_4	–36.784
g_3	–4.049	g_4	9.688
h_3	–2.183	h_4	–2.377
i_3	0.215	i_4	0.068

Table C-11: L95E Helicopter Mode Weight Tare Coefficients

R366 α = 0			
	PM		**RM**
a_3	43.480	a_4	1.404
b_3	38.357	b_4	174.980
c_3	–15.970	c_4	–92.272
d_3	16.565	d_4	9.641
e_3	–8.279	e_4	–4.271
f_3	–2.966	f_4	–38.629
g_3	–0.800	g_4	10.130
h_3	–2.325	h_4	–2.473
i_3	0.997	i_4	0.015

Table C-12: LNNC Helicopter Mode Weight Tare Coefficients

R384 α = –10			
	PM		**RM**
a_3	42.145	a_4	4.247
b_3	11.056	b_4	179.920
c_3	0.821	c_4	–99.168
d_3	21.352	d_4	13.435
e_3	–11.973	e_4	–7.008
f_3	4.039	f_4	–41.977
g_3	–2.342	g_4	11.013
h_3	–3.808	h_4	–3.318
i_3	7.903	i_4	0.273
R383 α = –5			
	PM		**RM**
a_3	45.323	a_4	1.323
b_3	60.086	b_4	154.730
c_3	–29.972	c_4	–80.159
d_3	20.307	d_4	9.395
e_3	–11.070	e_4	–4.221
f_3	–9.278	f_4	–33.414
g_3	0.840	g_4	8.969
h_3	–3.347	h_4	–2.493
i_3	4.700	i_4	–0.064
R376 α = 0			
	PM		**RM**
a_3	33.177	a_4	–2.377
b_3	4.409	b_4	29.415
c_3	1.098	c_4	0.206
d_3	0.264	d_4	4.166
e_3	1.351	e_4	0.009
f_3	0.497	f_4	–0.037
g_3	0.443	g_4	1.827
h_3	–1.116	h_4	–0.195
i_3	4.868	i_4	0.703

Table C-12: LNNC Helicopter Mode Weight Tare Coefficients (cont'd)

R378 α = 5			
	PM		**RM**
a_3	47.377	a_4	1.595
b_3	15.361	b_4	176.020
c_3	–1.769	c_4	–89.764
d_3	13.900	d_4	9.718
e_3	–6.745	e_4	–4.451
f_3	2.882	f_4	–38.021
g_3	–1.954	g_4	10.164
h_3	–1.760	h_4	–2.470
i_3	–2.415	i_4	0.190
R377 α = 10			
	PM		**RM**
a_3	53.373	a_4	1.420
b_3	14.741	b_4	215.150
c_3	–1.427	c_4	–113.470
d_3	18.931	d_4	9.676
e_3	–10.253	e_4	–4.435
f_3	3.111	f_4	–48.537
g_3	–2.156	g_4	12.738
h_3	–3.059	h_4	–2.771
i_3	–5.861	i_4	–0.454

Table C-13: Weight Tare Raw Data Table

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R261	2	-9.92	0.00	0.00	0.00	0.00	0.00	-0.30	-0.01	-0.04	7.50	0.25	0.09
	3	-5.96	0.00	0.00	0.00	0.00	0.00	-0.30	0.00	-0.05	4.62	-0.20	0.14
	4	-2.95	-0.01	0.00	0.76	0.00	0.00	-0.30	0.00	-0.05	2.32	0.79	0.15
	5	0.06	0.00	0.00	0.00	0.00	0.00	-0.14	0.00	-0.04	0.02	-0.48	0.17
	6	3.06	0.05	0.00	0.00	0.00	0.00	-0.10	-0.01	-0.05	-2.26	-0.20	0.14
	7	6.06	0.00	0.00	0.00	0.00	0.00	-0.10	0.00	-0.06	-4.01	-0.67	0.20
	8	9.05	0.00	0.00	0.00	0.00	0.00	-0.08	0.00	-0.05	-5.75	-0.31	0.16
	9	12.08	0.00	0.00	0.00	0.00	0.00	-0.10	-0.01	-0.05	-6.25	-0.72	0.13
R262	3	-9.92	5.00	0.00	0.00	0.00	0.00	-0.50	-0.01	-0.02	21.90	3.62	0.10
	4	-5.93	5.00	0.00	0.00	0.00	0.00	-0.30	-0.02	-0.02	19.06	3.11	0.11
	5	-2.94	5.00	0.00	1.32	0.01	0.00	-0.49	0.00	-0.02	16.66	5.14	0.12
	6	0.08	5.00	0.00	0.00	0.00	0.00	-0.29	-0.01	-0.02	14.41	4.18	0.13
	7	3.03	5.00	0.00	0.00	0.00	0.00	-0.20	-0.02	-0.08	12.16	4.96	0.13
	8	6.05	5.00	0.00	1.07	0.00	0.00	-0.20	-0.01	-0.02	10.43	5.13	0.13
	9	9.05	5.00	0.01	2.40	0.01	0.00	0.00	0.00	-0.05	8.63	4.81	0.15
	10	12.08	5.00	0.00	0.00	0.00	0.00	-0.20	-0.03	-0.06	8.20	5.36	0.11
R263	2	-9.92	10.00	0.00	1.69	0.01	0.00	-0.30	0.01	-0.07	16.07	4.88	0.16
	3	-6.00	10.00	0.00	2.00	0.01	0.00	-0.20	0.01	-0.02	13.18	5.61	0.16
	4	-2.95	10.01	0.01	2.27	0.01	0.00	-0.30	0.02	-0.07	10.83	6.41	0.15
	5	0.08	10.01	0.01	2.40	0.01	0.00	-0.20	0.01	-0.10	8.59	7.06	0.19
	6	3.09	10.01	0.01	2.14	0.01	0.00	-0.20	0.00	-0.06	6.91	7.35	0.21
	7	6.09	10.00	0.01	3.13	0.01	0.00	-0.10	0.03	-0.11	4.45	8.16	0.18
	8	9.05	10.00	0.00	1.31	0.01	0.00	-0.10	0.01	-0.08	3.41	7.99	0.16
	9	12.08	10.00	0.01	2.63	0.01	0.00	-0.10	0.04	-0.04	2.67	8.21	0.15

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R277	2	-9.91	-0.01	0.00	0.00	0.00	0.00	-0.20	0.01	-0.01	7.44	-0.43	0.03
	3	-5.99	-0.01	0.00	0.00	0.00	0.00	-0.10	0.01	-0.02	4.56	-0.40	0.08
	4	-3.03	-0.01	0.00	0.00	0.00	0.00	-0.11	0.00	0.01	2.30	-0.48	-0.06
	5	0.10	-0.01	0.00	0.00	0.00	0.00	0.20	-0.01	-0.01	0.07	-0.97	0.02
	6	3.09	-0.01	0.00	0.00	0.00	0.00	-0.10	0.00	-0.01	-1.71	0.08	0.06
	7	6.09	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-3.98	0.57	0.03
	8	9.06	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-5.15	0.55	0.01
	9	12.03	-0.01	0.00	0.00	0.00	0.00	0.10	0.00	-0.01	-6.32	1.08	0.07
R278	1	0.05	-0.01	0.00	0.00	0.00	0.00	-0.10	-0.01	-0.01	0.04	0.54	0.02
	3	-9.95	5.00	0.00	0.00	0.00	0.00	-0.40	-0.02	-0.04	18.51	3.24	0.15
	4	-5.94	5.00	0.00	0.00	0.00	0.00	-0.20	0.00	-0.03	14.95	4.18	0.16
	5	-5.94	4.99	0.00	0.00	0.00	0.00	-0.20	0.00	-0.04	14.97	4.21	0.17
	6	-2.93	5.08	0.00	0.00	0.00	0.00	-0.20	-0.01	-0.01	12.74	4.05	0.07
	7	0.09	5.00	0.00	0.00	0.00	0.00	-0.21	0.00	-0.01	10.42	4.07	0.07
	8	3.09	5.00	0.00	0.00	0.00	0.00	-0.20	-0.01	-0.03	8.68	4.68	0.16
	9	6.07	5.01	0.00	0.00	0.00	0.00	-0.20	-0.01	-0.02	6.94	5.13	0.11
	10	9.07	5.08	0.00	0.00	0.00	0.00	-0.10	-0.01	-0.03	5.22	5.15	0.14
	11	12.03	5.01	0.00	0.00	0.00	0.00	-0.10	-0.01	0.04	4.68	5.30	0.17
R279	2	-9.93	10.00	0.00	2.01	0.01	0.00	-0.30	0.01	-0.05	16.05	4.81	0.27
	3	-5.94	10.00	0.00	1.32	0.01	0.00	-0.29	0.01	-0.04	13.15	5.29	0.21
	4	-2.93	10.00	0.01	2.52	0.01	0.00	-0.30	0.02	-0.03	10.82	6.18	0.14
	5	0.05	10.00	0.00	0.76	0.00	0.00	-0.20	0.01	-0.03	8.54	6.65	0.11
	6	3.09	10.00	0.00	0.00	0.00	0.00	-0.10	0.02	-0.03	6.20	7.16	0.14
	7	6.08	10.00	0.00	0.00	0.00	0.00	-0.10	0.03	0.04	4.44	7.27	0.16
	8	9.06	10.00	0.00	0.00	0.00	0.00	-0.10	0.01	-0.01	3.39	7.57	0.19
	9	12.03	10.00	0.00	1.86	0.01	0.00	0.00	0.03	-0.03	2.11	8.19	0.16

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R301	2	-9.92	-4.94	0.00	0.00	0.00	0.00	-0.50	-0.05	0.13	-2.61	-4.74	-0.18
	3	-6.00	-4.94	0.00	0.00	0.00	0.00	-0.45	-0.07	0.02	-5.92	-3.85	-0.11
	4	-2.97	-4.94	0.00	0.00	0.00	0.00	-0.52	-0.06	0.06	-8.19	-4.36	-0.11
	5	-0.06	-4.94	0.00	0.00	0.00	0.00	-0.50	-0.06	0.01	-10.02	-4.55	-0.04
	6	3.22	-4.94	0.00	0.00	0.00	0.00	-0.40	-0.09	0.09	-12.14	-4.48	0.00
	7	6.11	-4.94	0.00	0.00	0.00	0.00	-0.30	-0.06	0.01	-14.06	-4.03	0.01
	8	9.04	-4.94	0.00	0.00	0.00	0.00	-0.20	-0.06	0.11	-15.76	-4.64	-0.07
	9	12.16	-4.94	0.00	0.00	0.00	0.00	-0.20	-0.06	0.10	-16.36	-4.07	0.00
	10	-0.06	-4.94	0.00	0.00	0.00	0.00	-0.50	-0.06	0.11	-10.46	-4.52	-0.06
R302	2	-9.92	-0.01	0.00	1.05	0.00	0.00	0.20	0.00	0.01	7.48	-1.56	-0.06
	3	-6.00	-0.01	0.00	0.74	0.00	0.00	0.19	0.01	0.02	4.56	-1.17	-0.13
	4	-3.04	-0.01	0.00	1.05	0.00	0.00	0.16	0.01	0.01	2.25	-1.25	-0.09
	5	-0.06	-0.01	0.00	0.00	0.00	0.00	0.30	0.01	0.02	-0.06	-1.61	-0.11
	6	2.94	-0.01	0.01	2.86	0.01	0.00	0.20	0.01	0.00	-2.35	-0.99	-0.01
	7	6.00	-0.01	0.00	0.00	0.00	0.00	0.24	0.00	-0.10	-4.05	-0.74	0.01
	8	9.04	-0.01	0.00	1.05	0.00	0.00	0.30	0.00	0.00	-5.76	-1.52	-0.02
	9	12.02	-0.01	0.01	2.09	0.01	0.00	0.22	-0.01	-0.01	-6.27	-1.33	0.00
	10	-0.06	-0.01	0.00	1.05	0.00	0.00	0.21	0.01	0.01	-0.14	-1.04	-0.04
R303	2	-9.92	5.08	0.00	0.00	0.00	0.00	-0.02	0.01	-0.10	7.97	2.45	-0.02
	3	-6.00	5.08	0.00	0.00	0.00	0.00	0.00	0.01	-0.09	5.14	3.04	-0.03
	4	-2.99	5.08	0.00	0.00	0.00	0.00	0.00	0.00	-0.10	2.85	3.08	0.01
	5	0.08	5.08	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	0.59	2.61	-0.07
	6	3.22	5.08	0.00	0.00	0.00	0.00	0.10	0.01	0.01	-1.78	1.96	-0.06
	7	6.11	5.08	0.00	0.00	0.00	0.00	-0.10	-0.01	-0.10	-3.41	4.09	0.01
	8	9.04	5.08	0.00	0.00	0.00	0.00	0.00	-0.01	-0.06	-4.55	3.35	0.06
	9	12.12	5.08	0.00	0.00	0.00	0.00	0.00	-0.01	-0.11	-5.70	3.66	0.09
	10	0.08	5.08	0.00	0.00	0.00	0.00	0.20	-0.02	-0.04	0.67	1.73	0.06

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R304	2	-9.92	10.00	0.00	0.00	0.00	0.00	-0.44	0.00	-0.01	18.41	6.86	0.06
	3	-6.00	10.00	0.00	0.00	0.00	0.00	-0.34	0.00	-0.01	15.55	7.87	0.06
	4	-3.04	10.00	0.00	0.00	0.00	0.00	-0.34	0.00	-0.01	13.24	7.88	0.07
	5	0.08	10.00	0.00	0.00	0.00	0.00	-0.36	-0.01	-0.02	11.00	8.81	0.08
	6	3.08	10.00	0.00	0.00	0.00	0.00	-0.44	-0.01	-0.02	9.28	8.95	0.12
	7	6.11	10.00	0.00	0.00	0.00	0.00	-0.24	-0.02	-0.02	7.02	8.94	0.12
	8	9.04	10.00	0.00	0.00	0.00	0.00	-0.24	-0.02	-0.04	5.84	9.05	0.19
	9	12.12	10.09	0.00	0.00	0.00	0.00	-0.44	-0.02	-0.04	5.26	9.53	0.18
	10	-0.04	10.09	0.00	0.00	0.00	0.00	-0.34	-0.01	-0.13	10.97	8.55	0.17

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R336	3	0.01	-0.01	0.01	2.54	0.01	0.00	0.00	-0.01	-0.03	0.01	0.19	0.02
	4	-0.08	-179.97	0.01	3.47	0.01	0.00	-0.10	0.80	-0.37	67.83	-5.35	0.83
	5	-0.07	-165.08	0.02	4.10	0.02	0.00	-2.10	0.79	-1.32	58.68	-6.97	1.68
	6	-0.06	-150.05	0.02	4.02	0.02	0.00	-2.30	0.45	-1.57	57.74	-9.99	2.03
	7	-0.05	-135.09	0.01	2.23	0.01	0.00	-1.70	0.09	-1.55	54.05	-13.15	2.58
	8	-0.03	-120.06	0.00	1.75	0.01	0.00	-0.90	-0.11	-1.18	48.31	-18.20	2.46
	9	-0.03	-105.02	0.01	2.60	0.01	0.00	-0.46	-0.33	-0.66	41.88	-23.76	1.90
	10	0.00	-89.97	0.01	2.21	0.01	0.00	-0.40	-0.42	-0.38	34.57	-25.81	1.02
	11	0.01	-75.04	0.01	2.21	0.01	0.00	-0.30	-0.35	-0.16	24.96	-25.59	0.15
	12	0.02	-60.00	0.00	1.89	0.01	0.00	-0.07	-0.20	-0.08	19.50	-21.86	-0.29
	13	0.03	-44.95	0.01	2.41	0.01	0.00	-0.10	-0.12	-0.08	15.05	-17.52	-0.31
	14	0.03	-30.01	0.00	0.00	0.00	0.00	-0.10	-0.08	-0.10	12.49	-12.40	-0.10
	15	0.03	-14.97	0.00	1.52	0.01	0.00	-0.10	-0.06	-0.06	10.07	-5.66	0.16
	16	0.02	-0.01	0.00	1.71	0.01	0.00	-0.10	-0.02	-0.13	9.85	2.77	0.23
	17	0.01	15.01	0.01	3.35	0.01	0.00	-0.10	0.00	-0.18	12.03	11.02	0.41
	18	0.00	30.05	0.00	0.46	0.00	0.00	-0.10	0.06	-0.19	18.04	18.58	0.92
	19	-0.02	45.10	0.00	0.00	0.00	0.00	0.00	0.07	-0.18	23.70	23.98	1.39
	20	-0.03	60.04	0.00	0.00	0.00	0.00	-0.20	0.06	-0.16	29.51	27.95	1.39
	21	-0.05	75.08	0.00	0.00	0.00	0.00	-0.10	-0.08	-0.09	37.22	27.03	0.98
	22	-0.07	90.14	0.00	0.00	0.00	0.00	-0.03	-0.14	-0.01	44.67	21.08	0.27
	23	-0.08	105.07	0.00	0.00	0.00	0.00	-0.10	-0.09	-0.08	48.25	19.44	-0.17
	24	-0.10	120.11	0.00	0.00	0.00	0.00	0.10	-0.02	-0.09	54.72	16.54	-0.83
	25	-0.10	135.16	0.00	0.00	0.00	0.00	-0.10	0.05	-0.23	60.10	12.31	-0.63
	26	-0.09	150.10	0.00	0.00	0.00	0.00	-0.03	0.03	-0.33	63.62	7.27	-0.20
	27	-0.09	165.14	0.00	0.00	0.00	0.00	-0.10	0.03	-0.42	65.92	1.39	0.20
	28	-0.09	178.84	0.00	0.00	0.00	0.00	-0.15	0.00	-0.42	66.09	-6.82	0.44
	29	0.02	-0.01	0.00	0.00	0.00	0.00	-0.19	-0.12	0.00	2.94	0.07	0.29

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R338	2	-10.01	0.08	0.00	0.00	0.00	0.00	-0.10	-0.02	0.02	7.59	-0.12	-0.02
	3	-10.01	-179.96	0.02	3.98	0.02	0.00	0.00	0.84	-0.18	61.30	-6.49	0.49
	4	-10.00	-165.06	0.02	3.84	0.02	0.00	-2.00	0.80	-1.20	50.07	-5.67	1.27
	5	-9.99	-150.11	0.01	2.87	0.01	0.00	-2.20	0.36	-1.67	50.24	-5.97	1.00
	6	-9.98	-135.08	0.01	2.76	0.01	0.00	-1.50	0.14	-1.46	47.51	-9.16	2.27
	7	-9.99	-120.04	0.01	2.99	0.01	0.00	-0.98	-0.09	-1.05	43.63	-12.59	2.08
	8	-9.98	-105.09	0.02	4.00	0.02	0.00	-0.40	-0.25	-0.62	38.25	-17.45	1.56
	9	-10.01	-90.05	0.01	2.98	0.01	0.00	-0.29	-0.41	-0.32	32.94	-19.37	0.77
	10	-10.02	-75.03	0.01	2.81	0.01	0.00	-0.10	-0.33	-0.08	24.90	-19.04	-0.12
	11	-10.01	-59.99	0.01	2.15	0.01	0.00	0.00	-0.18	0.04	21.15	-15.71	-0.54
	12	-10.00	-45.03	0.00	1.04	0.00	0.00	0.02	-0.09	-0.01	18.32	-12.59	-0.57
	13	-10.00	-30.00	0.00	0.36	0.00	0.00	0.00	-0.04	-0.06	16.89	-8.17	-0.36
	14	-10.00	-14.96	0.00	1.33	0.01	0.00	0.10	-0.01	-0.11	15.03	-2.85	0.49
	15	-10.01	0.00	0.00	1.75	0.01	0.00	0.00	0.04	-0.17	15.31	3.45	0.44
	16	-9.99	15.01	0.00	0.80	0.00	0.00	-0.02	0.06	-0.21	17.09	9.22	0.65
	17	-10.01	30.05	0.00	0.00	0.00	0.00	-0.07	0.10	-0.27	22.92	15.53	1.02
	18	-10.00	45.01	0.00	0.00	0.00	0.00	0.10	0.11	-0.26	26.41	19.50	1.46
	19	-10.00	60.04	0.00	0.00	0.00	0.00	0.00	0.05	-0.25	31.36	21.92	1.49
	20	-10.00	75.08	0.00	0.00	0.00	0.00	0.00	-0.06	-0.19	37.15	21.07	1.12
	21	-10.01	90.13	0.00	0.00	0.00	0.00	0.10	-0.09	-0.07	42.52	14.40	0.42
	22	-10.00	105.07	0.00	0.00	0.00	0.00	0.20	-0.04	-0.09	44.52	12.99	-0.09
	23	-10.00	120.02	0.00	0.00	0.00	0.00	0.20	0.00	-0.13	49.44	10.77	-0.61
	24	-10.00	135.15	0.00	0.00	0.00	0.00	0.24	0.11	-0.25	52.66	7.92	-0.37
	25	-9.99	150.09	0.00	0.00	0.00	0.00	0.20	0.11	-0.29	55.15	3.19	-0.04
	26	-9.99	165.12	0.00	0.00	0.00	0.00	0.10	0.14	-0.66	56.73	0.28	-0.24
	27	-10.00	178.84	0.00	0.00	0.00	0.00	0.10	0.09	-0.62	56.44	-5.46	0.35
	28	-10.01	0.00	0.01	3.02	0.01	0.00	0.10	-0.02	-0.17	5.30	0.95	0.66

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R345	2	0.04	0.08	0.00	1.06	0.00	0.00	0.00	0.00	0.01	0.02	-0.03	-0.03
	3	-4.99	0.08	0.00	0.00	0.00	0.00	0.00	-0.01	0.01	3.49	-0.07	-0.08
	4	-4.96	15.01	0.00	1.30	0.01	0.00	0.10	0.00	-0.19	11.49	9.59	0.57
	5	-4.95	29.97	0.00	0.00	0.00	0.00	0.10	-0.07	-0.36	17.63	16.59	1.59
	6	-4.96	45.01	0.00	0.00	0.00	0.00	0.02	0.04	-0.18	23.37	20.46	1.38
	7	-4.96	59.96	0.00	0.00	0.00	0.00	-0.10	-0.04	-0.14	27.85	23.32	1.48
	8	-4.95	75.00	0.00	0.00	0.00	0.00	0.20	0.00	-0.01	33.32	22.03	0.63
	9	-4.96	90.05	0.00	0.00	0.00	0.00	0.20	-0.03	0.13	39.85	15.74	-0.17
	10	-4.95	105.08	0.00	1.50	0.01	0.00	0.12	0.04	0.07	42.32	14.17	-0.45
	11	-4.96	120.03	0.00	0.00	0.00	0.00	0.20	0.10	0.01	48.32	11.43	-1.00
	12	-4.96	135.17	0.00	0.00	0.00	0.00	0.18	0.19	-0.14	52.39	8.41	-0.96
	13	-4.96	150.16	0.00	0.00	0.00	0.00	0.10	0.20	-0.30	55.18	4.20	-0.57
	14	-4.95	165.14	0.00	0.00	0.00	0.00	0.02	0.16	-0.38	57.71	-0.73	-0.13
	15	-4.95	165.14	0.00	0.00	0.00	0.00	0.01	0.16	-0.37	57.71	-0.81	-0.16
	16	-4.95	178.84	0.00	0.00	0.00	0.00	0.02	0.15	-0.41	57.24	-7.26	0.04
	17	-4.95	-0.01	0.00	0.00	0.00	0.00	0.10	0.01	-0.03	3.38	-0.31	0.20
R346	2	5.07	0.00	0.00	0.00	0.00	0.00	0.01	-0.03	0.01	-3.30	0.00	-0.04
	3	5.06	15.01	0.00	0.00	0.00	0.00	0.00	0.03	0.02	4.45	10.88	0.12
	4	5.04	30.05	0.00	1.50	0.01	0.00	0.10	0.02	-0.13	11.36	19.22	0.78
	5	5.06	45.01	0.00	0.00	0.00	0.00	-0.10	0.08	-0.11	17.92	25.12	1.02
	6	5.06	60.05	0.00	0.00	0.00	0.00	0.09	0.05	-0.09	23.28	29.46	0.92
	7	5.03	75.09	0.00	0.00	0.00	0.00	0.00	-0.03	0.02	31.82	28.36	0.64
	8	5.05	90.14	0.00	0.00	0.00	0.00	0.10	-0.08	0.10	40.14	23.43	-0.22
	9	5.05	105.08	0.00	0.00	0.00	0.00	0.19	-0.01	0.03	44.34	21.26	-0.61
	10	5.04	120.11	0.00	0.00	0.00	0.00	0.19	0.06	0.06	51.42	17.64	-1.28
	11	5.04	135.07	0.00	0.00	0.00	0.00	0.10	0.17	-0.11	57.11	13.62	-1.08
	12	5.04	150.10	0.00	0.00	0.00	0.00	0.10	0.18	-0.23	61.08	7.85	-0.62
	13	5.04	165.14	0.00	0.00	0.00	0.00	0.10	0.15	-0.40	64.13	1.29	-0.21
	14	5.05	178.84	0.00	0.00	0.00	0.00	-0.05	0.09	-0.43	63.89	-6.80	-0.07
	15	5.04	0.00	0.01	2.12	0.01	0.00	0.00	-0.06	0.06	-3.68	0.16	-0.12

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R347	2	10.07	0.00	0.00	0.00	0.00	0.00	0.20	-0.02	-0.06	-5.64	0.36	0.13
	3	10.04	15.01	0.00	0.00	0.00	0.00	0.04	0.04	-0.09	3.23	11.73	0.11
	4	10.05	30.05	0.00	0.00	0.00	0.00	0.13	0.11	-0.07	9.72	20.07	0.54
	5	10.05	45.01	0.00	0.00	0.00	0.00	0.20	0.11	-0.14	16.62	26.82	1.04
	6	10.04	60.05	0.00	0.00	0.00	0.00	0.20	0.12	-0.05	22.32	31.30	1.02
	7	10.04	75.00	0.00	0.00	0.00	0.00	0.10	-0.01	-0.05	31.70	31.30	0.72
	8	10.04	90.14	0.00	0.00	0.00	0.00	0.20	0.00	0.04	40.28	25.75	-0.10
	9	10.07	105.07	0.00	0.00	0.00	0.00	0.20	0.05	0.02	45.16	23.41	-0.54
	10	10.06	120.11	0.00	0.00	0.00	0.00	0.30	0.08	-0.08	53.02	20.46	-1.08
	11	10.06	135.07	0.00	0.00	0.00	0.00	0.20	0.20	-0.21	59.24	15.73	-0.96
	12	10.07	150.10	0.00	0.00	0.00	0.00	0.20	0.20	-0.29	63.84	9.19	-0.48
	13	10.07	165.06	0.00	0.00	0.00	0.00	0.00	0.18	-0.43	66.81	2.46	-0.09
	14	10.05	178.84	0.00	0.00	0.00	0.00	0.01	0.13	-0.49	66.53	-6.62	0.11
	15	10.05	0.07	0.00	0.00	0.00	0.00	0.10	-0.02	-0.06	-5.03	0.35	0.00
R352	2	0.03	0.07	0.01	2.50	0.01	0.00	-0.03	0.00	0.01	0.21	-0.03	-0.01
	3	0.05	15.10	0.01	2.92	0.01	0.00	0.02	0.01	-0.04	11.31	10.21	0.13
	4	0.05	30.05	0.01	2.61	0.01	0.00	0.02	0.09	-0.09	17.18	18.02	0.57
	5	0.05	45.10	0.01	2.13	0.01	0.00	0.08	0.11	-0.07	23.40	22.12	0.93
	6	0.05	60.04	0.01	2.72	0.01	0.00	0.02	0.05	-0.07	28.35	26.42	1.06
	7	0.05	75.08	0.01	2.82	0.01	0.00	0.09	-0.09	0.00	36.05	25.36	0.63
	8	0.05	90.14	0.01	2.13	0.01	0.00	0.22	-0.09	0.07	42.93	19.57	-0.04
	9	0.06	105.07	0.00	0.00	0.00	0.00	0.12	-0.07	0.09	46.84	17.50	-0.53
	10	0.05	120.11	0.00	0.00	0.00	0.00	0.32	0.01	-0.01	53.28	15.06	-1.11
	11	0.05	135.16	0.00	0.00	0.00	0.00	0.22	0.10	-0.13	57.97	10.73	-1.01
	12	0.04	150.10	0.00	0.00	0.00	0.00	0.22	0.13	-0.28	61.25	5.63	-0.57
	13	0.05	165.13	0.00	0.00	0.00	0.00	0.12	0.10	-0.31	63.72	-0.70	-0.23
	14	0.05	178.84	0.00	0.00	0.00	0.00	0.02	0.06	-0.40	63.94	-7.68	0.05
	15	0.06	0.07	0.01	3.29	0.01	0.00	0.12	-0.08	0.00	-0.22	-1.01	0.01

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R353	2	0.05	0.07	0.01	2.13	0.01	0.00	0.00	0.00	0.01	0.03	-0.05	-0.02
	3	-9.95	0.07	0.00	1.31	0.01	0.00	0.00	-0.01	0.02	6.93	-0.09	-0.07
	4	-9.94	15.01	0.01	2.50	0.01	0.00	-0.10	0.04	-0.11	18.77	9.64	0.09
	5	-9.96	30.05	0.00	1.99	0.01	0.00	-0.10	0.11	-0.09	24.10	14.50	0.55
	6	-9.95	45.01	0.01	2.61	0.01	0.00	-0.10	0.11	-0.06	28.70	18.35	1.00
	7	-9.95	60.13	0.00	1.07	0.00	0.00	0.00	0.10	-0.04	32.21	20.73	0.92
	8	-9.94	75.08	0.00	0.00	0.00	0.00	-0.06	-0.01	0.01	38.04	19.65	0.57
	9	-9.96	90.14	0.00	0.75	0.00	0.00	0.20	0.00	0.13	43.14	12.74	-0.16
	10	-9.94	105.07	0.00	1.99	0.01	0.00	0.10	0.03	0.05	45.28	11.70	-0.58
	11	-9.96	120.11	0.00	1.31	0.01	0.00	0.20	0.10	-0.01	50.03	9.75	-1.12
	12	-9.96	135.16	0.00	1.51	0.01	0.00	0.23	0.19	-0.13	52.94	6.87	-1.02
	13	-9.95	150.10	0.00	0.00	0.00	0.00	0.00	0.21	-0.29	55.71	3.15	-0.52
	14	-9.95	165.13	0.00	0.00	0.00	0.00	0.00	0.18	-0.34	57.62	-1.07	-0.22
	15	-9.95	178.84	0.01	2.38	0.01	0.00	-0.10	0.16	-0.41	57.17	-5.63	0.11
	16	-9.95	-0.01	0.01	3.01	0.01	0.00	-0.10	-0.02	0.02	8.74	-0.12	-0.10
R354	2	0.00	-0.01	0.00	2.05	0.01	0.00	0.00	0.01	0.00	-0.05	0.04	0.02
	3	-4.99	-0.01	0.00	1.83	0.01	0.00	0.10	0.00	0.01	4.01	-0.07	-0.07
	4	-4.99	15.01	0.01	2.46	0.01	0.00	0.00	0.03	-0.01	14.21	9.55	0.08
	5	-5.00	30.05	0.01	2.43	0.01	0.00	0.13	0.10	-0.03	19.57	16.03	0.53
	6	-5.01	45.01	0.00	1.62	0.01	0.00	0.09	0.12	-0.08	25.18	20.42	1.09
	7	-5.00	60.04	0.00	1.10	0.00	0.00	0.02	0.08	-0.03	29.43	23.29	1.06
	8	-5.00	75.08	0.00	1.03	0.00	0.00	0.00	0.00	0.01	36.21	22.46	0.64
	9	-5.00	90.13	0.00	0.00	0.00	0.00	0.09	-0.03	0.12	42.75	16.76	-0.10
	10	-5.00	105.07	0.00	0.00	0.00	0.00	0.15	0.02	0.09	45.27	14.65	-0.55
	11	-5.00	120.11	0.00	1.38	0.01	0.00	0.20	0.09	0.08	50.65	12.03	-1.12
	12	-5.00	135.16	0.00	0.00	0.00	0.00	0.20	0.17	-0.09	54.81	9.01	-0.97
	13	-4.99	150.18	0.00	0.00	0.00	0.00	0.20	0.21	-0.21	57.44	4.23	-0.52
	14	-4.99	165.14	0.00	0.00	0.00	0.00	0.00	0.18	-0.29	59.95	-0.34	-0.13
	15	-5.00	178.84	0.00	0.00	0.00	0.00	-0.07	0.13	-0.39	59.66	-6.60	0.05
	16	-4.99	-0.01	0.00	0.59	0.00	0.00	0.00	-0.05	0.01	3.73	-0.07	-0.08

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R355	2	0.04	-0.01	0.01	2.26	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	3	5.05	-0.01	0.01	2.61	0.01	0.00	0.00	0.01	0.00	-3.51	-0.01	-0.01
	4	5.04	15.01	0.00	0.75	0.00	0.00	0.00	0.05	-0.03	7.76	11.20	0.20
	5	5.06	30.05	0.01	3.11	0.01	0.00	0.00	0.11	-0.03	14.34	19.20	0.65
	6	5.05	45.01	0.01	3.20	0.01	0.00	-0.10	0.12	-0.07	20.59	26.41	1.02
	7	5.05	60.04	0.01	2.72	0.01	0.00	0.10	0.12	-0.07	25.76	29.90	1.08
	8	5.04	75.08	0.01	2.13	0.01	0.00	0.00	0.00	0.01	34.52	28.92	0.65
	9	5.06	90.14	0.00	0.00	0.00	0.00	0.01	-0.02	0.10	42.67	23.45	-0.03
	10	5.05	105.07	0.00	0.00	0.00	0.00	0.18	0.03	0.08	47.00	21.46	-0.46
	11	5.05	120.11	0.00	0.00	0.00	0.00	0.20	0.10	0.03	54.06	18.34	-1.04
	12	5.05	135.16	0.00	0.00	0.00	0.00	0.10	0.20	-0.14	59.83	14.32	-0.92
	13	5.06	150.10	0.00	0.00	0.00	0.00	0.00	0.22	-0.23	63.74	7.80	-0.44
	14	5.06	165.08	0.00	0.00	0.00	0.00	0.00	0.19	-0.29	66.19	1.19	-0.12
	15	5.05	178.84	0.00	0.00	0.00	0.00	-0.10	0.14	-0.33	66.48	-7.09	0.19
	16	5.05	-0.01	0.01	2.13	0.01	0.00	0.00	-0.02	0.00	-3.34	-0.02	-0.02
R356	2	0.05	-0.01	0.01	2.61	0.01	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02
	3	10.06	-0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	-5.80	-0.08	-0.08
	4	10.05	15.10	0.00	0.00	0.00	0.00	0.00	0.04	-0.02	5.50	12.11	0.14
	5	10.04	30.05	0.00	0.00	0.00	0.00	0.00	0.11	0.00	12.59	20.48	0.58
	6	10.05	45.01	0.00	1.51	0.01	0.00	0.00	0.11	-0.05	18.92	27.29	1.01
	7	10.05	60.13	0.00	1.06	0.00	0.00	0.00	0.08	0.04	25.42	31.27	0.96
	8	10.05	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	33.91	30.97	0.65
	9	10.05	90.04	0.00	1.30	0.01	0.00	0.00	-0.01	0.11	42.64	26.36	-0.05
	10	10.05	105.07	0.00	0.00	0.00	0.00	0.10	0.02	0.09	47.60	23.50	-0.52
	11	10.07	120.11	0.00	1.51	0.01	0.00	0.10	0.09	0.09	55.84	19.99	-1.14
	12	10.05	135.16	0.00	0.00	0.00	0.00	0.10	0.17	-0.14	61.71	15.80	-0.96
	13	10.05	150.10	0.00	0.00	0.00	0.00	-0.09	0.20	-0.21	66.13	9.17	-0.53
	14	10.05	165.05	0.00	0.00	0.00	0.00	-0.10	0.17	-0.36	69.18	2.57	-0.13
	15	10.06	178.84	0.00	0.00	0.00	0.00	-0.10	0.13	-0.41	68.84	-6.66	0.04
	16	10.01	-0.01	0.00	1.50	0.01	0.00	-0.20	-0.04	0.00	-3.81	0.53	0.02

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R361	2	0.05	0.07	0.00	0.00	0.00	0.00	0.00	0.05	0.08	-0.28	-0.48	0.03
	3	0.04	15.01	0.00	0.00	0.00	0.00	0.07	0.05	-0.02	11.21	10.56	0.23
	4	0.02	30.05	0.00	1.30	0.01	0.00	0.10	0.12	-0.03	17.16	18.18	0.68
	5	0.04	45.01	0.00	0.00	0.00	0.00	0.00	0.14	-0.07	23.36	23.40	1.14
	6	0.04	60.05	0.00	0.00	0.00	0.00	0.00	0.10	-0.02	29.35	27.11	1.21
	7	0.05	75.09	0.00	0.00	0.00	0.00	0.00	-0.01	0.02	36.88	26.90	0.96
	8	0.05	90.14	0.00	0.00	0.00	0.00	0.02	-0.03	0.20	44.36	20.40	-0.09
	9	0.04	105.08	0.00	1.98	0.01	0.00	0.20	0.02	0.06	47.60	19.13	-0.27
	10	0.05	120.11	0.00	0.00	0.00	0.00	0.30	0.07	0.02	54.78	16.36	-0.97
	11	0.05	135.07	0.00	0.00	0.00	0.00	0.26	0.14	-0.14	59.62	12.01	-0.86
	12	0.05	150.10	0.00	0.00	0.00	0.00	0.17	0.16	-0.34	63.48	6.83	-0.53
	13	0.06	165.14	0.00	0.00	0.00	0.00	0.10	0.12	-0.38	66.03	0.67	-0.02
	14	0.05	178.84	0.00	0.00	0.00	0.00	-0.10	0.09	-0.50	66.18	-6.65	0.25
	15	0.04	-0.01	0.00	0.00	0.00	0.00	0.00	-0.06	-0.10	1.51	0.57	0.19
	16	0.04	-0.01	0.00	0.00	0.00	0.00	0.00	-0.05	-0.07	1.46	0.40	0.18
R366	2	0.04	-0.01	0.01	2.59	0.01	0.00	0.00	0.00	-0.03	0.00	0.17	0.00
	3	0.05	15.01	0.00	1.06	0.00	0.00	0.00	0.08	-0.06	11.60	11.84	0.15
	4	0.05	30.05	0.01	2.59	0.01	0.00	0.00	0.20	-0.06	17.83	20.84	0.57
	5	0.05	45.01	0.01	2.37	0.01	0.00	0.00	0.23	-0.07	23.99	26.40	1.08
	6	0.05	60.04	0.01	2.24	0.01	0.00	-0.10	0.24	-0.02	30.22	31.10	1.07
	7	0.05	75.09	0.00	1.84	0.01	0.00	0.00	0.16	0.05	38.18	30.70	0.68
	8	0.05	90.14	0.01	2.37	0.01	0.00	-0.10	0.18	0.14	46.68	25.21	-0.05
	9	0.05	105.08	0.01	2.70	0.01	0.00	0.01	0.27	0.04	50.80	23.20	-0.51
	10	0.06	120.11	0.00	1.06	0.00	0.00	0.10	0.34	-0.01	58.43	20.07	-1.09
	11	0.06	135.07	0.01	2.48	0.01	0.00	0.10	0.46	-0.21	64.05	15.69	-0.96
	12	0.05	150.10	0.00	0.00	0.00	0.00	0.10	0.47	-0.36	68.04	10.07	-0.48
	13	0.05	165.14	0.01	2.99	0.01	0.00	-0.20	0.44	-0.51	71.67	3.45	-0.03
	14	0.06	178.84	0.00	0.00	0.00	0.00	-0.20	0.38	-0.56	71.44	-4.76	0.19
	15	0.04	-0.01	0.01	3.26	0.01	0.00	-0.10	-0.05	0.02	2.00	-0.09	-0.01

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R367	2	0.05	-0.01	0.00	0.75	0.00	0.00	-0.04	0.00	-0.01	0.21	0.03	0.03
	3	0.05	15.01	0.00	1.06	0.00	0.00	0.00	0.12	-0.11	10.24	12.16	0.22
	4	0.05	30.05	0.00	0.00	0.00	0.00	0.00	0.22	-0.11	16.57	21.13	0.61
	5	0.04	45.01	0.00	0.00	0.00	0.00	-0.10	0.26	-0.07	22.65	26.92	1.04
	6	0.06	60.13	0.00	0.00	0.00	0.00	-0.01	0.26	-0.08	28.41	31.42	1.09
	7	0.05	75.09	0.00	0.00	0.00	0.00	-0.01	0.22	-0.01	36.68	31.08	0.68
	8	0.05	90.14	0.00	1.83	0.01	0.00	-0.10	0.27	0.04	45.05	25.78	-0.14
	9	0.05	105.08	0.00	0.00	0.00	0.00	0.10	0.27	-0.02	49.61	24.11	-0.49
	10	0.06	120.12	0.00	0.00	0.00	0.00	0.11	0.37	-0.07	57.12	20.47	-1.05
	11	0.06	135.07	0.00	0.00	0.00	0.00	0.00	0.47	-0.25	62.86	16.43	-0.91
	12	0.04	150.11	0.00	0.00	0.00	0.00	0.00	0.49	-0.42	67.35	10.41	-0.48
	13	0.06	165.14	0.00	0.00	0.00	0.00	-0.07	0.47	-0.48	70.18	3.79	-0.10
	14	0.05	178.84	0.00	0.00	0.00	0.00	-0.10	0.43	-0.56	70.02	-4.27	0.13
	15	0.04	-0.01	0.01	2.70	0.01	0.00	-0.01	-0.03	-0.02	0.22	0.14	-0.04
R368	2	0.05	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.02	-0.01	0.01
	3	0.04	15.01	0.01	3.17	0.01	0.00	-0.20	0.13	-0.04	10.18	12.76	0.12
	4	0.06	30.05	0.00	1.05	0.00	0.00	-0.20	0.24	-0.04	16.44	21.73	0.54
	5	0.05	45.01	0.01	2.36	0.01	0.00	-0.20	0.29	-0.05	22.51	28.31	1.07
	6	0.06	60.05	0.00	1.29	0.01	0.00	-0.20	0.28	0.02	28.87	32.36	1.08
	7	0.05	75.09	0.00	1.97	0.01	0.00	-0.30	0.22	0.13	37.30	32.25	0.65
	8	0.05	90.05	0.00	1.83	0.01	0.00	-0.17	0.24	0.17	45.77	26.88	-0.14
	9	0.05	105.08	0.00	0.00	0.00	0.00	-0.05	0.32	0.04	50.21	24.79	-0.52
	10	0.06	120.12	0.01	2.36	0.01	0.00	0.00	0.41	0.01	58.05	21.43	-1.07
	11	0.05	135.08	0.00	1.05	0.00	0.00	0.00	0.51	-0.19	63.78	17.08	-0.99
	12	0.06	150.11	0.00	0.00	0.00	0.00	-0.10	0.52	-0.31	68.31	11.26	-0.49
	13	0.06	165.14	0.00	0.00	0.00	0.00	-0.29	0.47	-0.43	71.47	4.50	-0.15
	14	0.05	178.84	0.00	0.75	0.00	0.00	-0.20	0.44	-0.57	71.06	-3.70	0.15
	15	0.06	0.08	0.00	1.67	0.01	0.00	-0.20	-0.01	0.04	0.06	0.75	-0.03

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R369	2	0.05	0.08	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.01	0.10	-0.02
	3	0.05	15.01	0.00	0.00	0.00	0.00	0.00	0.11	-0.04	10.85	12.22	0.06
	4	0.06	30.05	0.00	0.00	0.00	0.00	0.00	0.23	-0.02	16.50	20.61	0.53
	5	0.05	45.01	0.00	0.00	0.00	0.00	-0.10	0.27	-0.04	23.17	27.21	0.94
	6	0.06	60.05	0.00	0.00	0.00	0.00	0.00	0.27	0.01	28.95	31.46	0.98
	7	0.05	75.09	0.00	0.00	0.00	0.00	0.00	0.22	0.12	37.29	30.84	0.54
	8	0.05	90.14	0.00	0.00	0.00	0.00	-0.10	0.19	0.18	46.06	25.47	-0.19
	9	0.04	105.08	0.00	0.00	0.00	0.00	0.10	0.28	0.07	50.72	23.61	-0.60
	10	0.06	120.11	0.00	0.00	0.00	0.00	0.13	0.37	-0.01	58.25	20.21	-1.22
	11	0.06	135.07	0.00	0.00	0.00	0.00	0.10	0.49	-0.16	63.91	16.44	-1.02
	12	0.05	150.10	0.00	0.00	0.00	0.00	0.00	0.49	-0.29	68.49	9.69	-0.60
	13	0.05	165.14	0.00	0.00	0.00	0.00	-0.10	0.46	-0.45	71.54	3.59	-0.24
	14	0.05	178.84	0.00	0.00	0.00	0.00	-0.20	0.41	-0.53	71.25	-4.93	0.01
	15	0.05	0.08	0.00	0.00	0.00	0.00	0.00	-0.02	0.09	0.68	-0.01	-0.18
R370	2	0.00	0.08	0.00	1.19	0.01	0.00	0.00	0.00	0.00	0.02	0.03	0.03
	3	-0.01	15.01	0.00	1.54	0.01	0.00	0.10	0.12	-0.04	9.65	9.72	0.23
	4	0.01	30.06	0.01	2.07	0.01	0.00	0.10	0.22	-0.09	15.96	21.02	0.55
	5	0.00	45.01	0.00	1.95	0.01	0.00	0.00	0.27	-0.08	22.58	27.44	1.05
	6	0.01	60.05	0.00	1.87	0.01	0.00	0.00	0.27	-0.06	28.90	31.87	0.99
	7	0.00	75.09	0.00	0.00	0.00	0.00	-0.10	0.20	0.00	37.36	31.99	0.59
	8	0.00	90.05	0.00	1.58	0.01	0.00	0.00	0.22	0.09	45.87	26.47	-0.10
	9	0.00	105.08	0.00	0.00	0.00	0.00	0.10	0.29	-0.02	50.09	24.62	-0.47
	10	0.01	120.11	0.00	0.00	0.00	0.00	0.10	0.38	-0.01	58.17	21.07	-1.13
	11	0.00	135.07	0.00	0.00	0.00	0.00	0.06	0.47	-0.20	64.57	16.96	-0.98
	12	0.01	150.10	0.00	0.00	0.00	0.00	0.10	0.50	-0.43	68.41	10.95	-0.45
	13	0.01	165.14	0.00	0.00	0.00	0.00	0.00	0.47	-0.46	71.50	4.13	-0.26
	14	0.00	178.84	0.00	0.00	0.00	0.00	-0.12	0.42	-0.61	71.75	-4.36	0.07
	15	0.00	0.08	0.01	2.10	0.01	0.00	0.10	-0.03	0.00	0.16	0.52	-0.05

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R376	2	-0.01	0.08	0.00	0.00	0.00	0.00	-0.03	0.00	0.00	-0.01	-0.18	-0.01
	3	-0.01	-179.97	0.01	3.03	0.01	0.00	-0.07	1.28	-0.34	78.32	-4.94	0.22
	4	0.00	-165.08	0.01	3.14	0.01	0.00	-2.17	1.27	-1.35	66.87	-7.67	0.99
	5	0.00	-150.05	0.00	0.55	0.00	0.00	-2.17	0.93	-1.72	65.39	-11.51	1.44
	6	-0.01	-135.10	0.00	1.89	0.01	0.00	-1.61	0.56	-1.72	61.20	-16.16	1.89
	7	0.00	-120.06	0.00	0.00	0.00	0.00	-0.98	0.27	-1.41	54.79	-21.75	1.85
	8	0.00	-105.03	0.00	1.36	0.01	0.00	-0.37	-0.01	-1.02	46.65	-27.53	1.28
	9	0.00	-89.98	0.00	0.00	0.00	0.00	-0.37	-0.22	-0.68	38.61	-30.45	0.48
	10	-0.01	-75.04	0.00	0.00	0.00	0.00	-0.07	-0.19	-0.35	27.53	-30.38	-0.33
	11	0.00	-60.00	0.00	0.00	0.00	0.00	0.03	-0.14	-0.19	20.91	-26.28	-0.70
	12	0.01	-45.04	0.00	1.02	0.00	0.00	-0.07	-0.05	-0.17	15.22	-21.39	-0.77
	13	0.00	-30.01	0.01	2.68	0.01	0.00	0.03	-0.05	-0.11	11.81	-15.22	-0.52
	14	0.00	-14.96	0.00	0.00	0.00	0.00	0.03	0.01	-0.05	8.02	-7.61	-0.23
	15	0.00	0.08	0.00	0.00	0.00	0.00	-0.07	0.13	0.01	7.90	2.06	-0.12
	16	-0.01	15.01	0.00	0.00	0.00	0.00	-0.07	0.18	-0.01	9.86	12.19	-0.01
	17	0.01	30.06	0.00	0.00	0.00	0.00	0.03	0.25	-0.06	16.39	21.00	0.40
	18	0.00	45.01	0.00	0.00	0.00	0.00	-0.07	0.31	-0.04	22.38	27.84	1.01
	19	-0.01	60.05	0.00	0.00	0.00	0.00	0.01	0.26	0.05	29.58	31.95	0.91
	20	0.00	75.09	0.00	0.00	0.00	0.00	-0.07	0.22	0.11	38.40	32.48	0.53
	21	0.00	90.05	0.00	0.00	0.00	0.00	0.03	0.23	0.16	46.96	27.18	-0.17
	22	0.00	105.08	0.00	0.00	0.00	0.00	-0.06	0.31	0.09	52.25	25.16	-0.55
	23	0.00	120.12	0.00	0.00	0.00	0.00	0.14	0.42	0.09	60.29	21.54	-1.20
	24	0.00	135.08	0.00	0.00	0.00	0.00	0.03	0.51	-0.12	66.68	17.35	-1.06
	25	0.01	150.11	0.00	0.00	0.00	0.00	0.03	0.55	-0.29	71.01	10.30	-0.59
	26	0.01	165.15	0.00	0.00	0.00	0.00	-0.11	0.53	-0.56	74.59	4.20	-0.81
	27	0.01	178.84	0.00	0.00	0.00	0.00	-0.17	0.49	-0.52	74.81	-5.41	0.15
	28	0.00	0.08	0.00	0.00	0.00	0.00	0.03	-0.06	0.03	0.37	-0.05	-0.18

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R377	2	0.00	0.08	0.01	2.35	0.01	0.00	0.01	0.03	0.01	-0.16	-0.09	0.01
	3	10.01	0.08	0.00	0.00	0.00	0.00	-0.07	0.03	0.00	-5.92	-0.32	-0.02
	4	10.00	15.01	0.00	0.00	0.00	0.00	-0.10	0.12	0.00	4.51	13.03	0.16
	5	9.99	30.05	0.00	0.00	0.00	0.00	0.01	0.24	-0.02	11.26	23.17	0.61
	6	9.99	45.02	0.00	0.00	0.00	0.00	0.00	0.30	-0.03	18.38	31.67	1.10
	7	10.00	60.05	0.00	0.00	0.00	0.00	-0.10	0.30	0.01	26.44	36.93	1.09
	8	10.00	75.09	0.00	0.00	0.00	0.00	-0.10	0.23	0.09	36.61	38.00	0.68
	9	10.01	90.14	0.00	1.29	0.01	0.00	-0.10	0.26	0.18	46.80	32.47	-0.03
	10	9.99	105.08	0.00	1.43	0.01	0.00	0.00	0.36	0.15	53.69	29.65	-0.41
	11	10.01	120.12	0.00	0.00	0.00	0.00	0.10	0.44	0.04	63.03	26.28	-1.04
	12	10.00	135.17	0.00	0.00	0.00	0.00	0.00	0.56	-0.12	70.41	20.71	-0.88
	13	10.00	150.11	0.00	0.00	0.00	0.00	-0.10	0.59	-0.26	75.99	12.97	-0.45
	14	10.01	165.14	0.00	0.00	0.00	0.00	-0.10	0.54	-0.42	79.69	4.91	-0.14
	15	9.99	178.84	0.00	0.00	0.00	0.00	-0.20	0.54	-0.55	80.30	-5.32	0.25
	16	10.01	0.00	0.00	0.66	0.00	0.00	-0.10	0.00	-0.01	-5.73	-0.43	0.03
	2	0.04	0.08	0.01	2.39	0.01	0.00	0.01	0.03	0.01	-0.16	-0.10	0.01
	3	10.06	0.08	0.00	0.00	0.00	0.00	-0.07	0.03	0.00	-5.92	-0.33	-0.02
	4	10.05	15.01	0.00	0.00	0.00	0.00	-0.10	0.12	0.00	4.51	13.03	0.16
	5	10.04	30.05	0.00	0.00	0.00	0.00	0.01	0.24	-0.02	11.26	23.16	0.61
	6	10.04	45.02	0.00	0.00	0.00	0.00	0.00	0.30	-0.03	18.38	31.67	1.10
	7	10.05	60.05	0.00	0.00	0.00	0.00	-0.10	0.30	0.01	26.44	36.93	1.09
	8	10.05	75.09	0.00	0.00	0.00	0.00	-0.10	0.23	0.09	36.61	38.00	0.68
	9	10.06	90.14	0.00	1.31	0.01	0.00	-0.10	0.26	0.18	46.80	32.47	-0.03
	10	10.04	105.08	0.00	1.31	0.01	0.00	0.00	0.36	0.15	53.69	29.65	-0.41
	11	10.06	120.12	0.00	0.00	0.00	0.00	0.10	0.44	0.04	63.03	26.28	-1.04
	12	10.05	135.17	0.00	0.00	0.00	0.00	0.00	0.56	-0.12	70.41	20.71	-0.88
	13	10.05	150.11	0.00	0.00	0.00	0.00	-0.10	0.59	-0.26	75.99	12.97	-0.45
	14	10.06	165.14	0.00	0.00	0.00	0.00	-0.10	0.54	-0.42	79.69	4.91	-0.14
	15	10.04	178.84	0.00	0.00	0.00	0.00	-0.20	0.54	-0.55	80.30	-5.32	0.25
	16	10.06	0.00	0.00	0.75	0.00	0.00	-0.10	0.00	-0.01	-5.73	-0.43	0.03

Table C-13: Weight Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R378	2	0.05	0.00	0.01	2.14	0.01	0.00	0.00	0.00	0.00	-0.02	0.01	0.02
	3	5.05	0.00	0.00	1.69	0.01	0.00	-0.10	0.02	0.00	-2.97	0.01	0.01
	4	5.04	15.02	0.01	2.13	0.01	0.00	-0.01	0.10	-0.03	7.49	13.22	0.18
	5	5.05	30.06	0.01	2.39	0.01	0.00	-0.10	0.22	0.00	14.28	23.00	0.57
	6	5.05	45.11	0.01	2.13	0.01	0.00	-0.10	0.26	-0.02	21.53	30.63	1.06
	7	5.05	60.04	0.01	2.82	0.01	0.00	-0.13	0.29	0.04	28.79	35.55	1.07
	8	5.05	75.09	0.00	2.00	0.01	0.00	-0.10	0.20	0.09	37.93	35.99	0.67
	9	5.05	90.07	0.00	1.51	0.01	0.00	-0.20	0.23	0.18	48.16	30.94	-0.05
	10	5.04	105.08	0.01	2.82	0.01	0.00	-0.07	0.31	0.10	54.36	28.85	-0.50
	11	5.06	120.12	0.00	0.75	0.00	0.00	0.00	0.41	-0.01	63.20	25.04	-1.08
	12	5.06	135.07	0.00	0.00	0.00	0.00	-0.10	0.51	-0.15	70.12	19.84	-0.92
	13	5.04	150.10	0.00	0.00	0.00	0.00	-0.19	0.54	-0.31	75.12	12.82	-0.52
	14	5.06	165.14	0.00	0.00	0.00	0.00	-0.30	0.50	-0.37	78.81	4.65	-0.18
	15	5.05	178.84	0.00	0.00	0.00	0.00	-0.30	0.49	-0.52	78.86	-4.49	0.13
	16	5.04	0.03	0.01	2.72	0.01	0.00	-0.10	-0.08	0.01	-1.83	0.44	-0.06
R383	2	-4.96	-0.01	0.00	0.00	0.00	0.00	-0.10	0.02	0.01	3.91	-0.05	0.10
	3	-4.96	15.01	0.00	0.00	0.00	0.00	-0.02	0.08	-0.05	15.63	11.20	0.18
	4	-4.94	30.06	0.01	2.38	0.01	0.00	-0.01	0.19	-0.06	21.36	19.81	0.75
	5	-4.95	45.01	0.00	1.84	0.01	0.00	-0.01	0.24	-0.07	27.35	25.45	1.40
	6	-4.96	60.05	0.00	0.00	0.00	0.00	-0.02	0.24	-0.06	33.71	29.75	1.35
	7	-4.95	75.09	0.00	0.00	0.00	0.00	-0.10	0.20	0.06	41.41	29.18	0.91
	8	-4.96	90.14	0.00	0.00	0.00	0.00	-0.10	0.21	0.09	49.38	24.01	0.30
	9	-4.95	105.08	0.00	0.00	0.00	0.00	0.00	0.32	0.04	53.40	21.80	-0.16
	10	-4.96	120.03	0.00	0.00	0.00	0.00	0.00	0.36	-0.01	61.18	19.07	-0.76
	11	-4.96	135.07	0.00	0.00	0.00	0.00	0.09	0.48	-0.21	66.25	14.76	-0.57
	12	-4.96	150.10	0.00	0.00	0.00	0.00	0.00	0.48	-0.37	70.26	9.65	-0.14
	13	-4.95	165.06	0.00	0.00	0.00	0.00	-0.05	0.46	-0.48	73.25	2.90	0.23
	14	-4.95	178.84	0.00	0.00	0.00	0.00	-0.15	0.46	-0.57	73.25	-4.96	0.51
	15	-4.96	0.06	0.00	1.30	0.01	0.00	-0.10	-0.07	0.00	5.56	0.02	0.36

Table C-13: Weight Tare Raw Data Table (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R384	2	-9.96	0.00	0.00	0.00	0.00	0.00	-0.08	0.00	-0.06	7.48	0.45	-0.02
	3	-9.96	15.01	0.00	0.00	0.00	0.00	-0.09	0.09	-0.08	17.90	11.01	0.16
	4	-9.96	30.05	0.00	0.00	0.00	0.00	-0.04	0.20	-0.06	23.03	18.14	0.53
	5	-9.97	45.01	0.00	0.00	0.00	0.00	-0.09	0.24	-0.07	28.51	22.94	1.02
	6	-9.94	60.05	0.00	0.00	0.00	0.00	-0.09	0.26	-0.02	33.57	26.19	0.94
	7	-9.96	75.09	0.00	0.00	0.00	0.00	-0.09	0.20	0.03	40.86	25.88	0.62
	8	-9.95	90.14	0.00	0.00	0.00	0.00	-0.09	0.22	0.13	47.64	20.29	-0.06
	9	-9.95	105.08	0.00	0.00	0.00	0.00	0.01	0.29	0.11	50.64	17.94	-0.47
	10	-9.95	120.11	0.00	0.00	0.00	0.00	0.11	0.37	0.01	57.11	16.01	-1.08
	11	-9.95	135.17	0.00	0.00	0.00	0.00	0.01	0.50	-0.12	62.09	12.27	-0.88
	12	-9.94	150.18	0.00	0.00	0.00	0.00	0.01	0.52	-0.28	65.47	7.16	-0.50
	13	-9.95	165.14	0.00	0.00	0.00	0.00	-0.19	0.51	-0.43	67.83	2.00	-0.01
	14	-9.95	178.84	0.00	0.00	0.00	0.00	-0.29	0.46	-0.60	68.11	-4.50	0.18
	15	-9.96	0.08	0.00	0.00	0.00	0.00	-0.16	-0.06	-0.01	8.40	0.24	0.00

APPENDIX D

AERODYNAMIC TARE DATA

Aero Tare

The aero tare data is subtracted from the raw data in order to account for the aerodynamic effects of the support struts and fairings on the model. This shift affects the forces and moments on both the full airframe models and wing-only models.

The aero tares are performed by taking wind-on data points on the struts and fairings inside the tunnel without the model. Coefficients for the known tare functions are then fitted to the data, and the functions are used to determine the values to be from each raw data point.

In airplane mode, the coefficients of the aero tare functions vary based on their yaw angle. In these cases, angle of attack and dynamic pressure are used as the independent variables. Equation D-1 provides the corrections for airplane mode.

$$force/moment = a_5 \cdot \alpha^2 + b_5 \cdot Q^2 + c_5 \cdot \alpha + d_5 \cdot Q + e_5 \cdot \alpha \cdot Q + f_5 \quad \text{(D-1)}$$

In helicopter mode, the coefficients of the aero tare functions vary based on their angle of attack and dynamic pressure. In these cases, yaw angle is used as the independent variable. Equation D-2 provides the corrections for helicopter mode.

$$force/moment = a_6 \cdot \beta^6 + b_6 \cdot \beta^5 + c_6 \cdot \beta^4 + d_6 \cdot \beta^3 + e_6 \cdot Q^2 + f_6 \cdot \beta + g_6 \cdot Q + h_6 \cdot Q \cdot sin(\beta)$$
$$+ i_6 \cdot Q \cdot cos(\beta) + j_6 \cdot Q \cdot sin(2 \cdot \beta) + k_6 \cdot Q \cdot cos(2 \cdot \beta) + l_6 \quad \text{(D-2)}$$

In wing-only mode, the coefficients of the aero tare functions vary based on their angle of attack and yaw. In these cases, dynamic pressure is used as the independent variable; Equation D-3 provides the corrections for helicopter mode.

$$force/moment = a_7 \cdot Q^2 + b_7 \cdot Q + c_7 \quad \text{(D-3)}$$

The calculated coefficients for the aero tare equations are provided in Table D-1 through Table D-3. Plots of the functions can be found in Figure D-1 through Figure D-35. The raw data collected for the weight tare runs is shown in Table D-4.

Table D-1: Airplane Mode Aero Tare Coefficients

R508 β = 0						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_5	0.00	-0.00	0.00	0.01	-0.00	-0.01
b_5	0.00	0.00	0.00	0.00	-0.00	-0.00
c_5	-0.02	-0.00	0.04	0.01	-0.07	-0.13
d_5	0.01	0.27	-0.02	-0.24	0.02	0.09
e_5	0.00	-0.01	-0.00	-0.00	0.00	0.00
f_5	0.03	0.03	-0.05	0.04	0.13	0.17
R517 β = 5						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_5	0.00	-0.00	0.00	0.01	-0.00	0.00
b_5	0.00	-0.00	0.00	-0.00	-0.00	-0.00
c_5	-0.00	0.00	0.07	-0.01	-0.10	-0.24
d_5	0.02	0.28	0.00	-0.25	0.04	-0.02
e_5	0.00	-0.01	-0.00	-0.00	0.00	0.01
f_5	0.23	0.22	0.68	-1.12	-1.59	-2.66
R520 β = 10						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_5	-0.00	-0.00	-0.00	0.02	0.01	0.01
b_5	0.00	-0.00	0.00	0.00	-0.00	-0.00
c_5	0.00	0.01	0.05	0.02	-0.09	-0.19
d_5	0.03	0.29	0.03	-0.31	0.02	-0.11
e_5	0.00	-0.01	-0.00	0.00	0.00	0.01
f_5	0.55	0.12	0.99	-2.62	-2.08	-3.70
R529 β = –5						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_5	0.00	-0.00	0.00	0.01	-0.00	-0.01
b_5	0.00	0.00	0.00	-0.00	-0.00	-0.00
c_5	-0.02	-0.01	0.12	0.04	-0.19	-0.39
d_5	0.01	0.26	-0.09	-0.20	0.12	0.27
e_5	0.00	-0.01	-0.00	-0.00	0.00	0.01
f_5	0.13	0.70	2.01	-1.15	-3.23	-4.55

Table D-2: Helicopter Mode Aero Tare Coefficients

R535 α = 0, *Q* = 0.3						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_6	2.04E-14	-9.61E-14	-1.17E-13	-1.02E-13	2.16E-13	1.28E-12
b_6	5.15E-13	-5.98E-12	2.76E-10	2.52E-10	-7.24E-10	-8.46E-11
c_6	-7.30E-10	3.88E-09	1.23E-08	2.05E-08	-1.86E-08	-3.57E-08
d_6	-1.82E-07	7.75E-07	-1.25E-05	-1.43E-05	3.16E-05	2.54E-06
e_6	2.61E-05	8.00E-04	3.68E-03	3.59E-03	-1.24E-02	-8.85E-03
f_6	4.00E-03	-1.63E-02	1.06E-01	1.59E-01	-2.44E-01	-1.42E-02
g_6	3.57E-02	6.12E-01	-1.44E-01	-8.93E-01	4.60E-01	3.15E-01
h_6	-5.92E-04	2.40E-02	-1.03E-01	-2.80E-01	3.04E-01	-2.57E+00
i_6	-2.87E-02	7.33E-03	1.14E-01	1.75E-01	-1.29E-01	-1.42E-01
j_6	6.44E-02	1.62E-02	-1.04E-02	-2.11E-01	1.66E-01	3.68E-01
k_6	-6.86E-03	-2.31E-01	-5.36E-02	3.08E-01	8.07E-02	1.97E-02
m_6	2.46E-02	1.12E-01	-2.65E-01	3.56E+00	8.67E-01	-9.77E-02
R538A α = 0, *Q* = 0.45						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_6	2.04E-14	-9.61E-14	-1.17E-13	-1.02E-13	2.16E-13	1.28E-12
b_6	5.15E-13	-5.98E-12	2.76E-10	2.52E-10	-7.24E-10	-8.46E-11
c_6	-7.30E-10	3.88E-09	1.23E-08	2.05E-08	-1.86E-08	-3.57E-08
d_6	-1.82E-07	7.75E-07	-1.25E-05	-1.43E-05	3.16E-05	2.54E-06
e_6	2.61E-05	8.00E-04	3.68E-03	3.59E-03	-1.24E-02	-8.85E-03
f_6	4.00E-03	-1.63E-02	1.06E-01	1.59E-01	-2.44E-01	-1.42E-02
g_6	3.57E-02	6.12E-01	-1.44E-01	-8.93E-01	4.60E-01	3.15E-01
h_6	-5.92E-04	2.40E-02	-1.03E-01	-2.80E-01	3.04E-01	-2.57E+00
i_6	-2.87E-02	7.33E-03	1.14E-01	1.75E-01	-1.29E-01	-1.42E-01
j_6	6.44E-02	1.62E-02	-1.04E-02	-2.11E-01	1.66E-01	3.68E-01
k_6	-6.86E-03	-2.31E-01	-5.36E-02	3.08E-01	8.07E-02	1.97E-02
m_6	2.46E-02	1.12E-01	-2.65E-01	3.56E+00	8.67E-01	-9.77E-02

Table D-2: Helicopter Mode Aero Tare Coefficients (cont'd)

R544A α = 0, *Q* = 0.6						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_6	2.04E-14	-9.61E-14	-1.17E-13	-1.02E-13	2.16E-13	1.28E-12
b_6	5.15E-13	-5.98E-12	2.76E-10	2.52E-10	-7.24E-10	-8.46E-11
c_6	-7.30E-10	3.88E-09	1.23E-08	2.05E-08	-1.86E-08	-3.57E-08
d_6	-1.82E-07	7.75E-07	-1.25E-05	-1.43E-05	3.16E-05	2.54E-06
e_6	2.61E-05	8.00E-04	3.68E-03	3.59E-03	-1.24E-02	-8.85E-03
f_6	4.00E-03	-1.63E-02	1.06E-01	1.59E-01	-2.44E-01	-1.42E-02
g_6	3.57E-02	6.12E-01	-1.44E-01	-8.93E-01	4.60E-01	3.15E-01
h_6	-5.92E-04	2.40E-02	-1.03E-01	-2.80E-01	3.04E-01	-2.57E+00
i_6	-2.87E-02	7.33E-03	1.14E-01	1.75E-01	-1.29E-01	-1.42E-01
j_6	6.44E-02	1.62E-02	-1.04E-02	-2.11E-01	1.66E-01	3.68E-01
k_6	-6.86E-03	-2.31E-01	-5.36E-02	3.08E-01	8.07E-02	1.97E-02
m_6	2.46E-02	1.12E-01	-2.65E-01	3.56E+00	8.67E-01	-9.77E-02
R540C α = 10, *Q* = 0.6						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_6	7.80E-12	-3.26E-13	3.06E-11	-1.69E-12	-5.04E-11	1.71E-10
b_6	-3.11E-09	-4.08E-10	-1.24E-08	1.79E-09	2.02E-08	-7.50E-08
c_6	4.18E-07	1.26E-07	1.64E-06	-2.44E-07	-2.67E-06	1.12E-05
d_6	-2.06E-05	-6.88E-06	-7.17E-05	-7.28E-06	1.19E-04	-5.92E-04
e_6	1.33E-03	3.34E-03	-4.44E-03	2.15E-02	1.76E-02	-3.68E-02
f_6	3.35E-02	-3.28E-02	3.34E-02	1.90E-01	-4.41E-02	6.71E-01
g_6	-1.03E-01	7.70E-01	6.27E-01	-2.27E+00	-1.71E+00	1.64E+00
h_6	1.51E-01	-2.99E-01	-9.17E-01	4.40E-01	2.16E+00	-3.01E+00
i_6	2.23E-03	-2.00E-02	-1.30E-02	2.49E-02	-6.33E-02	1.45E-01
j_6	6.44E-02	1.62E-02	-1.04E-02	-2.11E-01	1.66E-01	3.68E-01
k_6	-6.86E-03	-2.31E-01	-5.36E-02	3.08E-01	8.07E-02	1.97E-02
m_6	2.46E-02	1.12E-01	-2.65E-01	3.56E+00	8.67E-01	-9.77E-02

Table D-2: Helicopter Mode Aero Tare Coefficients (cont'd)

R544C α = 10, *Q* = 0.6						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_6	2.52E-12	-1.63E-12	-1.91E-11	2.49E-11	5.61E-11	3.19E-11
b_6	-8.27E-10	-1.51E-10	1.00E-08	-1.16E-08	-2.94E-08	-1.05E-08
c_6	7.66E-08	1.72E-07	-1.77E-06	2.09E-06	5.21E-06	1.00E-06
d_6	-1.62E-06	-1.69E-05	1.09E-04	-1.58E-04	-3.26E-04	-2.46E-05
e_6	1.75E-03	3.42E-03	-4.49E-03	-2.74E-03	-8.71E-03	-1.28E-02
f_6	2.38E-03	9.16E-03	-1.35E-01	5.61E-01	4.52E-01	2.18E-02
g_6	-9.09E-02	7.00E-01	2.62E-01	-7.99E-01	2.70E-01	-5.88E-01
h_6	7.70E-02	-3.76E-01	-2.57E-01	-1.95E-01	5.90E-01	-4.55E-01
i_6	-5.44E-03	-2.41E-02	2.03E-03	2.87E-01	2.01E-02	2.18E-01
j_6	4.54E-02	3.26E-02	1.82E-01	-3.76E-01	-2.86E-01	5.10E-02
k_6	3.01E-02	-4.23E-01	-1.27E-01	4.67E-01	2.21E-01	9.61E-01
m_6	7.54E-01	1.30E+00	-2.91E-01	-5.69E+00	-7.77E+00	-6.87E+00
R540B α = –5, *Q* = 0.6						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_6	6.33E-12	-2.29E-13	2.81E-11	2.35E-12	-5.37E-11	1.37E-10
b_6	-2.42E-09	-4.54E-10	-1.17E-08	-7.35E-10	2.26E-08	-5.88E-08
c_6	3.06E-07	1.60E-07	1.66E-06	2.22E-07	-3.25E-06	8.51E-06
d_6	-1.38E-05	-1.32E-05	-8.34E-05	-3.47E-05	1.70E-04	-4.31E-04
e_6	2.09E-03	1.79E-03	4.76E-03	1.53E-02	-1.00E-02	-2.99E-02
f_6	1.89E-02	1.51E-02	9.07E-02	2.55E-01	-1.69E-01	3.33E-01
g_6	-1.38E-01	7.75E-01	2.25E-01	-1.78E+00	-5.79E-01	1.05E+00
h_6	1.54E-01	-2.76E-01	-7.84E-01	7.36E-02	1.95E+00	-2.28E+00
i_6	-3.71E-03	7.86E-03	3.07E-02	8.74E-02	-1.36E-01	2.55E-02
j_6	1.78E-02	-1.63E-04	1.30E-01	-1.44E-01	8.09E-03	3.51E-01
k_6	7.05E-02	-3.64E-01	-3.87E-01	3.36E-01	9.39E-01	1.88E-01
m_6	4.32E-01	4.88E-01	1.10E+00	8.00E+00	-1.77E+00	-1.40E+01

Table D-2: Helicopter Mode Aero Tare Coefficients (concluded)

R544B α = 5, *Q* = 0.6						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_6	3.23E-12	-1.07E-12	-1.01E-11	5.06E-12	2.69E-11	6.13E-11
b_6	-1.08E-09	-4.05E-10	5.94E-09	-2.45E-09	-1.57E-08	-2.40E-08
c_6	1.04E-07	2.10E-07	-1.14E-06	6.11E-07	3.01E-06	3.11E-06
d_6	-2.32E-06	-1.87E-05	7.64E-05	-7.08E-05	-2.01E-04	-1.41E-04
e_6	2.23E-03	6.83E-03	-4.93E-03	-1.33E-02	-7.02E-03	-3.48E-02
f_6	-8.36E-04	7.94E-03	-1.06E-01	4.51E-01	3.06E-01	1.40E-01
g_6	-1.37E-01	5.85E-01	3.47E-01	-1.99E-01	1.14E-02	5.15E-01
h_6	1.22E-01	-3.55E-01	-3.65E-01	-4.89E-01	9.12E-01	-9.76E-01
i_6	-7.33E-03	-1.72E-02	-2.03E-03	2.36E-01	1.32E-02	1.70E-01
j_6	4.35E-02	3.17E-02	1.99E-01	-3.34E-01	-2.86E-01	1.00E-01
k_6	5.07E-02	-4.23E-01	-1.78E-01	3.19E-01	3.73E-01	7.80E-01
m_6	1.05E+00	2.57E+00	-7.65E-01	-9.53E+00	-5.79E+00	-1.56E+01

Table D-3: Wing-Only Aero Tare Coefficients

R503 α = 0, β = 0						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_7	1.05E-05	4.86E-05	2.16E-05	-5.34E-05	-3.08E-05	-5.37E-06
b_7	1.95E-02	1.22E-01	-4.30E-03	-6.61E-02	1.35E-02	1.73E-02
c_7	-3.58E-02	6.04E-02	1.64E-02	2.61E-01	1.24E-01	-1.35E-02
R504 α = 0, β = 5						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_7	1.98E-05	5.10E-05	6.65E-05	-1.02E-04	-9.43E-05	-2.62E-05
b_7	1.93E-02	1.19E-01	6.83E-03	-5.40E-02	9.04E-03	2.16E-02
c_7	4.80E-02	2.28E-02	-2.97E-03	1.95E+00	2.36E-02	-9.60E-03
R506 α = 0, β = 10						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_7	2.53E-05	4.57E-05	-8.76E-05	-1.37E-04	9.43E-07	1.60E-05
b_7	2.05E-02	1.16E-01	3.27E-02	-4.09E-02	-3.26E-03	1.34E-02
c_7	-1.59E-02	2.76E-02	4.37E-02	1.50E+00	-1.15E+00	6.49E-02
R505 α = 0, β = -5						
	L	**D**	**SF**	**PM**	**RM**	**YM**
a_7	2.53E-05	4.57E-05	-8.76E-05	-1.37E-04	9.43E-07	1.60E-05
b_7	2.05E-02	1.16E-01	3.27E-02	-4.09E-02	-3.26E-03	1.34E-02
c_7	-1.59E-02	2.76E-02	4.37E-02	1.50E+00	-1.15E+00	6.49E-02

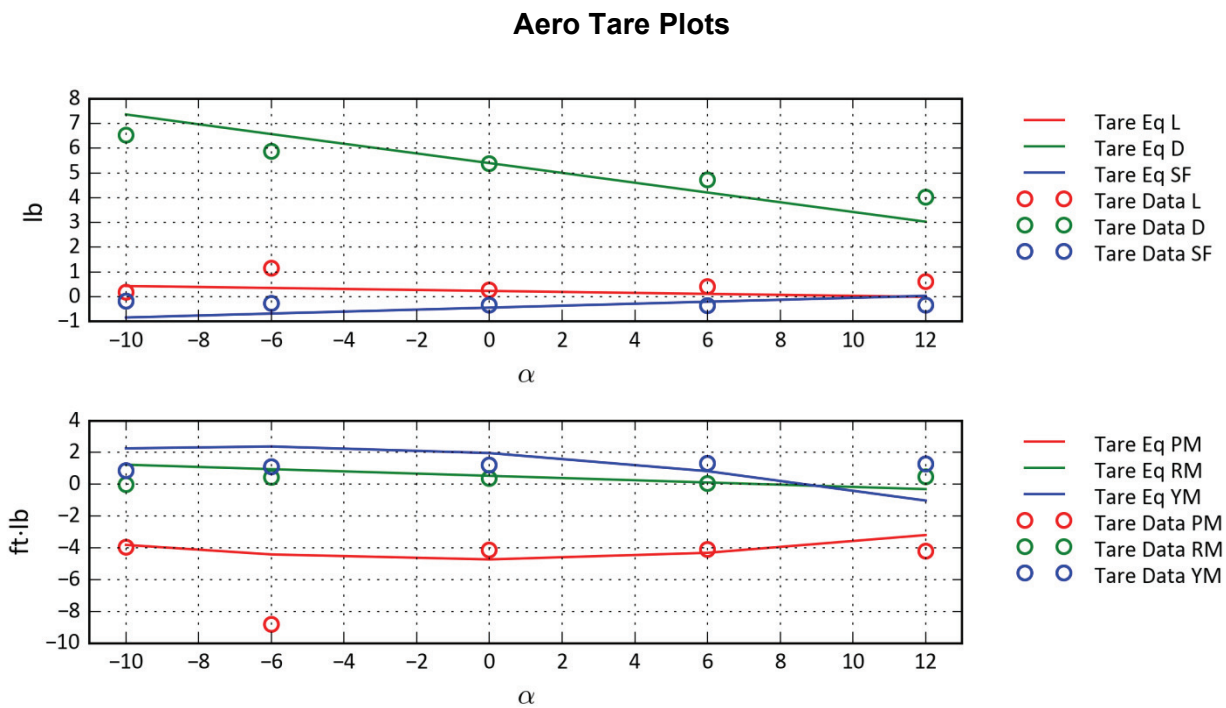

Figure D-1: Airplane Mode—R508 α = 0, Q = 20.

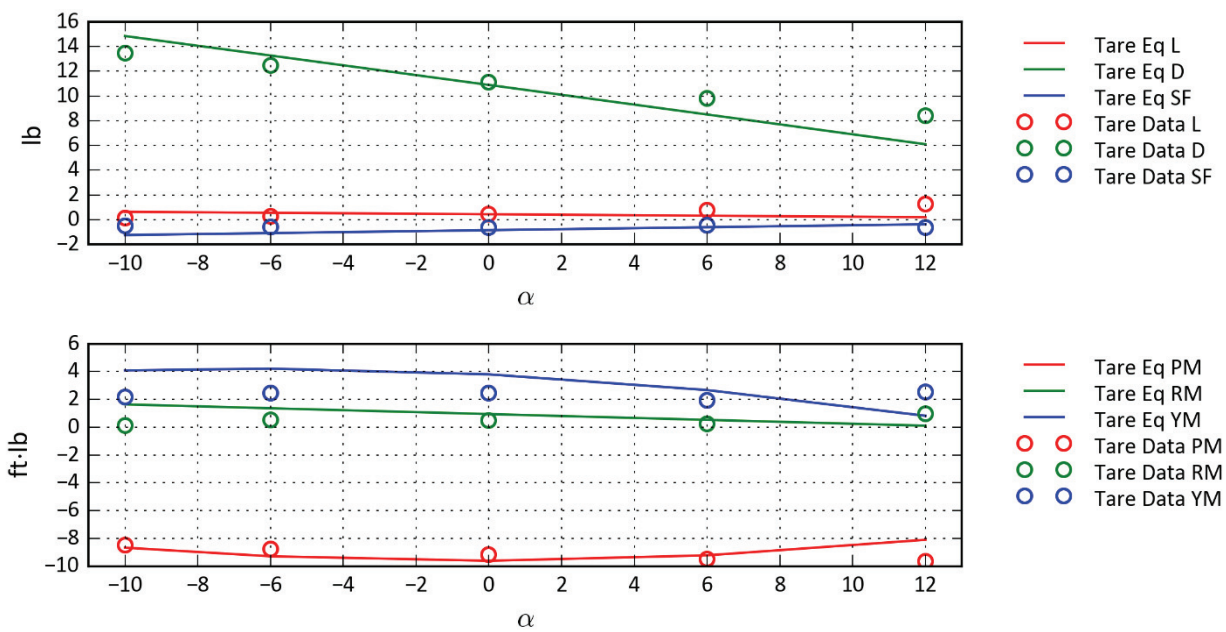

Figure D-2: Airplane Mode—R508 α = 0, Q = 40.

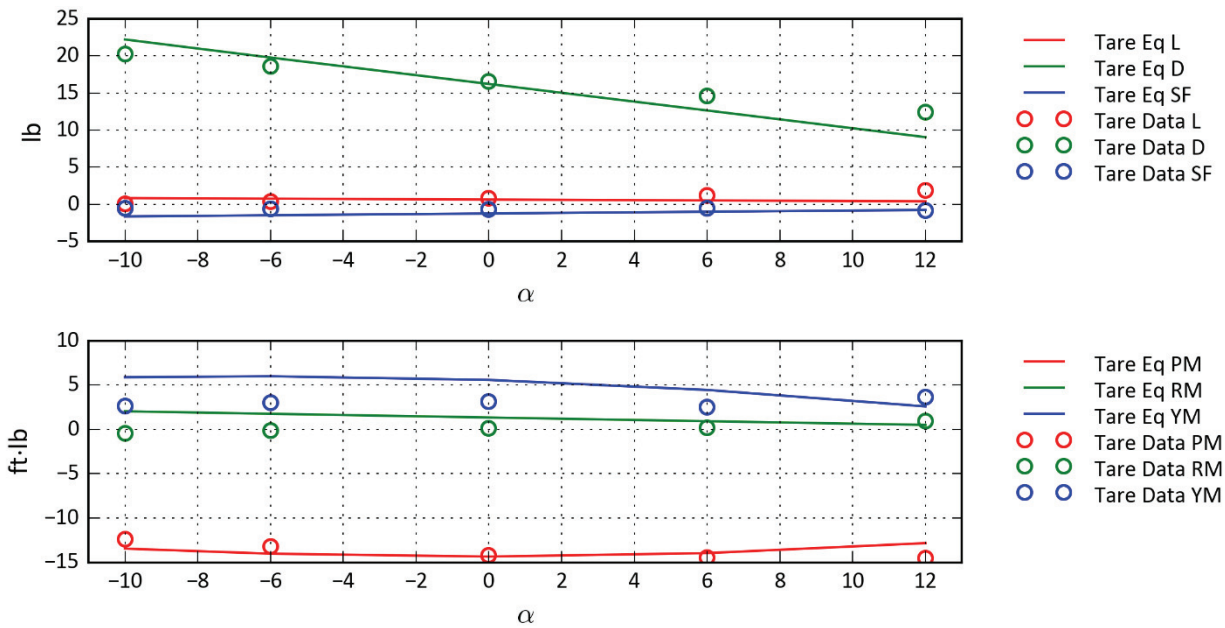

Figure D-3: Airplane Mode—R508 α = 0, Q = 60.

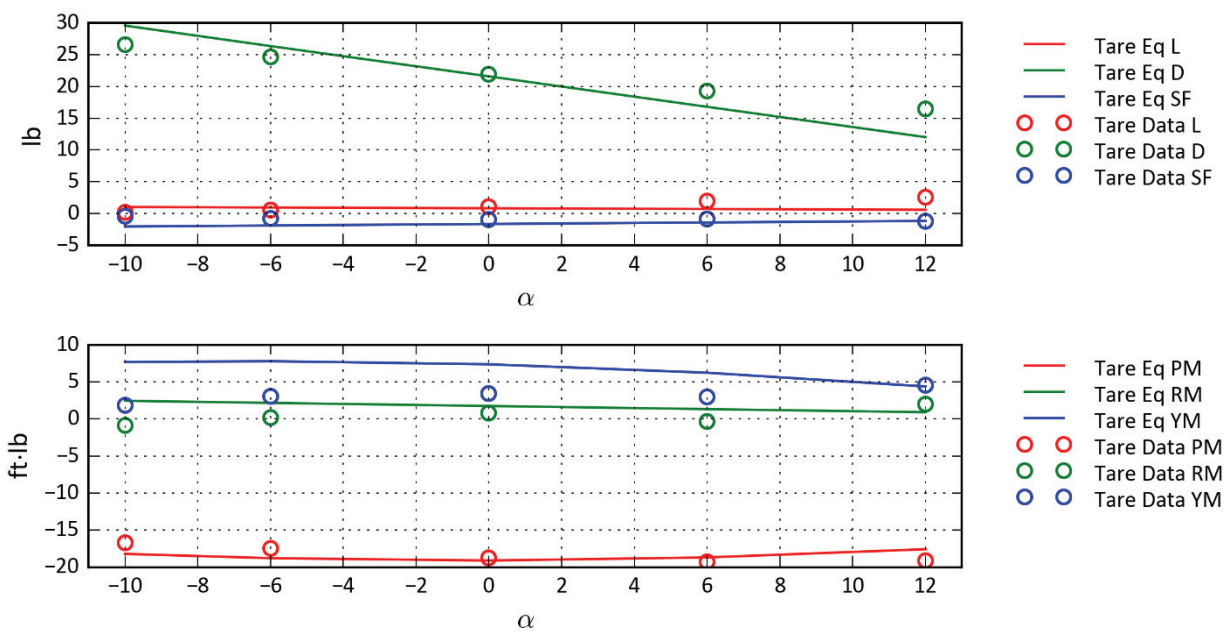

Figure D-4: Airplane Mode—R508 α = 0, Q = 80.

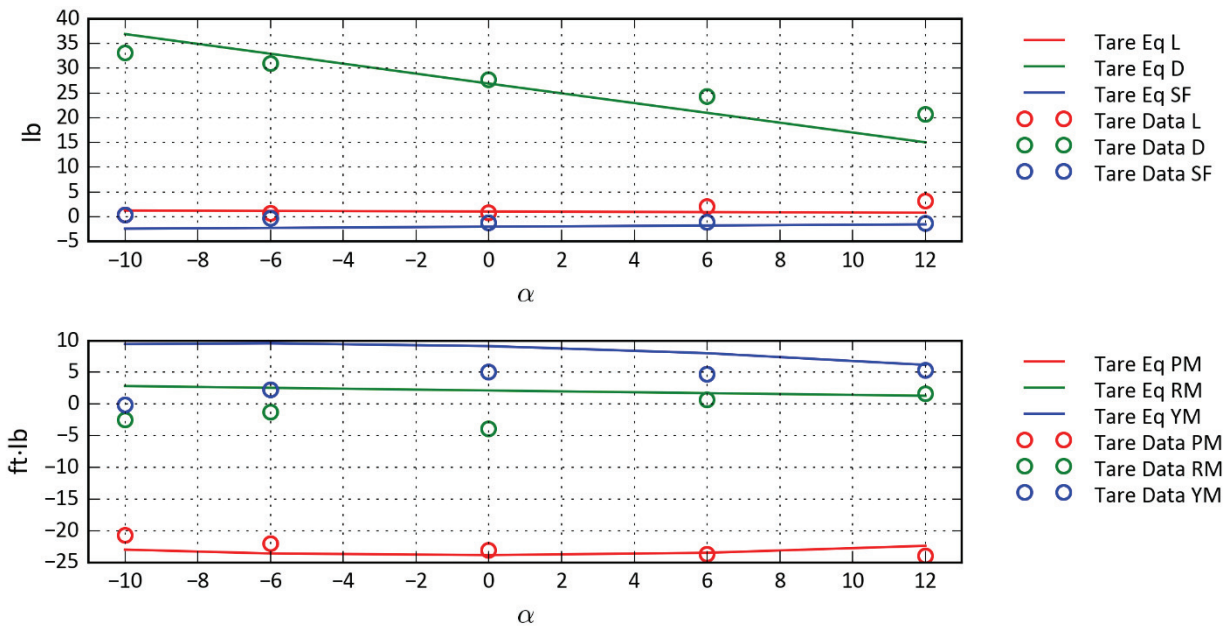

Figure D-5: Airplane Mode—R508 α = 0, Q = 100.

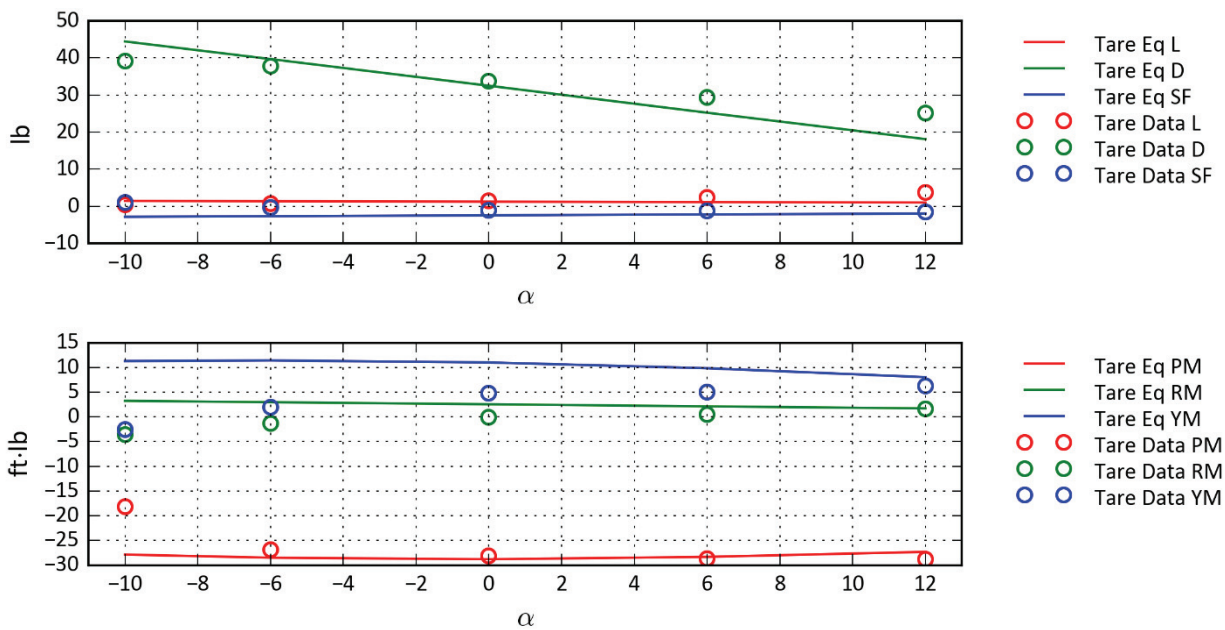

Figure D-6: Airplane Mode—R508 α = 0, Q = 120.

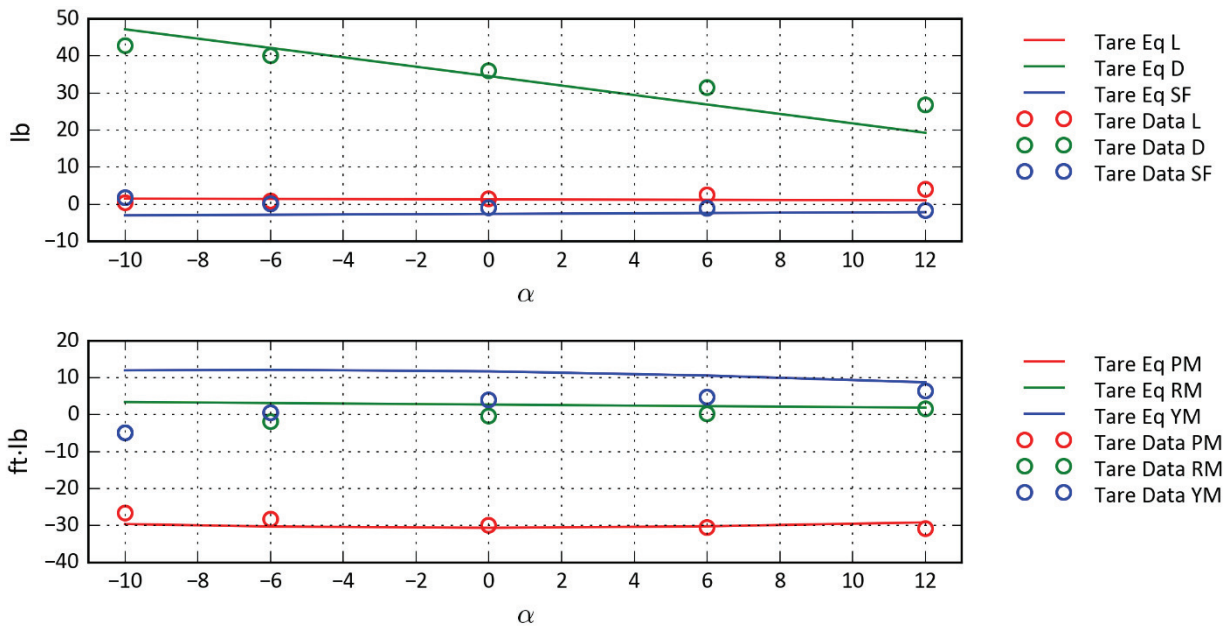

Figure D-7: Airplane Mode—R508 α = 0, Q = 130.

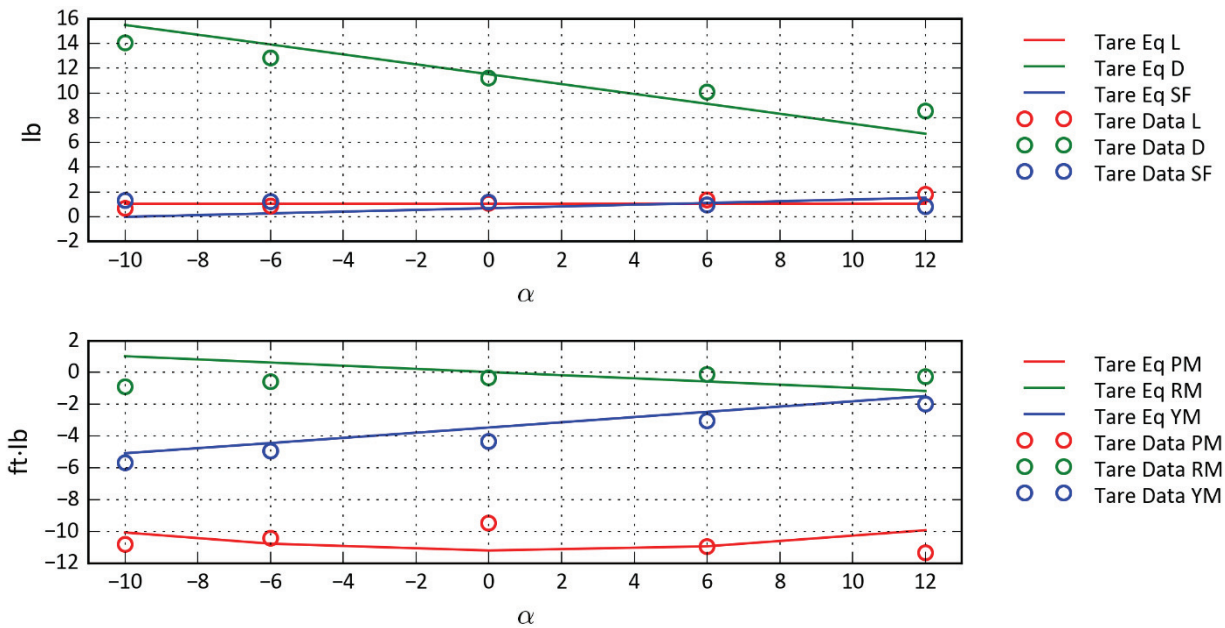

Figure D-8: Airplane Mode—R517 α = 5, Q = 40.

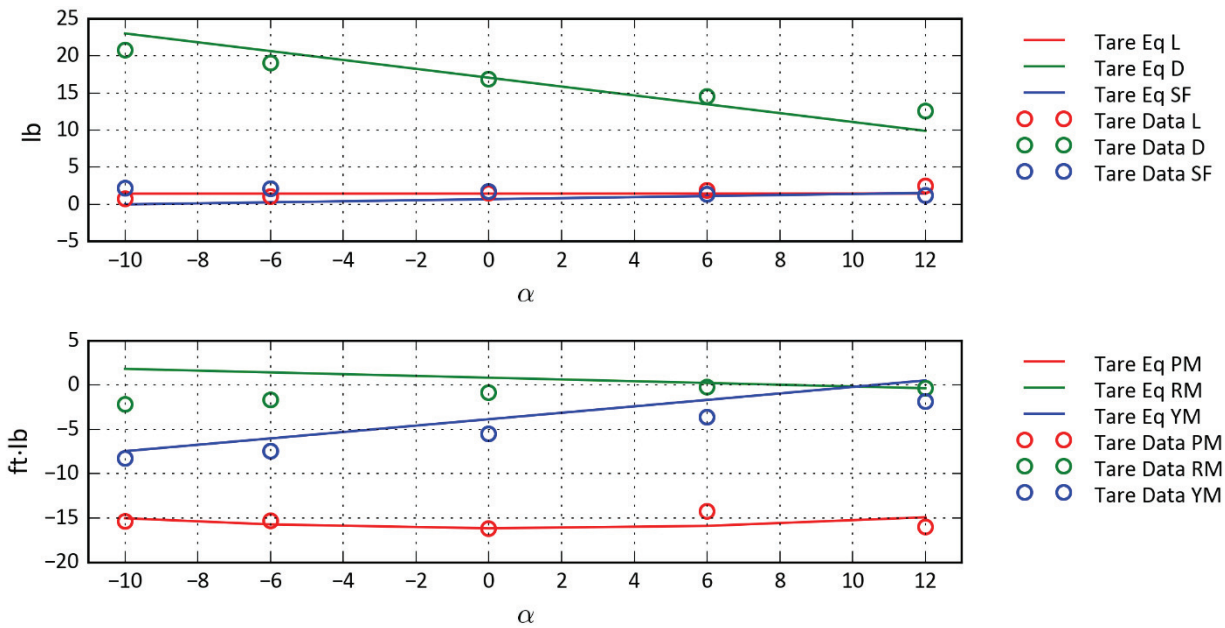

Figure D-9: Airplane Mode—R517 α = 5, Q = 60.

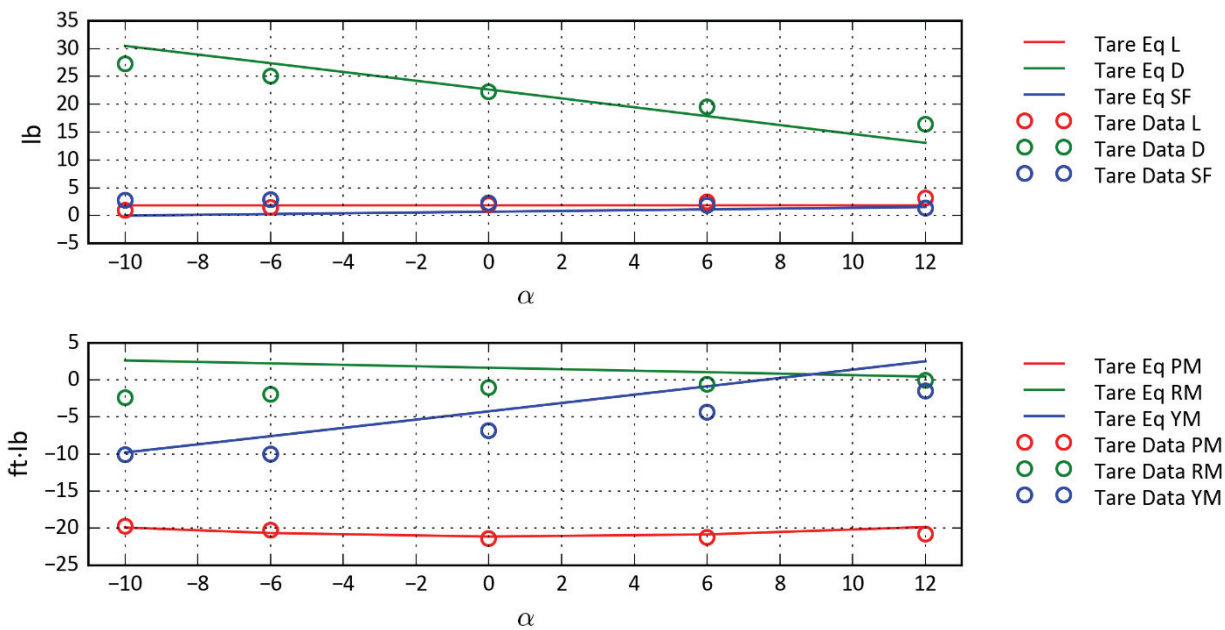

Figure D-10: Airplane Mode—R517 α = 5, Q = 80.

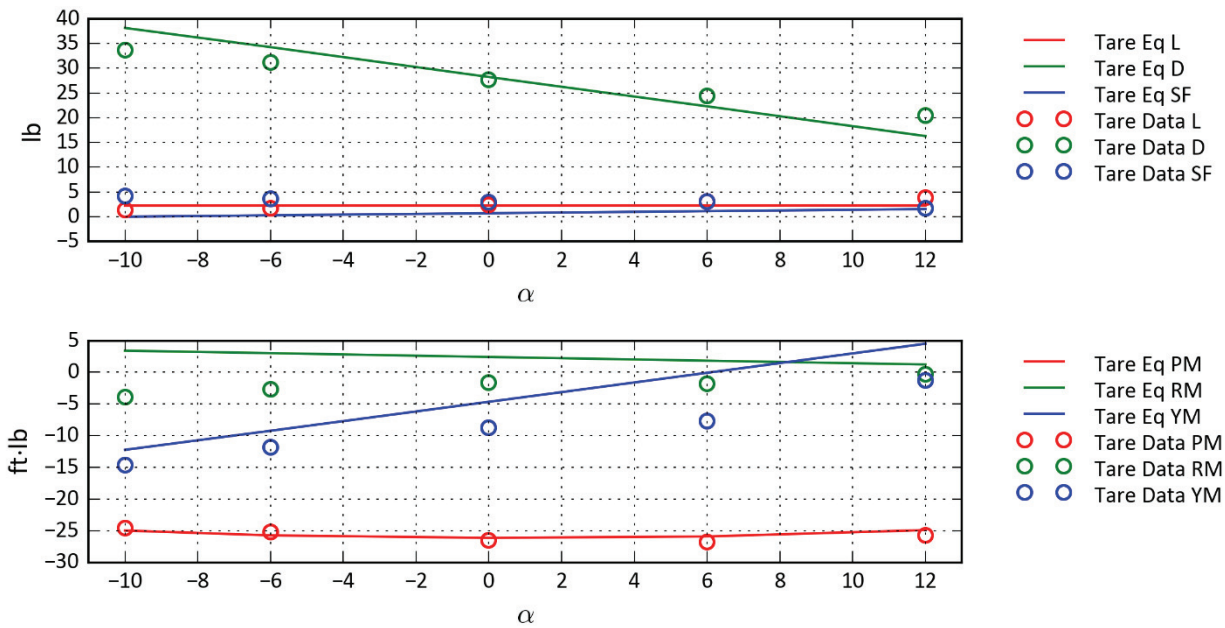

Figure D-11: Airplane Mode—R517 α = 5, Q = 100.

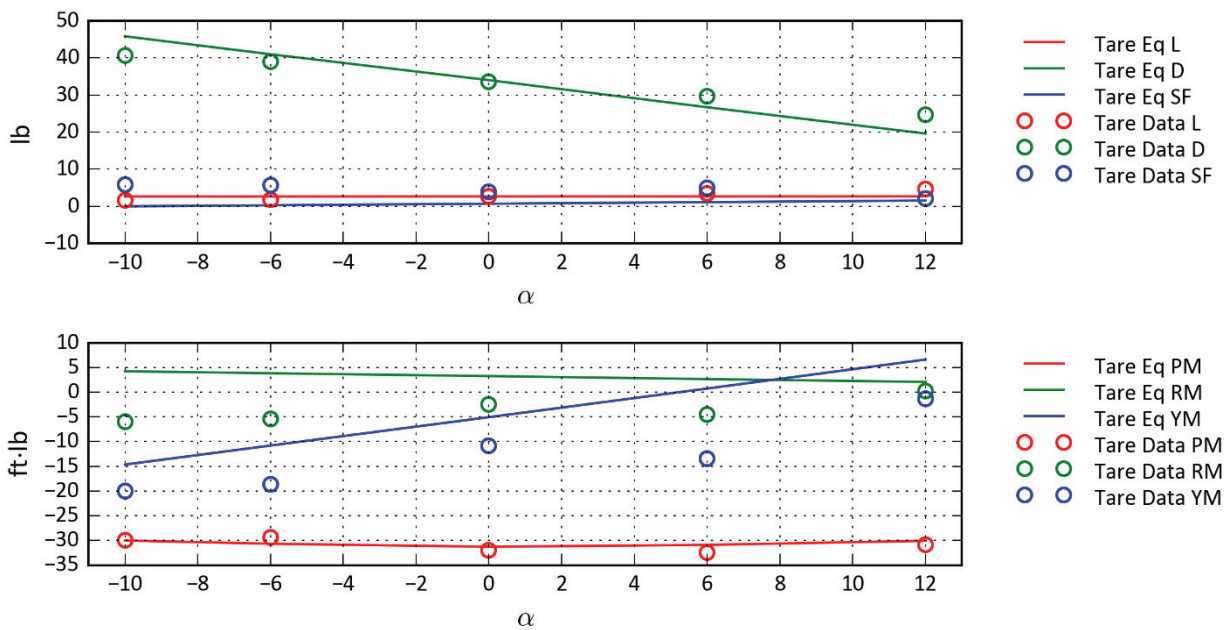

Figure D-12: Airplane Mode—R517 α = 5, Q = 120.

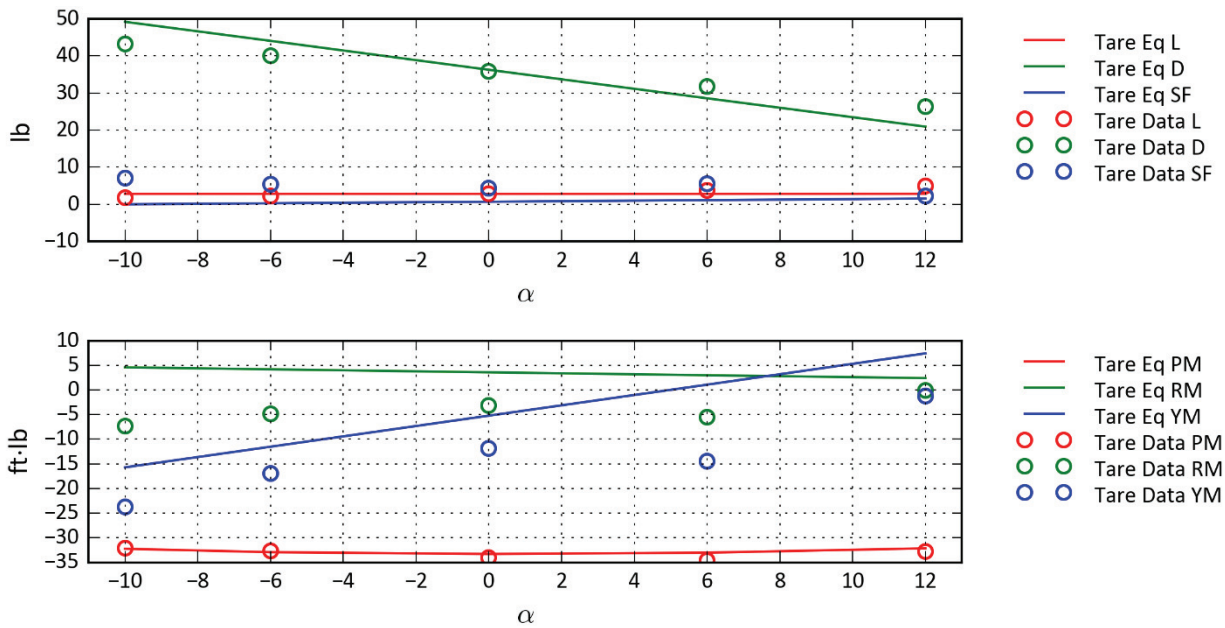

Figure D-13: Airplane Mode—R517 α = 5, Q = 130.

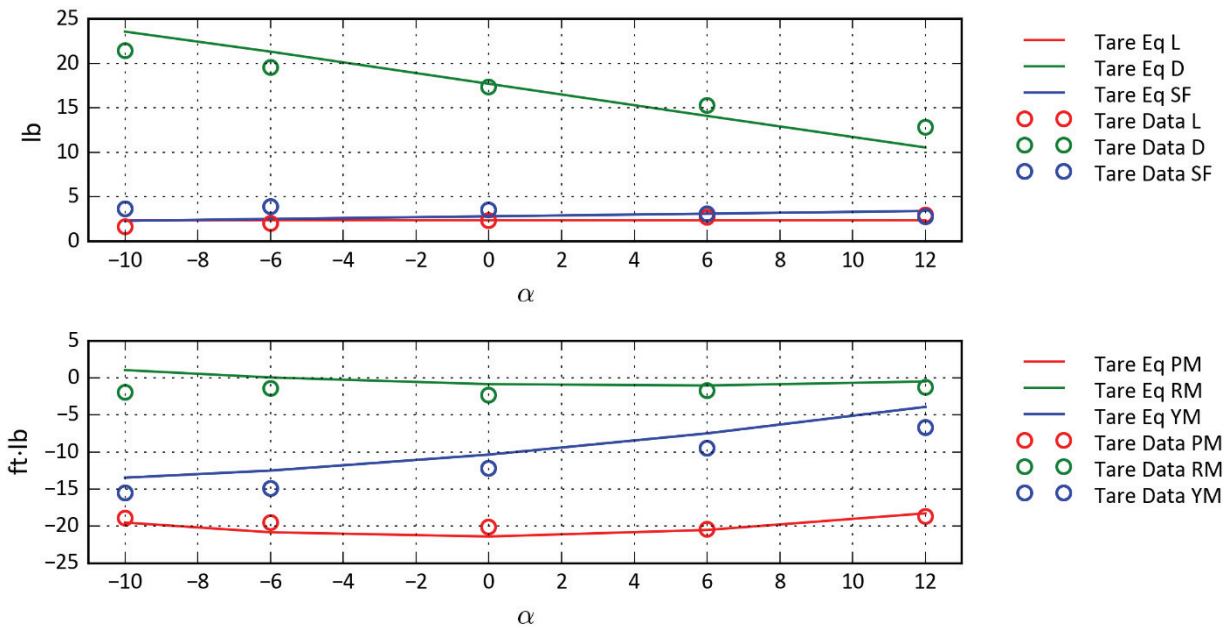

Figure D-14: Airplane Mode—R520 α = 10, Q = 60.

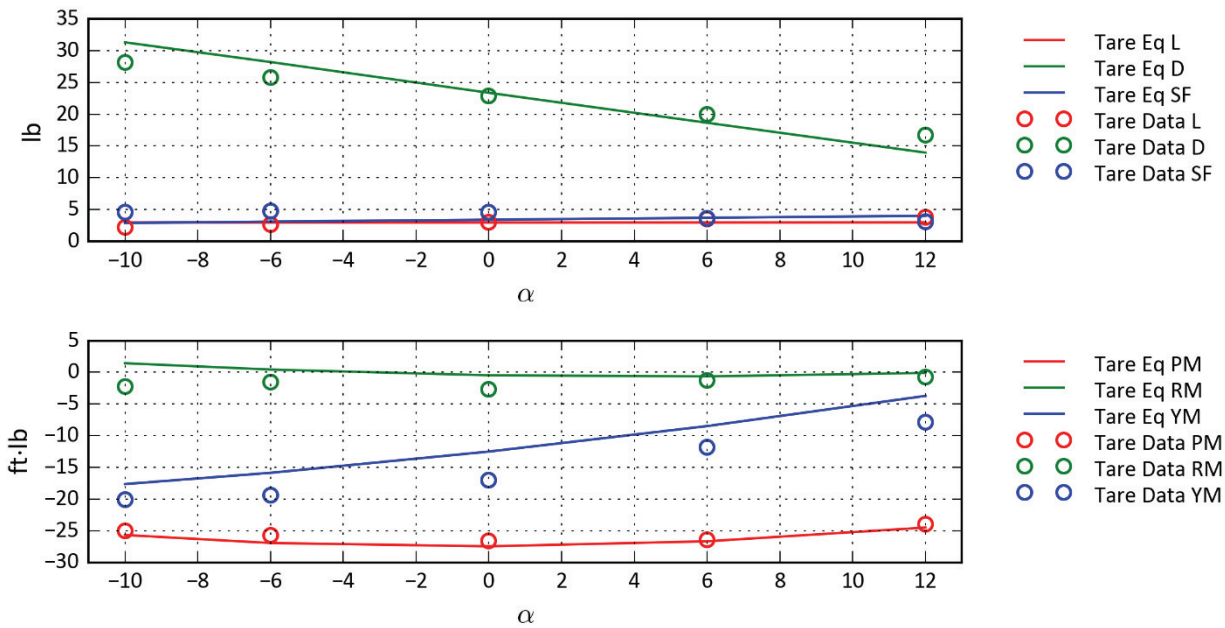

Figure D-15: Airplane Mode—R520 α = 10, Q = 80.

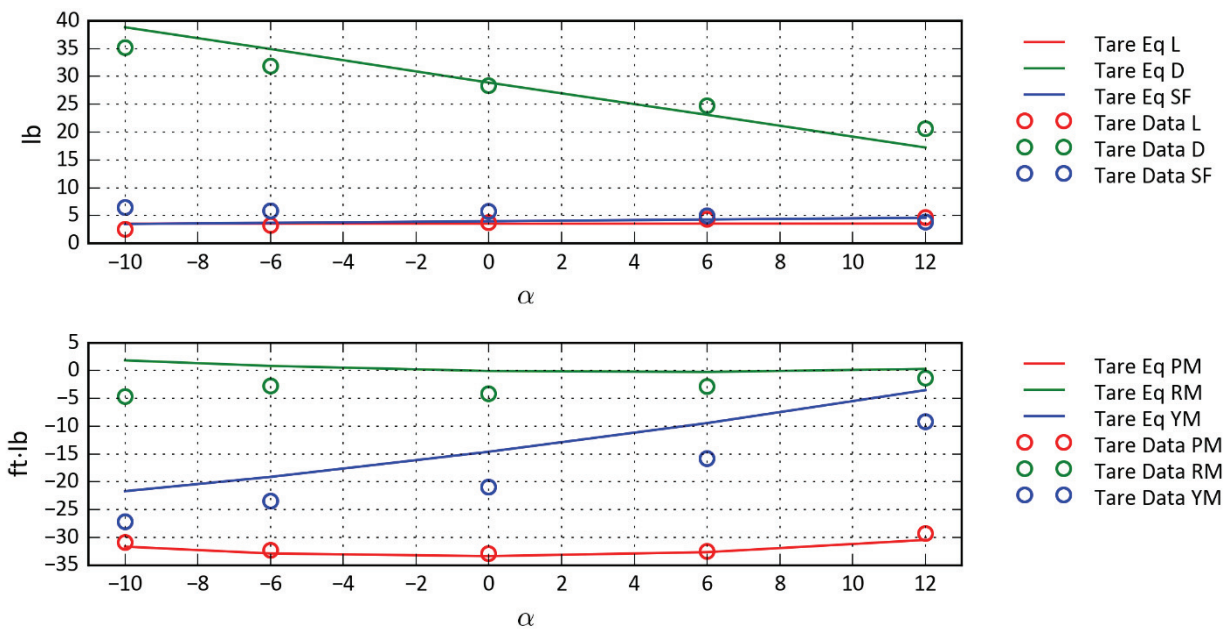

Figure D-16: Airplane Mode—R520 α = 10, Q = 100.

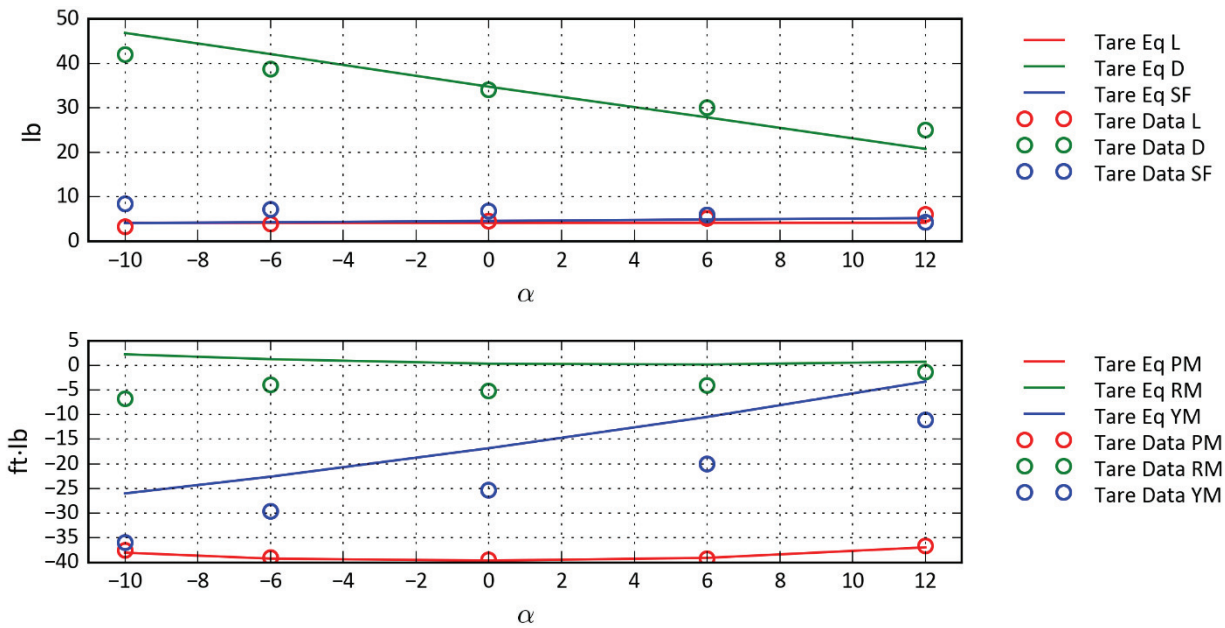

Figure D-17: Airplane Mode—R520 α = 10, Q = 120.

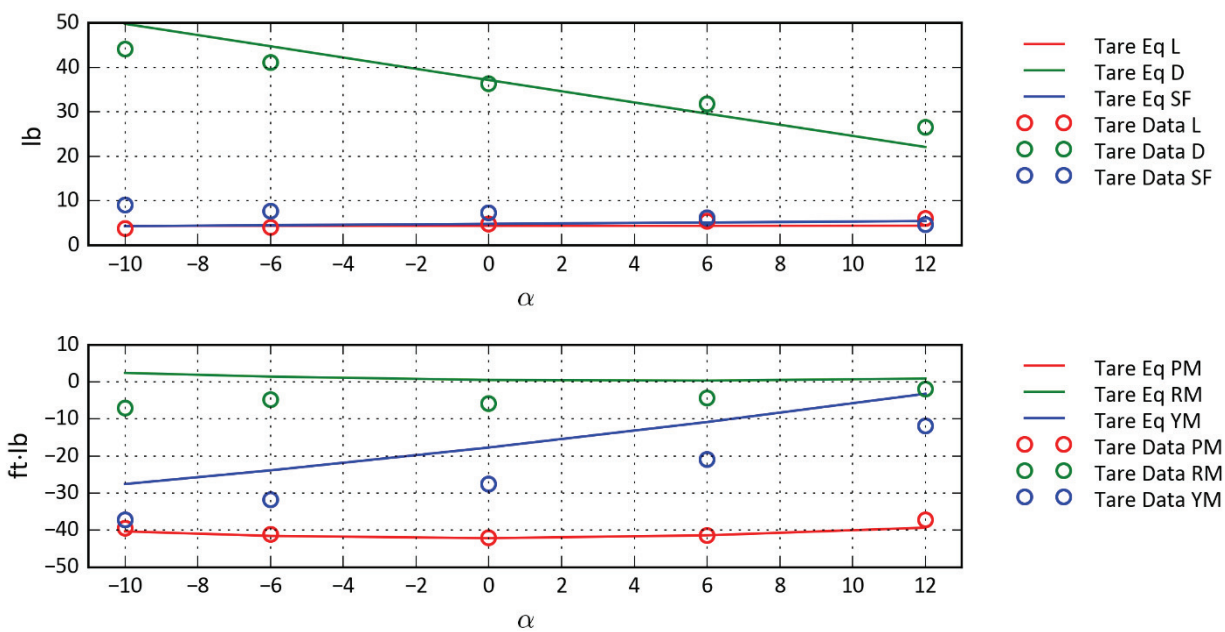

Figure D-18: Airplane Mode—R520 α = 10, Q = 130.

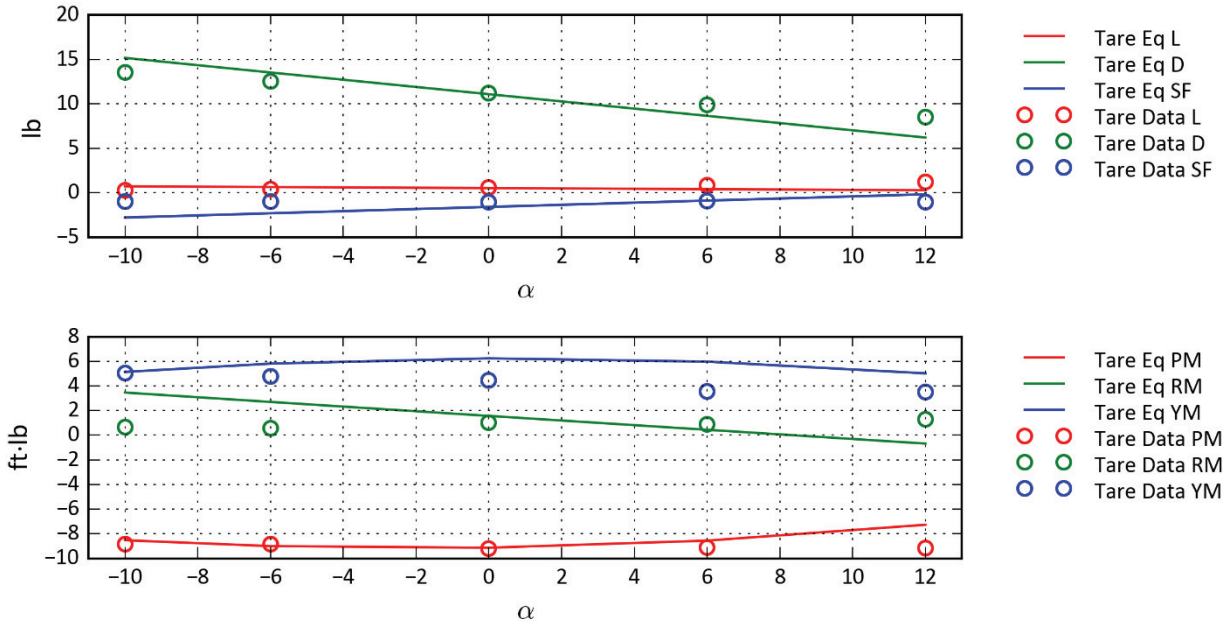

Figure D-19: Airplane Mode—R529 α = –5, Q = 40.

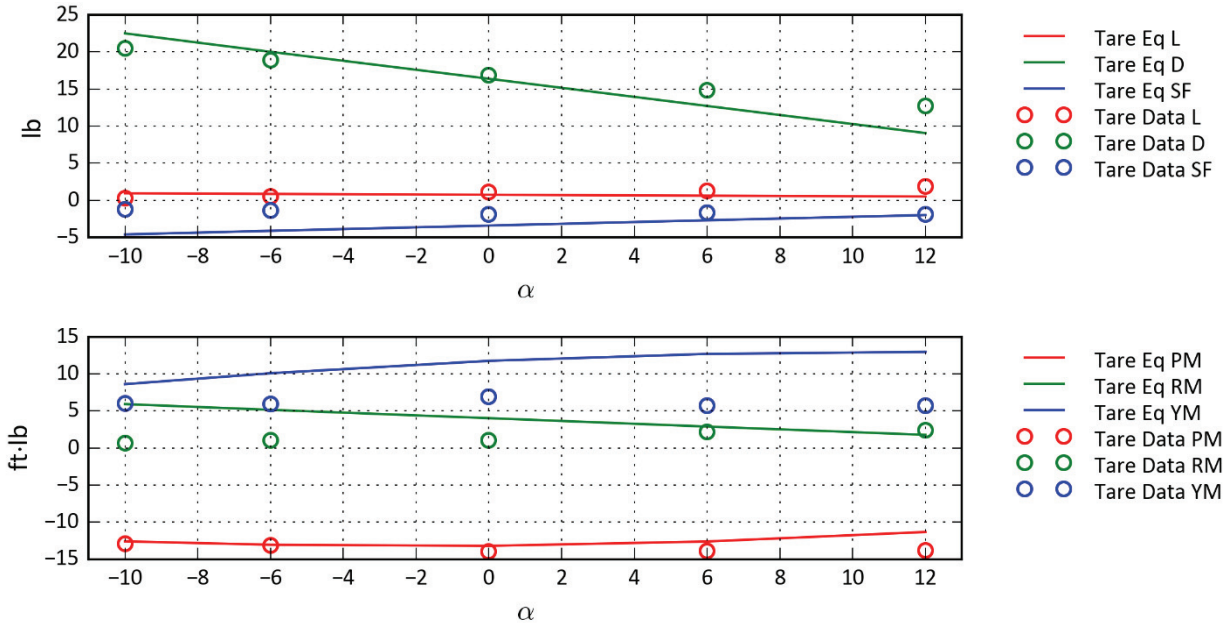

Figure D-20: Airplane Mode—R529 α = –5, Q = 60.

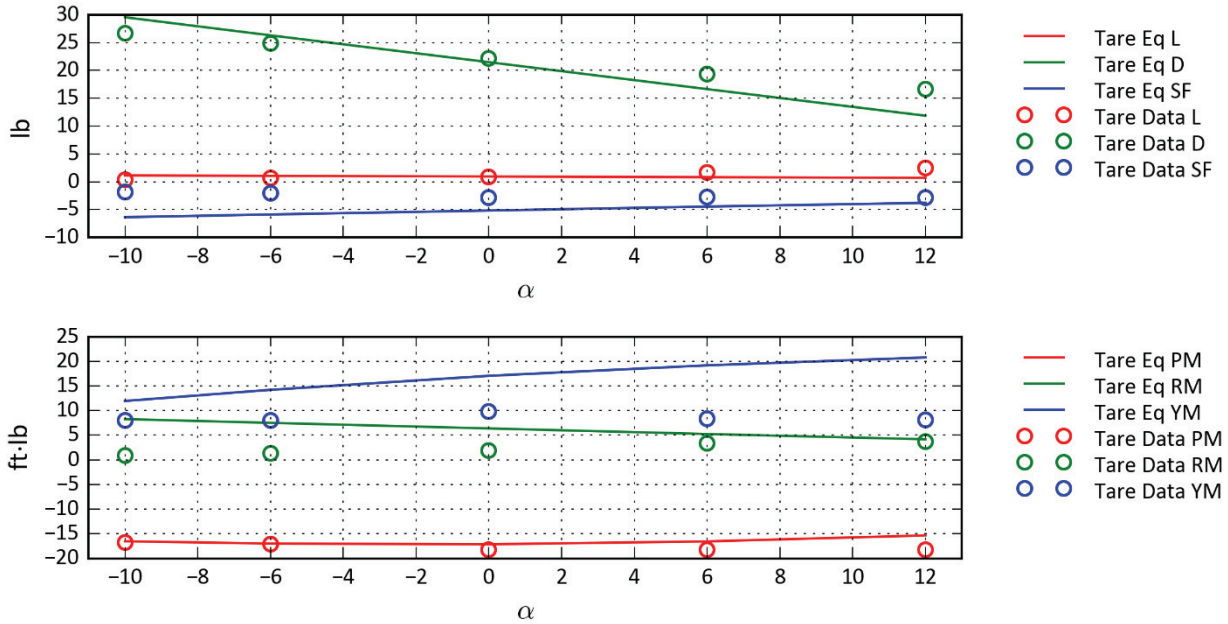

Figure D-21: Airplane Mode—R529 α = –5, Q = 80.

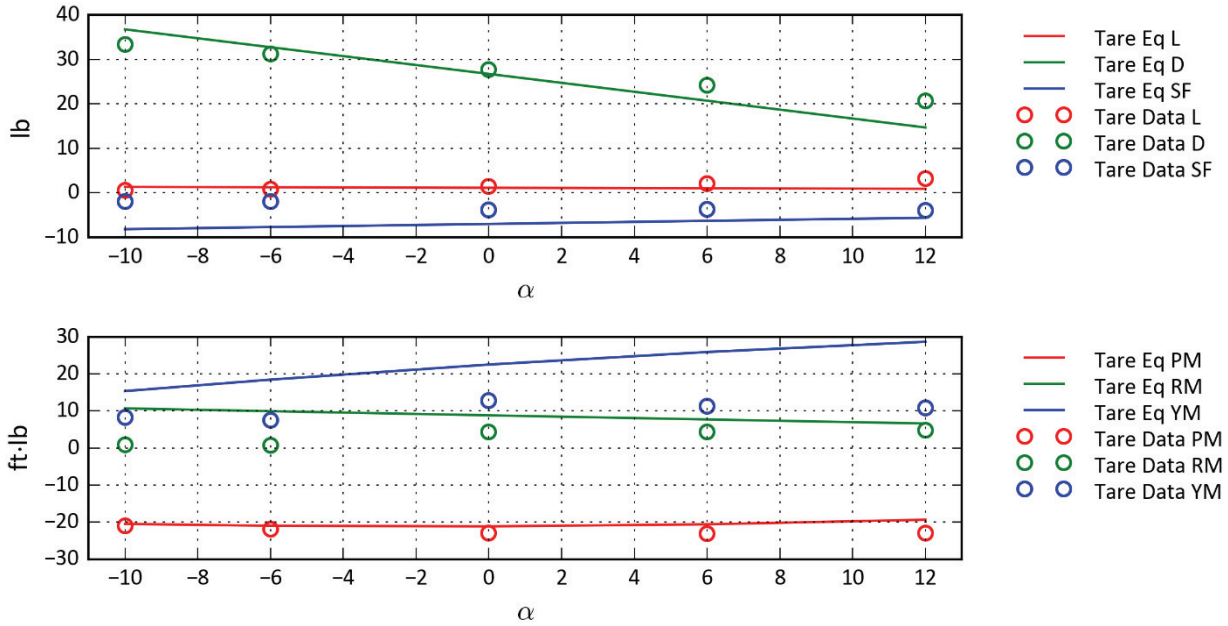

Figure D-22: Airplane Mode—R529 α = –5, Q = 100.

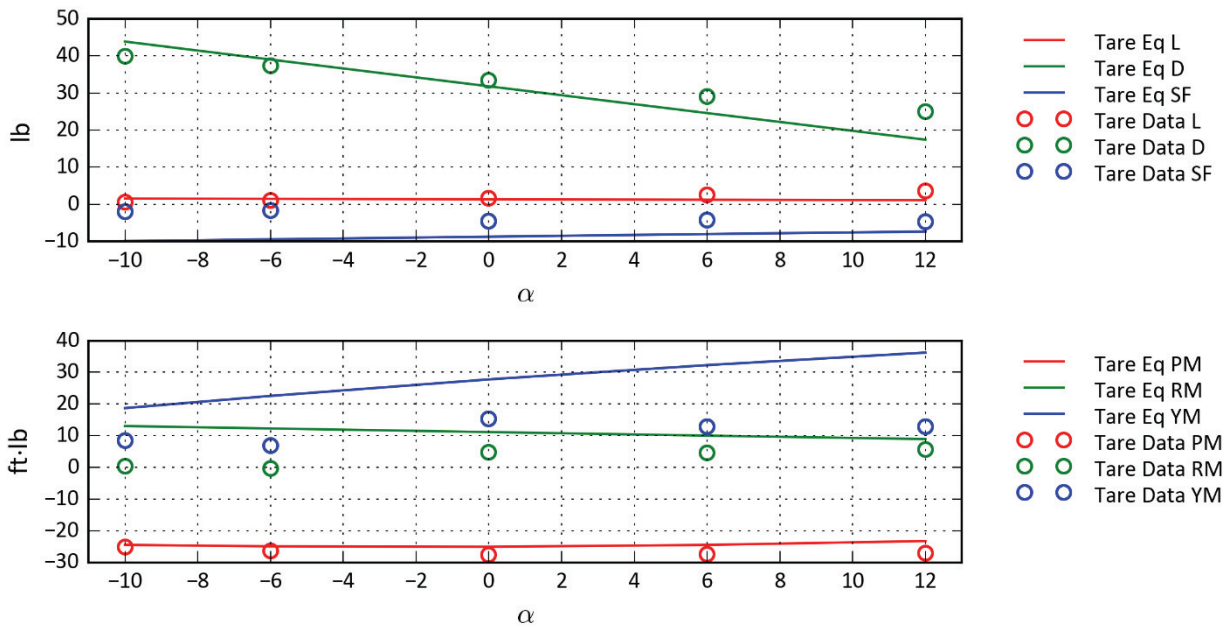

Figure D-23: Airplane Mode—R529 α = –5, Q = 120.

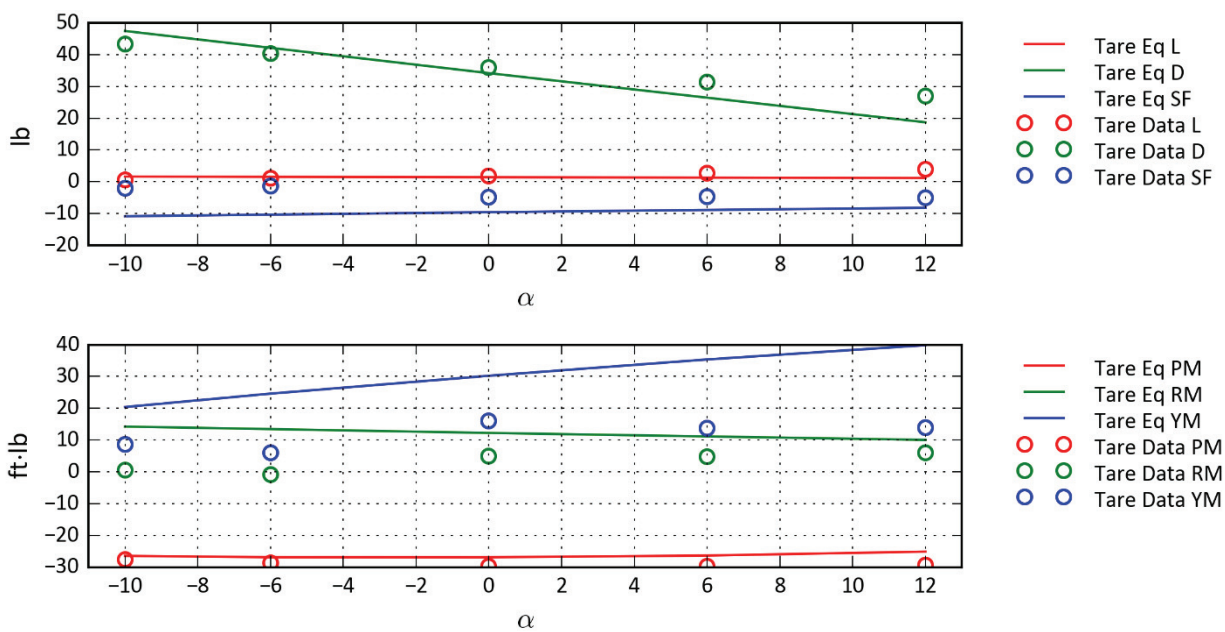

Figure D-24: Airplane Mode—R529 α = –5, Q = 130.

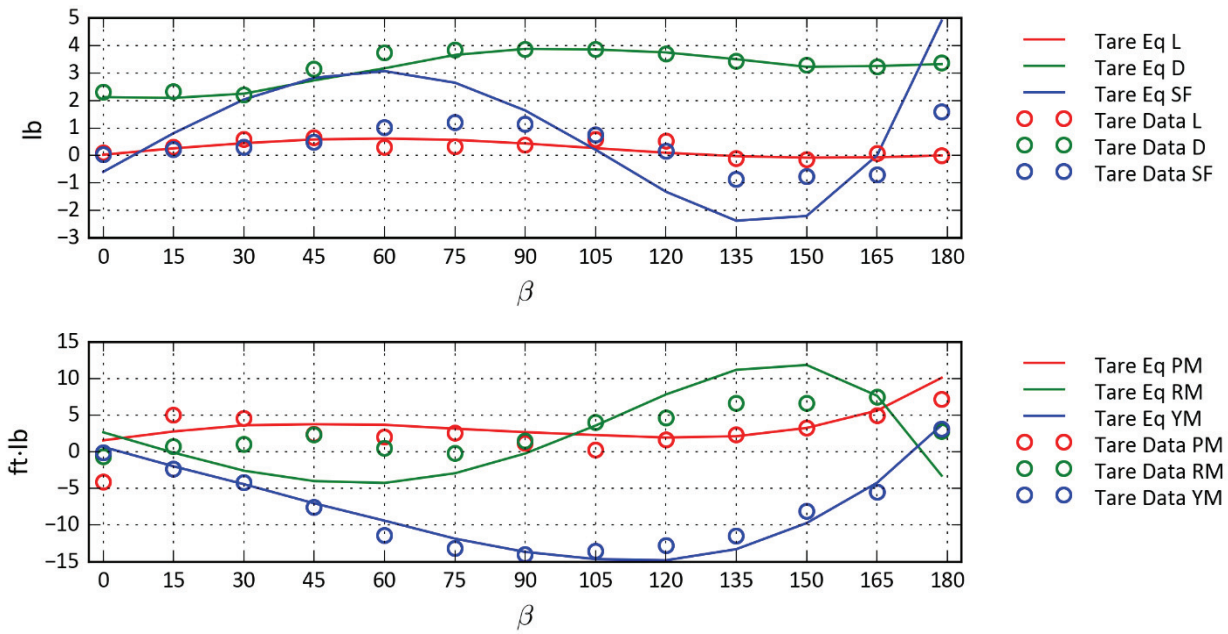

Figure D-25: Helicopter Mode—R535 α = 0, *Re* = 0.3.

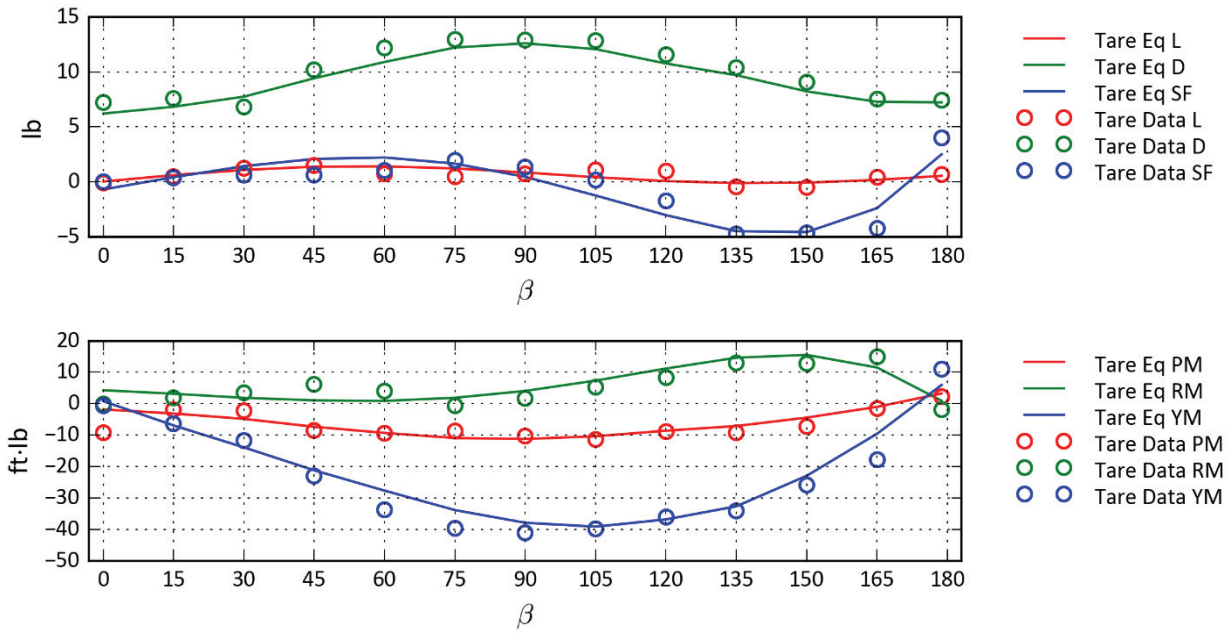

Figure D-26: Helicopter Mode—R535 α = 0, *Re* = 0.45.

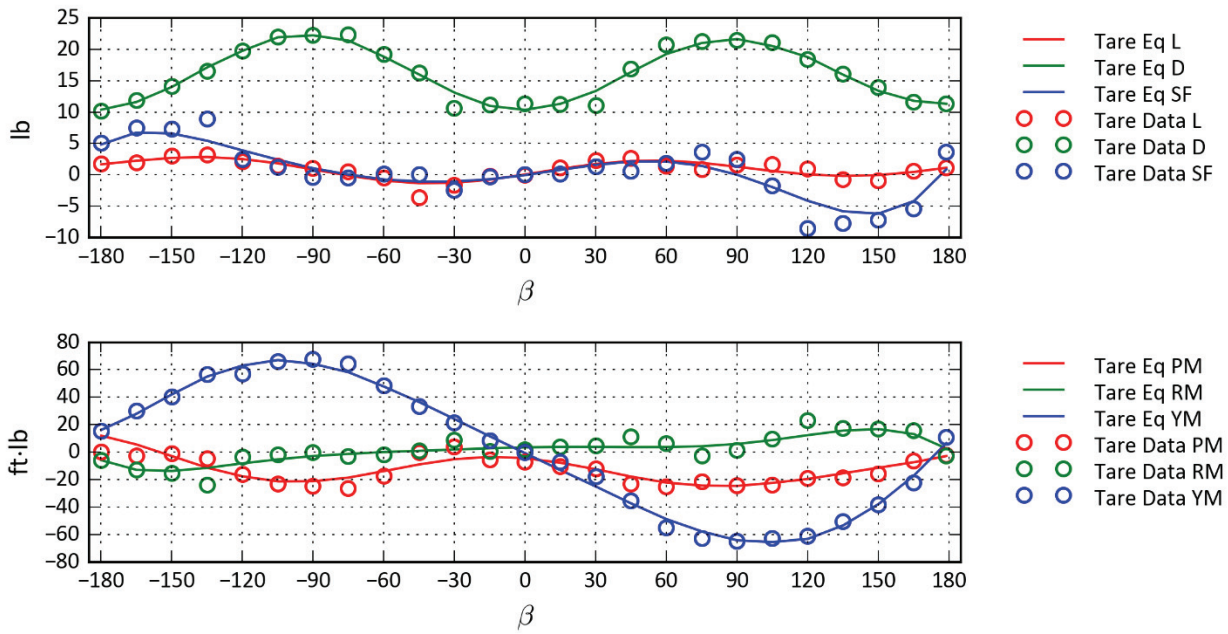

Figure D-27: Helicopter Mode—R544A α = 0, *Re* = 0.6.

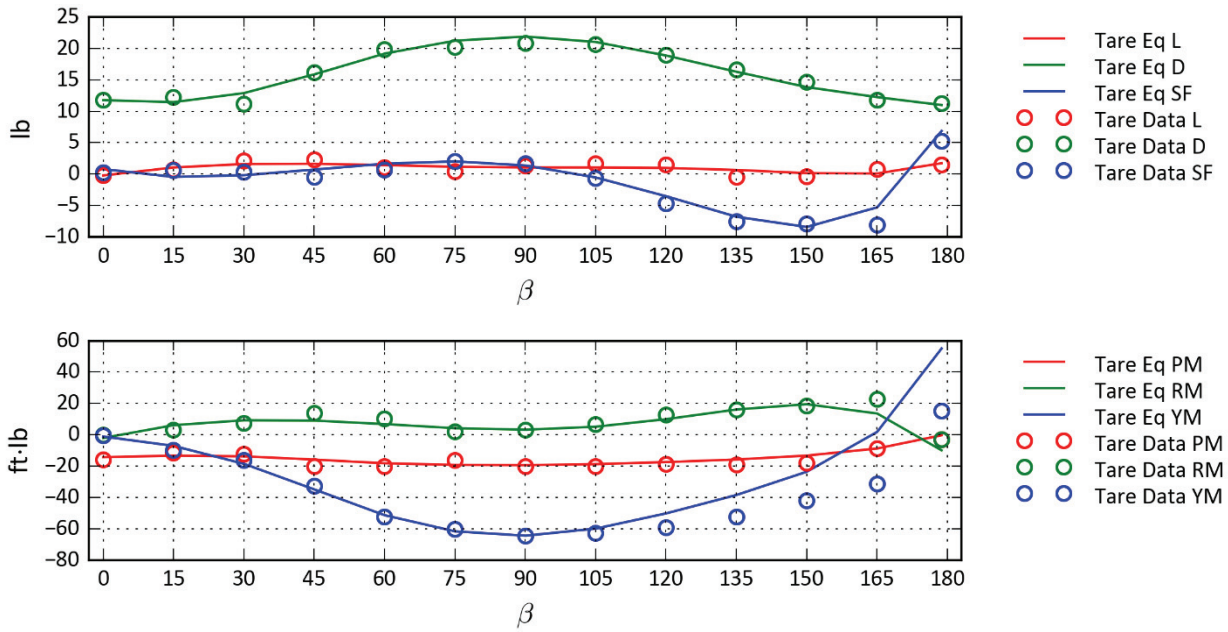

Figure D-28: Helicopter Mode—R540C α = –10, *Re* = 0.6.

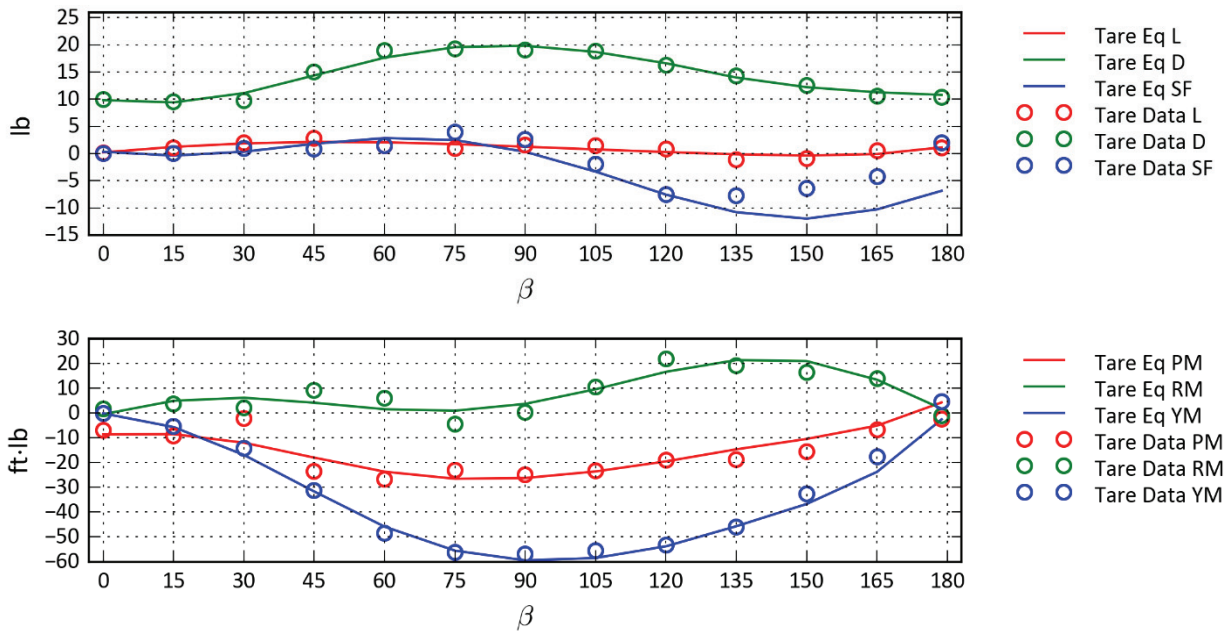

Figure D-29: Helicopter Mode—R544C α = 10, *Re* = 0.6.

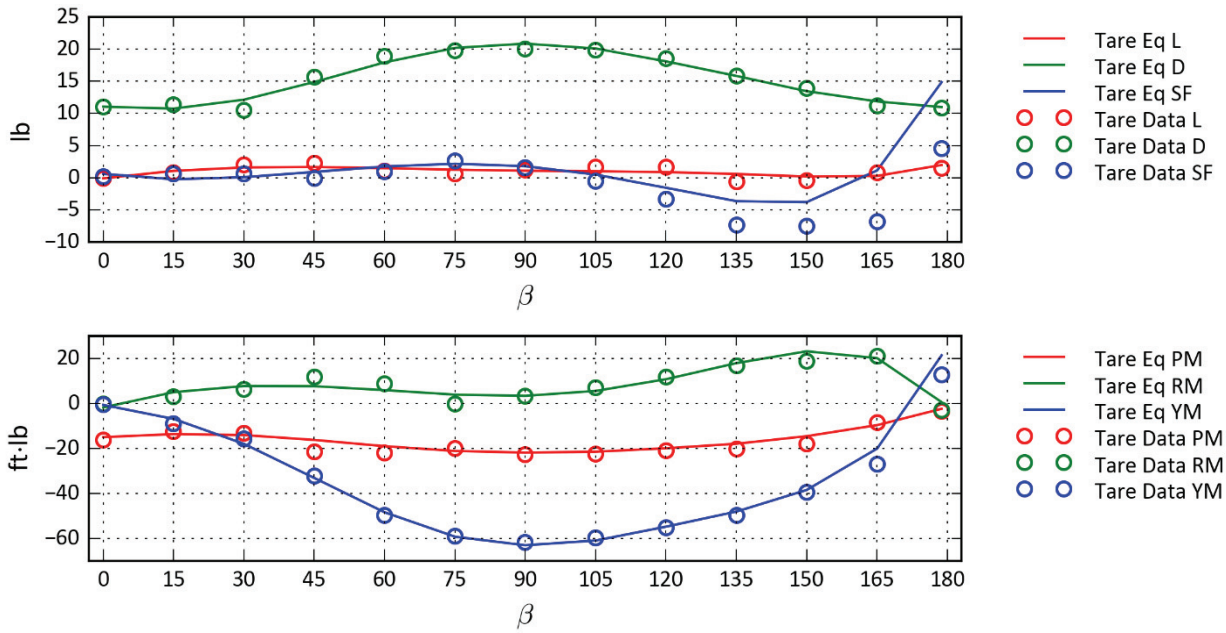

Figure D-30: Helicopter Mode—R540B α = –5, *Re* = 0.6.

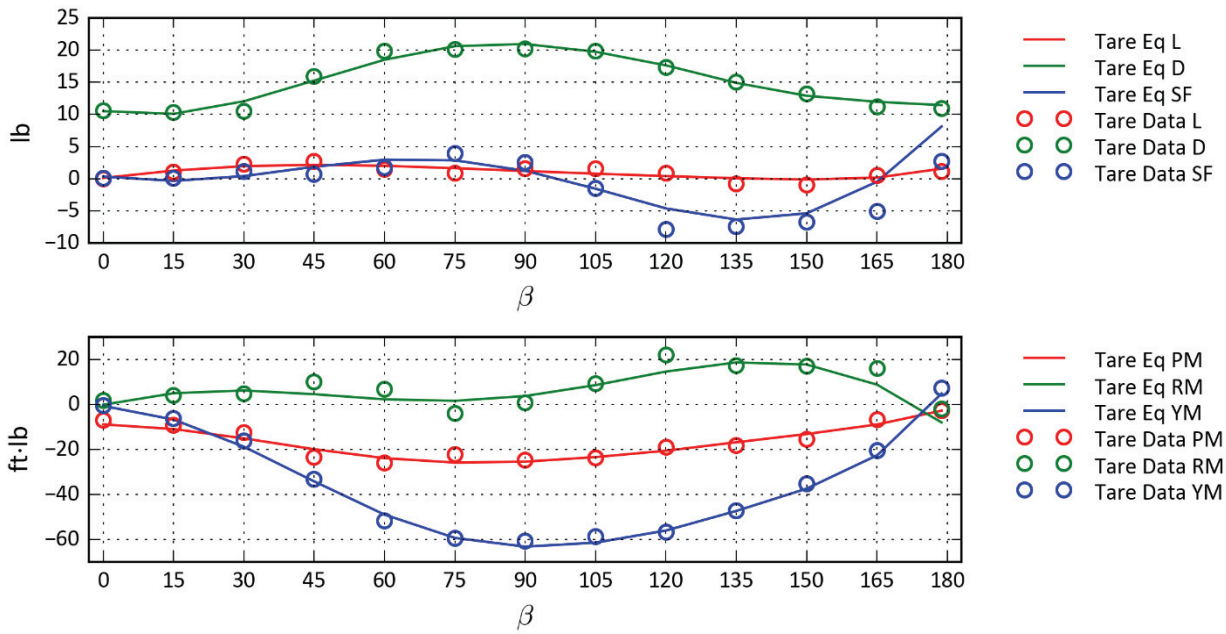

Figure D-31: Helicopter Mode—R544B α = 5, *Re* = 0.6.

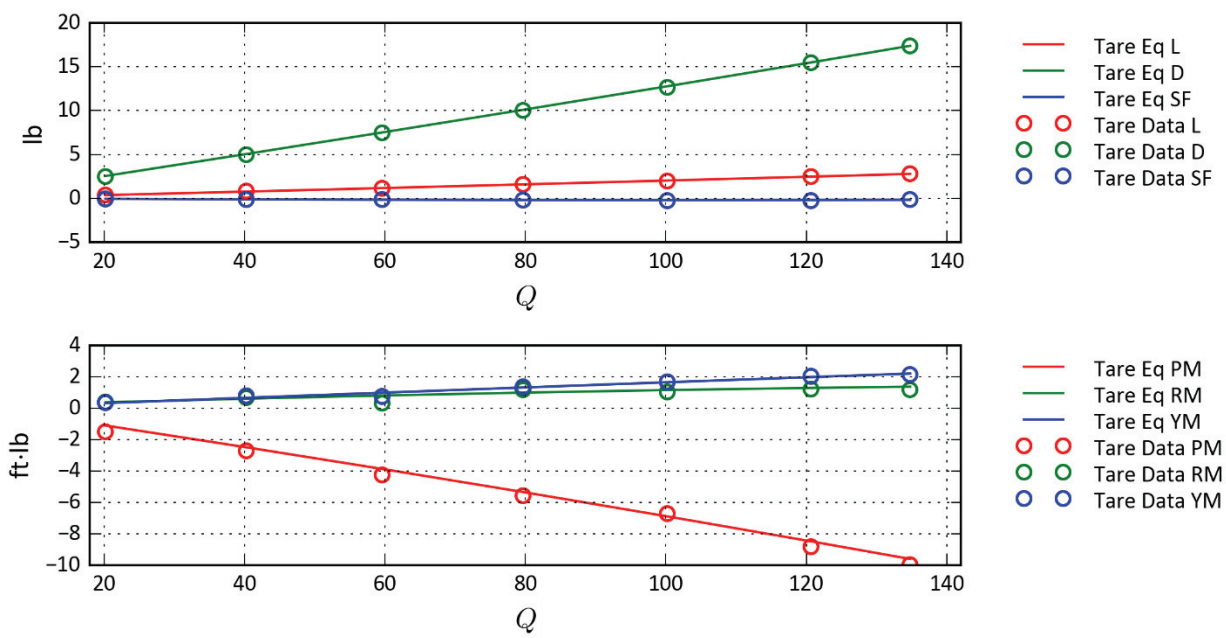

Figure D-32: Wing Only—R503 α = 0, β = 0.

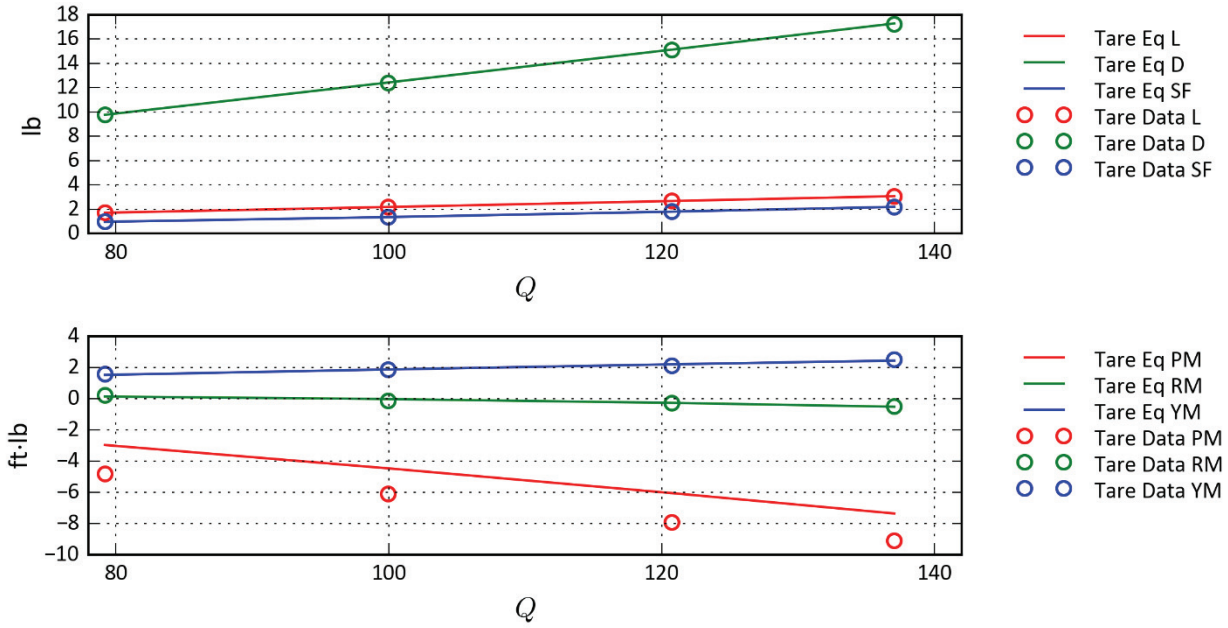

Figure D-33: Wing Only—R504 α = 0, β = 5.

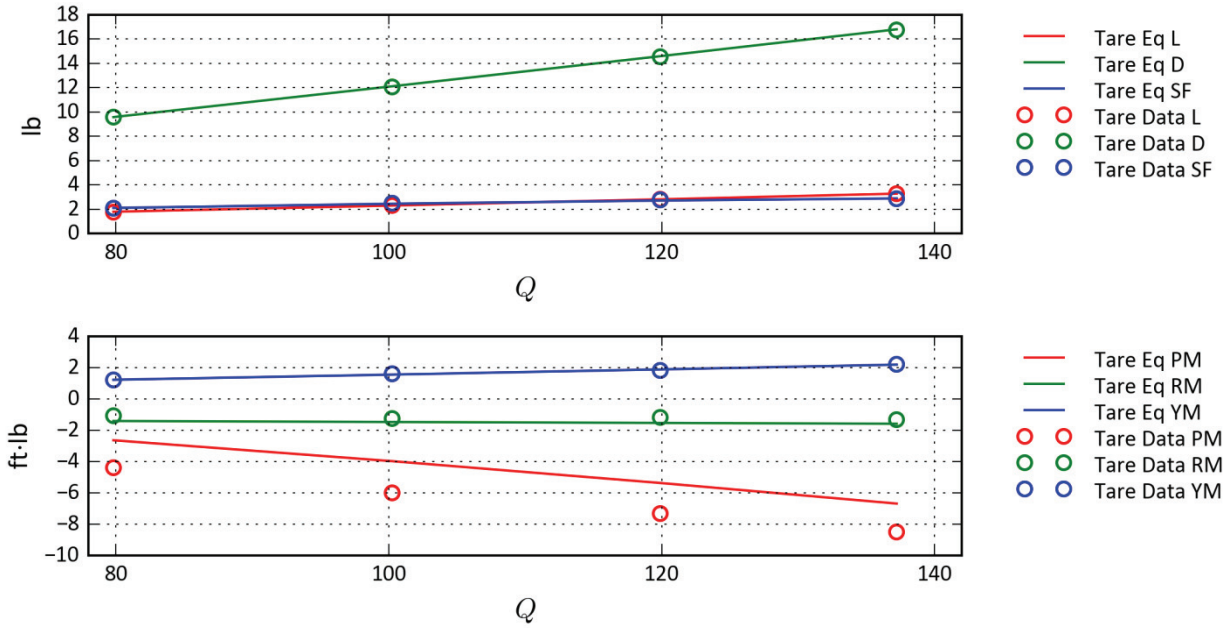

Figure D-34: Wing Only—R506 α = 0, β = 10.

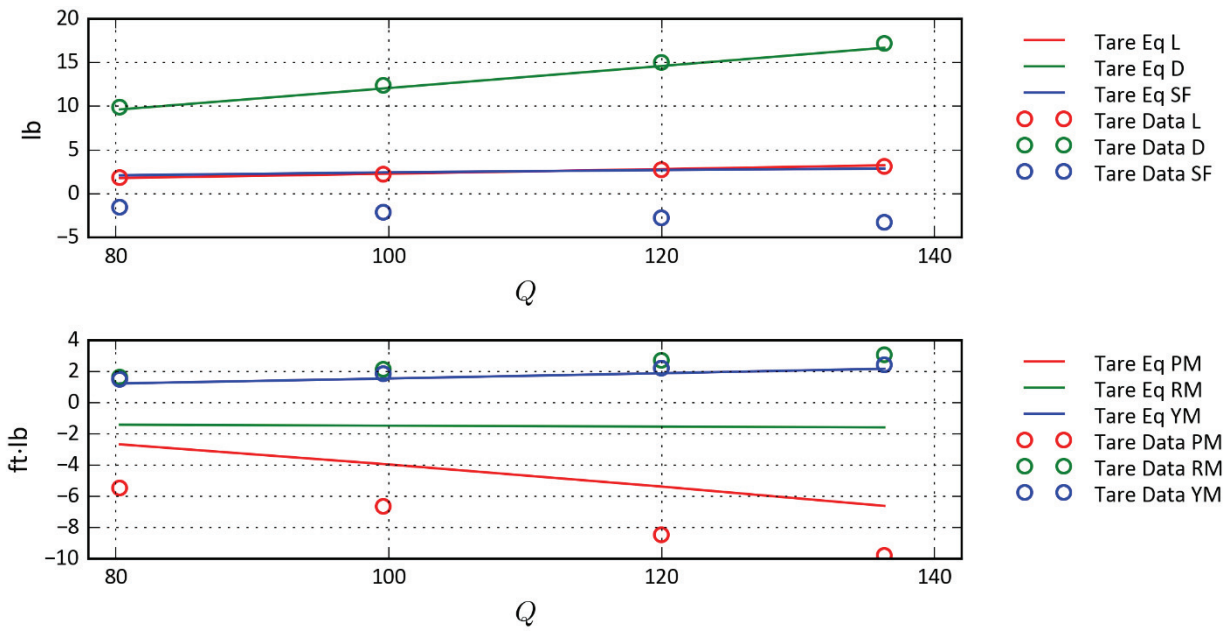

Figure D-35: Wing Only—R505 α = 0, β = –5.

Table D-4: Aero Tare Raw Data Table

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R503	2	-1.24	0.01	0.01	2.65	0.01	0.00	0.00	0.00	0.00	-0.01	0.00	0.04
	3	-1.24	0.01	20.19	131.23	0.56	0.12	0.37	2.50	-0.07	-1.51	0.42	0.36
	4	-1.24	0.01	40.23	185.94	0.78	0.17	0.85	4.99	-0.15	-2.72	0.69	0.78
	5	-1.24	0.01	59.64	227.41	0.95	0.20	1.15	7.48	-0.13	-4.26	0.34	0.76
	6	-1.24	0.01	79.66	264.13	1.09	0.24	1.57	10.02	-0.23	-5.56	1.18	1.37
	7	-1.24	0.01	100.21	297.74	1.22	0.27	1.96	12.68	-0.26	-6.74	1.05	1.68
	8	-1.24	0.01	120.68	328.43	1.33	0.29	2.47	15.44	-0.24	-8.84	1.23	2.03
	9	-1.24	0.01	134.80	348.34	1.40	0.31	2.80	17.40	-0.13	-9.99	1.20	2.15
	10	-1.24	0.01	100.63	298.97	1.22	0.27	2.10	12.89	-0.12	-7.70	0.93	1.77
	11	-1.24	0.01	40.26	186.68	0.78	0.17	0.73	5.22	-0.07	-2.98	0.25	0.65
	12	-1.24	0.01	0.01	3.51	0.01	0.00	-0.08	0.11	0.02	-0.06	-0.08	-0.08
R504	2	-1.24	5.09	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	0.01	0.25	0.01
	3	-1.24	5.09	79.20	263.52	1.09	0.24	1.69	9.75	0.95	-4.82	0.23	1.58
	4	-1.24	5.09	99.96	297.55	1.22	0.27	2.17	12.37	1.36	-6.13	-0.14	1.87
	5	-1.24	5.09	120.77	328.70	1.33	0.29	2.68	15.08	1.79	-7.94	-0.26	2.14
	6	-1.24	5.09	137.06	351.58	1.41	0.31	3.05	17.24	2.18	-9.13	-0.49	2.50
	7	-1.24	5.09	0.01	3.29	0.01	0.00	0.10	0.05	0.04	0.30	-0.23	-0.03
R505	2	-1.24	-4.92	0.00	1.25	0.01	0.00	0.00	0.00	0.00	0.04	0.04	0.00
	3	-1.24	-4.92	0.00	1.03	0.00	0.00	0.02	0.00	0.00	-0.02	0.08	0.00
	4	-1.24	-4.92	80.29	265.59	1.09	0.24	1.82	9.92	-1.54	-5.46	1.67	1.51
	5	-1.24	-4.92	99.58	297.24	1.21	0.27	2.20	12.37	-2.13	-6.64	2.14	1.87
	6	-1.24	-4.92	119.98	328.00	1.32	0.29	2.71	15.03	-2.73	-8.47	2.74	2.24
	7	-1.24	-4.92	136.32	351.08	1.40	0.31	3.13	17.20	-3.30	-9.81	3.09	2.44
	8	-1.24	-4.92	0.01	3.50	0.01	0.00	0.12	0.10	0.00	-0.15	-0.02	0.00

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R506	2	-1.24	10.10	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	-0.04	0.02
	3	-1.24	10.10	79.81	265.16	1.08	0.24	1.76	9.56	2.06	-4.41	-1.08	1.22
	4	-1.24	10.10	100.24	298.65	1.21	0.27	2.30	12.07	2.47	-6.02	-1.26	1.63
	5	-1.24	10.10	119.92	328.25	1.32	0.29	2.82	14.56	2.76	-7.34	-1.16	1.85
	6	-1.24	10.10	137.23	352.62	1.40	0.31	3.26	16.77	2.86	-8.52	-1.32	2.23
	7	-1.24	9.70	0.00	0.00	0.00	0.00	-0.02	0.05	0.09	-0.84	-1.68	0.12
R507	2	-1.26	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
	3	-1.26	0.01	20.04	132.62	0.53	0.12	0.55	5.33	-0.37	-5.23	0.25	1.41
	4	-1.26	0.01	39.96	188.28	0.75	0.17	1.05	10.94	-0.65	-10.07	-1.50	2.67
	5	-1.26	0.01	60.65	233.03	0.92	0.21	1.02	16.64	-0.76	-15.32	0.12	3.25
	6	-1.26	0.01	79.78	268.48	1.05	0.24	1.36	21.75	-1.17	-19.79	2.19	3.47
	7	-1.26	0.01	99.77	301.57	1.17	0.27	1.67	27.26	-1.13	-24.82	0.36	4.35
	8	-1.26	0.01	120.03	332.44	1.28	0.29	1.91	33.35	-1.52	-29.85	0.48	5.76
	9	-1.26	0.01	131.71	349.29	1.34	0.31	2.05	36.84	-1.82	-32.56	0.55	6.76
	10	-1.26	0.01	99.74	302.04	1.17	0.27	1.41	27.80	-1.60	-24.46	1.08	6.27
	11	-1.26	0.01	0.00	1.11	0.00	0.00	0.10	0.06	0.01	-0.34	0.45	0.04

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R508	2	-1.26	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	-0.08	0.01
	3	-1.26	0.01	19.90	132.52	0.53	0.12	0.36	5.35	-0.37	-4.87	0.39	1.31
	4	-1.26	0.01	19.83	132.44	0.53	0.12	0.17	6.53	-0.20	-2.31	-0.38	0.87
	5	-1.26	0.01	19.83	132.45	0.53	0.12	1.14	5.88	-0.29	-7.72	0.00	1.09
	6	-1.26	0.01	19.89	132.65	0.53	0.12	0.26	5.37	-0.34	-4.16	0.41	1.22
	7	-1.26	0.01	19.90	132.69	0.53	0.12	0.23	5.17	-0.38	-4.48	0.16	1.38
	8	-1.26	0.01	19.90	132.70	0.53	0.12	0.40	4.72	-0.36	-5.30	0.10	1.29
	9	-1.26	0.01	19.98	132.97	0.53	0.12	0.51	4.22	-0.21	-5.98	-0.22	0.86
	10	-1.26	0.01	20.00	133.05	0.53	0.12	0.61	4.03	-0.34	-6.53	0.45	1.26
	11	-1.26	0.01	40.06	189.06	0.75	0.17	0.13	13.48	-0.52	-6.81	-0.24	2.18
	12	-1.26	0.01	40.13	189.28	0.75	0.17	0.24	12.45	-0.61	-7.67	0.08	2.45
	13	-1.26	0.01	40.24	189.52	0.75	0.17	0.46	11.12	-0.64	-9.20	0.51	2.45
	14	-1.26	0.01	40.35	189.78	0.75	0.17	0.76	9.82	-0.47	-10.66	0.28	1.93
	15	-1.26	0.01	40.45	189.99	0.75	0.17	1.24	8.39	-0.65	-11.98	0.96	2.54
	16	-1.26	0.01	59.96	232.21	0.91	0.20	0.08	20.24	-0.56	-10.75	-0.83	2.59
	17	-1.26	0.01	59.83	231.95	0.91	0.20	0.37	18.62	-0.66	-12.13	-0.54	3.00
	18	-1.26	0.01	59.96	232.22	0.91	0.20	0.78	16.57	-0.73	-14.23	0.14	3.14
	19	-1.26	0.01	60.06	232.47	0.91	0.20	1.20	14.58	-0.55	-15.65	0.19	2.46
	20	-1.26	0.01	60.13	232.60	0.91	0.20	1.90	12.43	-0.86	-16.85	0.91	3.62
	21	-1.26	0.01	79.82	269.07	1.05	0.24	0.23	26.55	-0.40	-15.06	-1.22	1.79
	22	-1.26	0.01	79.73	268.94	1.05	0.24	0.52	24.59	-0.77	-16.41	-0.22	3.03
	23	-1.26	0.01	79.80	269.08	1.05	0.24	1.07	21.88	-0.94	-18.79	0.80	3.44
	24	-1.26	0.01	79.80	269.12	1.05	0.24	1.93	19.24	-0.82	-20.44	-0.36	2.98
	25	-1.26	0.01	79.94	269.41	1.05	0.24	2.53	16.44	-1.24	-21.43	1.95	4.55
	26	-1.26	0.01	99.71	302.19	1.17	0.27	0.31	33.16	0.30	-19.08	-2.94	-0.16
	27	-1.26	0.01	99.73	302.26	1.17	0.27	0.62	30.93	-0.40	-20.94	-1.68	2.24
	28	-1.26	0.01	99.55	302.02	1.16	0.27	0.77	27.69	-1.23	-23.15	-3.90	5.03
	29	-1.26	0.01	99.78	302.45	1.16	0.27	1.97	24.29	-1.15	-24.89	0.67	4.71
	30	-1.26	0.01	99.94	302.72	1.17	0.27	3.17	20.64	-1.34	-26.28	1.62	5.27
	31	-1.26	0.01	120.03	333.31	1.27	0.29	0.39	39.20	1.07	-16.53	-3.98	-2.62

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R508	32	-1.26	0.01	120.17	333.54	1.27	0.29	0.78	37.80	-0.30	-25.79	-1.77	1.98
	33	-1.26	0.01	120.23	333.67	1.27	0.29	1.42	33.69	-1.18	-28.18	-0.09	4.71
	34	-1.26	0.01	119.96	333.26	1.27	0.29	2.34	29.41	-1.27	-29.89	0.46	4.95
	35	-1.26	0.01	120.50	334.07	1.27	0.29	3.74	25.05	-1.62	-31.12	1.59	6.19
	36	-1.27	0.01	127.41	344.14	1.31	0.30	0.43	42.75	1.73	-25.01	-5.31	-4.96
	37	-1.26	0.01	127.65	344.49	1.31	0.30	0.83	40.11	0.11	-27.25	-2.28	0.48
	38	-1.27	0.01	127.88	344.89	1.31	0.30	1.51	35.92	-0.91	-30.02	-0.39	3.96
	39	-1.26	0.01	127.93	344.97	1.31	0.30	2.51	31.44	-1.16	-31.70	0.23	4.76
	40	-1.27	0.01	128.26	345.43	1.31	0.30	4.04	26.72	-1.67	-33.22	1.60	6.37
	41	-1.27	0.01	99.36	302.07	1.16	0.27	0.62	26.07	-0.95	-13.89	-2.77	4.05
	42	-1.27	0.01	99.33	301.95	1.16	0.27	1.17	27.62	-0.95	-22.95	0.11	4.07
	43	-1.27	0.01	0.02	4.15	0.02	0.00	-0.08	0.06	-0.01	0.21	0.09	0.19

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R517	2	-1.23	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.01	-0.06	-0.06
	3	-1.23	5.01	100.31	295.61	1.24	0.27	1.23	33.75	4.35	-24.63	-4.05	-15.31
	4	-1.23	5.00	128.89	338.25	1.39	0.30	1.83	43.26	7.07	-31.98	-7.14	-23.78
	5	-1.23	5.00	128.93	338.46	1.39	0.30	2.18	40.08	5.40	-33.71	-4.66	-16.91
	6	-1.23	5.00	128.72	338.28	1.39	0.30	2.82	35.89	4.30	-36.26	-3.06	-11.85
	7	-1.23	5.01	128.85	338.58	1.39	0.30	3.67	31.83	5.48	-37.89	-5.39	-14.52
	8	-1.23	5.01	129.42	339.49	1.39	0.30	4.89	26.37	2.24	-36.77	0.53	-1.29
	9	-1.23	5.01	120.03	326.43	1.34	0.29	1.54	40.66	5.90	-29.87	-5.83	-20.03
	10	-1.23	5.00	119.89	326.31	1.34	0.29	1.72	39.05	5.64	-30.50	-5.32	-18.71
	11	-1.23	5.00	120.67	327.47	1.34	0.29	2.71	33.54	3.83	-34.15	-2.35	-10.84
	12	-1.23	5.00	120.35	327.07	1.34	0.29	3.49	29.66	4.95	-35.76	-4.32	-13.41
	13	-1.23	5.01	121.14	328.25	1.34	0.29	4.61	24.72	2.02	-34.85	0.85	-1.37
	14	-1.22	5.00	99.84	296.69	1.22	0.27	1.31	33.68	4.17	-24.48	-3.75	-14.69
	15	-1.22	5.00	100.16	297.13	1.22	0.27	1.69	31.21	3.55	-26.27	-2.52	-11.83
	16	-1.22	5.00	100.06	297.00	1.22	0.27	2.31	27.71	2.96	-28.73	-1.52	-8.76
	17	-1.22	5.01	100.38	297.54	1.22	0.27	3.01	24.35	2.99	-30.08	-1.63	-7.71
	18	-1.22	5.00	100.43	297.64	1.22	0.27	3.83	20.48	1.63	-29.67	0.32	-1.31
	19	-1.23	5.00	100.49	297.77	1.22	0.27	3.83	20.43	1.60	-29.62	0.62	-1.31
	20	-1.23	5.00	79.65	263.93	1.09	0.24	0.96	27.24	2.76	-19.68	-2.24	-10.10
	21	-1.23	5.00	79.89	264.33	1.09	0.24	1.40	25.08	2.88	-21.32	-1.83	-10.04
	22	-1.23	5.00	80.12	264.72	1.09	0.24	1.89	22.29	2.24	-23.57	-0.94	-6.90
	23	-1.23	5.01	80.17	264.83	1.10	0.24	2.39	19.54	1.80	-24.63	-0.47	-4.35
	24	-1.23	5.01	80.25	264.99	1.10	0.24	3.16	16.40	1.32	-24.75	0.58	-1.50
	25	-1.23	5.00	60.03	228.23	0.95	0.20	0.76	20.78	2.20	-15.28	-2.02	-8.31
	26	-1.23	5.01	60.09	228.31	0.95	0.20	1.01	19.06	2.09	-16.40	-1.54	-7.45
	27	-1.23	5.00	60.24	228.62	0.95	0.20	1.45	16.87	1.71	-18.26	-0.67	-5.52
	28	-1.23	5.01	60.15	228.44	0.95	0.20	1.45	16.87	1.72	-18.39	-0.74	-5.51
	29	-1.23	5.00	60.28	228.70	0.95	0.20	1.84	14.50	1.34	-17.62	-0.11	-3.61
	30	-1.23	5.00	60.47	229.10	0.95	0.20	2.46	12.55	1.16	-19.98	0.28	-1.86
	31	-1.23	5.01	40.22	186.08	0.78	0.17	0.65	14.03	1.32	-10.72	-0.73	-5.67

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R517	32	-1.23	5.00	40.31	186.29	0.78	0.17	0.85	12.82	1.21	-11.49	-0.42	-4.94
	33	-1.23	5.01	40.34	186.36	0.78	0.17	1.10	11.19	1.17	-11.69	-0.21	-4.35
	34	-1.23	5.00	40.33	186.35	0.78	0.17	1.03	10.06	0.88	-14.17	-1.24	-2.94
	35	-1.23	5.01	40.49	186.73	0.78	0.17	1.35	10.08	0.92	-14.30	0.02	-3.04
	36	-1.23	5.00	40.53	186.84	0.78	0.17	1.80	8.56	0.80	-15.27	0.39	-1.98
	37	-1.23	5.00	99.68	296.92	1.21	0.27	1.48	33.86	4.51	-25.35	-4.26	-15.95
	38	-1.23	5.00	99.48	296.76	1.21	0.27	1.46	33.79	4.51	-25.29	-4.23	-16.02
	39	-1.23	5.00	0.02	4.56	0.02	0.00	0.97	0.16	0.14	-0.47	-3.05	-0.22
	40	-1.23	5.01	0.02	4.01	0.02	0.00	0.32	0.16	0.18	-0.49	-0.07	-0.50

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R520	2	-1.24	10.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.02	0.02
	3	-1.24	10.01	100.26	297.16	1.22	0.27	2.65	34.70	6.65	-31.02	-4.58	-28.18
	4	-1.24	10.01	127.57	337.47	1.37	0.30	3.77	44.12	8.98	-39.91	-7.08	-37.33
	5	-1.24	10.01	127.64	337.79	1.37	0.30	4.05	41.08	7.70	-42.33	-5.32	-31.87
	6	-1.24	10.01	127.64	337.96	1.37	0.30	4.76	36.34	7.33	-44.35	-5.40	-27.62
	7	-1.24	10.01	127.88	338.42	1.37	0.30	5.45	31.78	6.21	-44.66	-3.84	-20.92
	8	-1.24	10.01	128.57	339.46	1.37	0.30	5.97	26.50	4.65	-41.23	-1.49	-11.99
	9	-1.24	10.01	120.04	327.42	1.33	0.29	3.24	41.93	8.44	-37.96	-6.76	-35.96
	10	-1.24	10.01	120.06	327.52	1.33	0.29	3.88	38.70	7.15	-40.16	-4.45	-29.61
	11	-1.24	10.01	119.41	326.62	1.32	0.29	4.46	34.04	6.76	-41.84	-4.69	-25.34
	12	-1.24	10.01	120.35	328.03	1.33	0.29	5.10	30.08	5.96	-42.46	-3.63	-20.00
	13	-1.24	10.01	120.82	328.76	1.33	0.29	6.00	25.01	4.33	-40.68	-0.86	-11.07
	14	-1.24	10.01	99.54	297.09	1.21	0.27	2.53	35.18	6.39	-31.33	-4.63	-27.26
	15	-1.24	10.01	99.50	296.97	1.21	0.27	2.54	35.21	6.37	-31.37	-4.72	-27.20
	16	-1.24	10.01	99.64	297.25	1.21	0.27	3.26	31.89	5.85	-33.51	-3.32	-23.49
	17	-1.24	10.01	99.22	296.66	1.21	0.26	3.72	28.31	5.76	-35.24	-3.72	-20.93
	18	-1.24	10.01	99.64	297.34	1.21	0.27	4.29	24.77	4.93	-35.81	-2.40	-15.81
	19	-1.24	10.01	99.91	297.81	1.21	0.27	4.65	20.63	3.78	-33.37	-0.82	-9.25
	20	-1.24	10.01	80.20	265.75	1.09	0.24	2.17	28.18	4.59	-25.35	-2.17	-20.12
	21	-1.24	10.01	80.41	266.07	1.09	0.24	2.63	25.74	4.77	-26.92	-2.01	-19.37
	22	-1.24	10.01	80.15	265.63	1.09	0.24	3.03	22.91	4.61	-28.96	-2.23	-17.06
	23	-1.24	10.01	80.30	265.91	1.09	0.24	3.48	19.98	3.62	-29.65	-0.82	-11.83
	24	-1.24	10.01	80.67	266.58	1.09	0.24	3.75	16.73	3.12	-27.98	-0.28	-7.85
	25	-1.24	10.01	60.36	229.60	0.94	0.20	1.64	21.42	3.67	-19.29	-1.94	-15.57
	26	-1.24	10.01	60.72	230.28	0.95	0.21	2.00	19.55	3.86	-20.70	-1.90	-14.93
	27	-1.24	10.01	60.62	230.10	0.95	0.21	2.33	17.32	3.49	-22.49	-1.85	-12.22
	28	-1.24	10.01	60.48	229.85	0.95	0.20	2.67	15.27	3.07	-23.69	-1.24	-9.50
	29	-1.24	10.01	60.61	230.13	0.95	0.21	2.93	12.79	2.74	-22.72	-0.74	-6.74
	30	-1.24	10.01	40.67	187.74	0.78	0.17	2.70	14.48	2.70	-20.46	-3.11	-11.23
	31	-1.24	10.01	40.58	187.51	0.78	0.17	1.20	14.21	2.71	-12.18	-1.39	-11.23

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R520	32	-1.24	10.01	40.77	187.97	0.78	0.17	1.46	13.21	2.83	-14.76	-1.50	-10.71
	33	-1.24	10.01	40.81	188.08	0.78	0.17	1.68	11.71	2.52	-16.08	-0.71	-8.92
	34	-1.24	10.01	40.95	188.41	0.78	0.17	2.35	10.38	2.25	-17.44	-2.29	-7.29
	35	-1.24	10.01	40.98	188.50	0.78	0.17	2.35	10.39	2.25	-17.41	-2.32	-7.28
	36	-1.24	10.01	40.88	188.27	0.78	0.17	1.96	10.36	2.24	-17.48	-0.34	-7.26
	37	-1.24	10.01	41.03	188.63	0.78	0.17	2.11	8.76	1.93	-17.40	0.65	-5.39
	38	-1.24	10.01	99.61	297.62	1.20	0.27	2.84	35.04	5.46	-32.40	-2.95	-24.27

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R529	2	-1.23	-4.92	0.00	0.91	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.03
	3	-1.23	-4.92	129.56	339.42	1.39	0.31	0.65	43.39	-1.98	-25.30	1.07	8.56
	4	-1.23	-4.92	129.24	339.11	1.39	0.30	1.08	40.37	-1.13	-27.42	-1.06	4.90
	5	-1.23	-4.92	129.30	339.25	1.39	0.30	1.12	40.35	-1.43	-27.52	-0.49	5.96
	6	-1.23	-4.92	128.74	338.59	1.39	0.30	1.79	35.91	-4.87	-29.74	4.95	16.00
	7	-1.23	-4.92	129.05	339.11	1.39	0.30	2.73	31.28	-4.61	-30.81	4.83	13.64
	8	-1.23	-4.92	129.80	340.19	1.39	0.31	3.94	26.96	-5.08	-31.60	5.93	13.91
	9	-1.23	-4.92	129.47	339.79	1.39	0.31	3.93	26.93	-5.10	-31.59	6.04	13.91
	10	-1.23	-4.92	119.63	325.93	1.34	0.29	0.63	39.88	-2.01	-22.93	0.84	8.52
	11	-1.23	-4.92	119.71	326.06	1.34	0.29	0.99	37.32	-1.60	-25.24	-0.17	6.51
	12	-1.23	-4.92	119.55	325.86	1.34	0.29	0.98	37.31	-1.71	-25.15	0.03	6.85
	13	-1.23	-4.92	119.63	325.98	1.34	0.29	1.60	33.44	-4.65	-27.65	4.83	15.30
	14	-1.23	-4.92	119.71	326.09	1.34	0.29	2.52	29.03	-4.33	-28.69	4.59	12.84
	15	-1.23	-4.92	120.19	326.78	1.34	0.29	3.62	24.94	-4.68	-29.28	5.75	12.77
	16	-1.23	-4.92	99.82	296.53	1.22	0.27	0.54	33.30	-1.97	-18.74	1.29	8.25
	17	-1.23	-4.92	99.88	296.59	1.22	0.27	0.85	31.15	-1.90	-20.77	1.08	7.39
	18	-1.23	-4.92	100.08	296.87	1.23	0.27	1.44	27.71	-3.88	-22.97	4.25	12.81
	19	-1.23	-4.92	100.31	297.22	1.23	0.27	2.12	24.21	-3.71	-24.22	4.33	11.19
	20	-1.23	-4.92	100.74	297.87	1.23	0.27	3.17	20.69	-3.91	-25.26	4.85	10.71
	21	-1.23	-4.92	79.89	264.02	1.10	0.24	0.39	26.71	-1.87	-14.49	1.37	8.01
	22	-1.23	-4.92	79.84	263.91	1.10	0.24	0.63	24.91	-2.03	-15.95	1.71	7.93
	23	-1.23	-4.92	79.95	264.09	1.10	0.24	0.82	22.16	-2.88	-18.17	1.94	9.76
	24	-1.23	-4.92	80.03	264.23	1.10	0.24	1.63	19.39	-2.72	-19.40	3.35	8.35
	25	-1.23	-4.92	80.59	265.18	1.10	0.24	2.47	16.63	-2.90	-20.52	3.78	8.09
	26	-1.23	-4.92	60.27	228.35	0.96	0.20	0.30	20.44	-1.25	-10.67	1.11	6.01
	27	-1.23	-4.92	60.16	228.12	0.96	0.20	0.49	18.93	-1.37	-12.02	1.43	5.94
	28	-1.23	-4.92	60.17	228.12	0.96	0.20	1.10	16.85	-1.89	-13.87	1.08	6.88
	29	-1.23	-4.92	60.31	228.37	0.96	0.20	1.10	16.87	-1.89	-13.95	1.06	6.92
	30	-1.23	-4.92	60.36	228.45	0.96	0.20	1.24	14.82	-1.69	-15.07	2.14	5.66
	31	-1.23	-4.92	60.58	228.87	0.96	0.21	1.39	11.90	-1.92	-11.72	0.44	5.85

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R529	32	-1.23	-4.92	60.72	229.13	0.96	0.21	1.82	12.67	-1.90	-16.05	2.42	5.69
	33	-1.23	-4.92	60.56	228.82	0.96	0.20	1.82	12.68	-1.90	-16.04	2.41	5.69
	34	-1.23	-4.92	39.89	184.91	0.78	0.17	0.28	13.55	-1.00	-6.55	1.15	5.05
	35	-1.23	-4.92	39.88	184.87	0.78	0.17	0.42	12.56	-1.00	-7.69	0.94	4.75
	36	-1.23	-4.92	39.93	184.99	0.78	0.17	0.60	11.20	-1.05	-9.18	1.04	4.43
	37	-1.23	-4.92	40.05	185.27	0.78	0.17	0.84	9.88	-0.90	-10.26	0.89	3.52
	38	-1.23	-4.92	40.22	185.66	0.79	0.17	1.21	8.48	-1.03	-11.37	1.35	3.50
	39	-1.23	-4.92	100.26	296.79	1.23	0.27	1.13	27.72	-3.83	-23.07	2.43	12.46
	40	-1.23	-4.92	100.11	296.89	1.23	0.27	1.53	27.68	-3.80	-23.12	4.03	12.47
	41	-1.23	-4.92	0.01	2.90	0.01	0.00	0.07	0.11	-0.02	-0.15	0.36	0.06
R535	3	-1.23	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	-0.04	0.00
	4	-1.23	0.01	5.12	65.57	0.28	0.06	0.09	2.30	0.03	-4.03	-0.57	-0.16
	5	-1.23	15.02	5.08	65.28	0.28	0.06	0.30	2.31	0.20	13.81	29.89	-2.37
	6	-1.23	30.05	4.88	63.99	0.28	0.06	0.57	2.20	0.30	31.56	55.58	-4.19
	7	-1.23	45.00	4.99	64.72	0.28	0.06	0.64	3.13	0.47	51.54	76.79	-7.61
	8	-1.23	60.03	4.97	64.58	0.28	0.06	0.29	3.73	1.00	76.39	88.74	-11.43
	9	-1.23	75.06	5.14	65.65	0.28	0.06	0.31	3.86	1.20	105.58	92.71	-13.23
	10	-1.23	75.06	5.12	65.54	0.28	0.06	0.32	3.84	1.19	105.65	92.80	-13.17
	11	-1.23	90.01	5.16	65.82	0.29	0.06	0.38	3.85	1.13	135.48	85.58	-14.05
	12	-1.23	105.03	5.19	65.97	0.29	0.06	0.59	3.87	0.76	160.05	78.11	-13.65
	13	-1.23	105.03	5.17	65.88	0.29	0.06	0.58	3.85	0.75	160.16	78.22	-13.55
	14	-1.23	120.06	5.26	66.43	0.29	0.06	0.54	3.68	0.17	185.89	64.01	-12.74
	15	-1.23	120.06	5.29	66.59	0.29	0.06	0.52	3.70	0.16	186.09	64.13	-12.82
	16	-1.23	135.01	5.30	66.68	0.29	0.06	-0.11	3.42	-0.88	204.61	45.65	-11.53
	17	-1.23	150.03	5.13	65.61	0.28	0.06	-0.16	3.28	-0.78	216.08	20.92	-8.14
	18	-1.23	165.06	5.27	66.46	0.29	0.06	0.02	3.23	-0.72	221.92	-5.66	-5.58
	19	-1.23	165.06	5.26	66.43	0.29	0.06	0.06	3.22	-0.70	222.07	-5.45	-5.54
	20	-1.23	178.81	5.20	66.00	0.29	0.06	-0.01	3.35	1.57	219.99	-38.05	3.06
	21	-1.23	0.01	19.86	129.37	0.56	0.12	0.15	8.95	0.13	-14.38	-0.50	-0.65
	22	-1.23	0.01	0.00	1.63	0.01	0.00	0.10	0.14	0.09	-0.23	-0.48	0.05

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R538	2	-1.23	0.09	0.00	1.81	0.01	0.00	-0.01	0.00	0.01	-0.01	-0.14	-0.03
	3	-1.23	0.01	15.23	113.41	0.49	0.10	-0.11	7.82	0.07	-8.31	-0.02	-0.69
	4	-1.23	0.08	15.21	113.38	0.49	0.10	-0.08	7.32	0.03	-9.40	-0.06	-0.57
	5	-1.23	0.04	15.24	113.53	0.49	0.10	-0.09	7.24	0.04	-9.17	-0.03	-0.59
	6	-1.23	15.02	15.54	114.69	0.49	0.10	0.42	8.10	0.43	7.94	30.82	-7.23
	7	-1.23	15.02	15.61	114.95	0.49	0.10	0.42	8.11	0.43	7.98	30.76	-7.22
	8	-1.23	15.02	15.58	114.85	0.49	0.10	0.42	8.11	0.43	7.93	30.79	-7.19
	9	-1.23	15.02	15.63	115.02	0.49	0.10	0.47	7.59	0.39	6.86	30.98	-6.45
	10	-1.23	30.05	14.91	112.33	0.48	0.10	1.28	7.33	0.46	25.86	58.45	-12.30
	11	-1.23	30.05	14.99	112.65	0.48	0.10	1.23	6.84	0.64	24.82	57.99	-11.78
	12	-1.23	45.00	15.03	112.81	0.48	0.10	1.43	10.52	0.16	42.72	81.61	-23.03
	13	-1.23	45.00	15.04	112.88	0.48	0.10	1.49	10.21	0.61	40.59	80.60	-23.05
	14	-1.23	60.03	14.89	112.32	0.48	0.10	0.67	12.69	0.93	66.80	91.87	-35.42
	15	-1.23	60.03	14.87	112.25	0.48	0.10	0.71	12.16	1.06	64.97	92.22	-33.81
	16	-1.23	75.06	15.00	112.75	0.48	0.10	0.42	13.08	1.64	97.43	92.22	-40.26
	17	-1.23	75.06	15.06	113.02	0.48	0.10	0.50	12.97	1.94	94.44	92.35	-39.75
	18	-1.23	90.01	15.12	113.26	0.48	0.10	0.72	13.46	1.29	125.37	84.66	-43.17
	19	-1.23	90.01	15.05	112.99	0.48	0.10	0.72	12.92	1.35	124.02	85.76	-41.07
	20	-1.23	105.04	14.93	112.54	0.48	0.10	1.14	13.20	0.19	150.02	77.86	-41.35
	21	-1.23	105.04	14.94	112.62	0.48	0.10	1.07	12.85	0.14	148.48	79.43	-39.91
	22	-1.23	120.07	14.75	111.89	0.48	0.10	1.08	12.16	-1.76	175.95	66.63	-38.19
	23	-1.23	120.07	14.70	111.68	0.48	0.10	0.97	11.56	-1.74	175.65	67.90	-36.19
	24	-1.23	135.01	15.32	114.04	0.49	0.10	-0.42	11.04	-5.25	192.50	52.00	-36.96
	25	-1.23	135.01	15.25	113.77	0.48	0.10	-0.46	10.41	-4.75	192.93	51.95	-34.21
	26	-1.23	150.04	15.16	113.44	0.48	0.10	-0.41	9.67	-5.04	204.38	26.88	-28.04
	27	-1.23	150.03	15.07	113.11	0.48	0.10	-0.49	9.07	-4.63	205.47	27.03	-25.87
	28	-1.23	165.06	14.90	112.46	0.48	0.10	0.42	7.86	-4.89	214.72	2.31	-20.23
	29	-1.23	165.06	14.90	112.47	0.48	0.10	0.43	7.53	-4.25	215.59	2.04	-17.84
	30	-1.23	178.81	15.18	113.53	0.48	0.10	0.69	7.69	4.50	214.13	-43.19	12.70
	31	-1.23	178.81	15.22	113.70	0.48	0.10	0.70	7.41	4.01	214.99	-42.76	11.03

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R538	32	-1.23	0.08	20.06	130.66	0.55	0.12	0.08	8.73	-0.01	-14.00	0.21	-0.43
	33	-1.23	0.09	0.00	0.00	0.00	0.00	-0.01	0.01	-0.04	-0.05	0.17	0.15

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R540	2	-1.22	0.01	0.00	0.90	0.00	0.00	0.01	0.00	0.00	0.02	-0.06	0.00
	3	-1.22	0.01	22.88	139.69	0.60	0.13	-0.21	11.75	0.21	-13.88	-0.33	-0.84
	4	-1.22	0.01	22.96	140.03	0.60	0.13	-0.11	11.00	0.16	-15.16	-0.21	-0.69
	5	-1.22	15.02	23.12	140.57	0.60	0.13	0.63	12.19	0.58	-1.27	31.29	-9.93
	6	-1.22	15.02	23.03	140.35	0.60	0.13	0.73	11.37	0.56	-2.59	31.53	-9.04
	7	-1.22	30.05	22.75	139.51	0.59	0.13	2.10	11.09	0.29	16.33	60.99	-16.38
	8	-1.22	30.05	22.75	139.55	0.59	0.13	2.01	10.47	0.55	14.98	60.14	-15.89
	9	-1.22	45.10	22.96	140.21	0.59	0.13	2.24	15.31	-0.43	29.27	86.61	-30.99
	10	-1.22	45.10	22.95	140.23	0.59	0.13	2.26	16.13	-0.56	30.62	87.04	-32.89
	11	-1.22	45.10	22.90	140.11	0.59	0.13	2.23	15.61	-0.10	28.18	85.56	-32.31
	12	-1.22	60.03	23.30	141.34	0.60	0.13	1.01	19.77	0.61	54.80	96.39	-52.63
	13	-1.22	60.03	23.17	140.97	0.60	0.13	1.05	18.85	0.91	52.56	95.85	-49.95
	14	-1.22	75.06	23.17	141.00	0.60	0.13	0.37	20.13	1.98	87.29	92.61	-60.60
	15	-1.22	75.06	23.28	141.35	0.60	0.13	0.55	19.74	2.59	83.52	92.02	-59.12
	16	-1.22	90.11	23.18	141.06	0.60	0.13	1.29	20.75	1.67	113.95	84.83	-64.84
	17	-1.22	90.01	23.15	140.99	0.59	0.13	1.23	20.01	1.53	111.50	86.30	-61.76
	18	-1.22	105.04	23.26	141.36	0.60	0.13	1.66	20.58	-0.68	138.85	79.07	-62.82
	19	-1.22	105.04	23.13	140.96	0.59	0.13	1.63	19.86	-0.51	136.67	80.32	-59.87
	20	-1.22	120.07	23.27	141.41	0.60	0.13	1.49	18.95	-4.69	164.95	70.74	-59.29
	21	-1.22	120.07	23.06	140.78	0.59	0.13	1.66	18.51	-3.31	163.03	70.26	-55.33
	22	-1.23	135.11	23.30	141.54	0.60	0.13	-0.53	16.57	-7.61	181.74	53.22	-52.76
	23	-1.22	135.11	23.35	141.69	0.60	0.13	-0.63	15.82	-7.40	181.20	55.09	-49.98
	24	-1.22	150.04	23.05	140.78	0.59	0.13	-0.38	14.66	-7.97	193.30	31.48	-42.17
	25	-1.22	150.03	23.16	141.13	0.59	0.13	-0.49	13.88	-7.56	193.93	32.42	-39.59
	26	-1.22	165.06	23.10	140.96	0.59	0.13	0.75	11.77	-8.12	206.41	8.73	-31.51
	27	-1.23	165.06	23.06	140.87	0.59	0.13	0.79	11.20	-6.84	207.50	7.09	-27.11
	28	-1.22	178.81	23.10	141.03	0.59	0.13	1.45	11.22	5.19	207.48	-43.96	15.18
	29	-1.23	178.81	23.16	141.26	0.59	0.13	1.43	10.80	4.50	208.15	-43.49	12.73
	30	-1.22	0.09	19.99	131.02	0.55	0.12	0.17	8.81	0.16	-16.73	-0.54	-0.48
	31	-1.22	0.09	0.00	0.00	0.00	0.00	0.11	0.07	-0.03	-2.63	-0.38	0.17

Table D-4: Aero Tare Raw Data Table (cont'd)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R544	2	-1.22	0.01	0.00	1.61	0.01	0.00	-0.01	0.00	0.01	0.07	-0.07	-0.01
	3	-1.22	-179.91	25.18	144.61	0.64	0.13	1.73	10.18	5.05	227.38	-49.75	15.17
	4	-1.22	-164.99	24.88	143.78	0.64	0.13	1.91	11.86	7.46	207.82	-82.87	29.81
	5	-1.22	-149.96	24.87	143.75	0.64	0.13	2.99	14.06	7.26	194.50	-106.70	40.06
	6	-1.22	-134.92	25.12	144.50	0.64	0.13	3.18	16.47	8.86	168.93	-132.06	56.57
	7	-1.22	-119.99	24.92	143.92	0.64	0.13	2.09	19.75	2.42	132.10	-123.69	56.77
	8	-1.22	-104.96	25.23	144.85	0.64	0.13	1.40	21.98	1.17	97.77	-128.43	65.89
	9	-1.22	-90.00	24.99	144.17	0.64	0.13	0.97	22.21	-0.38	65.89	-126.66	67.66
	10	-1.22	-74.98	25.24	144.89	0.64	0.13	0.50	22.33	-0.51	34.71	-120.49	64.09
	11	-1.22	-59.95	24.93	143.98	0.64	0.13	-0.55	19.16	0.08	19.45	-103.44	48.43
	12	-1.22	-44.91	25.16	144.66	0.64	0.13	-3.63	16.19	0.04	17.66	-80.50	33.16
	13	-1.22	-29.97	25.20	144.77	0.64	0.13	-1.68	10.59	-2.46	8.89	-48.26	21.23
	14	-1.22	-14.94	25.04	144.30	0.64	0.13	-0.27	11.14	-0.31	-6.53	-28.00	8.14
	15	-1.22	0.01	25.05	144.32	0.64	0.13	-0.07	11.33	0.03	-7.38	1.79	-0.37
	16	-1.22	0.01	25.10	144.46	0.64	0.13	0.01	10.58	0.10	-8.22	1.67	-0.55
	17	-1.22	0.01	25.14	144.59	0.64	0.13	0.10	9.96	0.02	-9.05	1.72	-0.24
	18	-1.22	15.02	25.23	144.86	0.64	0.13	1.06	11.19	0.09	-1.68	33.06	-7.37
	19	-1.22	15.02	25.08	144.41	0.64	0.13	0.99	10.27	0.09	-1.77	33.02	-6.40
	20	-1.22	15.02	25.33	145.15	0.64	0.13	1.03	9.54	-0.06	-2.16	33.52	-5.30
	21	-1.22	30.05	24.99	144.15	0.64	0.13	2.29	11.07	1.27	14.88	59.26	-18.17
	22	-1.22	30.05	25.17	144.70	0.64	0.13	2.24	10.51	1.09	13.94	59.65	-16.33
	23	-1.22	30.05	25.04	144.30	0.64	0.13	1.98	9.68	0.96	14.50	59.50	-14.30
	24	-1.22	45.00	25.23	144.88	0.64	0.13	2.61	16.89	0.60	26.02	85.50	-35.80
	25	-1.22	45.00	25.23	144.87	0.64	0.13	2.69	15.92	0.70	25.06	85.35	-33.49
	26	-1.22	45.00	25.24	144.91	0.64	0.13	2.80	15.00	0.80	24.33	85.27	-31.35
	27	-1.22	60.03	25.33	145.18	0.64	0.13	1.41	20.74	1.84	49.04	94.49	-55.18
	28	-1.22	60.03	25.20	144.82	0.64	0.13	1.42	19.83	1.69	47.72	95.40	-52.00
	29	-1.22	60.03	25.27	145.01	0.64	0.13	1.40	18.91	1.44	46.81	95.87	-48.56
	30	-1.22	75.06	25.08	144.47	0.64	0.13	0.82	21.25	3.58	81.29	90.09	-63.21
	31	-1.22	75.06	25.08	144.49	0.64	0.13	0.83	20.12	3.95	80.61	89.76	-59.53

Table D-4: Aero Tare Raw Data Table (concluded)

	POINT	α (°)	β (°)	Q (psf)	V (ft/s)	Re (10^6)	M	L (lb)	D (lb)	SF (lb)	PM (ft-lb)	RM (ft-lb)	YM (ft-lb)
R544	32	-1.22	75.06	24.95	144.10	0.64	0.13	0.92	19.23	3.97	79.47	90.32	-56.32
	33	-1.22	90.01	25.09	144.54	0.64	0.13	1.56	21.38	2.42	109.66	85.45	-65.22
	34	-1.22	90.01	24.89	143.95	0.64	0.13	1.55	20.19	2.54	109.43	86.00	-60.98
	35	-1.22	90.01	24.65	143.27	0.63	0.13	1.57	19.02	2.56	109.54	86.83	-56.93
	36	-1.22	105.03	24.80	143.73	0.63	0.13	1.64	21.04	-1.76	135.83	83.49	-63.20
	37	-1.22	105.03	24.87	143.94	0.63	0.13	1.55	19.85	-1.53	136.18	84.54	-58.95
	38	-1.22	105.03	24.69	143.45	0.63	0.13	1.46	18.83	-1.97	136.19	87.66	-55.59
	39	-1.22	120.06	25.17	144.88	0.64	0.13	0.88	18.41	-8.54	165.42	82.67	-61.43
	40	-1.22	120.06	25.15	144.84	0.64	0.13	0.83	17.31	-7.88	165.95	82.41	-56.85
	41	-1.22	120.06	24.99	144.39	0.63	0.13	0.78	16.27	-7.57	166.50	83.09	-53.23
	42	-1.22	135.01	25.00	144.44	0.63	0.13	-0.80	16.05	-7.77	183.37	56.14	-50.89
	43	-1.22	135.01	25.05	144.60	0.64	0.13	-0.86	15.02	-7.42	184.52	57.09	-47.36
	44	-1.22	135.01	24.88	144.13	0.63	0.13	-1.10	14.30	-7.78	184.74	59.81	-46.12
	45	-1.22	150.03	24.96	144.38	0.63	0.13	-0.92	13.89	-7.24	197.07	31.28	-38.31
	46	-1.22	150.03	25.06	144.68	0.63	0.13	-0.95	13.20	-6.79	198.18	31.65	-35.46
	47	-1.22	150.03	25.12	144.90	0.64	0.13	-0.98	12.51	-6.38	199.39	31.82	-32.73
	48	-1.22	165.06	25.23	145.26	0.64	0.13	0.58	11.57	-5.44	210.50	2.47	-22.52
	49	-1.22	165.06	25.20	145.20	0.64	0.13	0.50	11.15	-5.06	211.38	2.65	-20.67
	50	-1.22	165.06	25.04	144.75	0.63	0.13	0.49	10.60	-4.24	212.59	1.43	-17.61
	51	-1.22	178.81	25.28	145.48	0.64	0.13	1.11	11.28	3.64	210.22	-43.59	10.60
	52	-1.22	178.81	25.29	145.54	0.64	0.13	1.07	10.88	2.66	211.06	-42.16	7.16
	53	-1.22	178.81	25.14	145.13	0.63	0.13	1.02	10.32	1.92	212.29	-41.01	4.64
	54	-1.22	0.01	20.54	131.20	0.57	0.12	-0.09	9.14	0.16	-15.00	0.81	-0.31
	55	-1.22	0.01	0.01	2.27	0.01	0.00	-0.18	0.15	-0.01	-0.90	1.14	0.04

APPENDIX E

RUN TO TARE

Table E-1: Airplane Mode

Configuration	Run	β	Aero Tare	Weight Tare
L00E	R254	0	R508	R261
L00E	R255	0	R508	R261
L00E	R256	0	R508	R261
L00E	R272	0	R508	R261
L00E	R257	5	R517	R262
L00E	R258	5	R517	R262
L00E	R266	5	R517	R262
L00E	R276	10	R520	R263
L00E	R259	10	R520	R263
L00E	R260	10	R520	R263
L00E	R265	10	R520	R263
L00	R283	0	R508	R277
L00	R284	0	R508	R277
L00	R289	0	R508	R277
L00	R285	5	R517	R278
L00	R286	5	R517	R278
L00	R290	5	R517	R278
L00	R280	10	R520	R279
L00	R287	10	R520	R279
L00	R291	10	R520	R279
LNNC	R300A	-5	R529	R301
LNNC	R300B	-5	R529	R301
LNNC	R300C	-5	R529	R301
LNNC	R297A	0	R508	R302
LNNC	R297B	0	R508	R302
LNNC	R299	0	R508	R302
LNNC	R317	0	R508	R302
LNNC	R295	5	R517	R303
LNNC	R296	5	R517	R303
LNNC	R298	5	R517	R303
LNNC	R292	10	R520	R304
LNNC	R293	10	R520	R304
LNNC	R294	10	R520	R304
LNNC	R321	10	R520	R304

Table E-2: Helicopter Mode

Configuration	Run	α	Re	Aero Tare	Weight Tare
L85	R325	–10	0.6	R540C	R338
L85	R330	–10	0.6	R540C	R338
L85	R332	–5	0.6	R540B	R345
L85	R335	–5	0.6	R540B	R345
L85	R322	0	0.3	R535	R336
L85	R327	0	0.3	R535	R336
L85	R323	0	0.45	R538A	R336
L85	R328	0	0.45	R538A	R336
L85	R324	0	0.6	R544A	R336
L85	R329	0	0.6	R544A	R336
L85	R334	0	0.6	R544A	R336
L85	R333	5	0.6	R544B	R346
L85	R337	5	0.6	R544B	R346
L85	R326	10	0.6	R544C	R347
L85	R331	10	0.6	R544C	R347
L95	R339	0	0.6	R544A	R367
L75	R340	0	0.6	R544A	R368
L60	R342	0	0.6	R544A	R370
L85E	R349	–10	0.6	R540C	R353
L85E	R350	–5	0.6	R540B	R354
L85E	R365	–5	0.6	R540B	R354
L85E	R343	0	0.3	R535	R352
L85E	R344	0	0.45	R538A	R352
L85E	R348	0	0.6	R544A	R352
L85E	R364	0	0.6	R544A	R352
L85E	R351	5	0.6	R544B	R355
L85E	R372	5	0.6	R544B	R355
L85E	R357	10	0.6	R544C	R356
L95E	R358	0	0.6	R544A	R366
L75E	R359	0	0.6	R544A	R369
L75E	R360	0	0.6	R544A	R369
L60E	R371	0	0.6	R544A	R361
LNNC	R382	–10	0.6	R540C	R384
LNNC	R385	–5	0.6	R540B	R383
LNNC	R373	0	0.3	R535	R376
LNNC	R374	0	0.45	R538A	R376
LNNC	R379	0	0.6	R544A	R376
LNNC	R380	5	0.6	R544B	R378
LNNC	R381	10	0.6	R544C	R377

Table E-3: Wing Only

Configuration	Run	α	β	Aero Tare
WC	R435	–6	0	R503
WC	R466	–6	0	R503
WC	R436	–6	0	R503
WC	R437	–3	0	R503
WC	R465	–3	0	R503
WC	R410	0	–5	R505
WC	R447	0	–5	R505
WC	R401	0	0	R503
WC	R418	0	0	R503
WC	R442	0	0	R503
WC	R454	0	0	R503
WC	R402	0	5	R504
WC	R448	0	5	R504
WC	R409	0	10	R506
WC	R453	0	10	R506
WC	R419	6	0	R503
WC	R424	6	0	R503
WC	R457	6	0	R503
WC	R458	6	0	R503
WC	R425	8	0	R503
WC	R426	8	0	R503
WC	R456	8	0	R503
WN	R431	–6	0	R503
WN	R441	–3	0	R503
WN	R463	–3	0	R503
WN	R411	0	–5	R505
WN	R446	0	–5	R505
WN	R416	0	0	R503
WN	R443	0	0	R503
WN	R449	0	5	R504
WN	R403	0	5	R504
WN	R408	0	10	R506
WN	R452	0	10	R506
WN	R420	6	0	R503
WN	R460	6	0	R503
WN	R430	8	0	R503
WNE2L	R433	–6	0	R503
WNE2L	R413	0	–5	R505
WNE2L	R414	0	0	R503
WNE2L	R405	0	5	R504

Table E-3: Wing Only (cont'd)

Configuration	Run	α	β	Aero Tare
WNE2L	R406	0	10	R506
WNE2L	R422	6	0	R503
WNE2L	R428	8	0	R503
WNE2L	R439	–3	0	R503