NASA/TM-1998-206281
ARL-TR-1401

Wind-Tunnel Evaluation of the Effect of Blade Nonstructural Mass Distribution on Helicopter Fixed-System Loads

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January 1998

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Summary

This report provides data obtained during a wind-tunnel test conducted to investigate parametrically the effect of blade nonstructural mass on helicopter fixed-system vibratory loads. The data were obtained with aeroelastically scaled model rotor blades that allowed for the addition of concentrated nonstructural masses at multiple locations along the blade radius. Testing was conducted for advance ratios ranging from 0.10 to 0.35 for 10 blade-mass configurations. Three thrust levels were obtained at representative full-scale shaft angles for each blade-mass configuration. This report provides the fixed-system forces and moments measured during testing. The comprehensive database obtained is well suited for use in correlation and development of advanced rotorcraft analyses.

Introduction

Significant research and development efforts have been devoted to the reduction of helicopter vibratory loads throughout the years. A survey documenting many of the vibration-reduction techniques developed has been presented by Reichert in reference 1. Although techniques are available to isolate or detune the helicopter fuselage from forcing frequencies present in the complete system, the most obvious course of action is to reduce the major vibratory forcing functions. For the case of the helicopter, the main rotor generates the bulk of these vibratory loads and transmits them to the fuselage primarily through the main-rotor shaft. Therefore, the main-rotor dynamic response is of primary concern when attempting to minimize helicopter vibrations. Both passive- (e.g., pendulum absorbers) and active-control (e.g., higher harmonic control) techniques have been successfully used to reduce the main-rotor dynamic response (ref. 1). However, these techniques have the disadvantage of significant weight penalty, added parts, increased maintenance requirements, and possible degradation of rotor performance. A better approach is required.

It is possible to achieve vibration reduction by aeroelastic tailoring of the rotor. This approach, which has the advantage of addressing the vibration problem in the design phase, has become a viable option in recent years because of the increased use of composite materials in rotor blade construction. These materials allow the rotor designer more freedom when selecting blade stiffness, mass, torsional inertia, local center of gravity, and elastic-coupling characteristics. Using computer analyses, the designer may apply these parameters to tune the rotor response in an effort to minimize the rotor loads that are transmitted to the fuselage. The underlying assumption is, however, that the analyses used are reliable and well understood.

Numerous analytical investigations have been conducted to evaluate the effectiveness of aeroelastic tailoring in reducing helicopter vibrations. However, few have included experimental results to verify the conclusions. References 2 and 3 offer substantial data sets to validate the aeroelastic tailoring techniques and the analyses used; however, no detailed information is provided about the blade designs, which effectively disallows any further research outside the respective organizations. It is apparent that a substantial need exists for additional experimental data to support the validation of aeroelastically tailored rotor design techniques.

The goal of this research program is to provide a detailed experimental database to be used for comparison and validation of aeroelastic tailoring optimization techniques, as well as for correlation with and to aid in the development of new rotor dynamics analyses. The approach taken has been to vary parametrically the mass distribution of an aeroelastically scaled model rotor during testing at the Langley Transonic Dynamics Tunnel (TDT) and to measure the effect of the distributed mass on the fixed-system loads and response. This testing has resulted in a database that relates one aeroelastic tailoring parameter (mass distribution) to the resulting dynamic response. A summary of these test results appears in reference 4. This paper is intended to provide the reader with the results of the testing in sufficient detail for further, independent evaluation and analysis.

Symbols

Forces and moments are measured in U.S. customary units. The positive directions of forces, moments, angles, and velocities are shown in figure 1.

A	balance axial force, lb
A_n	amplitude of n^{th} harmonic, lb or in-lb
a	speed of sound, ft/sec
c	blade chord, ft
C_L	rotor lift coefficient, $\frac{L}{\pi R^2 \rho (\Omega R)^2}$
C_D	rotor drag coefficient, $\frac{D}{\pi R^2 \rho (\Omega R)^2}$
C_Q	rotor torque coefficient, $\frac{Q}{\pi R^3 \rho (\Omega R)^2}$
D	rotor drag, $N \sin \alpha_s + A \cos \alpha_s$, lb
L	rotor lift, $N \cos \alpha_s - A \sin \alpha_s$, lb
M_T	rotor-tip Mach number in hover, $\frac{\Omega R}{a}$

N	balance normal force, lb
n	index of harmonic
nP	frequency, n times rotor rotational frequency Ω
Q	rotor torque, in-lb
R	rotor radius, ft
r	blade radial location measured from center of rotation, ft
T	rotor thrust, lb
T_{1g}	thrust required to simulate 1g flight condition (285 lb for model scale and 18 500 lb for full scale)
V	free-stream velocity, ft/sec
x	blade chordwise measurement from leading edge, ft
α_s	rotor-shaft angle of attack, deg
δ_3	hub pitch-flap coupling ratio
θ_0	collective pitch at 0.75R, deg
μ	rotor advance ratio, $\frac{V \cos \alpha_s}{\Omega R}$
ρ	density, slugs/ft^3
ϕ_n	phase angle referenced in direction of rotor rotation from 0° over model tail, deg
ψ	rotor-blade azimuth angle referenced in direction of rotor rotation from 0° over model tail, deg
Ω	rotor rotational frequency, rad/sec

Apparatus and Procedures

Wind Tunnel

The Langley TDT, a schematic of which is shown in figure 2, is a continuous-flow pressure tunnel capable of speeds up to Mach 1.2 at stagnation pressures up to 1 atm. The TDT has a 16-ft square slotted test section that has cropped corners and a cross-sectional area of 248 ft^2. Either air or refrigerant-12 (R-12), a heavy gas, may be used as the test medium. For this research, R-12 was used at a nominal density of 0.006 slug/ft^3. The TDT is particularly suited for rotorcraft aeroelastic testing primarily because of three advantages associated with the heavy gas. First, the high density of the test medium allows model rotor components to be heavier, thereby more easily meeting structural design requirements while maintaining dynamic scaling. Second, the low speed of sound of R-12 allows much lower rotor rotational speeds and forward flight velocities to match full-scale aerodynamic parameters (e.g., M_T and μ, among others). Finally, the high-density environment increases the Reynolds number throughout the test envelope, which allows more accurate modeling of the full-scale aerodynamics of the system. A more detailed discussion of the advantages of the heavy-gas test medium and further discussions on rotorcraft testing in the TDT are presented in reference 5.

Model Description

Testbed. The ARES-1 (Aeroelastic Rotor Experimental System 1) generic rotorcraft testbed shown in figures 3 and 4 was used for the wind-tunnel testing. The ARES-1 is the most basic in a series of three rotorcraft testbeds, which are more fully described in reference 5. It is a single-degree-of-freedom system (allowing for pitching motions of the shaft) that is soft-mounted to the floor to permit limited flexibility.

The ARES-1 model is powered by a variable-frequency synchronous motor rated at 47-hp output at 12000 rpm. The motor is connected to the rotor shaft through a belt-driven, two-stage speed-reduction system. Control of rotor systems on the ARES-1 testbed is achieved through variable shaft angle of attack and a standard rise-and-fall swashplate. All control is achieved hydraulically with a fly-by-wire control system, with the shaft angle of attack actuated by one and the swashplate by three independent hydraulic actuators.

Instrumentation on the ARES-1 model allows continuous display of model control settings, rotor speed, rotor forces and moments, blade loads and position, and pitch-link loads. All rotating-system data are transferred through a 30-channel slip-ring assembly to the model fixed-system. Rotor forces and moments are measured by a six-component strain-gauge balance placed in the fixed system 21.0 in. below the rotor hub. The balance supports the rotor pylon and drive system, pitches with the model shaft, and measures all forces and moments generated by the rotor model. A streamlined fuselage shape encloses the rotor controls and drive system; however, fuselage forces and moments are not sensed by the balance. A photograph of the ARES-1 testbed with the rotor hardware installed is shown in the TDT test section in figure 4.

Rotor. A summary of the model rotor system characteristics is presented in table 1. The rotor used a four-bladed, articulated hub with coincident lead-lag and flap hinges placed 3.0 in. (0.0534R) from the center of rotation and pitch-bearings placed directly outboard of the hinges. Rotary potentiometers placed on the hub and geared to the blade cuffs permitted measurement of blade lead-lag, flap, and pitch angles. Lead-lag dampers on the hub provided an effective damping output of

980 in-lb-sec/rad. For this test the hub was configured with a measured pitch-flap coupling ratio of 0.5 ($\delta_3 = 26.6°$, flap up-pitch down) with no pitch-link cant.

The blades tested were a 1/6-size, aeroelastically scaled representation of a U.S. Army candidate design for the "growth" version of the UH-60 Black Hawk utility-class helicopter. The blades, therefore, were similar to the advanced blade design in references 6 and 7. The current blades, however, have provisions for the addition of insertable nonstructural masses at 13 locations along the blade span to permit parametric variation of the blade-mass distribution.

Aerodynamic design. The blade planform and airfoil distributions are shown in figure 5. The blades have a wide root chord with a tapered, unswept tip. Taper initiation is at 0.80*R* with a 3:1 taper ratio extending to the tip. The blades have a −16° (nose-down) linear twist distribution. The airfoils used in the design are the RC(4)-10, RC(3)-10, and the RC(3)-08, with blends between the different airfoil shapes. For each of the airfoils, the aerodynamic center is considered to be at the quarter-chord. Further information regarding the airfoils used may be found in references 8 and 9. Information pertaining to the techniques used to develop the aerodynamic design of the blades may be found in reference 10.

Blade construction. In order to evaluate the effects of blade-mass distribution on fixed-system vibratory loads, the blade set was fabricated with a facility for the addition of nonstructural mass at discrete locations along the blade radius. An illustration of the concept is shown in figure 6, with a cross-sectional view of the blade shown in figure 7. The blade consists of an airfoil glove and an insertable steel spar. The airfoil glove maintains the aerodynamic shape and provides the majority of the blade stiffness. As shown in figures 6 and 7, the airfoil glove has an internal channel centered about the quarter-chord that is made to accept the steel spar. The spar may be inserted in the channel at the root end of the blade glove and locked in place for testing with keys and shoulder bolts fastened near the root. The primary function of the steel spar is to provide a mounting area for the insertable nonstructural masses and to provide the mechanical connection of the blade to the rotor hub. Cutout areas of the spar, placed every 5 percent of blade radius beginning inboard at 0.30*R* and extending outboard to 0.90*R*, permit the mounting of either tungsten or steel masses to effect the desired mass-distribution modifications.

A single tungsten mass and its associated mounting hardware provided a mass of 0.00838 slug (0.27 lb). A single steel mass and mounting hardware were 0.00342 slug (0.11 lb). These two masses represent approximately 8.7 percent and 3.5 percent, respectively, of total blade mass, if one neglects the mass of the root-end connecting hardware. For the baseline configuration tested, no masses were inserted in the blades. For each of the subsequent configurations, a single mass was inserted in each blade. Mounting a steel or tungsten mass in the blades produced no change in the chordwise center of gravity and negligible changes to the blade torsional inertia and stiffness distributions.

Blade structural properties. Model scale structural properties are provided in table 2. The flapwise stiffness and mass distributions are measured values. All other properties are estimates based on computer analysis of the blade design. The increased mass and stiffness caused by the root-end hardware are not included in the data. The chordwise center-of-gravity distribution and the elastic axis are coincident and placed at the blade quarter-chord.

Rotating blade modes. To provide confidence in the blade construction and structural properties, a rotating shake test was performed to identify the rotating blade modes and compare them with analysis. The modes and frequencies identified are shown in tables 3 and 4 and are described in the "Results" section of the paper.

Blade-mass configurations. Ten blade-mass configurations were tested. Table 5 provides a listing of the configurations and the notation used to designate these configurations throughout the paper.

Test Procedures

The purpose of this test was to measure vibratory forces and moments in the fixed system while varying parametrically the location and magnitude of discrete nonstructural masses installed in the rotor blades. Because frequency response and dynamic response of strain-gauge balances are of utmost concern during testing of this nature, load comparisons were made only when the rotor was operating at a specified frequency. For this test, a rotor speed of 662 rpm was established as the nominal frequency and used for all data presented in this paper. Because of changing wind-tunnel conditions, this method had the drawback of not being able to exactly match the hover tip Mach number M_T (which ranged from 0.656 to 0.680) for each configuration. However, it was determined that it was more important to remove the possibility that balance dynamic response might contaminate the data than it was to exactly match the aerodynamic environment. Therefore, a dynamic calibration of the balance is not required to observe trends in the fixed-system loads.

Testing was conducted in a heavy-gas test medium at a nominal density of 0.006 slug/ft^3, which provided a nominal Reynolds number of 7.5×10^6/ft at a nominal hover tip Mach number (M_T = 0.65). Test data were acquired for nine advance ratios that ranged from 0.10 to 0.35. Rotor blade limit loads established an upper speed limit of $\mu = 0.35$. At each advance ratio, data were acquired for the rotor-shaft angles of attack shown in table 6, with the rotor collective pitch trimmed to produce a 1.0g rotor thrust level. With the shaft angle of attack held constant, the collective pitch was then retrimmed to acquire data for 0.75g and 1.25g thrust. For all test conditions, rotor cyclic pitch was used to minimize (<0.1°) the first-harmonic components of blade flapping with respect to the shaft. The conditions provided in table 6 represent the results obtained for the baseline configuration only. Slight variations were noted in trim conditions for the other configurations tested.

For each of the test points, a high-speed dynamic data acquisition system acquired 5 sec of data for each channel at a rate of 1000 samples/sec. Concurrently, wind-tunnel conditions and ARES-1 control settings were recorded. Fixed-system loads were then reduced off line with a Fourier analysis program. This analysis provided the mean, one-half peak-to-peak load, and magnitude and phase information for the first eight harmonics of rotor rotational frequency. For these calculations, 52 rotor revolutions were used.

During a separate set of tests on a hover test stand in an air environment, data were acquired to determine the rotating blade bending frequencies and modal moments. These data were obtained by operating the ARES-1 in hover and allowing rotor wake recirculation to excite the blade modes. Data for rotor speeds of 200 rpm to 700 rpm were obtained. The frequencies and modal moments were reduced from blade strain-gauge data with a Fast Fourier Transform that provided approximately 0.25-Hz resolution for frequencies ranging to 100 Hz.

Results

Blade Frequencies and Modal Moments

Four of the 10 configurations were chosen for experimental verification of the blade flap and chord frequencies and the flapwise bending modal moments. The chosen configurations were the baseline configuration and the configurations with a tungsten mass at 0.30R (T30), 0.60R (T60), and 0.80R (T80). Blade excitation was insufficient to verify the torsional frequencies in the same manner. Tables 3 and 4 provide the experimental frequencies obtained and calculated frequencies for the elastic blade modes of the four configurations. Figure 8 compares the experimental and calculated modal moments for the first elastic flapwise mode. Figure 9 compares the experimental and calculated modal moments for the second elastic flapwise mode. The calculations were performed using the CAMRAD (ref. 11) comprehensive rotor analysis.

Fixed-System Loads

Tables 7–66 present the results of the fixed-system loads measured at the ARES-1 fixed-system balance. Data are presented for the mean load A_0, one-half peak-to-peak load, magnitude A_n, and phase ϕ_n for the first eight harmonics of rotor speed. Phase angles are presented in degrees referenced to the direction of rotor rotation from 0° over the tail of the model. The total load at any azimuthal location may be reconstructed from the tabulated harmonics by using the equation

$$\text{Load} = A_0 + \sum_{n=0}^{8} A_n \sin(n\psi + \phi_n)$$

The data are grouped according to measured fixed-system forces and moments for each rotor configuration and thrust condition. Each set of data is presented in order of ascending advance ratio for ease in assessing data repeatability and for comparison with other configurations and loads. The data are presented in the following order:

Configuration	Table for—					
	Normal force	Axial force	Side force	Pitch	Roll	Yaw
Baseline	7	17	27	37	47	57
T30	8	18	28	38	48	58
T40	9	19	29	39	49	59
T50	10	20	30	40	50	60
T60	11	21	31	41	51	61
T70	12	22	32	42	52	62
T75	13	23	33	43	53	63
T80	14	24	34	44	54	64
T85	15	25	35	45	55	65
S80	16	26	36	46	56	66

The 4P fixed-system normal force and pitching and rolling moments are presented in bar graph format, which permits a more direct comparison of the effects of each blade-mass configuration. To generate the bar graphs, all data were first plotted as shown in figure 10, where the 4P fixed-system normal-force loads for the baseline configuration at a 1.0g thrust condition are presented versus advance ratio. The data for the bar charts were then developed based on the best-fit curves for each load-versus-advance-ratio plot. Figures 11–19 present the resulting bar graphs for the 4P normal, pitch, and roll balance loads at each thrust condition and advance ratio tested.

Concluding Remarks

A database has been obtained in the Langley Transonic Dynamics Tunnel (TDT) which relates rotorcraft fixed-system vibratory loads to main rotor blade-mass distribution. The database, obtained with 10 different blade-mass configurations, is particularly suited to the validation and development of rotor dynamics analyses and aeroelastic tailoring techniques. The data set, which was obtained with an aeroelastically scaled model rotor system with an advanced aerodynamic blade design, was acquired on the Aeroelastic Rotor Experimental System 1 (ARES-1) testbed. The testing was performed at full-scale tip Mach numbers and Reynolds numbers sufficient to provide a realistic aerodynamic environment. This report presents the fixed-system force and moment results in tabular and graphical formats.

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April 15, 1997

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Table 1. Model Rotor System Description

Number of blades	4
Radius, ft	4.685
Root cutout, *r/R*	0.213
Root chord, ft	0.450
Tip chord, ft	0.150
Taper initiation, *r/R*	0.800
Taper ratio	3:1
Solidity:	
Area weighted	0.114
Thrust weighted	0.101
Torque weighted	0.0956
Twist, deg	−16 (linear)
Pitch axis, *x/c*	0.25
Elastic axis, *x/c*	0.25 (straight)
Chordwise center of gravity, *x/c*	0.25 (straight)
Aerodynamic center, *x/c*	0.25 (straight)
Flap hinge, *r/R*	0.0534
Lag hinge, *r/R*	0.0534
Pitch horn offset, *x/R*	0.0249
Pitch-link radial attachment, *r/R*	0.0400

Table 2. Rotor-Blade Structural Properties

Radial station, r/R	Mass, slugs/ft	Stiffness, lb-ft^2 for—			Torsional inertia, lb-sec^2
		Flap	Chord	Torsion	
0.1222	0.0280	329.9	7000.0	267.4	0.000242
0.14	0.0280	329.9	7000.0	267.4	0.000242
0.16	0.0280	329.9	6250.0	267.4	0.000242
0.18	0.0280	329.9	6250.0	267.4	0.000251
0.20	0.0280	305.5	6250.0	267.4	0.000251
0.22	0.0278	284.7	6250.0	267.4	0.000275
0.24	0.0272	270.8	6250.0	267.4	0.000331
0.26	0.0272	243.1	6250.0	267.4	0.000359
0.28	0.0272	243.1	6250.0	267.4	0.000359
0.30	0.0236	243.1	6250.0	256.9	0.000359
↓	↓	↓	↓	↓	↓
0.48	0.0236	243.1	6250.0	256.9	0.000359
0.50	0.0236	250.0	6250.0	229.2	0.000359
↓	↓	↓	↓	↓	↓
0.54	0.0236	250.0	6250.0	229.2	0.000359
0.56	0.0240	250.0	6250.0	229.2	0.000359
0.58	0.0240	262.5	6250.0	229.2	0.000359
0.60	0.0240	270.8	6250.0	243.0	0.000359
0.62	0.0240	281.3	6250.0	256.9	0.000359
0.64	0.0240	281.3	6250.0	263.9	0.000359
0.66	0.0246	277.8	6250.0	263.9	0.000359
0.68	0.0259	269.1	6250.0	263.9	0.000359
0.70	0.0312	269.1	6250.0	263.9	0.000359
0.72	0.0312	269.1	6250.0	253.5	0.000359
0.74	0.0312	244.8	6250.0	256.9	0.000359
0.76	0.0312	217.0	6250.0	277.8	0.000359
0.78	0.0304	208.3	6250.0	281.3	0.000359
0.80	0.0291	208.3	6250.0	253.5	0.000359
0.82	0.0282	208.3	5555.5	225.7	0.000359
0.84	0.0268	187.5	4650.0	180.6	0.000359
0.86	0.0271	154.5	3470.0	156.3	0.000359
0.88	0.0209	125.0	2290.0	111.1	0.000359
0.90	0.0200	69.4	1944.0	83.3	0.000349
0.92	0.0191	52.1	1389.0	62.5	0.000328
0.94	0.0140	31.9	900.0	48.6	0.000290
0.96	0.0115	20.8	590.0	34.7	0.000200
0.98	0.0099	13.9	382.0	20.8	0.000099
1.00	0.0092	13.2	278.0	13.9	0.000053

Table 3. Experimental Rotor-Blade Frequencies (662 rpm)

Mode	Frequency, per rev for—			
	Baseline	T30	T60	T80
Flap	2.85	2.83	2.88	2.95
Flap	5.34	5.34	5.34	5.34
Lag[a]	6.48			

[a]Frequencies available only for baseline configuration.

Table 4. Calculated Rotor-Blade Frequencies (662 rpm)

Mode	Frequency, per rev for—			
	Baseline	T30	T60	T80
Flap	2.88	2.77	2.85	3.03
Flap	5.43	5.21	5.42	5.56
Lag	6.69			

Table 5. Rotor Blade-Mass Configurations

Configuration	Description
Baseline	Baseline (no masses installed)
T30	Tungsten mass installed at 0.30*R*
T40	Tungsten mass installed at 0.40*R*
T50	Tungsten mass installed at 0.50*R*
T60	Tungsten mass installed at 0.60*R*
T70	Tungsten mass installed at 0.70*R*
T75	Tungsten mass installed at 0.75*R*
T80	Tungsten mass installed at 0.80*R*
T85	Tungsten mass installed at 0.85*R*
S80	Steel mass installed at 0.80*R*

Table 6. Control Settings and Performance Parameters for Baseline Configuration

μ	α_s	θ_0	C_L	C_D	C_T	C_Q
$T = 1.0T_{1g} = 285$ lb						
0.100	−1.0	9.9	0.00658	−0.00007	0.00658	0.00034
0.125	−1.2	9.2	0.00658	−0.00010	0.00658	0.00032
0.150	−1.5	9.2	0.00658	−0.00015	0.00658	0.00030
0.175	−1.9	9.0	0.00658	−0.00018	0.00658	0.00029
0.200	−2.4	9.2	0.00658	−0.00020	0.00658	0.00031
0.225	−3.0	9.5	0.00657	−0.00024	0.00658	0.00032
0.250	−3.7	9.9	0.00657	−0.00029	0.00658	0.00034
0.300	−4.9	11.2	0.00656	−0.00041	0.00658	0.00038
0.350	−6.5	12.9	0.00656	−0.00057	0.00658	0.00047
$T = 0.75T_{1g} = 214$ lb						
0.100	−1.0	7.8	0.00493	−0.00003	0.00493	0.00024
0.125	−1.2	7.1	0.00493	−0.00005	0.00493	0.00023
0.150	−1.5	7.0	0.00493	−0.00008	0.00493	0.00022
0.175	−1.9	6.9	0.00493	−0.00010	0.00493	0.00022
0.200	−2.4	6.9	0.00493	−0.00011	0.00493	0.00023
0.225	−3.0	7.5	0.00493	−0.00013	0.00493	0.00024
0.250	−3.7	7.9	0.00493	−0.00016	0.00493	0.00025
0.300	−4.9	9.1	0.00493	−0.00020	0.00493	0.00029
0.350	−6.5	10.6	0.00493	−0.00032	0.00493	0.00035
$T = 1.25T_{1g} = 356$ lb						
0.100	−1.0	11.2	0.00820	−0.00010	0.00820	0.00042
0.125	−1.2	11.0	0.00820	−0.00013	0.00820	0.00040
0.150	−1.5	10.9	0.00820	−0.00018	0.00820	0.00039
0.175	−1.9	11.0	0.00820	−0.00024	0.00820	0.0039
0.200	−2.4	11.3	0.00819	−0.00032	0.00820	0.0040
0.225	−3.0	11.6	0.00819	−0.00037	0.00820	0.0042
0.250	−3.7	12.0	0.00819	−0.00044	0.00820	0.0045
0.300	−4.9	13.6	0.00818	−0.00063	0.00820	0.0052
0.350	−6.5	15.3	0.00816	−0.00085	0.00820	0.0065

Table 7. Fixed-System Loads Data for Normal Force Baseline Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	222.68	39.18	1.19 269.74	1.41 294.30	1.64 177.18	31.19 169.02	1.74 282.12	0.88 97.41	0.70 223.20	11.62 Mag 144.18 Phase
0.102	218.35	38.56	1.34 254.22	1.57 305.10	1.49 176.02	30.50 170.29	1.33 268.48	0.89 104.26	0.43 208.72	11.08 Mag 145.91 Phase
0.130	214.88	23.36	0.98 293.20	2.17 319.34	0.68 188.55	16.74 185.15	0.71 276.89	0.69 143.53	0.59 217.07	7.93 Mag 167.96 Phase
0.131	215.86	22.57	1.55 269.05	2.05 318.88	0.70 182.81	16.51 192.98	1.05 295.65	0.60 145.46	0.63 244.42	6.91 Mag 175.59 Phase
0.147	215.99	25.67	6.59 226.13	4.66 292.99	0.56 69.47	13.72 202.92	2.19 253.24	1.27 164.34	0.17 327.29	5.61 Mag 140.83 Phase
0.148	217.06	26.11	6.49 224.94	4.70 294.28	0.47 94.52	13.63 201.47	2.34 247.05	1.08 163.39	0.30 312.93	6.02 Mag 144.30 Phase
0.153	217.77	18.62	1.38 249.76	1.68 335.65	0.47 216.28	14.11 202.33	0.97 302.30	0.87 173.82	0.32 199.78	6.98 Mag 137.76 Phase
0.154	218.63	17.71	0.56 270.65	2.18 350.59	0.45 211.47	14.32 202.22	1.03 269.71	0.88 176.25	0.41 197.74	6.32 Mag 137.18 Phase
0.174	217.48	23.24	6.53 233.60	5.64 298.53	0.57 67.70	11.34 240.75	3.09 258.42	1.44 222.37	0.39 37.59	4.14 Mag 157.56 Phase
0.176	217.21	23.63	6.56 234.52	6.03 298.41	0.29 79.70	11.11 245.77	2.82 272.47	1.45 228.58	0.30 31.07	4.31 Mag 162.87 Phase
0.179	218.11	18.42	4.01 180.18	2.25 324.02	0.17 246.80	11.40 246.34	2.52 321.06	1.11 234.48	0.56 199.38	6.28 Mag 165.14 Phase
0.181	217.42	18.04	4.12 177.66	2.16 305.99	0.35 287.59	11.43 247.65	2.69 325.13	1.18 234.33	0.28 194.11	5.85 Mag 166.29 Phase
0.200	215.04	26.85	6.06 241.29	4.35 292.60	0.46 67.90	17.09 269.27	2.62 262.31	2.05 297.21	0.91 100.51	4.40 Mag 216.89 Phase
0.201	215.84	26.81	5.98 235.81	4.64 289.50	0.48 51.31	17.18 260.84	2.58 249.86	2.19 291.76	0.92 86.59	4.47 Mag 201.44 Phase
0.223	214.20	27.65	6.14 246.57	2.59 293.63	0.33 51.74	19.83 280.59	2.46 254.53	1.97 284.44	1.34 137.39	4.36 Mag 285.20 Phase
0.224	214.26	27.86	6.19 246.74	2.55 301.99	0.52 64.00	19.73 284.80	2.80 253.45	2.01 296.87	1.39 141.50	4.66 Mag 290.79 Phase
0.248	213.54	32.36	5.44 257.89	2.19 321.20	0.12 146.94	25.45 299.78	2.99 237.19	1.31 289.14	1.11 175.48	4.35 Mag 313.05 Phase
0.249	213.32	32.13	5.25 255.68	2.74 308.13	0.18 49.19	25.51 295.97	3.42 236.96	1.46 287.04	1.06 174.51	3.94 Mag 312.25 Phase
0.298	212.23	46.88	3.44 274.70	1.93 286.59	1.67 286.84	39.20 314.12	2.51 225.77	0.46 78.71	0.85 210.38	13.74 Mag 23.49 Phase
0.298	212.39	46.87	3.30 279.95	2.17 295.38	1.38 279.41	39.20 309.07	2.21 211.35	0.41 195.65	1.05 194.81	13.94 Mag 12.08 Phase
0.347	202.64	62.98	1.56 286.99	2.64 189.16	1.77 278.85	48.17 332.99	2.85 230.32	1.53 90.47	2.40 280.05	28.43 Mag 17.94 Phase
0.347	203.46	62.49	1.15 280.91	1.20 119.34	1.32 284.19	48.59 329.98	3.10 224.11	1.19 87.49	2.05 273.96	26.68 Mag 10.32 Phase

*1/2 Peak-to-peak

Table 7. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	285.22	64.36	1.93	0.37	1.92	40.17	0.78	0.92	2.26	32.88 Mag
			230.62	272.74	147.40	168.20	13.25	73.76	293.68	133.82 Phase
0.100	289.16	69.32	1.99	0.30	1.76	40.85	1.04	1.27	2.05	36.91 Mag
			225.32	233.51	155.73	174.41	9.67	91.08	308.50	144.78 Phase
0.102	284.87	65.55	1.51	1.15	1.55	40.50	1.93	1.42	2.48	31.91 Mag
			238.87	224.88	168.57	172.14	14.90	89.59	301.31	136.00 Phase
0.130	282.30	39.87	1.82	1.33	0.75	27.21	1.18	1.04	2.42	16.54 Mag
			279.66	314.99	170.37	181.23	281.28	84.40	321.46	158.98 Phase
0.130	284.33	41.28	1.32	1.43	0.96	27.02	1.32	1.31	3.04	18.29 Mag
			283.32	317.45	163.80	179.36	266.07	88.07	320.48	154.63 Phase
0.147	286.60	39.91	6.21	3.68	0.54	22.47	1.19	0.77	1.05	12.97 Mag
			224.66	292.59	106.03	185.08	253.19	3.67	103.98	154.85 Phase
0.152	290.96	30.97	1.21	1.56	0.64	20.92	1.58	0.98	1.14	13.33 Mag
			302.83	339.92	175.75	192.32	323.32	98.39	351.23	148.19 Phase
0.152	290.49	31.87	1.12	1.16	0.62	20.77	1.78	0.67	0.97	15.00 Mag
			295.99	344.99	178.47	195.12	310.20	109.87	293.06	154.68 Phase
0.174	287.64	28.92	6.12	4.57	0.69	15.13	2.05	0.95	1.41	6.27 Mag
			234.83	290.63	80.54	208.78	233.54	260.20	142.83	166.19 Phase
0.174	287.71	27.93	6.08	4.74	0.64	14.92	1.95	1.10	1.11	5.70 Mag
			233.86	285.93	81.80	209.11	232.38	260.06	155.04	161.17 Phase
0.178	289.38	22.28	4.17	1.62	0.25	14.31	1.00	1.63	0.19	9.34 Mag
			149.75	306.98	197.33	207.30	318.34	150.76	333.10	133.48 Phase
0.180	287.67	22.44	4.24	1.62	0.20	14.25	0.85	1.38	0.13	9.81 Mag
			144.52	308.38	208.09	204.72	349.50	139.88	179.02	125.94 Phase
0.199	286.08	29.92	6.02	3.23	0.15	16.57	2.23	1.15	1.41	8.83 Mag
			238.98	301.26	116.92	241.74	241.83	295.81	186.23	212.91 Phase
0.224	284.67	27.19	5.69	1.15	0.17	17.09	3.01	1.43	1.12	8.22 Mag
			239.76	251.89	185.97	253.87	224.90	306.15	195.21	212.35 Phase
0.225	284.75	28.86	5.88	1.26	0.22	17.23	2.85	1.55	1.37	9.77 Mag
			242.19	251.79	112.14	264.21	234.80	330.42	213.23	230.83 Phase
0.249	283.48	28.47	5.22	1.47	0.23	20.06	2.61	1.25	1.49	5.45 Mag
			244.32	319.71	229.79	293.62	242.33	329.10	215.42	212.72 Phase
0.298	278.69	43.74	2.85	1.61	1.68	37.33	2.40	0.49	0.87	10.71 Mag
			253.29	294.40	290.79	315.66	201.99	98.99	293.67	45.00 Phase
0.349	272.80	53.80	1.17	2.57	1.46	48.42	3.14	1.54	2.20	14.64 Mag
			195.30	151.06	307.95	327.83	204.24	73.87	336.58	18.02 Phase

*1/2 Peak-to-peak

Table 7. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	356.75	59.52	1.31	1.03	2.05	51.81	3.82	1.07	0.76	10.74 Mag
			242.81	242.89	161.29	173.02	76.36	61.84	97.14	177.07 Phase
0.105	366.25	61.07	0.99	0.73	2.59	52.08	4.99	1.19	1.21	11.61 Mag
			269.27	273.63	163.71	179.45	82.31	74.65	113.29	181.58 Phase
0.129	358.45	50.07	1.07	2.32	2.81	38.65	2.47	1.11	1.41	15.79 Mag
			271.66	298.31	142.03	179.98	78.42	39.53	90.68	197.06 Phase
0.131	357.32	47.96	0.36	2.11	2.55	38.97	2.31	1.08	1.04	13.13 Mag
			304.29	297.98	132.60	180.29	72.21	47.93	85.81	191.64 Phase
0.147	357.07	46.18	4.44	2.81	1.39	33.36	0.71	1.69	0.66	13.05 Mag
			214.98	284.43	158.62	177.95	22.25	20.49	194.97	172.09 Phase
0.147	356.92	45.54	4.63	2.92	1.38	33.28	0.68	1.94	0.73	11.19 Mag
			216.86	294.62	169.38	188.92	357.60	38.47	184.69	205.83 Phase
0.172	357.66	33.42	5.32	2.73	0.67	23.85	0.31	0.84	1.03	4.38 Mag
			223.25	280.87	119.96	200.74	341.55	83.24	193.31	213.09 Phase
0.173	357.44	33.66	5.10	3.02	0.75	23.83	0.60	0.67	1.01	5.62 Mag
			222.05	271.91	112.06	192.93	317.08	40.62	198.56	181.60 Phase
0.178	359.29	29.90	4.45	1.24	0.99	21.62	2.31	1.51	0.39	7.69 Mag
			145.69	290.05	114.76	201.58	111.45	144.86	244.48	212.23 Phase
0.178	357.87	32.47	4.43	1.09	1.27	22.31	2.41	1.96	0.89	9.05 Mag
			143.76	296.85	98.83	198.46	81.08	151.97	243.51	212.03 Phase
0.198	358.00	30.24	4.71	1.85	0.50	20.26	0.16	0.38	0.93	7.89 Mag
			223.42	272.13	185.03	219.39	95.80	70.70	232.51	230.18 Phase
0.199	358.13	30.46	4.78	1.90	0.42	20.14	0.49	0.32	0.91	8.35 Mag
			223.67	272.71	157.10	221.74	169.59	81.50	250.70	235.04 Phase
0.224	356.36	34.72	4.98	1.75	0.49	21.04	1.42	1.11	0.78	14.49 Mag
			229.13	207.20	238.24	238.18	257.15	312.12	246.76	225.98 Phase
0.225	355.69	32.57	4.68	1.02	0.54	21.04	0.85	1.44	0.69	12.35 Mag
			226.84	214.64	204.87	232.95	240.64	313.39	209.96	222.44 Phase
0.248	356.65	26.78	4.70	0.80	0.18	19.95	1.11	1.14	1.24	6.12 Mag
			227.51	248.00	157.47	269.29	200.18	335.00	219.27	211.81 Phase
0.248	356.36	27.74	4.50	1.85	0.31	19.74	0.67	1.07	0.98	7.81 Mag
			229.16	253.18	216.21	274.57	220.31	343.35	220.34	229.41 Phase
0.299	352.72	43.53	2.74	0.46	1.27	37.19	2.02	0.27	0.78	10.99 Mag
			225.41	286.77	281.59	307.50	173.28	102.47	113.62	62.43 Phase
0.299	353.03	44.15	2.46	0.46	0.86	36.94	2.19	0.44	0.35	11.40 Mag
			216.03	192.96	278.64	296.07	157.69	94.15	120.07	41.30 Phase
0.348	341.63	49.99	1.89	1.44	1.43	45.33	3.93	0.83	1.46	7.09 Mag
			191.92	144.69	312.45	325.10	208.98	45.67	98.19	35.91 Phase
0.349	343.09	51.30	1.95	2.44	1.93	45.57	4.29	0.64	1.64	7.93 Mag
			195.15	134.28	284.81	318.63	204.70	29.78	85.08	26.23 Phase

*1/2 Peak-to-peak

Table 8. Fixed-System Loads Data for Normal Force T30 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.107	217.57	48.49	11.28 217.02	6.59 279.14	0.71 165.58	25.16 158.72	2.44 241.01	0.50 5.67	0.56 130.52	11.07 Mag 135.11 Phase
0.109	218.97	47.07	10.96 219.33	6.86 285.51	0.79 161.76	24.08 165.90	2.38 254.30	0.37 52.69	0.74 145.69	10.78 Mag 146.27 Phase
0.126	214.91	40.26	10.82 219.80	7.24 292.70	0.85 152.43	18.64 172.49	1.50 254.79	0.77 58.59	0.49 136.11	9.15 Mag 153.31 Phase
0.128	216.61	37.99	10.47 220.67	6.95 300.13	0.79 148.33	17.70 171.40	1.77 256.81	0.99 71.66	0.59 147.58	8.15 Mag 155.12 Phas
0.151	213.86	32.34	10.23 230.07	6.35 306.34	0.43 136.42	13.07 212.07	2.28 284.67	1.60 170.39	0.44 211.31	8.34 Mag 178.07 Phase
0.151	213.71	32.44	10.30 228.33	6.54 302.67	0.42 125.53	13.32 205.65	2.09 275.66	1.58 158.49	0.47 181.93	7.60 Mag 169.30 Phase
0.175	216.63	30.85	9.91 237.03	8.29 303.67	0.06 105.99	13.23 236.08	1.55 286.12	2.59 200.77	0.40 275.55	4.90 Mag 199.91 Phase
0.176	217.30	30.52	9.63 239.97	8.26 311.90	0.12 45.17	13.00 248.26	1.40 296.66	2.56 220.07	0.47 296.56	5.96 Mag 227.68 Phase
0.200	218.69	35.93	9.52 240.22	6.92 305.19	0.23 47.78	19.33 255.64	1.60 265.30	2.46 251.56	0.62 60.75	6.87 Mag 215.76 Phase
0.224	216.05	41.80	9.81 249.48	5.53 320.14	0.17 112.97	22.76 277.81	1.40 251.50	3.79 254.26	1.19 116.37	9.40 Mag 259.02 Phase
0.224	214.22	41.50	9.78 250.40	6.18 330.43	0.41 70.61	22.61 275.90	1.34 247.29	3.86 256.38	1.49 96.12	9.19 Mag 260.91 Phase
0.249	219.19	44.89	9.62 258.32	6.24 336.08	0.11 114.91	30.32 296.69	2.80 232.47	2.88 263.84	1.42 171.04	3.92 Mag 291.51 Phase
0.250	217.82	46.05	9.49 259.08	5.78 347.52	0.10 264.45	30.12 296.58	2.49 225.58	2.93 268.38	1.42 170.30	5.70 Mag 263.47 Phase
0.298	212.20	56.93	8.49 280.59	7.34 302.31	0.59 275.74	45.50 304.27	4.52 198.56	1.45 217.62	0.46 202.10	12.42 Mag 2.82 Phase
0.299	211.85	55.44	8.39 275.89	6.94 295.42	0.63 236.36	45.46 298.04	4.66 189.64	1.51 217.47	0.67 152.38	11.98 Mag 340.58 Phase
0.347	203.83	69.92	5.37 297.87	1.67 281.86	2.57 295.07	56.61 326.94	4.62 217.03	0.16 343.39	1.24 332.53	27.38 Mag 27.37 Phase
0.347	205.24	70.63	4.74 297.77	2.61 261.52	1.58 277.47	56.93 325.10	4.43 209.23	0.59 334.64	1.98 316.96	28.95 Mag 18.96 Phase

*1/2 Peak-to-peak

Table 8. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	285.04	68.02	10.18 216.78	7.48 293.59	0.67 161.13	36.13 158.96	1.90 263.43	0.98 134.19	0.87 341.02	25.61 Mag 127.96 Phase
0.113	287.95	64.62	9.75 219.33	7.00 288.53	0.75 114.19	34.20 156.21	1.91 258.96	1.20 122.02	1.35 334.44	24.61 Mag 121.32 Phase
0.125	288.94	53.30	10.58 221.61	7.35 292.35	1.23 124.47	29.16 167.32	1.39 307.48	0.17 74.06	0.47 59.37	15.91 Mag 137.82 Phase
0.125	288.05	53.80	10.42 224.21	7.41 292.16	1.15 122.46	29.56 171.37	1.18 302.40	0.45 109.81	0.61 44.83	15.76 Mag 145.60 Phase
0.149	287.44	41.15	10.69 226.82	6.44 305.56	1.06 114.42	19.83 185.88	1.59 307.14	1.66 165.42	0.85 139.68	12.59 Mag 145.53 Phase
0.150	287.36	39.45	10.83 226.77	6.45 310.03	1.09 119.72	19.94 187.55	1.71 313.77	1.60 164.59	0.77 129.33	10.89 Mag 145.75 Phase
0.174	289.46	36.53	10.71 238.94	8.29 306.53	0.61 114.42	15.72 210.23	1.23 279.23	3.06 220.95	1.25 132.18	8.17 Mag 180.64 Phase
0.175	289.68	36.84	10.82 237.11	7.81 302.07	0.68 109.58	15.74 206.77	1.27 286.00	3.08 214.16	0.86 116.73	9.34 Mag 171.32 Phase
0.198	291.17	36.07	10.88 239.71	6.92 310.48	0.37 196.74	17.50 237.66	0.98 292.73	2.81 253.35	1.69 169.43	8.44 Mag 196.86 Phase
0.201	289.81	37.69	10.77 240.98	6.55 309.81	0.32 153.13	17.93 235.55	0.57 272.00	2.61 247.06	1.45 147.22	10.28 Mag 187.44 Phase
0.224	285.80	32.44	9.84 246.74	3.92 326.67	0.44 154.79	18.18 262.68	1.16 254.49	2.55 286.84	2.30 184.37	5.70 Mag 229.41 Phase
0.224	286.22	36.52	9.69 245.25	4.20 318.79	0.47 135.00	18.22 255.20	1.36 231.03	2.58 274.65	1.71 155.76	10.47 Mag 217.77 Phase
0.250	289.42	35.18	9.79 253.68	3.24 345.53	0.46 219.27	22.99 298.14	2.44 215.24	2.15 290.14	2.19 234.78	4.62 Mag 139.05 Phase
0.250	288.03	37.85	9.71 253.50	3.86 336.81	0.75 183.88	23.09 285.15	2.68 189.68	1.72 271.47	1.69 218.28	5.03 Mag 174.11 Phase
0.297	284.54	56.78	7.15 268.09	5.02 303.90	0.96 285.92	43.51 308.54	4.44 196.16	1.37 222.42	1.34 301.59	14.18 Mag 38.32 Phase
0.298	285.37	59.11	7.27 267.10	5.59 288.17	1.07 252.29	44.08 295.51	4.19 177.28	1.31 196.62	1.77 270.54	15.61 Mag 23.83 Phase
0.347	274.62	67.50	4.36 290.67	1.02 284.97	2.21 289.43	55.98 318.64	3.94 185.67	0.62 99.62	2.13 2.02	22.02 Mag 29.42 Phase
0.347	274.76	66.40	4.08 280.68	0.73 211.28	1.88 292.56	56.05 322.16	3.67 188.65	0.68 72.65	1.90 7.25	22.51 Mag 28.55 Phase

*1/2 Peak-to-peak

Table 8. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.112	360.68	69.05	8.80 210.98	8.90 277.51	1.78 101.30	45.14 164.80	1.79 359.88	0.58 22.31	0.21 281.62	19.15 Mag 158.01 Phase
0.113	359.79	69.59	8.58 211.22	8.83 278.14	2.14 106.48	45.14 165.84	1.22 3.15	0.98 4.47	0.62 215.20	19.50 Mag 152.59 Phase
0.125	357.59	59.00	8.20 220.71	5.62 292.19	2.23 112.88	37.85 169.06	0.93 355.39	1.12 338.94	1.15 187.44	17.55 Mag 154.76 Phase
0.126	358.70	60.31	8.87 219.28	6.38 289.59	2.18 121.51	37.25 172.71	0.77 7.90	1.19 351.88	0.51 189.73	18.35 Mag 159.19 Phase
0.147	359.55	46.79	9.48 224.63	5.49 301.84	1.39 100.35	28.29 173.45	1.99 319.80	0.61 13.07	1.14 109.48	11.09 Mag 153.52 Phase
0.149	359.49	47.88	9.63 226.92	5.37 299.23	1.28 108.74	27.99 185.95	1.68 327.92	0.56 38.48	1.06 117.19	12.37 Mag 177.98 Phase
0.172	360.27	38.56	10.12 230.82	6.35 285.23	0.92 100.91	22.23 186.07	1.49 314.54	1.48 188.01	1.71 122.18	2.64 Mag 225.33 Phase
0.172	360.27	37.96	9.92 232.39	6.28 292.04	0.94 108.21	22.19 188.14	1.42 315.29	1.27 187.98	1.57 127.41	2.39 Mag 233.30 Phase
0.198	358.30	35.44	10.02 239.19	4.66 303.97	0.71 170.83	19.05 219.05	1.03 332.90	1.82 194.82	1.55 183.03	6.18 Mag 204.32 Phase
0.199	360.55	35.35	10.49 237.41	5.06 300.44	0.61 183.74	19.00 219.92	1.03 339.00	1.48 204.15	1.48 183.33	3.59 Mag 229.95 Phase
0.224	361.45	32.35	8.79 242.35	2.66 297.94	0.89 170.66	19.33 235.52	1.10 259.07	1.44 254.73	1.31 212.60	5.36 Mag 226.54 Phase
0.224	361.62	33.90	9.16 240.72	2.39 291.75	0.89 166.85	19.70 233.40	1.40 256.74	1.32 247.86	1.29 205.09	6.63 Mag 226.87 Phase
0.250	359.94	33.48	9.17 250.07	3.44 327.83	0.60 185.93	19.22 275.09	2.04 201.31	1.09 270.52	1.48 214.42	5.68 Mag 160.13 Phase
0.250	360.94	34.30	9.39 246.48	2.77 310.50	0.62 190.17	19.26 268.66	2.18 203.91	1.28 241.02	1.15 221.67	6.50 Mag 139.63 Phase
0.299	353.07	56.23	5.81 248.46	2.87 289.21	0.85 267.70	44.23 293.56	4.70 164.92	1.05 187.45	0.64 36.68	16.16 Mag 44.53 Phase
0.299	353.16	56.05	6.21 256.01	2.81 329.49	1.14 292.75	43.51 297.50	4.94 173.01	0.69 207.38	0.67 60.54	16.31 Mag 50.82 Phase
0.347	343.50	60.66	2.33 267.85	2.53 97.72	1.41 301.50	53.09 316.77	6.06 179.18	0.85 135.99	1.46 114.70	8.67 Mag 48.34 Phase
0.347	344.01	60.23	2.35 265.61	1.26 171.87	1.50 281.04	52.96 315.12	5.78 173.80	0.81 111.68	1.50 103.65	10.71 Mag 40.01 Phase

*1/2 Peak-to-peak

Table 9. Fixed-System Loads Data for Normal Force T40 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	205.51	40.75	7.36 212.73	3.95 266.34	0.77 140.88	25.95 158.84	3.12 215.12	0.23 41.30	0.27 101.39	6.57 Mag 117.91 Phase
0.104	205.49	40.78	7.49 212.91	3.10 263.45	0.78 132.53	26.08 153.37	3.33 207.69	0.22 40.13	0.36 74.39	6.87 Mag 107.68 Phase
0.126	205.44	33.55	7.09 223.05	4.76 281.35	0.60 127.16	17.49 174.31	3.40 231.90	0.56 77.43	0.61 160.44	5.94 Mag 150.61 Phase
0.128	205.16	34.01	7.63 221.18	4.58 282.55	0.45 124.03	17.49 172.52	3.36 231.49	0.60 60.93	0.55 156.99	6.24 Mag 149.76 Phase
0.151	219.21	29.37	6.89 230.04	4.45 283.81	0.56 101.34	14.07 202.38	3.63 249.54	1.15 179.40	0.08 14.23	7.22 Mag 152.53 Phase
0.152	219.28	28.58	6.86 229.58	4.10 282.66	0.48 89.82	14.02 200.31	3.29 242.73	1.03 168.09	0.12 100.85	7.02 Mag 145.57 Phase
0.201	215.68	30.14	6.49 253.44	5.86 305.44	0.24 25.31	18.70 273.85	2.79 282.65	1.65 324.98	0.94 117.94	6.91 Mag 252.38 Phase
0.202	215.42	30.67	7.07 247.48	4.68 298.52	0.32 1.45	18.93 255.99	3.14 267.72	1.56 297.69	1.09 84.65	7.56 Mag 214.95 Phase
0.226	217.28	32.35	6.69 260.13	3.13 303.11	0.04 175.22	20.92 272.08	2.64 248.49	2.21 271.89	1.32 133.47	7.78 Mag 263.93 Phase
0.226	217.13	31.13	6.75 259.87	2.73 297.66	0.12 29.05	20.97 270.57	2.66 252.73	2.11 274.57	1.56 135.64	7.01 Mag 262.86 Phase
0.250	216.45	38.67	6.35 269.91	3.48 327.67	0.04 46.88	27.85 296.86	2.86 248.62	2.33 281.04	1.54 192.18	6.35 Mag 287.04 Phase
0.250	216.76	39.11	6.52 266.51	3.70 318.49	0.20 95.26	27.81 289.38	3.31 247.37	2.34 261.18	1.40 172.79	6.27 Mag 265.23 Phase
0.299	209.09	51.60	5.48 303.34	3.36 290.79	1.40 303.57	41.61 301.65	2.47 203.52	1.00 281.27	1.01 256.71	10.35 Mag 6.81 Phase
0.299	209.32	51.60	5.90 304.08	3.65 299.32	1.37 300.77	41.53 306.77	2.55 217.19	0.94 308.99	0.74 243.29	9.89 Mag 17.55 Phase
0.349	197.32	65.54	4.65 334.48	0.72 248.97	1.16 270.48	50.98 318.80	2.62 241.54	1.19 71.27	2.15 323.04	24.19 Mag 354.21 Phase
0.349	197.25	63.63	4.47 332.88	0.83 185.18	1.45 297.97	50.55 317.18	2.30 226.93	1.38 86.39	1.88 310.00	24.04 Mag 351.22 Phase

*1/2 Peak-to-peak

Table 9. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	278.12	68.68	6.06 216.04	4.72 241.41	1.11 152.50	38.55 162.60	0.09 162.80	0.04 118.43	0.86 341.26	30.81 Mag 118.31 Phase
0.105	277.92	71.62	6.04 213.37	5.08 240.46	1.07 152.65	38.02 160.06	0.72 114.71	0.80 311.80	1.18 336.54	33.84 Mag 111.78 Phase
0.128	278.07	50.31	6.44 222.72	6.05 269.04	0.82 116.79	28.37 168.62	1.48 231.74	1.19 337.31	1.23 18.58	16.22 Mag 137.27 Phase
0.129	279.67	48.90	6.48 222.19	5.02 274.01	0.65 133.13	27.99 165.65	1.42 239.01	0.89 323.96	1.28 19.13	15.99 Mag 135.97 Phase
0.150	286.75	38.25	6.76 229.31	3.40 284.25	0.47 90.54	20.68 186.38	1.78 285.73	0.18 179.88	1.05 56.73	14.01 Mag 142.80 Phase
0.150	291.61	40.77	6.85 229.40	4.06 284.85	0.56 103.87	20.61 177.40	2.17 259.99	0.45 180.45	1.04 23.66	15.73 Mag 129.33 Phase
0.153	287.70	37.04	7.03 232.77	3.87 286.51	0.69 99.59	19.30 184.91	1.96 260.23	0.44 198.08	1.05 96.12	12.11 Mag 138.96 Phase
0.155	287.20	37.23	6.98 231.63	3.94 289.24	0.57 90.67	19.53 185.27	1.88 267.26	0.63 207.17	0.99 105.81	12.79 Mag 134.49 Phase
0.201	290.33	35.69	6.57 248.51	3.89 291.79	0.21 269.85	18.06 233.15	1.14 238.01	0.94 250.32	1.84 177.26	13.31 Mag 204.78 Phase
0.203	289.85	34.23	6.98 249.26	3.37 281.52	0.19 258.79	17.76 235.44	0.85 239.78	1.02 267.48	2.44 172.01	11.29 Mag 214.97 Phase
0.226	286.01	30.28	5.79 260.47	2.18 278.50	0.16 186.25	18.09 256.09	2.03 223.49	1.62 281.27	1.68 214.52	10.14 Mag 224.52 Phase
0.226	286.00	30.77	6.08 259.79	2.30 276.70	0.40 202.64	18.02 255.44	2.00 221.42	1.32 282.09	1.63 215.15	10.54 Mag 224.49 Phase
0.251	285.61	34.94	6.36 259.79	2.22 297.55	0.32 221.25	22.23 280.92	2.93 218.46	1.72 270.99	1.51 230.34	7.58 Mag 183.86 Phase
0.251	285.79	35.19	6.04 261.83	2.79 290.05	0.38 132.24	22.14 281.67	2.80 216.66	1.83 274.70	1.58 224.89	8.08 Mag 178.48 Phase
0.299	281.27	50.92	4.53 289.73	2.00 281.33	1.20 290.26	39.81 298.41	3.33 175.74	0.69 282.46	1.33 276.86	11.76 Mag 36.47 Phase
0.299	278.35	50.00	4.84 288.80	1.89 307.71	1.78 287.07	39.78 300.22	2.95 182.27	0.73 268.22	1.19 263.74	11.31 Mag 31.25 Phase
0.347	270.24	56.56	2.81 321.80	0.66 158.03	1.21 306.55	49.89 321.82	2.74 198.22	1.11 71.28	2.61 338.60	14.54 Mag 25.71 Phase
0.349	269.59	56.58	2.57 322.14	0.35 249.65	1.06 319.15	50.41 316.88	2.86 205.39	1.41 71.12	2.21 310.69	15.60 Mag 8.04 Phase

*1/2 Peak-to-peak

Table 9. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	348.54	61.33	3.99 201.94	3.59 228.44	2.17 134.07	49.03 157.95	3.10 42.63	1.19 336.45	0.02 274.42	17.14 Mag 137.72 Phase
0.107	349.71	61.94	3.95 200.02	3.26 230.65	2.02 135.88	48.32 161.99	2.80 49.13	1.26 355.77	0.50 265.19	19.34 Mag 135.18 Phase
0.127	348.65	56.76	4.81 216.04	4.41 264.91	1.63 132.45	38.18 171.27	1.10 37.18	1.87 0.16	0.67 196.83	19.25 Mag 153.83 Phase
0.127	349.35	56.48	4.80 215.53	3.72 265.22	1.43 126.75	38.28 168.94	1.30 57.69	1.70 356.43	0.41 195.41	19.74 Mag 147.94 Phase
0.147	360.45	51.48	5.95 227.19	2.93 289.40	0.82 124.98	30.23 180.87	1.28 10.49	1.32 18.27	0.59 129.39	21.20 Mag 168.98 Phase
0.149	359.01	50.00	6.01 225.26	2.66 287.79	0.84 120.72	30.06 172.17	1.27 12.09	1.21 5.19	0.63 135.65	19.95 Mag 154.61 Phase
0.201	359.55	38.69	5.93 241.91	2.62 274.42	0.27 173.82	20.22 219.98	0.37 192.12	0.91 204.02	1.14 225.81	15.22 Mag 236.81 Phase
0.202	359.72	37.67	6.28 239.99	2.68 274.88	0.51 159.29	20.32 212.93	0.44 133.46	0.61 200.49	1.28 204.74	13.48 Mag 232.15 Phase
0.226	354.75	36.27	5.36 247.75	1.93 245.88	0.47 191.88	20.66 237.70	0.30 249.51	1.26 285.07	1.34 227.34	15.51 Mag 228.83 Phase
0.226	354.96	33.84	5.09 247.80	1.56 236.88	0.55 204.12	20.82 237.41	0.57 296.11	1.70 286.64	1.66 237.49	12.71 Mag 232.36 Phase
0.251	354.98	32.56	5.22 251.47	1.85 292.31	0.47 179.67	19.97 268.61	0.90 187.82	1.66 277.17	1.33 233.71	8.87 Mag 183.52 Phase
0.251	356.11	31.17	4.94 251.40	2.01 279.98	0.27 172.15	19.91 270.40	0.76 184.31	1.40 286.55	1.08 237.84	8.25 Mag 179.10 Phase
0.299	351.88	51.63	3.88 272.10	0.62 252.27	1.22 272.75	39.42 298.19	3.14 166.01	0.55 339.85	1.39 62.02	15.85 Mag 62.63 Phase
0.300	352.13	51.31	3.72 269.75	1.36 14.13	0.68 305.92	39.67 295.81	2.87 168.28	0.46 302.08	1.03 49.26	16.35 Mag 48.23 Phase
0.348	339.39	56.77	2.76 301.33	2.99 87.78	1.35 311.48	50.10 315.13	4.49 213.06	0.78 57.80	1.69 144.54	7.57 Mag 38.18 Phase
0.348	339.75	54.63	2.87 294.33	1.43 116.04	1.56 288.79	49.64 309.65	3.69 202.48	0.71 44.05	1.50 118.92	7.46 Mag 23.66 Phase

*1/2 Peak-to-peak

Table 10. Fixed-System Loads Data for Normal Force T50 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	216.21	44.18	11.08 211.82	4.59 254.13	0.99 180.89	27.62 169.04	1.96 246.11	0.70 340.77	0.71 152.06	6.44 Mag 109.03 Phase
0.107	215.84	45.02	11.04 211.30	4.76 253.50	1.11 179.05	27.76 167.79	1.88 235.89	0.61 341.08	0.70 145.89	6.60 Mag 117.91 Phase
0.127	216.31	37.11	10.27 217.03	4.62 258.45	0.73 189.74	19.65 175.01	2.43 238.63	1.10 41.49	1.07 182.52	6.34 Mag 129.43 Phase
0.130	216.21	36.82	10.30 215.21	4.48 255.55	0.54 187.83	19.55 171.34	2.16 234.33	1.01 41.97	1.05 168.77	7.04 Mag 111.98 Phase
0.152	215.87	31.18	9.71 225.73	4.61 274.13	0.29 178.51	14.13 204.77	2.76 267.47	0.77 143.97	0.94 209.05	8.64 Mag 139.95 Phase
0.153	215.40	32.80	9.86 225.51	4.83 268.55	0.16 168.86	14.07 202.75	2.47 263.79	0.78 151.28	0.89 206.68	10.06 Mag 140.79 Phase
0.175	219.62	31.05	9.72 230.31	5.45 273.73	0.07 316.12	12.46 227.13	2.53 283.86	1.47 200.13	0.75 261.72	10.20 Mag 153.98 Phase
0.175	219.45	29.98	9.40 230.92	5.64 273.51	0.20 253.00	12.53 224.57	2.52 288.28	1.50 197.91	0.90 259.84	8.85 Mag 150.68 Phase
0.201	219.11	33.06	9.25 242.17	5.77 287.08	0.39 349.53	17.40 256.62	2.41 287.49	1.63 296.13	0.40 342.12	7.71 Mag 178.96 Phase
0.201	220.75	35.16	9.17 239.11	5.64 283.95	0.36 333.58	17.46 254.22	2.44 279.16	1.71 295.25	0.44 338.91	10.71 Mag 182.05 Phase
0.225	216.97	35.45	9.02 241.34	5.21 290.24	0.35 317.00	20.15 269.04	1.71 284.14	2.25 257.33	0.84 85.36	6.11 Mag 197.95 Phase
0.225	215.58	34.72	9.07 242.40	5.09 292.50	0.16 331.55	20.07 271.98	1.78 288.92	2.27 260.16	0.75 93.48	5.26 Mag 214.78 Phase
0.250	214.91	35.63	8.67 254.33	4.52 312.45	0.15 51.99	24.43 288.25	1.06 234.43	2.38 277.88	1.63 148.25	1.36 Mag 287.54 Phase
0.251	214.41	36.11	8.46 253.99	5.48 306.10	0.24 327.60	24.60 287.16	0.78 213.60	2.21 273.10	1.42 149.27	0.59 Mag 293.25 Phase
0.298	211.13	50.92	7.64 271.60	4.90 290.89	0.86 299.30	36.06 301.48	2.42 200.59	0.70 187.12	2.31 194.28	15.80 Mag 22.60 Phase
0.298	210.71	50.69	7.36 274.20	5.89 296.49	0.41 275.19	36.41 302.54	2.47 207.61	0.94 197.73	2.03 186.88	14.97 Mag 30.67 Phase
0.347	199.16	67.06	5.53 302.32	1.92 232.85	2.04 268.95	45.67 327.43	2.36 241.28	2.23 87.19	1.03 310.47	33.31 Mag 34.13 Phase
0.347	198.11	68.20	5.32 302.90	2.73 272.13	2.28 282.36	45.67 320.99	2.75 227.68	1.93 83.58	0.99 278.34	34.41 Mag 17.35 Phase

*1/2 Peak-to-peak

Table 10. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	287.86	65.02	10.10 211.91	4.64 250.67	0.76 162.38	38.85 162.62	0.46 71.42	0.43 233.42	0.96 17.72	23.01 Mag 104.78 Phase
0.106	288.05	63.14	9.77 212.11	4.92 247.38	0.75 154.50	38.72 164.02	0.65 46.30	0.59 219.97	0.80 38.04	21.08 Mag 109.97 Phase
0.125	288.56	45.44	9.85 218.84	4.53 264.26	0.89 166.37	30.09 176.42	0.56 303.54	0.67 327.73	0.46 126.53	8.44 Mag 123.97 Phase
0.125	288.38	45.27	10.12 215.50	3.99 260.25	1.05 158.32	30.19 168.09	0.95 322.67	0.69 305.01	0.49 101.90	9.19 Mag 104.99 Phase
0.150	284.04	43.89	10.10 224.23	4.86 278.49	0.57 100.47	21.14 177.34	1.43 276.29	0.30 305.31	0.86 178.29	16.49 Mag 115.87 Phase
0.151	285.12	43.04	10.22 221.16	4.87 279.89	0.58 99.76	20.89 175.96	1.51 277.05	0.12 330.61	0.77 153.26	15.92 Mag 108.65 Phase
0.176	287.86	35.40	9.90 229.23	5.21 275.93	0.36 69.85	15.40 199.35	1.86 288.99	1.86 218.73	0.88 149.22	13.11 Mag 125.56 Phase
0.176	287.42	35.12	10.00 229.90	5.23 277.43	0.40 78.25	15.56 202.33	2.03 296.84	1.89 237.66	1.19 154.48	12.58 Mag 129.37 Phase
0.200	290.48	35.62	10.12 238.28	4.86 282.19	0.11 201.45	16.10 231.53	1.73 295.61	1.83 273.57	1.48 154.05	12.54 Mag 175.66 Phase
0.200	290.34	34.82	9.85 238.66	4.29 279.20	0.14 275.10	16.04 232.12	1.83 296.24	1.72 276.67	1.58 168.83	12.18 Mag 178.52 Phase
0.224	288.09	29.45	9.68 241.92	3.63 287.51	0.17 286.45	16.47 250.97	1.23 285.76	2.35 303.30	2.38 176.35	5.24 Mag 156.56 Phase
0.224	287.55	28.81	9.59 243.01	3.58 279.25	0.06 274.86	16.34 254.33	1.41 287.93	2.24 302.26	2.68 175.36	4.57 Mag 156.21 Phase
0.251	285.56	30.50	8.40 245.70	2.78 331.81	0.31 204.12	18.93 280.16	1.38 194.15	1.89 305.21	1.88 217.06	9.23 Mag 106.96 Phase
0.251	285.78	29.75	8.15 248.47	3.05 331.02	0.23 263.88	18.59 282.98	1.51 192.65	1.44 311.89	1.70 222.34	8.37 Mag 115.74 Phase
0.298	280.19	54.57	6.68 266.28	3.23 282.48	1.55 281.49	33.87 299.24	2.97 187.07	0.84 141.29	1.98 257.81	22.62 Mag 41.06 Phase
0.299	281.35	53.57	6.10 267.34	3.96 281.65	1.74 272.99	34.34 303.21	3.54 190.49	1.22 154.28	1.96 269.51	22.26 Mag 35.16 Phase
0.347	274.13	60.98	4.10 297.07	0.88 140.93	2.25 278.89	44.83 319.49	1.66 221.84	1.96 86.21	1.01 328.96	27.26 Mag 27.19 Phase
0.347	273.82	60.68	4.17 298.45	1.10 250.16	2.08 273.09	45.17 320.56	1.77 213.88	2.30 89.06	1.42 0.66	25.69 Mag 31.69 Phase

*1/2 Peak-to-peak

Table 10. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	358.22	64.17	7.56	3.83	1.90	48.80	2.55	1.43	0.69	17.95 Mag
			206.57	236.65	119.85	162.47	59.08	345.27	222.37	100.92 Phase
0.126	357.69	53.68	7.85	3.61	2.01	40.13	1.53	1.46	0.45	11.55 Mag
			213.75	272.64	139.68	179.85	67.20	354.29	166.34	142.28 Phase
0.127	356.97	54.47	7.97	3.55	2.17	39.75	1.41	1.58	0.76	13.17 Mag
			211.05	260.95	131.31	166.32	35.38	328.64	141.58	114.06 Phase
0.152	359.23	44.51	8.38	3.25	0.89	30.33	1.24	1.10	1.00	9.95 Mag
			224.09	285.98	105.77	183.31	22.25	4.80	138.80	151.95 Phase
0.153	359.21	45.25	8.62	3.37	0.76	30.26	1.67	1.27	1.07	10.76 Mag
			221.16	273.51	102.61	177.40	344.94	342.80	113.63	135.35 Phase
0.175	357.68	34.91	8.50	3.88	0.68	22.70	1.37	0.67	1.42	2.87 Mag
			230.98	276.14	115.76	199.28	353.26	246.11	177.11	180.29 Phase
0.175	357.51	35.24	9.20	3.83	0.44	22.27	1.28	0.73	1.45	2.63 Mag
			230.25	269.71	108.91	194.92	341.01	240.70	164.07	190.07 Phase
0.201	357.58	36.28	8.66	4.04	0.45	18.89	0.22	0.53	1.91	10.27 Mag
			233.67	277.24	199.55	212.37	116.21	271.53	189.67	191.76 Phase
0.224	358.80	34.37	8.94	3.62	0.75	19.03	1.40	1.17	1.93	10.72 Mag
			238.68	269.86	212.43	233.87	302.73	293.33	234.10	193.31 Phase
0.225	360.12	34.62	8.84	3.26	0.68	19.14	1.36	1.29	1.92	10.30 Mag
			236.75	273.61	187.95	227.35	301.64	300.23	218.74	189.24 Phase
0.250	356.99	30.16	6.68	2.07	0.40	17.72	1.25	1.19	0.81	9.27 Mag
			238.97	271.88	183.33	261.53	190.22	300.70	215.39	120.91 Phase
0.299	349.25	56.72	5.06	2.49	1.40	33.91	2.47	0.92	1.48	27.11 Mag
			257.05	295.20	284.12	305.56	184.49	105.79	128.54	66.52 Phase
0.300	348.95	56.86	4.94	2.01	1.46	34.13	2.19	0.72	1.32	27.42 Mag
			253.87	306.38	281.79	305.61	186.57	107.86	122.60	67.88 Phase
0.346	342.26	54.74	1.91	3.39	2.06	43.30	5.12	1.73	1.78	16.39 Mag
			274.68	99.79	273.95	324.34	202.43	100.09	127.15	42.64 Phase
0.347	341.56	54.25	2.11	2.85	1.96	43.65	4.43	1.57	1.56	17.06 Mag
			279.02	120.49	269.18	320.65	191.39	86.76	122.61	41.47 Phase

*1/2 Peak-to-peak

Table 11. Fixed-System Loads Data for Normal Force T60 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	215.32	42.66	7.46 193.15	3.11 271.22	1.04 166.02	28.06 167.15	2.03 261.89	0.54 148.73	0.65 103.46	9.66 Mag 140.77 Phase
0.110	216.34	40.81	6.85 192.42	2.90 289.56	0.90 161.86	27.74 167.55	1.87 252.41	0.38 151.92	0.25 44.98	9.33 Mag 141.93 Phase
0.128	217.16	30.86	7.26 189.96	3.47 280.23	0.65 158.43	17.60 181.51	2.01 276.60	0.36 148.92	0.16 120.69	7.53 Mag 162.98 Phase
0.131	217.06	30.08	6.70 192.95	3.94 288.15	0.53 161.29	17.30 184.82	1.73 282.76	0.33 212.13	0.25 73.82	7.23 Mag 167.28 Phase
0.143	218.67	27.60	6.88 228.52	5.00 291.27	0.51 115.60	14.49 189.03	2.20 260.88	0.22 101.95	0.34 246.12	6.78 Mag 125.83 Phase
0.145	218.33	26.90	6.77 228.37	5.20 292.35	0.50 122.31	14.11 200.37	1.96 273.83	0.44 182.10	0.08 283.43	6.51 Mag 141.44 Phase
0.169	218.95	24.28	6.66 237.30	5.76 288.85	0.38 71.41	11.95 221.91	1.92 282.04	1.13 226.09	0.58 290.03	5.28 Mag 139.12 Phase
0.169	217.89	24.02	6.23 239.51	6.07 291.98	0.42 75.76	12.08 220.44	2.16 255.28	1.25 223.77	0.37 282.16	4.92 Mag 136.45 Phase
0.195	215.74	27.31	5.90 244.49	6.39 301.56	0.34 43.79	15.53 255.07	2.33 257.75	1.67 292.18	0.15 273.35	5.33 Mag 172.30 Phase
0.195	214.59	27.46	6.23 244.97	5.81 300.26	0.16 11.18	15.52 257.86	2.47 270.19	1.75 291.91	0.24 283.91	5.26 Mag 175.77 Phase
0.220	215.96	26.23	5.61 260.03	3.92 314.18	0.36 55.16	17.85 274.92	1.84 264.67	2.04 288.02	0.55 130.70	2.16 Mag 257.61 Phase
0.220	219.82	25.20	5.21 258.45	3.81 307.46	0.26 50.96	17.41 276.40	2.53 265.93	2.20 297.93	0.71 155.26	2.59 Mag 266.92 Phase
0.246	214.38	29.10	4.61 279.47	3.38 342.20	0.21 355.88	23.01 290.40	2.04 233.27	1.15 275.32	0.47 100.12	1.23 Mag 317.23 Phase
0.246	214.47	30.06	4.85 278.72	3.87 340.54	0.26 171.90	23.13 297.08	2.41 242.61	1.35 296.53	0.50 120.31	1.31 Mag 316.18 Phase
0.295	208.33	45.41	4.03 307.85	4.04 288.68	1.06 293.29	35.46 309.54	2.20 187.09	0.11 66.00	0.53 232.72	11.62 Mag 38.98 Phase
0.295	210.61	45.58	4.01 308.73	4.77 290.10	1.20 281.27	35.88 310.41	2.06 189.88	0.51 107.46	0.64 180.48	11.41 Mag 39.41 Phase

*1/2 Peak-to-peak

Table 11. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	283.20	55.59	6.18 180.21	2.82 247.89	0.68 134.64	37.50 172.81	2.29 35.61	0.72 79.23	0.56 276.19	21.66 Mag 147.89 Phase
0.110	276.79	56.94	6.03 184.62	3.20 253.00	0.79 143.29	37.45 167.90	1.57 31.56	0.57 60.29	0.71 285.41	22.83 Mag 137.32 Phase
0.132	288.12	44.57	5.63 180.57	2.47 294.97	0.92 133.29	28.30 165.87	1.39 26.30	1.35 33.67	0.65 293.51	16.65 Mag 136.44 Phase
0.144	290.23	42.04	6.16 230.10	4.99 298.92	0.98 116.99	23.02 180.62	1.67 293.11	0.37 2.09	0.91 128.05	15.11 Mag 144.53 Phase
0.154	286.48	32.31	6.13 184.43	3.00 298.69	0.73 145.76	18.59 182.71	2.40 325.17	0.58 166.10	0.69 144.63	13.48 Mag 132.61 Phase
0.154	286.41	31.14	5.77 183.60	3.03 306.65	0.57 130.98	18.59 187.18	2.20 331.00	0.67 128.57	0.63 142.98	12.58 Mag 142.64 Phase
0.170	287.78	27.71	5.48 239.02	5.42 284.06	0.70 98.27	16.60 200.53	1.32 266.62	1.40 235.47	1.79 138.70	2.97 Mag 134.71 Phase
0.170	286.86	26.81	5.26 242.81	5.54 288.64	0.84 103.24	16.60 202.26	1.27 262.81	1.53 245.10	1.52 141.59	2.94 Mag 122.42 Phase
0.180	287.88	23.42	6.13 180.88	3.93 290.55	0.25 212.67	13.19 205.95	1.94 341.68	0.59 196.69	0.91 141.87	9.05 Mag 139.57 Phase
0.180	288.28	23.93	5.84 180.99	3.85 285.24	0.21 212.20	13.26 198.84	1.73 334.73	0.92 170.23	0.91 144.26	9.32 Mag 131.07 Phase
0.201	289.26	26.34	5.18 197.18	2.17 298.53	0.10 275.98	16.29 239.53	1.78 328.51	0.96 236.27	0.48 9.86	10.45 Mag 183.50 Phase
0.202	290.95	27.64	5.17 190.29	2.51 308.45	0.39 256.28	16.13 230.84	1.62 325.24	1.10 184.85	0.80 357.19	11.58 Mag 160.97 Phase
0.226	288.38	25.46	3.82 188.31	0.11 288.05	0.88 276.10	17.47 255.31	2.22 320.98	1.36 243.25	0.17 46.91	8.13 Mag 179.61 Phase
0.227	288.50	23.63	4.06 189.82	0.62 339.33	0.85 299.75	17.37 259.23	1.74 315.75	1.36 268.97	0.55 135.28	6.01 Mag 167.09 Phase
0.249	283.64	24.72	3.46 173.87	1.41 36.29	1.05 285.00	20.94 275.18	0.86 307.67	2.17 255.32	0.54 101.95	4.90 Mag 142.97 Phase
0.296	281.36	43.09	2.81 299.74	2.74 287.21	1.75 269.57	34.15 300.95	2.06 157.99	0.73 95.68	0.88 306.14	11.12 Mag 41.06 Phase
0.346	272.28	54.09	2.43 332.35	1.89 215.33	1.58 319.03	47.19 327.02	3.17 206.36	1.66 89.16	2.22 344.83	15.24 Mag 29.43 Phase
0.346	273.81	53.80	2.21 337.28	2.76 192.77	1.39 304.91	46.79 333.62	2.47 210.32	1.72 94.82	2.33 343.20	16.24 Mag 40.64 Phase

*1/2 Peak-to-peak

Table 11. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	358.95	59.26	5.68	2.65	1.88	49.66	5.48	1.43	0.64	12.93 Mag
			157.61	245.58	139.59	172.50	70.69	68.77	52.70	169.77 Phase
0.110	359.43	61.61	5.57	2.21	1.65	49.63	5.58	1.55	0.42	15.40 Mag
			157.31	253.91	136.85	176.58	72.99	73.50	43.92	172.95 Phase
0.128	359.72	52.85	5.88	2.51	1.72	39.11	3.06	1.52	0.74	15.43 Mag
			161.28	280.13	140.53	172.31	68.50	41.87	112.51	174.07 Phase
0.131	360.41	51.43	5.74	2.52	1.54	38.61	3.85	1.54	0.67	14.31 Mag
			155.82	270.38	127.96	169.03	75.14	31.05	85.25	171.86 Phase
0.144	356.50	46.12	4.55	4.88	1.18	32.74	2.14	1.42	0.92	12.67 Mag
			224.94	303.05	144.46	179.84	16.23	21.11	174.95	184.14 Phase
0.145	356.48	45.45	4.55	4.25	1.30	32.64	2.18	1.42	0.91	12.63 Mag
			223.67	300.23	131.92	178.81	19.05	19.68	182.05	180.42 Phase
0.170	355.92	34.49	4.04	4.30	1.33	24.62	1.43	0.39	1.04	5.60 Mag
			231.06	272.05	120.99	194.46	357.51	99.58	200.30	209.67 Phase
0.171	355.48	34.93	4.31	4.66	1.35	24.74	1.17	0.31	1.15	4.79 Mag
			231.46	272.55	114.29	186.96	345.97	118.30	171.27	213.83 Phase
0.194	359.08	29.88	4.45	4.12	0.80	18.73	0.53	0.34	1.13	7.25 Mag
			240.99	285.47	134.37	218.27	44.54	128.77	256.47	233.53 Phase
0.197	358.29	29.24	4.54	3.13	0.57	18.72	0.35	1.20	0.82	7.13 Mag
			236.04	282.52	127.34	209.15	45.74	143.06	231.19	217.16 Phase
0.221	354.37	33.92	3.29	3.68	0.84	19.98	0.47	1.11	0.83	13.89 Mag
			240.21	249.16	156.31	229.21	264.00	306.49	274.10	223.96 Phase
0.221	353.03	32.82	2.87	2.97	0.78	19.75	0.24	1.47	0.81	14.23 Mag
			240.38	242.66	157.92	230.12	180.24	311.59	256.35	224.80 Phase
0.245	354.42	25.44	2.86	1.57	0.52	18.33	0.85	1.41	0.82	7.24 Mag
			237.87	268.54	147.07	262.24	163.96	319.37	226.73	201.17 Phase
0.247	355.59	26.64	2.72	2.43	0.72	18.56	1.02	1.37	1.07	8.17 Mag
			234.70	271.04	146.23	260.22	173.29	325.02	204.54	202.34 Phase
0.295	348.72	40.44	1.52	1.66	1.21	33.20	3.21	1.44	1.02	9.60 Mag
			290.23	315.40	313.48	305.90	168.79	95.55	151.52	77.24 Phase
0.297	351.05	41.34	1.40	1.10	1.05	33.42	3.61	1.32	0.89	9.53 Mag
			276.18	297.02	316.06	302.44	170.31	78.90	151.18	67.55 Phase

*1/2 Peak-to-peak

Table 12. Fixed-System Loads Data for Normal Force T70 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	218.41	54.94	10.91 215.61	4.95 259.72	1.18 203.87	31.29 181.76	1.93 240.77	0.73 15.25	0.91 75.09	14.31 Mag 176.33 Phase
0.103	219.06	55.04	10.78 216.12	4.92 265.64	1.15 195.49	30.97 178.22	1.89 247.54	0.57 355.03	0.77 76.24	14.87 Mag 172.73 Phase
0.128	218.29	39.27	10.10 222.53	5.01 273.85	1.24 200.91	19.34 183.21	1.83 238.54	1.03 359.97	0.74 188.78	8.68 Mag 180.72 Phase
0.129	217.35	39.20	10.20 223.35	5.01 280.17	1.09 203.34	19.32 190.31	1.93 272.68	0.72 24.78	0.68 203.68	8.85 Mag 193.37 Phase
0.153	221.06	28.39	9.64 229.39	4.64 277.91	0.24 237.15	13.12 217.27	2.43 274.80	0.58 197.95	0.63 240.55	5.88 Mag 165.37 Phase
0.153	220.75	28.12	9.54 230.74	4.76 283.96	0.41 222.92	13.06 218.13	2.34 272.49	0.61 187.46	0.69 237.37	5.79 Mag 163.05 Phase
0.180	224.04	26.71	9.48 237.68	6.25 286.50	0.37 300.27	11.22 250.33	1.66 273.46	1.16 221.42	0.70 298.80	4.46 Mag 177.41 Phase
0.181	224.08	26.83	9.75 237.78	5.98 287.88	0.43 300.05	11.22 256.16	2.29 285.09	1.12 223.62	0.51 284.41	4.53 Mag 183.08 Phase
0.203	216.81	31.58	9.11 248.63	4.95 293.93	0.53 359.03	17.51 278.73	2.53 260.87	1.69 305.76	0.56 57.96	5.43 Mag 219.51 Phase
0.203	216.77	31.57	9.11 248.75	4.59 308.50	0.82 10.76	17.45 283.49	2.45 270.53	1.67 305.93	0.56 50.60	5.40 Mag 229.30 Phase
0.224	220.72	34.02	9.18 253.19	5.05 317.75	0.72 354.30	21.07 310.06	2.21 281.14	1.79 287.17	0.63 150.68	3.39 Mag 319.39 Phase
0.225	219.74	34.18	9.41 250.26	5.09 300.77	0.88 352.09	21.09 301.29	2.22 259.11	1.94 268.32	0.69 107.61	3.40 Mag 297.62 Phase
0.249	216.40	37.42	8.59 260.84	4.58 316.75	0.58 24.55	26.95 310.86	2.52 227.95	1.17 291.54	1.46 162.70	4.13 Mag 336.57 Phase
0.249	216.30	37.75	8.42 260.57	4.40 325.85	0.73 353.91	26.90 304.12	2.66 214.98	1.20 287.90	1.32 146.06	5.03 Mag 324.35 Phase
0.299	214.75	54.29	7.75 273.89	2.53 263.89	1.35 326.68	42.99 318.80	4.68 218.42	0.93 152.77	1.76 214.43	15.70 Mag 26.01 Phase
0.300	214.44	54.45	7.72 276.70	3.10 268.50	1.69 320.32	43.23 324.34	4.88 220.03	1.10 166.76	1.97 226.97	14.98 Mag 37.57 Phase
0.346	198.78	66.51	4.87 299.66	2.16 188.99	2.83 307.27	53.37 340.69	3.42 203.71	1.64 111.70	0.68 10.49	27.02 Mag 43.48 Phase
0.346	200.65	66.43	4.60 303.32	1.20 230.16	2.71 303.89	53.32 344.41	3.22 215.37	1.51 128.44	1.62 331.84	27.44 Mag 53.27 Phase

*1/2 Peak-to-peak

Table 12. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	287.11	76.93	9.19 215.62	5.40 258.56	1.43 183.62	42.97 183.41	0.62 101.37	0.69 323.21	1.26 326.23	33.18 Mag 158.21 Phase
0.103	291.09	76.68	9.30 214.79	5.90 260.25	1.62 186.63	42.51 183.31	0.35 88.08	0.49 298.10	1.36 333.48	32.63 Mag 159.53 Phase
0.126	288.05	56.83	9.04 223.92	6.28 272.99	1.39 179.76	31.09 192.21	0.75 227.02	1.00 291.21	0.95 31.69	19.20 Mag 181.97 Phase
0.127	288.31	57.64	9.16 226.32	6.01 278.51	1.27 184.36	30.96 190.66	0.90 220.45	0.94 294.57	1.07 30.27	20.14 Mag 180.00 Phase
0.150	288.45	37.01	10.24 229.44	5.13 287.10	0.38 148.48	19.37 203.71	1.36 278.73	0.50 214.97	0.89 147.74	9.64 Mag 149.39 Phase
0.150	288.35	35.16	10.08 227.85	4.78 283.12	0.38 146.96	19.25 196.86	1.47 283.29	0.51 192.25	1.26 148.39	8.23 Mag 128.41 Phase
0.152	290.56	40.17	9.62 227.02	4.49 292.08	0.54 121.79	20.68 200.95	1.54 294.19	0.42 229.45	0.77 117.99	12.92 Mag 158.56 Phase
0.153	287.78	40.16	9.57 231.33	4.85 291.72	0.70 134.32	20.14 203.88	1.60 291.38	0.47 240.44	0.76 123.96	12.68 Mag 167.02 Phase
0.171	286.65	30.63	10.00 237.78	5.82 283.35	0.09 353.91	13.77 215.49	1.79 278.87	2.05 237.12	1.18 156.84	5.23 Mag 173.38 Phase
0.174	288.24	31.77	9.82 236.67	6.42 287.50	0.29 25.67	13.63 223.03	2.06 282.05	1.83 238.62	0.90 158.79	7.20 Mag 176.65 Phase
0.177	287.79	30.72	9.56 239.15	6.53 290.52	0.15 91.99	14.16 226.63	1.80 271.09	1.56 259.42	1.24 149.55	4.56 Mag 191.76 Phase
0.179	287.83	30.33	9.47 238.79	6.26 292.15	0.11 357.90	13.95 224.38	1.64 269.01	1.81 254.24	1.05 151.39	4.93 Mag 190.40 Phase
0.195	287.72	34.57	10.61 245.19	5.01 279.96	0.72 303.45	15.29 253.33	2.00 270.92	2.00 285.70	1.22 192.56	10.35 Mag 170.81 Phase
0.199	288.36	30.07	9.29 239.04	5.10 295.44	0.33 268.41	15.80 255.28	1.76 276.44	2.18 306.76	1.55 183.66	6.16 Mag 177.69 Phase
0.203	289.30	28.66	8.84 246.46	4.44 284.95	0.16 241.31	16.43 253.20	1.36 281.02	1.45 296.84	1.70 165.03	5.68 Mag 207.31 Phase
0.205	288.36	29.50	8.93 248.38	4.14 292.99	0.26 248.49	16.64 252.82	1.60 275.42	1.78 301.79	1.93 164.09	6.38 Mag 203.02 Phase
0.224	299.72	26.39	9.15 248.48	2.98 310.39	0.50 317.06	16.08 273.84	2.07 287.14	1.37 320.94	1.74 182.37	1.43 Mag 118.37 Phase
0.225	284.03	26.95	8.96 251.08	3.35 312.69	0.23 321.34	16.80 279.75	1.08 255.68	1.55 337.98	1.44 206.24	1.00 Mag 227.48 Phase
0.225	285.53	26.00	8.70 249.01	3.63 282.33	0.18 1.68	16.57 280.18	1.01 249.41	1.62 330.79	1.82 189.27	1.60 Mag 225.15 Phase
0.247	287.54	31.99	9.55 254.69	2.43 286.90	0.71 274.15	21.14 306.34	2.85 231.97	0.80 344.58	1.98 229.31	8.35 Mag 114.03 Phase

*1/2 Peak-to-peak

Table 12. Continued

(b) Concluded

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.248	282.61	28.28	7.52	2.17	0.42	20.40	2.52	0.86	1.04	3.05 Mag
			253.84	301.45	241.48	303.68	218.09	302.89	232.03	136.03 Phase
0.248	283.11	28.14	7.35	2.36	0.44	20.54	2.50	0.66	0.89	3.97 Mag
			249.91	319.92	245.69	298.98	208.38	301.88	210.48	96.72 Phase
0.297	282.43	58.37	6.99	1.94	1.69	41.81	4.77	1.72	0.84	20.40 Mag
			269.24	227.77	323.37	323.51	200.13	177.46	321.60	65.51 Phase
0.300	281.44	56.30	5.75	2.70	2.08	41.03	4.20	0.70	1.12	18.73 Mag
			273.29	265.56	313.22	323.82	197.03	179.74	314.73	65.34 Phase
0.301	281.82	56.42	5.51	2.17	1.85	40.89	4.27	0.76	0.97	20.75 Mag
			275.95	262.59	299.53	325.84	196.64	168.43	319.64	62.05 Phase
0.346	271.17	64.55	4.04	0.83	2.60	52.28	3.38	1.42	2.50	23.73 Mag
			288.54	166.14	333.67	340.48	190.75	101.17	23.82	60.72 Phase
0.347	272.89	64.77	3.98	2.34	2.08	52.75	3.48	1.93	2.35	22.09 Mag
			289.58	218.12	310.24	335.34	193.43	91.32	22.28	53.25 Phase
0.347	275.75	67.38	4.69	1.57	3.11	52.96	3.45	1.39	2.17	25.06 Mag
			299.09	200.87	327.09	342.71	217.51	96.46	43.63	68.10 Phase

*1/2 Peak-to-peak

Table 12. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	356.83	63.86	6.64 209.82	5.02 259.02	2.44 164.65	52.30 191.51	3.18 59.18	1.28 12.05	0.35 183.93	10.84 Mag 184.79 Phase
0.106	357.72	64.33	6.43 209.08	4.81 254.58	2.64 156.00	52.55 183.18	2.78 50.35	1.49 359.20	0.40 139.98	11.01 Mag 169.18 Phase
0.129	361.44	58.06	7.21 218.83	5.15 277.74	2.36 158.59	41.07 189.88	2.18 66.14	1.87 349.28	0.55 143.04	15.14 Mag 186.66 Phase
0.129	362.12	58.70	7.20 218.90	5.48 283.96	2.62 163.90	41.42 195.49	2.13 79.38	1.54 347.50	0.35 197.79	15.72 Mag 188.89 Phase
0.142	356.46	54.14	7.67 222.51	5.21 282.06	1.67 151.03	34.71 192.59	1.60 74.76	1.96 358.83	0.88 140.99	15.71 Mag 194.40 Phase
0.152	362.08	47.80	7.58 225.35	4.34 276.66	1.38 141.96	30.38 195.00	1.52 36.97	1.10 356.94	0.70 163.72	14.85 Mag 172.30 Phase
0.177	361.19	37.26	7.90 230.56	5.73 269.50	1.01 133.72	21.75 204.40	0.42 347.61	0.17 164.05	0.63 162.29	6.92 Mag 230.39 Phase
0.179	361.48	34.71	7.68 230.95	5.34 265.32	0.99 144.72	21.18 210.59	0.67 345.52	0.13 30.12	0.80 160.88	5.25 Mag 269.69 Phase
0.203	361.84	35.65	7.30 241.23	3.77 268.89	0.98 195.34	20.31 235.94	0.25 118.06	0.38 164.39	0.93 221.66	10.56 Mag 245.55 Phase
0.203	361.76	35.42	7.00 243.11	3.98 274.80	0.88 192.45	20.37 239.98	0.59 68.59	0.47 123.20	0.95 235.49	10.41 Mag 256.00 Phase
0.224	357.60	32.19	7.03 242.78	1.88 262.59	0.83 213.16	18.62 250.85	0.58 221.53	1.00 285.77	0.55 240.06	11.00 Mag 261.46 Phase
0.224	356.63	31.63	7.49 242.63	3.09 255.96	0.88 215.77	19.02 249.06	0.57 162.17	0.50 293.54	0.66 202.95	9.38 Mag 251.25 Phase
0.224	355.79	32.93	6.62 238.74	2.18 279.23	0.83 221.40	19.29 248.65	0.63 179.93	0.76 267.62	0.94 259.49	12.21 Mag 244.79 Phase
0.225	356.93	33.33	7.11 242.46	2.30 267.74	0.66 209.05	18.99 247.56	0.65 183.74	0.68 315.12	0.81 231.92	12.44 Mag 240.06 Phase
0.247	356.29	29.91	5.61 240.57	2.03 270.53	0.61 217.60	19.78 280.99	2.37 178.33	1.05 269.04	0.35 262.07	6.49 Mag 248.03 Phase
0.248	356.17	29.93	6.14 236.05	2.70 303.31	0.47 227.24	19.85 278.71	2.07 189.79	0.83 259.79	0.66 262.30	5.29 Mag 243.10 Phase
0.301	348.69	52.01	4.26 268.25	1.43 249.58	1.45 303.98	40.11 318.67	4.46 192.63	0.33 124.40	0.73 85.55	16.09 Mag 69.03 Phase
0.301	347.83	53.02	3.99 265.03	0.48 125.27	1.61 304.05	39.71 320.85	4.87 188.69	0.15 63.48	1.05 119.95	17.15 Mag 77.26 Phase
0.347	344.27	52.39	0.99 295.47	1.67 178.61	2.67 296.73	46.77 335.45	5.06 196.57	1.37 106.87	1.38 139.71	12.56 Mag 57.57 Phase
0.347	345.54	52.64	1.66 277.42	2.32 91.81	2.23 303.27	47.46 341.61	5.07 198.33	1.22 107.78	1.49 131.19	11.84 Mag 72.56 Phase

*1/2 Peak-to-peak

Table 13. Fixed-System Loads Data for Normal Force T75 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	216.54	51.26	12.38	5.10	1.62	26.86	1.06	1.18	0.75	13.42 Mag
			221.15	275.00	208.97	187.88	247.95	11.97	101.40	183.88 Phase
0.103	217.23	53.62	12.43	5.01	1.61	26.71	1.26	1.11	0.83	16.16 Mag
			220.32	273.91	210.52	187.75	235.93	354.71	89.49	184.18 Phase
0.119	211.76	40.57	11.88	6.87	1.30	18.36	1.17	0.98	0.55	8.31 Mag
			226.26	286.38	212.09	194.75	246.42	27.57	116.77	200.35 Phase
0.122	211.35	40.27	11.89	6.40	1.40	18.16	1.19	1.08	0.77	8.42 Mag
			225.41	283.96	212.91	192.29	242.61	28.90	135.29	185.92 Phase
0.149	218.79	29.22	11.45	5.69	0.72	11.41	1.91	0.11	0.72	6.86 Mag
			232.79	287.95	225.15	222.65	291.09	124.28	187.89	162.40 Phase
0.150	218.94	29.31	11.83	5.94	0.68	11.01	1.86	0.10	0.71	6.60 Mag
			236.69	296.50	237.83	241.33	306.39	177.54	216.08	197.55 Phase
0.153	220.30	28.55	11.82	5.25	0.82	10.59	1.57	0.39	0.60	7.24 Mag
			233.05	288.16	216.77	224.24	283.54	160.45	178.60	156.94 Phase
0.153	220.30	27.61	11.55	5.48	0.68	10.56	1.57	0.22	0.61	4.79 Mag
			234.50	295.38	233.30	228.41	286.99	138.64	189.39	183.68 Phase
0.176	216.94	28.13	11.70	6.34	0.89	10.61	1.36	0.51	0.71	4.67 Mag
			242.18	295.51	277.86	275.60	309.90	240.32	234.99	202.20 Phase
0.176	217.91	27.89	11.88	6.67	0.65	10.17	1.53	0.55	0.70	4.50 Mag
			241.16	300.83	274.62	271.51	293.09	227.35	225.38	208.63 Phase
0.202	220.32	31.79	11.45	5.32	0.42	16.66	2.03	1.69	0.13	1.52 Mag
			251.12	302.41	329.19	285.63	285.23	303.47	243.12	204.89 Phase
0.203	219.83	32.17	11.85	5.26	0.60	16.61	1.67	1.37	0.40	3.69 Mag
			248.24	293.92	332.00	279.88	289.38	297.36	247.14	151.54 Phase
0.224	217.61	35.48	11.89	5.62	0.43	20.12	2.07	1.90	0.72	1.73 Mag
			256.01	317.88	345.78	311.15	290.65	291.41	155.45	8.29 Phase
0.225	219.45	35.40	11.81	6.21	0.31	19.96	2.10	1.64	0.75	1.49 Mag
			255.85	310.84	354.89	305.33	281.58	276.61	133.95	31.73 Phase
0.249	216.14	42.26	12.20	4.12	0.34	28.32	1.23	1.69	0.56	3.20 Mag
			263.01	301.96	21.10	325.62	261.07	306.42	156.59	74.99 Phase
0.249	216.44	42.51	12.11	3.98	0.52	28.13	1.66	1.60	0.96	5.08 Mag
			261.87	314.54	334.42	318.14	250.51	295.21	141.90	76.46 Phase
0.301	212.31	57.60	10.98	4.50	0.67	40.06	3.16	1.24	1.54	18.67 Mag
			271.07	296.12	318.98	330.83	234.53	74.38	199.04	55.71 Phase
0.301	210.44	56.84	11.06	5.00	0.43	39.95	3.00	1.37	1.63	17.62 Mag
			274.09	299.49	7.50	332.88	239.20	87.40	205.07	58.19 Phase
0.345	206.24	74.44	7.00	3.39	2.55	51.04	3.38	1.49	1.16	29.73 Mag
			284.91	268.66	313.53	351.07	243.89	107.00	318.96	41.25 Phase
0.345	204.60	71.98	7.07	2.65	2.55	50.80	3.84	1.83	1.51	27.54 Mag
			286.82	237.32	307.21	356.97	254.91	109.61	15.54	55.55 Phase

*1/2 Peak-to-peak

Table 13. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	282.77	69.58	10.95	5.95	1.96	39.91	0.87	0.33	0.53	25.97 Mag
			220.18	271.70	184.75	193.74	97.52	31.25	320.63	171.44 Phase
0.109	289.15	68.88	10.78	6.31	1.75	37.47	0.31	0.47	0.57	26.81 Mag
			220.44	266.60	181.89	186.95	38.44	19.20	333.69	160.10 Phase
0.120	283.99	55.93	11.07	7.08	1.93	29.81	0.37	1.19	1.82	18.10 Mag
			226.64	279.49	161.59	189.14	194.50	299.81	17.28	162.75 Phase
0.123	283.39	59.59	11.43	7.44	1.88	30.02	0.47	0.91	1.94	21.36 Mag
			230.94	282.08	174.60	200.07	213.31	332.66	39.61	179.22 Phase
0.149	290.29	37.79	11.90	5.78	0.90	18.76	1.04	0.39	0.86	10.93 Mag
			233.61	300.57	153.44	209.03	295.06	130.81	123.48	149.08 Phase
0.150	289.87	37.31	11.82	5.88	0.86	18.85	1.06	0.14	0.80	10.43 Mag
			234.30	299.47	146.24	209.12	302.89	140.05	141.12	147.95 Phase
0.152	290.13	38.01	12.28	5.67	0.92	18.35	1.12	0.25	1.09	10.78 Mag
			232.33	293.88	156.84	205.12	290.83	135.15	170.26	142.78 Phase
0.153	290.19	36.08	12.04	5.82	0.91	18.12	1.40	0.27	1.38	8.66 Mag
			231.74	296.06	158.44	204.79	297.89	118.48	164.54	134.88 Phase
0.176	286.83	30.89	12.01	6.77	0.31	11.96	1.35	1.21	0.86	7.31 Mag
			244.59	302.71	135.87	240.46	303.57	263.32	167.17	188.84 Phase
0.177	287.75	30.57	12.18	6.86	0.38	11.90	1.42	1.19	0.87	6.17 Mag
			242.15	298.31	139.93	235.46	290.78	246.48	171.09	174.27 Phase
0.201	289.01	37.18	12.32	6.02	0.29	15.00	1.50	1.75	1.48	11.49 Mag
			252.16	312.18	207.68	265.12	306.30	324.56	167.81	180.70 Phase
0.202	290.06	36.95	12.15	5.98	0.20	15.05	1.82	1.86	1.06	11.42 Mag
			248.10	303.16	262.90	257.26	298.96	306.43	169.72	161.89 Phase
0.225	289.93	30.37	12.37	4.29	0.46	15.16	1.25	1.59	1.88	6.21 Mag
			252.57	288.47	193.76	285.39	293.97	339.22	174.25	149.68 Phase
0.225	289.83	29.23	11.94	3.95	0.28	14.88	1.30	1.44	1.93	5.72 Mag
			255.01	299.82	202.49	286.95	286.94	351.33	166.11	159.50 Phase
0.250	288.93	39.23	11.55	3.28	0.62	21.49	0.80	1.12	1.59	11.72 Mag
			257.77	327.32	245.77	318.52	236.62	353.18	195.94	113.80 Phase
0.251	287.12	40.37	11.74	4.18	0.47	21.97	1.04	1.09	1.69	11.71 Mag
			258.22	331.15	242.20	315.41	229.58	343.69	197.62	108.93 Phase
0.300	278.90	55.14	9.15	4.11	1.73	38.64	2.48	1.21	1.38	16.82 Mag
			271.35	276.88	288.47	326.92	219.74	126.96	346.66	62.61 Phase
0.301	280.35	56.90	9.27	4.46	1.61	38.99	2.50	1.04	1.09	16.92 Mag
			263.75	303.37	292.26	328.70	229.36	126.40	330.99	75.77 Phase
0.345	270.73	63.28	6.01	0.29	2.78	49.36	2.06	1.75	2.86	19.85 Mag
			284.96	333.21	316.90	346.15	226.67	92.31	24.92	40.51 Phase
0.346	271.95	60.52	4.51	2.43	2.71	49.46	1.83	2.04	2.58	18.42 Mag
			275.37	227.84	308.63	353.70	242.02	97.36	42.01	62.66 Phase

*1/2 Peak-to-peak

Table 13. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	358.57	61.69	8.15 214.13	5.81 271.73	3.12 163.67	48.38 190.98	2.70 45.59	1.60 350.58	0.61 197.75	10.78 Mag 156.46 Phase
0.107	356.61	60.41	7.67 216.93	5.50 267.50	3.17 169.53	48.35 196.43	2.46 60.08	1.72 2.37	0.55 182.67	9.45 Mag 161.28 Phase
0.120	352.94	60.71	8.72 222.41	6.84 292.31	2.62 159.15	38.73 194.74	1.52 58.94	2.13 342.51	1.18 186.12	19.04 Mag 165.48 Phase
0.122	352.67	58.67	8.88 223.17	6.82 293.57	2.73 163.77	38.99 199.57	1.43 58.57	1.93 348.39	1.02 183.13	15.24 Mag 178.89 Phase
0.148	357.22	45.34	10.24 233.22	4.93 285.75	1.75 147.13	27.28 208.87	1.20 15.24	1.80 359.89	0.81 152.62	14.22 Mag 162.72 Phase
0.149	356.33	44.70	10.14 233.67	4.29 290.70	1.69 148.87	27.16 205.40	1.15 0.19	1.47 359.62	0.86 143.63	13.00 Mag 165.23 Phase
0.150	355.39	42.39	10.24 231.50	4.39 290.95	1.63 145.52	27.67 200.69	1.41 11.97	1.21 8.90	0.83 104.53	9.36 Mag 154.15 Phase
0.150	354.49	42.82	9.70 234.51	4.24 300.86	1.86 154.74	27.43 207.75	1.32 32.79	1.41 8.27	0.87 139.59	10.83 Mag 175.30 Phase
0.150	361.72	41.73	10.64 231.07	4.33 282.29	1.59 157.03	27.43 206.08	1.33 354.72	1.34 347.76	0.91 169.40	9.54 Mag 145.48 Phase
0.151	360.56	44.65	10.21 233.47	4.63 284.72	1.85 158.52	27.32 206.37	1.41 11.69	1.48 3.28	1.28 169.41	13.44 Mag 157.39 Phase
0.174	362.09	37.42	10.61 239.55	6.25 282.84	1.37 150.60	20.00 216.41	0.97 334.65	0.56 286.36	1.19 164.26	4.41 Mag 250.65 Phase
0.175	362.40	37.50	10.79 239.58	6.43 283.06	1.16 148.10	19.90 219.75	1.20 340.60	0.38 299.27	1.10 164.01	4.50 Mag 273.33 Phase
0.200	360.14	36.18	10.63 247.39	4.30 303.87	1.29 205.56	18.31 245.76	1.11 0.61	0.68 43.11	1.65 217.80	10.62 Mag 189.21 Phase
0.200	360.48	34.64	10.89 247.42	4.43 286.35	1.03 206.48	18.51 242.82	1.26 339.58	0.50 349.40	1.50 199.44	7.54 Mag 173.66 Phase
0.224	356.68	33.54	10.34 251.45	4.12 266.28	1.40 202.40	17.69 255.11	1.32 279.05	0.67 336.05	1.12 221.37	7.34 Mag 172.83 Phase
0.225	356.98	33.82	10.84 252.36	4.44 273.42	1.53 209.76	18.13 263.97	1.54 298.49	0.79 339.21	1.29 238.21	5.58 Mag 172.19 Phase
0.250	356.50	32.44	10.50 253.65	2.50 314.06	1.01 225.84	19.41 303.92	1.88 230.05	0.64 324.30	0.75 237.40	9.96 Mag 137.44 Phase
0.251	358.48	33.77	10.00 251.42	3.13 305.89	1.22 218.59	19.77 296.87	2.20 213.68	0.63 289.83	0.64 235.84	10.59 Mag 126.90 Phase
0.300	352.64	51.07	6.11 254.17	1.49 312.80	1.93 278.77	39.20 321.17	1.83 172.95	1.14 101.74	0.15 53.20	13.81 Mag 78.07 Phase
0.300	352.57	50.77	6.47 261.77	1.94 309.41	1.59 274.83	38.69 317.27	2.25 171.73	1.23 102.02	0.42 130.25	14.25 Mag 70.40 Phase
0.346	342.45	50.46	2.35 270.12	3.23 183.94	1.44 288.01	44.04 340.87	3.93 204.77	1.46 73.19	1.22 127.45	11.63 Mag 64.48 Phase
0.347	340.93	50.83	2.66 266.56	2.45 195.81	2.19 318.08	44.32 343.01	3.35 202.33	1.29 85.11	1.50 143.94	12.06 Mag 77.33 Phase

*1/2 Peak-to-peak

Table 14. Fixed-System Loads Data for Normal Force T80 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.096	215.69	48.23	11.07 249.10	2.31 264.49	0.37 284.26	30.09 193.98	2.50 225.05	0.43 45.91	1.63 323.86	12.67 Mag 188.26 Phase
0.099	216.12	47.72	10.95 247.04	2.63 264.10	0.11 250.03	29.87 181.35	1.87 209.52	0.25 320.99	1.83 302.86	12.88 Mag 161.32 Phase
0.132	214.93	31.30	13.23 257.02	3.31 282.61	0.79 210.76	14.65 200.27	2.51 234.00	0.94 317.53	0.65 298.49	5.23 Mag 180.98 Phase
0.132	215.09	31.44	13.07 260.04	3.51 283.26	0.57 209.19	14.75 204.60	2.47 232.14	0.87 314.53	1.08 337.02	6.05 Mag 191.42 Phase
0.155	214.71	20.77	7.80 233.52	3.64 281.47	0.30 124.77	8.58 244.05	2.68 272.27	0.48 192.77	0.42 213.57	4.21 Mag 125.81 Phase
0.155	214.75	21.42	7.76 234.05	4.24 284.81	0.41 131.46	8.52 240.92	2.74 267.00	0.49 168.33	0.47 205.12	4.60 Mag 110.67 Phase
0.181	214.27	22.22	7.11 240.50	4.94 294.97	0.64 4.80	11.58 282.89	1.97 272.48	0.90 253.10	0.48 280.48	2.35 Mag 126.62 Phase
0.181	213.51	22.16	7.19 243.59	4.97 302.81	0.32 21.73	11.34 289.54	2.22 276.57	0.64 254.30	0.62 270.67	3.16 Mag 129.51 Phase
0.203	218.44	26.48	7.16 250.72	3.77 304.27	0.78 46.58	17.14 295.85	2.98 270.87	1.64 302.68	0.20 128.20	1.81 Mag 113.87 Phase
0.203	217.48	27.11	7.17 253.94	4.47 310.41	0.56 43.10	17.04 301.53	2.90 279.90	1.89 313.17	0.22 156.98	1.58 Mag 119.52 Phase
0.229	212.43	30.49	6.85 257.50	3.80 302.13	0.45 359.85	21.56 313.55	2.50 273.78	2.16 300.97	0.87 153.39	5.04 Mag 10.80 Phase
0.229	211.67	30.20	7.01 258.67	3.52 303.90	0.80 43.85	21.30 310.14	2.41 260.58	2.22 301.68	0.73 155.70	5.21 Mag 1.61 Phase
0.252	212.89	37.66	7.26 267.02	3.83 321.53	0.60 38.20	28.85 327.36	2.31 254.03	1.50 317.33	1.38 184.48	8.76 Mag 37.49 Phase
0.253	212.38	37.10	7.32 268.60	2.66 303.30	0.90 47.01	28.91 322.54	2.09 249.37	1.20 308.32	1.37 172.38	8.59 Mag 29.69 Phase
0.300	209.82	53.90	5.04 278.30	4.81 269.93	1.05 315.75	40.70 326.11	2.76 230.73	1.21 104.66	0.77 283.81	20.01 Mag 35.40 Phase
0.302	209.06	53.33	5.38 279.42	3.97 267.70	0.57 329.86	40.96 327.50	2.78 226.85	0.96 120.29	0.74 281.16	19.85 Mag 36.16 Phase
0.350	201.12	73.21	3.90 306.08	1.82 205.22	2.12 308.37	51.26 349.56	2.18 221.09	2.38 95.40	0.92 308.50	32.81 Mag 36.30 Phase
0.350	200.41	72.40	3.28 315.07	1.78 227.14	2.16 296.02	51.22 347.25	2.90 209.97	2.25 91.13	1.66 323.18	32.03 Mag 29.36 Phase

*1/2 Peak-to-peak

Table 14. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	284.89	73.39	9.74 252.46	2.91 240.56	2.29 159.28	40.85 183.54	1.41 186.22	1.26 318.07	4.32 340.67	35.67 Mag 141.44 Phase
0.105	285.93	68.81	9.55 256.62	2.32 238.84	2.09 166.27	39.77 195.74	0.73 179.85	1.90 347.09	3.80 17.65	32.24 Mag 168.73 Phase
0.130	288.72	51.79	12.00 263.89	3.26 277.97	1.62 191.06	25.99 194.08	3.19 200.82	1.45 322.71	2.44 22.16	19.79 Mag 170.82 Phase
0.132	289.00	51.74	12.09 263.41	3.39 277.07	1.81 183.71	26.11 190.82	3.30 199.54	1.54 317.95	2.60 13.20	19.48 Mag 164.33 Phase
0.153	289.34	37.18	13.58 268.09	2.53 282.80	1.03 162.19	18.10 212.66	3.26 217.51	1.03 335.57	1.27 80.17	10.51 Mag 179.76 Phase
0.153	289.48	36.14	13.32 269.87	2.57 288.52	1.11 154.52	18.23 215.73	3.10 222.11	1.19 346.07	1.35 102.26	9.05 Mag 192.40 Phase
0.153	285.18	32.08	7.50 234.01	4.05 296.01	1.07 100.76	17.42 214.60	1.49 261.74	0.26 14.64	1.17 143.25	8.99 Mag 166.77 Phase
0.180	286.41	23.20	6.93 242.87	4.76 301.57	0.81 31.91	11.08 241.71	2.12 234.54	1.55 228.65	0.66 231.59	3.88 Mag 147.51 Phase
0.181	286.58	23.61	7.16 243.21	4.99 291.54	0.74 41.40	11.21 247.78	2.22 251.87	1.16 242.66	0.72 206.12	4.89 Mag 168.41 Phase
0.201	289.14	27.87	6.60 254.47	3.11 325.22	0.50 47.31	15.38 272.10	2.39 251.19	1.75 304.45	1.42 240.20	7.05 Mag 208.65 Phase
0.202	288.13	39.53	16.35 274.22	3.41 281.20	0.57 201.32	14.70 263.99	4.25 217.85	1.44 351.35	1.11 180.80	9.33 Mag 194.03 Phase
0.203	287.53	39.39	16.38 275.56	2.89 277.90	0.72 218.62	14.84 266.06	4.42 220.57	1.33 343.85	0.55 180.09	9.07 Mag 198.89 Phase
0.228	286.48	26.52	5.93 254.38	2.57 276.22	0.18 200.00	16.89 293.37	2.57 240.88	1.25 345.83	1.56 227.08	3.57 Mag 229.14 Phase
0.229	285.88	26.94	5.96 252.85	2.69 265.66	0.17 178.28	16.96 294.16	2.66 248.49	1.13 333.34	1.50 224.37	3.97 Mag 227.79 Phase
0.251	282.67	39.04	16.83 278.93	0.56 285.46	1.81 235.77	22.52 317.37	5.12 243.03	0.89 340.63	1.37 223.94	0.75 Mag 102.65 Phase
0.251	282.62	39.39	16.68 279.31	0.35 237.85	2.14 224.88	22.76 314.81	4.71 236.14	0.91 326.06	1.50 247.92	1.12 Mag 71.71 Phase
0.252	283.34	29.93	6.06 259.79	1.88 290.36	0.56 183.08	23.45 311.26	1.95 231.22	0.63 327.17	1.02 233.11	3.95 Mag 95.90 Phase
0.300	275.03	62.78	15.62 277.97	1.68 281.39	2.29 269.42	41.53 328.83	3.73 287.41	1.72 65.53	0.15 198.52	19.74 Mag 43.43 Phase
0.301	282.05	50.04	3.25 271.04	2.32 259.31	1.84 309.17	40.46 329.95	1.88 207.79	0.81 100.83	1.25 326.41	14.78 Mag 58.66 Phase
0.348	266.55	76.30	14.96 282.60	2.25 140.84	3.27 301.70	49.57 354.22	4.63 309.73	2.63 78.48	1.20 20.61	21.74 Mag 49.42 Phase
0.349	269.38	76.01	15.09 280.11	3.82 154.53	3.11 284.88	49.23 340.31	4.40 280.54	2.93 62.34	0.35 317.20	22.72 Mag 20.36 Phase
0.349	271.28	61.65	1.95 295.72	3.98 221.18	1.94 307.41	49.68 349.31	2.07 239.24	2.59 91.81	2.48 9.88	19.36 Mag 44.01 Phase

*1/2 Peak-to-peak

Table 14. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.100	355.91	63.02	7.45 261.54	1.45 227.51	2.87 151.05	52.20 191.79	2.99 85.55	1.66 354.59	1.97 115.96	13.05 Mag 172.76 Phase
0.100	355.70	62.62	7.43 259.63	1.61 210.25	2.75 153.85	52.45 188.43	3.18 84.83	1.54 350.85	1.98 108.32	10.60 Mag 165.85 Phase
0.131	358.78	57.41	10.64 267.21	2.67 263.80	3.53 182.28	37.90 199.64	2.53 122.21	1.84 8.46	0.31 89.84	19.04 Mag 190.75 Phase
0.133	359.47	56.10	10.20 267.44	2.90 265.86	3.47 185.51	38.03 200.97	2.44 123.49	1.87 356.55	0.53 68.64	17.61 Mag 186.42 Phase
0.152	358.87	38.70	6.03 226.97	2.57 277.54	1.36 121.66	27.56 214.65	0.74 38.19	2.00 37.64	0.93 155.56	10.97 Mag 180.38 Phase
0.153	359.73	39.74	5.60 231.31	2.69 284.77	1.36 127.75	27.65 224.36	0.80 78.74	1.87 53.91	0.95 183.34	12.56 Mag 202.57 Phase
0.179	357.70	31.64	5.72 239.74	3.65 270.02	1.11 112.17	18.52 222.72	0.90 149.43	0.46 62.24	0.98 181.08	8.53 Mag 246.23 Phase
0.181	358.27	31.91	5.74 237.80	4.01 275.12	1.25 128.19	18.60 226.58	0.93 181.27	0.64 71.02	1.21 183.33	7.59 Mag 264.95 Phase
0.201	358.17	28.95	5.76 241.62	2.95 264.43	1.03 194.75	19.56 256.92	0.56 198.01	0.42 86.88	1.43 228.58	8.44 Mag 234.52 Phase
0.202	358.17	29.75	5.97 242.63	2.55 278.44	0.67 181.71	19.50 253.87	0.37 230.82	0.43 108.36	1.20 212.48	9.25 Mag 233.10 Phase
0.228	353.88	32.51	4.87 241.11	2.80 224.96	0.47 194.69	19.58 264.08	1.69 212.79	1.04 329.34	0.89 245.48	11.09 Mag 216.48 Phase
0.228	355.90	32.57	5.10 239.29	2.50 239.06	0.55 209.34	19.75 268.14	1.49 220.07	0.76 337.00	0.97 252.38	11.25 Mag 221.66 Phase
0.251	355.62	28.52	4.56 244.29	1.82 276.67	0.63 209.26	22.70 305.40	1.89 206.72	0.34 290.13	0.36 201.03	6.09 Mag 166.72 Phase
0.251	354.42	29.74	4.85 244.32	1.77 279.15	0.36 195.34	22.63 301.80	2.29 197.43	0.26 297.92	0.80 230.96	7.10 Mag 167.57 Phase
0.301	352.25	46.54	2.22 256.98	0.50 287.10	1.16 307.56	41.34 319.95	2.33 171.95	1.26 112.82	1.19 135.71	9.32 Mag 75.71 Phase
0.303	349.77	49.21	2.24 263.96	1.21 291.66	1.29 317.03	41.91 319.95	2.10 181.19	1.30 103.67	1.01 132.81	12.13 Mag 76.87 Phase
0.350	341.10	54.72	0.45 171.41	5.10 180.76	1.81 319.87	46.51 342.36	5.03 207.30	1.35 72.94	0.98 158.12	12.71 Mag 65.34 Phase

*1/2 Peak-to-peak

Table 15. Fixed-System Loads Data for Normal Force T85 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.088	214.67	50.61	10.39 216.86	4.77 272.01	0.92 198.16	28.26 189.34	3.02 212.88	0.78 352.50	0.36 67.93	12.47 Mag 178.17 Phase
0.089	215.12	51.62	10.15 214.57	4.98 270.22	0.93 190.80	28.29 183.32	3.11 203.23	0.57 348.20	0.47 78.30	13.30 Mag 168.22 Phase
0.120	215.26	33.50	9.96 220.29	5.04 271.73	0.87 191.61	15.99 190.06	3.04 215.29	0.82 27.56	0.53 174.50	4.44 Mag 178.39 Phase
0.121	215.36	33.09	9.36 223.37	5.14 277.58	0.82 190.07	15.93 192.52	2.96 213.77	0.88 51.79	0.55 183.15	4.54 Mag 186.58 Phase
0.146	219.00	23.90	9.15 229.45	4.58 286.77	0.58 136.20	9.47 226.76	2.96 241.51	0.75 138.66	0.89 199.16	3.86 Mag 116.56 Phase
0.149	219.67	23.45	9.17 229.89	4.24 294.86	0.53 144.31	9.36 236.69	2.95 253.77	0.68 144.92	0.87 214.31	3.91 Mag 137.23 Phase
0.177	218.79	23.61	9.51 234.14	5.69 278.46	0.25 267.48	10.89 286.05	3.16 260.38	0.74 226.58	0.68 242.08	3.68 Mag 107.49 Phase
0.178	218.87	23.32	9.11 232.74	6.33 278.82	0.19 197.11	10.59 279.10	3.24 250.64	0.54 214.24	0.61 237.26	3.33 Mag 94.20 Phase
0.197	219.08	27.79	8.51 242.53	4.91 287.99	0.18 89.96	16.67 295.47	3.35 277.38	1.26 292.38	0.10 184.17	0.75 Mag 109.27 Phase
0.200	218.99	28.36	8.50 241.76	4.95 290.51	0.29 63.29	17.10 294.62	3.37 277.27	1.23 284.55	0.10 89.04	0.91 Mag 106.47 Phase
0.226	219.99	32.24	9.13 248.01	3.76 295.29	0.32 351.06	21.00 313.58	3.19 287.81	1.81 285.31	0.88 147.17	3.28 Mag 336.93 Phase
0.227	220.26	31.53	8.72 249.10	3.82 285.18	0.35 14.98	21.18 317.44	3.61 295.29	1.80 288.44	0.84 150.77	2.66 Mag 343.75 Phase
0.251	214.46	37.24	8.51 256.03	2.63 289.24	0.26 8.22	28.65 322.74	2.46 282.56	1.26 286.75	1.67 178.43	5.75 Mag 12.63 Phase
0.252	214.68	37.51	8.51 254.66	3.36 296.51	0.30 54.34	28.91 320.39	2.29 277.68	1.38 279.93	1.67 176.94	5.49 Mag 16.23 Phase
0.299	210.53	57.79	7.42 266.71	4.09 262.51	1.51 321.67	42.93 333.80	3.24 243.77	1.20 148.83	2.73 232.92	22.38 Mag 49.08 Phase
0.300	208.95	55.84	7.45 267.14	4.02 274.42	1.38 296.27	42.86 331.49	3.52 237.20	1.13 139.83	2.43 227.81	20.11 Mag 45.78 Phase
0.350	199.35	70.05	3.72 288.31	2.19 229.53	2.05 318.16	49.99 354.83	3.75 258.26	2.80 105.81	1.81 308.94	29.68 Mag 49.89 Phase
0.350	200.16	67.13	4.13 285.98	2.15 211.38	2.06 307.91	49.13 0.33	2.71 253.65	2.90 122.42	2.38 298.47	27.47 Mag 60.34 Phase

*1/2 Peak-to-peak

Table 15. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.092	283.25	73.09	8.17 218.33	4.69 269.53	1.78 174.15	38.98 188.56	1.97 151.26	0.78 1.05	1.80 324.33	34.31 Mag 157.69 Phase
0.120	285.69	51.88	8.59 226.62	4.90 277.04	1.64 161.72	27.62 189.76	2.12 188.39	1.06 337.80	1.27 8.81	18.22 Mag 172.58 Phase
0.120	287.00	51.66	8.62 223.12	4.69 273.67	1.65 159.99	28.01 194.91	2.19 185.85	0.99 335.69	1.01 353.74	18.17 Mag 182.66 Phase
0.147	289.39	35.91	8.58 230.65	4.23 289.19	1.00 120.26	17.12 212.35	2.19 238.62	0.67 20.41	0.52 107.37	10.55 Mag 189.13 Phase
0.149	288.07	34.63	8.65 228.16	4.10 292.19	1.01 115.43	16.97 206.69	1.94 225.02	0.48 48.30	0.51 90.95	9.74 Mag 177.53 Phase
0.177	286.85	24.48	9.35 238.02	6.55 277.76	0.68 139.94	10.93 251.36	2.81 248.41	0.83 270.57	0.74 134.47	1.72 Mag 175.59 Phase
0.177	286.35	23.81	9.13 234.58	6.30 271.62	0.74 131.92	10.93 245.76	2.71 241.84	1.01 257.91	0.77 121.72	1.11 Mag 114.42 Phase
0.199	291.94	26.88	8.18 243.99	4.00 283.87	0.32 143.99	15.58 272.07	2.49 251.35	1.05 333.86	1.64 188.63	3.63 Mag 269.35 Phase
0.200	292.80	28.22	8.01 242.52	4.11 290.28	0.21 170.57	15.66 269.98	2.65 245.23	0.90 323.48	1.39 181.42	6.48 Mag 248.04 Phase
0.227	289.45	25.38	7.82 246.49	2.80 261.16	0.39 253.33	16.52 296.78	2.31 266.13	1.39 341.47	2.04 204.52	1.96 Mag 219.59 Phase
0.227	289.00	26.96	8.57 247.63	2.72 278.38	0.23 266.81	16.32 297.94	2.61 274.35	1.55 353.05	2.02 202.03	4.30 Mag 252.15 Phase
0.250	284.92	29.99	7.38 248.06	3.00 287.48	0.78 215.04	23.25 314.14	2.03 234.07	0.92 347.80	1.64 218.36	3.42 Mag 140.45 Phase
0.252	284.45	30.33	7.89 250.52	2.52 298.83	0.47 240.58	23.03 318.17	2.26 238.59	0.90 343.37	1.84 221.96	2.26 Mag 170.31 Phase
0.300	282.60	56.33	5.71 256.76	3.68 262.70	2.04 297.95	42.40 331.05	3.46 221.23	1.13 129.64	1.47 298.29	19.37 Mag 67.08 Phase
0.301	283.06	55.96	5.38 262.50	2.39 257.57	2.11 309.16	42.09 333.01	2.98 215.59	1.03 123.51	1.32 300.87	20.40 Mag 63.43 Phase
0.350	270.18	56.95	2.55 276.67	1.65 188.50	1.89 334.67	48.63 350.68	3.10 241.11	2.81 83.20	2.91 19.47	16.89 Mag 58.65 Phase
0.352	269.09	59.17	2.87 275.50	2.16 181.54	2.38 319.95	49.58 341.68	2.58 233.34	2.96 69.37	2.86 359.55	17.52 Mag 34.03 Phase

*1/2 Peak-to-peak

Table 15. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.094	356.27	60.47	6.24 207.71	3.53 251.85	2.88 156.92	51.85 195.03	3.36 79.96	2.17 27.36	0.55 142.14	6.75 Mag 174.06 Phase
0.095	357.65	58.74	5.48 202.00	3.57 244.31	3.03 165.48	52.19 196.62	4.33 73.85	1.95 23.98	0.51 163.94	3.73 Mag 213.95 Phase
0.120	360.27	54.14	6.95 220.40	4.99 286.06	2.83 157.24	38.32 209.06	1.44 100.82	2.20 30.30	0.82 181.58	12.67 Mag 215.69 Phase
0.122	359.82	56.54	6.79 223.74	4.51 287.03	2.30 168.08	39.00 202.87	1.40 115.05	2.66 19.19	0.56 134.11	15.66 Mag 204.83 Phase
0.144	364.55	40.77	6.71 220.35	3.46 282.72	2.03 147.40	28.44 190.73	0.87 54.62	2.28 356.97	0.87 116.84	8.25 Mag 177.76 Phase
0.145	365.51	40.79	6.57 226.22	3.00 287.35	2.23 154.70	28.68 208.22	0.65 102.12	2.58 28.42	0.92 155.65	8.06 Mag 213.67 Phase
0.175	359.44	33.15	7.70 230.90	4.93 261.38	1.46 144.45	18.04 222.87	0.56 151.50	1.32 16.60	0.91 129.97	8.23 Mag 237.05 Phase
0.176	359.34	33.16	7.66 230.16	4.96 259.90	1.63 147.85	18.01 225.32	0.37 217.71	1.04 7.18	0.81 148.44	7.74 Mag 251.03 Phase
0.197	364.24	34.53	6.97 232.56	3.37 264.79	0.85 165.90	19.36 243.14	1.41 124.49	1.23 52.97	0.96 208.51	12.80 Mag 245.50 Phase
0.197	363.87	33.31	7.02 234.38	2.91 259.91	0.97 186.65	19.13 248.17	1.60 139.42	0.95 77.64	1.16 212.63	11.69 Mag 260.57 Phase
0.225	354.84	31.69	7.37 241.68	2.91 248.70	1.24 213.06	18.09 269.59	0.98 194.03	0.40 339.56	1.31 255.64	10.22 Mag 238.63 Phase
0.226	356.82	33.00	7.24 243.33	2.72 231.18	1.05 204.62	18.11 273.98	1.48 219.87	0.42 314.65	1.70 247.28	12.27 Mag 249.00 Phase
0.251	356.29	35.66	6.93 240.78	2.52 288.48	0.60 226.25	22.24 305.09	3.10 187.30	0.70 278.30	1.11 266.17	8.50 Mag 222.25 Phase
0.252	356.44	33.66	6.81 239.58	2.35 266.53	0.74 203.08	21.70 300.30	2.33 180.46	0.76 269.93	1.38 276.73	7.66 Mag 193.58 Phase
0.300	350.98	56.79	4.26 240.82	1.58 261.01	1.38 298.71	43.92 315.01	3.32 189.67	1.25 87.13	1.39 88.96	18.56 Mag 71.26 Phase
0.301	351.30	55.73	4.18 237.69	1.63 251.94	1.95 308.08	44.16 324.05	2.92 200.14	0.92 86.30	1.37 114.34	17.09 Mag 93.95 Phase

*1/2 Peak-to-peak

Table 16. Fixed-System Loads Data for Normal Force S80 Configuration

[See fig. 11.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	216.59	55.05	12.15 216.37	4.98 271.34	1.11 182.80	29.17 180.44	1.24 245.53	1.19 338.27	0.30 279.07	17.43 Mag 149.81 Phase
0.101	217.05	55.57	11.97 218.11	5.50 272.19	1.02 179.10	29.33 180.63	0.97 240.67	1.07 329.85	0.16 192.40	17.08 Mag 155.03 Phase
0.131	215.26	39.11	11.18 223.37	5.31 288.41	0.96 194.50	16.77 187.14	1.51 237.61	0.95 11.12	0.32 196.34	11.23 Mag 160.32 Phase
0.133	215.16	38.08	10.89 227.14	5.39 287.73	0.89 198.92	16.38 188.54	1.26 242.32	0.89 22.97	0.67 214.08	10.91 Mag 162.70 Phase
0.150	216.40	30.86	10.83 229.07	5.18 283.42	0.55 182.54	10.84 210.63	2.34 248.77	0.35 48.36	0.58 231.06	9.74 Mag 145.47 Phase
0.150	215.80	31.51	10.85 231.53	5.83 284.99	0.61 183.83	11.73 210.24	2.08 250.92	0.43 66.82	0.74 224.69	9.40 Mag 146.44 Phase
0.175	214.43	31.50	10.83 237.55	7.20 287.79	0.53 217.94	10.40 250.23	1.68 252.53	0.58 235.64	0.79 258.29	9.26 Mag 154.87 Phase
0.175	215.18	28.76	11.21 239.37	7.37 294.35	0.28 211.34	10.35 255.08	1.90 251.51	0.61 251.86	0.83 269.40	5.44 Mag 177.64 Phase
0.200	217.38	31.19	10.17 245.64	5.48 294.05	0.23 85.40	15.96 276.27	1.99 253.16	1.83 309.20	0.24 309.36	5.59 Mag 162.04 Phase
0.200	218.03	31.49	10.44 245.88	4.82 293.65	0.28 48.49	16.15 273.30	1.49 247.49	1.57 299.84	0.37 307.20	5.58 Mag 161.07 Phase
0.223	218.65	34.01	10.41 254.67	4.42 309.77	0.12 25.40	20.08 300.76	2.27 252.49	1.82 281.29	0.75 149.85	3.57 Mag 185.92 Phase
0.224	217.82	34.14	10.63 255.33	4.52 312.38	0.03 63.97	20.06 302.40	2.11 259.98	2.01 285.75	0.85 148.61	2.59 Mag 196.36 Phase
0.248	217.39	39.81	9.80 255.61	5.59 307.63	0.31 256.18	27.30 310.08	2.35 219.76	1.89 293.51	1.15 177.48	4.88 Mag 78.04 Phase
0.249	218.08	38.66	10.19 259.06	4.46 309.89	0.16 226.63	27.53 314.71	2.66 230.73	1.84 307.00	1.53 184.98	3.08 Mag 79.19 Phase
0.299	210.14	54.39	8.53 275.37	4.21 303.64	0.93 315.61	38.82 321.49	4.17 194.35	0.84 57.98	1.25 226.33	15.79 Mag 52.59 Phase
0.299	210.93	54.17	9.05 276.87	5.03 301.14	0.86 286.74	38.66 316.03	1.68 131.71	1.12 49.85	1.42 195.02	13.39 Mag 51.20 Phase

*1/2 Peak-to-peak

Table 16. Continued

[See fig. 12.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	286.78	69.89	10.56 217.13	6.42 265.42	1.33 136.37	40.33 179.85	0.93 45.61	0.37 327.51	0.16 63.31	26.85 Mag 130.81 Phase
0.104	287.75	71.87	10.27 216.59	6.00 259.42	1.24 142.02	39.85 180.38	1.09 56.52	0.92 329.49	0.40 25.27	30.72 Mag 126.95 Phase
0.123	285.78	51.03	10.69 227.31	6.36 285.14	1.84 143.19	30.05 189.71	0.94 59.95	1.68 339.53	0.33 131.40	15.92 Mag 135.66 Phase
0.127	286.71	48.36	10.78 225.01	6.09 284.74	1.56 136.24	29.54 185.80	0.77 63.08	1.55 340.81	0.31 147.51	12.91 Mag 130.46 Phase
0.150	287.09	38.46	11.06 228.94	4.72 292.20	1.00 120.95	19.85 193.91	1.05 313.28	0.80 334.42	1.30 193.73	14.14 Mag 119.30 Phase
0.150	286.59	39.06	10.66 229.54	5.05 291.25	0.96 118.14	19.57 191.74	0.75 331.26	0.72 325.73	0.61 181.64	15.00 Mag 118.33 Phase
0.175	286.97	34.42	11.06 235.12	6.61 287.77	0.53 126.66	13.73 210.35	0.47 225.30	0.89 258.73	0.85 195.85	10.48 Mag 109.61 Phase
0.175	286.20	34.17	10.90 239.30	6.60 295.04	0.42 110.69	13.78 217.02	0.63 195.39	0.84 279.64	0.52 198.49	10.89 Mag 131.28 Phase
0.200	288.97	35.77	10.60 245.26	5.08 304.80	0.30 172.14	16.19 252.03	0.39 297.84	1.26 316.18	1.67 174.83	10.91 Mag 161.48 Phase
0.200	289.76	34.52	10.25 244.00	5.05 299.67	0.20 166.46	15.98 250.95	0.55 269.98	1.42 308.71	1.59 175.11	10.07 Mag 158.76 Phase
0.224	290.82	32.47	10.04 250.64	3.79 283.19	0.49 209.81	15.72 276.83	0.91 224.55	1.31 325.81	2.28 198.98	9.58 Mag 149.16 Phase
0.225	287.14	32.71	10.35 252.07	5.35 283.29	0.49 193.51	15.91 277.76	0.87 228.33	1.42 340.49	2.37 201.04	9.28 Mag 142.36 Phase
0.225	291.07	32.36	10.08 248.28	3.77 287.12	0.58 212.73	16.07 276.83	0.93 231.82	1.26 324.12	2.34 199.59	9.30 Mag 139.56 Phase
0.249	289.14	36.49	9.73 254.40	2.95 320.80	1.02 219.66	21.60 307.40	2.18 196.26	1.23 339.90	1.51 220.86	12.50 Mag 116.34 Phase
0.249	290.14	38.40	9.55 254.84	2.94 323.61	0.73 229.64	21.60 300.29	1.67 184.73	1.27 340.84	1.51 224.26	13.96 Mag 99.12 Phase
0.301	279.21	53.50	6.97 270.20	2.95 293.21	1.24 303.45	39.14 313.86	4.08 202.49	1.17 83.33	1.76 295.85	14.35 Mag 56.36 Phase
0.301	278.70	54.01	6.86 275.33	2.85 299.35	1.78 296.73	38.91 315.50	3.88 199.33	1.24 95.03	2.12 318.06	15.41 Mag 59.53 Phase

*1/2 Peak-to-peak

Table 16. Concluded

[See fig. 13.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	357.57	62.42	6.69 209.06	4.69 257.03	2.80 144.89	52.23 189.08	3.14 51.70	1.66 11.94	0.82 214.05	18.17 Mag 114.58 Phase
0.104	356.72	61.68	6.67 210.92	4.35 260.78	2.75 138.91	52.12 186.60	3.01 59.73	1.62 14.14	0.84 189.73	15.07 Mag 107.59 Phase
0.127	356.96	59.64	7.70 223.11	5.67 300.70	2.45 145.59	40.92 195.37	1.86 92.71	2.45 11.34	1.56 187.61	19.66 Mag 149.09 Phase
0.150	358.89	45.06	8.99 230.27	3.47 295.90	1.62 130.13	31.14 187.30	2.12 40.41	1.63 340.51	1.86 151.10	14.39 Mag 114.82 Phase
0.150	359.04	46.37	8.78 232.12	3.61 301.17	1.97 133.53	31.14 194.31	1.87 70.22	2.13 11.42	1.93 158.52	15.71 Mag 128.21 Phase
0.175	357.62	36.81	9.49 235.07	5.42 282.39	1.35 127.83	22.41 203.94	1.19 77.80	0.81 8.75	2.06 158.87	6.01 Mag 140.48 Phase
0.175	357.49	36.03	8.96 239.91	5.04 292.08	1.24 130.92	22.29 216.74	1.46 119.74	1.10 23.12	2.11 182.74	5.87 Mag 171.68 Phase
0.200	359.19	35.87	8.98 245.56	2.88 294.59	0.73 181.11	21.46 239.82	1.13 127.60	0.27 58.43	2.29 211.07	11.52 Mag 203.44 Phase
0.200	360.08	35.64	8.66 243.98	3.90 283.72	0.95 166.57	21.35 235.55	1.09 112.37	0.44 50.29	2.28 203.22	10.77 Mag 198.06 Phase
0.223	357.91	39.16	8.38 252.22	3.24 268.73	0.99 192.14	19.75 247.97	1.41 208.94	0.71 289.32	2.51 225.23	14.68 Mag 191.28 Phase
0.224	357.09	37.61	8.71 250.34	2.88 266.62	0.98 196.95	19.90 253.23	1.54 222.59	0.84 313.30	2.42 238.53	12.98 Mag 203.17 Phase
0.225	357.23	36.73	8.30 249.53	3.87 265.58	0.79 181.81	20.04 250.41	1.38 207.72	0.54 15.13	2.57 221.85	11.47 Mag 199.16 Phase
0.225	355.22	37.12	8.41 252.44	4.37 270.75	1.16 184.21	19.98 255.32	1.45 194.99	0.33 300.07	2.46 234.13	11.51 Mag 208.69 Phase
0.248	355.76	37.32	8.15 249.19	2.00 321.68	1.21 208.50	21.28 281.00	2.61 186.50	0.87 278.59	1.26 228.05	10.99 Mag 147.06 Phase
0.248	356.79	36.25	7.93 249.57	1.74 291.49	1.34 201.44	20.91 282.41	2.77 188.26	1.04 312.66	1.17 232.90	11.35 Mag 144.32 Phase
0.300	350.97	49.24	4.81 261.91	0.86 319.72	1.32 296.92	39.74 307.01	3.33 174.23	1.34 106.26	1.28 168.09	12.78 Mag 74.98 Phase
0.301	349.30	49.22	4.89 267.23	1.06 339.14	1.07 280.99	39.21 306.62	3.09 171.89	1.21 106.63	1.38 171.10	13.91 Mag 64.54 Phase

*1/2 Peak-to-peak

Table 17. Fixed-System Loads Data for Axial Force Baseline Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−2.41	12.44	2.81 331.05	0.33 215.32	0.93 38.78	3.72 175.10	1.10 129.61	0.23 261.71	1.15 253.03	7.84 Mag 180.69 Phase
0.102	−2.02	12.23	2.80 331.29	0.25 183.57	0.65 31.88	3.78 170.86	0.64 127.83	0.32 265.22	1.10 249.97	7.62 Mag 183.73 Phase
0.130	−3.67	9.53	2.76 328.56	0.15 194.78	0.12 137.43	3.23 182.65	0.67 169.74	0.60 13.83	1.04 198.86	4.64 Mag 207.48 Phase
0.131	−2.73	9.32	2.89 328.98	0.04 196.69	0.35 190.52	3.05 186.64	1.08 168.39	0.73 21.67	0.99 203.28	4.21 Mag 218.27 Phase
0.147	−4.91	7.39	0.78 244.21	0.10 103.67	1.32 216.68	1.77 125.46	2.07 43.36	1.81 32.77	1.46 192.81	2.49 Mag 186.33 Phase
0.148	−4.71	6.92	0.87 248.40	0.04 116.60	1.27 221.83	1.82 130.83	2.25 39.74	1.43 28.38	1.50 175.31	2.37 Mag 180.01 Phase
0.153	−3.07	8.33	2.60 329.83	0.20 129.31	0.51 261.09	2.92 182.59	0.65 178.94	1.39 39.14	1.29 194.88	2.98 Mag 198.45 Phase
0.154	−2.29	8.16	2.73 330.15	0.53 163.07	0.20 331.02	3.00 185.38	0.16 111.10	0.97 37.74	1.46 199.41	3.01 Mag 200.75 Phase
0.174	−1.25	6.36	0.87 252.93	0.12 157.91	1.32 215.99	2.09 155.73	2.44 56.88	1.82 74.29	0.48 179.59	1.46 Mag 204.04 Phase
0.176	−1.29	6.58	0.93 255.55	0.12 221.67	1.47 220.68	2.34 157.36	2.04 71.49	1.91 79.47	0.42 176.82	1.78 Mag 200.74 Phase
0.179	−0.50	7.70	2.44 333.83	0.47 211.52	0.65 210.44	2.86 179.20	1.89 173.78	1.59 74.96	1.57 273.93	2.32 Mag 163.92 Phase
0.181	−0.78	8.18	2.45 334.96	0.35 236.29	0.84 211.45	2.91 178.24	2.28 171.69	1.56 80.98	1.52 278.90	2.23 Mag 178.21 Phase
0.200	−2.44	6.12	0.90 249.06	0.16 33.05	1.76 236.46	1.07 198.97	1.84 67.90	2.31 116.95	0.97 280.69	2.63 Mag 211.18 Phase
0.201	−2.38	6.33	0.95 248.52	0.23 13.02	1.47 229.25	1.12 182.47	1.93 53.21	2.67 103.23	1.28 267.35	2.59 Mag 195.44 Phase
0.223	−2.08	5.66	0.91 248.05	0.23 67.98	1.76 252.44	0.67 127.59	1.07 56.66	1.85 101.15	1.12 323.95	2.38 Mag 241.66 Phase
0.224	−2.05	5.99	0.97 253.69	0.29 39.79	2.34 258.25	0.67 134.71	1.52 48.58	1.93 102.99	0.66 336.29	2.43 Mag 247.67 Phase
0.248	−2.05	6.05	1.04 261.82	0.38 59.47	1.36 254.99	1.75 178.92	1.82 18.93	2.65 95.96	0.78 32.66	1.56 Mag 287.43 Phase
0.249	−2.25	6.35	0.99 262.16	0.37 52.66	1.60 269.70	2.04 171.47	2.12 24.66	2.40 91.74	0.81 11.20	1.26 Mag 275.15 Phase
0.298	−2.57	10.67	0.86 260.42	0.23 62.00	1.98 295.67	1.08 201.00	2.31 16.71	0.25 53.53	1.72 31.64	6.82 Mag 16.76 Phase
0.298	−2.86	10.66	0.90 269.58	0.22 26.47	1.76 280.27	0.85 211.39	2.31 0.54	0.68 31.87	1.49 16.19	6.86 Mag 8.74 Phase
0.347	−3.58	20.64	0.77 266.74	0.69 206.52	1.66 351.95	2.85 137.09	2.19 6.71	1.26 55.54	0.38 82.97	16.27 Mag 31.92 Phase
0.347	−3.63	19.87	0.56 261.71	0.72 116.53	2.01 3.20	3.02 138.57	2.45 3.65	1.69 54.67	0.79 88.52	14.23 Mag 24.01 Phase

*1/2 Peak-to-peak

Table 17. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	−5.23	30.21	2.45 337.81	1.00 238.85	0.57 187.82	2.82 142.73	0.69 173.90	0.40 331.23	0.30 50.11	25.93 Mag 155.62 Phase
0.100	−3.20	31.83	2.52 339.17	1.35 244.98	0.56 223.93	3.08 144.60	0.78 183.64	0.23 280.15	0.08 232.78	26.81 Mag 166.91 Phase
0.102	−3.58	30.03	2.59 339.85	1.20 243.21	0.72 238.01	3.30 143.77	1.36 188.01	0.12 254.60	0.18 7.30	25.00 Mag 157.88 Phase
0.130	−4.83	17.97	2.64 334.70	0.58 271.21	0.28 334.56	2.20 144.93	1.14 105.94	0.50 225.03	1.60 82.77	14.23 Mag 187.75 Phase
0.130	−3.63	18.56	2.55 334.42	0.89 257.80	0.11 153.48	2.31 148.24	1.15 78.50	0.66 190.44	1.94 85.25	14.79 Mag 181.56 Phase
0.147	−6.98	16.18	0.76 249.06	0.14 132.53	1.24 247.81	2.31 90.71	1.52 4.82	0.76 23.61	1.27 176.45	12.60 Mag 184.56 Phase
0.152	−2.78	15.44	2.71 332.24	0.27 131.58	0.27 287.60	3.09 142.09	1.32 137.34	0.48 35.02	2.35 83.10	10.95 Mag 187.38 Phase
0.152	−3.05	17.23	2.67 332.08	0.22 161.68	0.50 337.90	3.42 145.31	1.66 132.22	0.48 67.97	1.95 68.38	12.60 Mag 190.32 Phase
0.174	−3.49	11.91	0.63 252.21	0.07 103.43	1.28 239.79	2.47 97.36	2.23 14.75	2.37 54.03	0.44 170.49	7.41 Mag 226.60 Phase
0.174	−3.61	11.70	0.76 252.87	0.08 71.26	1.34 237.29	2.58 95.96	2.13 10.50	2.80 56.58	0.38 133.17	7.24 Mag 228.06 Phase
0.178	−2.90	12.66	1.98 344.37	0.24 234.83	0.41 256.68	3.75 139.52	0.97 157.23	1.54 22.10	2.16 31.32	6.80 Mag 199.98 Phase
0.180	−3.97	11.71	2.03 344.77	0.24 213.06	0.48 295.98	3.61 133.83	0.92 180.71	1.55 20.92	1.95 14.52	6.24 Mag 188.06 Phase
0.199	−4.59	13.34	0.77 249.15	0.27 63.34	1.62 243.29	1.88 89.06	2.15 19.56	1.90 71.80	0.39 271.75	9.45 Mag 236.39 Phase
0.224	−4.22	14.38	0.79 246.77	0.34 122.27	1.49 245.83	2.40 78.38	2.47 8.53	1.64 91.62	0.41 119.25	9.88 Mag 227.64 Phase
0.225	−4.17	15.64	0.79 249.85	0.24 144.03	1.81 269.26	2.55 86.49	2.43 19.42	1.72 100.49	0.44 129.12	10.87 Mag 247.98 Phase
0.249	−4.52	12.33	0.81 261.60	0.40 57.54	1.94 307.54	3.68 125.53	2.37 16.20	2.13 103.53	0.79 83.24	5.83 Mag 257.59 Phase
0.298	−5.61	13.30	0.84 247.11	0.11 12.94	1.68 333.83	2.03 108.41	2.63 350.26	0.36 35.40	0.95 54.61	9.52 Mag 29.47 Phase
0.349	−7.51	17.60	0.70 213.00	0.91 182.61	3.00 31.97	4.63 100.44	3.08 349.89	0.85 359.46	0.95 281.45	9.95 Mag 32.62 Phase

*1/2 Peak-to-peak

Table 17. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	−7.42	21.63	2.20 336.54	0.36 205.44	1.89 225.98	3.92 105.58	3.02 249.31	1.48 303.52	2.01 243.21	15.73 Mag 167.21 Phase
0.105	−5.66	23.46	2.33 338.13	0.34 141.76	2.31 202.17	5.26 113.04	4.15 254.87	1.25 306.39	2.85 251.70	16.10 Mag 175.59 Phase
0.129	−5.88	25.50	2.28 336.90	0.32 353.99	2.06 191.10	3.16 108.14	2.08 251.37	0.64 41.25	2.25 244.96	19.95 Mag 191.98 Phase
0.131	−7.15	22.32	2.40 337.30	0.38 342.38	1.44 189.97	3.31 109.05	2.04 247.27	0.77 355.92	1.93 229.16	17.68 Mag 188.83 Phase
0.147	−8.80	20.40	0.69 233.66	0.09 27.25	1.55 238.00	3.42 76.18	1.04 247.36	0.68 302.33	1.39 160.27	17.16 Mag 174.80 Phase
0.147	−8.95	18.37	0.68 240.30	0.16 56.99	1.64 255.80	3.43 85.52	0.62 246.91	0.62 314.86	1.57 179.89	15.07 Mag 202.37 Phase
0.172	−5.27	15.60	0.61 234.32	0.21 285.91	1.34 263.21	2.83 81.01	1.05 302.02	1.92 3.62	1.31 139.25	10.74 Mag 225.77 Phase
0.173	−5.30	17.21	0.66 236.24	0.14 143.41	1.33 255.61	2.87 76.53	0.90 284.50	1.56 352.38	1.52 130.18	12.57 Mag 203.96 Phase
0.178	−4.58	17.99	1.45 355.54	0.59 229.68	0.36 179.61	3.07 107.58	1.76 299.47	1.98 350.16	1.27 142.36	12.53 Mag 219.80 Phase
0.178	−4.92	20.96	1.39 358.69	0.71 237.85	0.42 138.98	2.80 101.84	1.60 263.43	2.24 351.44	1.58 105.95	14.29 Mag 217.43 Phase
0.198	−7.80	16.80	0.67 237.90	0.34 108.32	0.98 252.49	3.20 75.28	1.35 299.58	1.57 29.87	1.46 191.77	13.25 Mag 230.23 Phase
0.199	−7.84	17.89	0.71 235.57	0.26 115.22	1.21 249.12	3.27 77.52	1.73 315.04	1.70 21.15	1.75 186.78	13.82 Mag 235.86 Phase
0.224	−7.57	20.53	0.70 233.69	0.48 174.46	1.69 272.30	3.19 87.83	1.13 11.44	1.17 57.49	1.15 193.23	16.66 Mag 224.46 Phase
0.225	−7.77	17.85	0.66 226.43	0.40 152.96	1.47 267.00	3.21 84.43	1.06 345.84	1.05 71.67	1.16 188.10	14.47 Mag 215.96 Phase
0.248	−7.48	15.09	0.78 240.02	0.14 320.26	1.26 318.89	4.02 102.76	1.75 319.32	1.31 114.20	0.61 231.31	9.64 Mag 210.58 Phase
0.248	−7.21	15.83	0.72 226.18	0.33 301.83	1.07 328.88	3.96 108.62	1.38 314.26	1.14 111.68	0.48 232.88	11.25 Mag 230.19 Phase
0.299	−10.53	9.09	0.63 203.33	0.17 281.39	1.13 301.70	2.81 100.29	2.83 303.39	0.56 283.52	0.80 323.86	4.29 Mag 74.05 Phase
0.299	−10.37	9.65	0.67 200.01	0.13 300.03	0.97 319.41	2.63 96.45	3.05 288.46	0.75 275.10	1.20 291.59	4.43 Mag 62.78 Phase
0.348	−13.51	10.80	0.92 181.46	0.91 254.97	2.20 5.55	5.97 84.97	3.14 345.98	2.00 21.73	2.01 325.65	1.71 Mag 165.14 Phase
0.349	−13.56	11.07	1.13 163.93	0.72 214.94	1.75 328.70	5.73 83.05	3.07 345.17	1.75 6.65	2.07 314.31	2.33 Mag 136.75 Phase

*1/2 Peak-to-peak

Table 18. Fixed-System Loads Data for Axial Force T30 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.107	−0.62	10.56	0.41 235.05	0.45 181.25	1.29 296.36	3.27 169.51	1.15 53.64	0.84 296.79	0.80 203.91	5.65 Mag 157.91 Phase
0.109	−0.68	10.11	0.45 235.91	0.44 198.91	0.83 341.34	3.23 175.10	1.16 64.99	0.93 312.53	0.80 204.06	5.69 Mag 169.40 Phase
0.126	−3.54	7.34	0.59 224.97	0.29 251.23	0.94 276.30	2.46 185.29	0.79 113.37	1.14 303.58	0.91 194.85	3.27 Mag 170.01 Phase
0.128	−3.47	7.49	0.56 220.49	0.36 214.67	0.91 266.09	2.31 183.98	0.95 97.76	1.17 300.84	0.84 169.19	3.71 Mag 163.58 Phase
0.151	−1.95	7.38	0.59 218.59	0.28 177.15	1.03 248.79	1.61 208.32	1.17 133.92	3.12 6.52	0.44 140.57	2.54 Mag 148.79 Phase
0.151	−2.14	7.29	0.55 218.60	0.32 185.11	0.94 243.69	1.59 202.35	0.96 133.50	3.13 355.34	0.31 129.25	2.64 Mag 148.39 Phase
0.175	−2.06	6.58	0.67 225.34	0.19 295.71	0.93 215.50	1.30 240.48	0.65 166.81	4.09 24.85	1.22 143.52	1.13 Mag 213.55 Phase
0.176	−1.81	6.74	0.60 223.89	0.20 229.24	1.02 220.98	1.34 253.06	0.54 179.07	4.11 43.71	1.09 165.32	1.03 Mag 218.68 Phase
0.200	−0.42	8.72	0.62 221.13	0.10 226.03	1.43 218.44	1.90 281.89	0.49 155.86	3.99 68.26	1.77 207.31	1.99 Mag 215.70 Phase
0.224	−2.27	10.13	0.71 239.86	0.32 257.99	2.29 234.43	2.50 347.97	0.62 236.93	4.37 68.56	1.85 264.04	4.26 Mag 277.44 Phase
0.224	−2.79	10.71	0.71 232.30	0.32 350.70	2.30 229.85	2.52 340.39	0.79 244.21	4.80 67.93	2.20 251.35	4.06 Mag 275.03 Phase
0.249	−0.54	7.24	0.83 251.11	0.12 45.53	1.86 263.98	1.52 341.80	0.31 61.69	3.70 71:84	2.06 326:88	2.19 Mag 323.53 Phase
0.250	−0.83	7.08	0.75 239.18	0.38 112.48	1.88 247.72	1.40 339.74	0.20 256.72	3.69 74.57	2.14 334.07	1.54 Mag 292.86 Phase
0.298	−2.02	15.29	1.06 266.94	0.47 275.94	2.07 304.42	3.41 8.42	2.94 337.79	2.59 39.64	1.22 69.24	6.93 Mag 33.52 Phase
0.299	−2.11	14.25	1.05 264.51	0.46 250.42	1.64 276.00	3.30 2.86	3.07 337.64	2.60 33.57	1.04 41.48	6.33 Mag 13.04 Phase
0.347	−2.45	25.79	1.05 258.72	0.51 221.62	2.46 338.09	4.50 92.25	2.28 332.75	2.69 74.00	1.22 165.22	17.59 Mag 53.12 Phase
0.347	−2.28	25.49	0.78 256.46	0.67 246.47	1.72 19.21	5.02 92.15	2.60 332.57	2.55 73.49	1.34 123.51	18.22 Mag 44.11 Phase

*1/2 Peak-to-peak

Table 18. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−2.34	28.78	0.20 277.36	1.29 216.97	0.94 226.24	2.92 159.26	1.36 15.42	1.00 6.79	2.47 163.55	23.62 Mag 156.68 Phase
0.113	−2.64	26.92	0.22 279.61	0.92 215.77	0.73 152.08	3.09 152.54	1.14 17.16	1.38 333.28	2.67 161.32	22.13 Mag 151.08 Phase
0.125	−4.79	22.40	0.40 212.77	0.85 257.71	1.43 224.27	2.12 174.00	0.39 58.71	1.29 332.28	2.04 179.78	17.23 Mag 172.87 Phase
0.125	−5.02	21.33	0.32 216.73	0.83 260.59	1.04 231.84	2.09 183.21	0.46 38.93	1.27 339.44	2.13 184.34	16.65 Mag 179.19 Phase
0.149	−3.47	14.86	0.38 224.48	0.20 231.76	1.67 255.12	1.31 131.34	0.22 87.30	3.31 349.09	1.73 182.07	10.22 Mag 190.46 Phase
0.150	−3.72	14.84	0.39 215.95	0.16 230.62	1.75 253.63	1.24 134.72	0.28 134.64	3.36 350.03	1.99 193.74	10.00 Mag 197.05 Phase
0.174	−4.18	14.84	0.51 217.28	0.24 297.27	1.83 250.75	0.86 120.81	0.44 9.90	5.25 31.33	1.98 243.24	8.16 Mag 249.28 Phase
0.175	−4.29	14.91	0.50 218.05	0.26 253.02	1.62 247.10	1.15 126.51	0.25 21.56	5.10 24.09	1.55 231.69	8.47 Mag 235.80 Phase
0.198	−3.00	11.68	0.62 214.42	0.22 270.25	1.87 268.18	0.60 13.11	0.41 220.60	3.68 55.86	2.07 277.63	6.44 Mag 250.73 Phase
0.201	−3.38	12.08	0.54 219.46	0.04 248.15	1.85 252.72	0.58 8.97	0.54 249.01	3.63 51.70	1.47 267.86	7.70 Mag 235.77 Phase
0.224	−5.04	10.56	0.58 242.11	0.17 239.90	1.78 244.76	2.08 33.97	0.74 256.08	2.75 72.64	1.60 356.76	6.57 Mag 275.03 Phase
0.224	−5.12	13.91	0.61 238.92	0.29 271.24	2.20 249.05	2.06 23.24	0.64 271.47	2.80 59.87	1.31 340.76	10.05 Mag 249.15 Phase
0.250	−4.01	7.44	0.77 241.95	0.28 135.26	1.75 294.20	2.24 88.72	1.52 322.40	2.75 72.26	2.54 68.42	2.91 Mag 346.59 Phase
0.250	−4.07	8.66	0.75 246.84	0.27 114.45	2.29 256.79	2.07 74.60	1.96 310.56	2.41 58.47	2.26 66.86	4.11 Mag 269.34 Phase
0.297	−5.81	21.43	0.75 247.68	0.55 252.73	2.17 343.97	3.81 43.33	3.41 335.75	3.16 48.35	1.62 93.92	12.30 Mag 35.36 Phase
0.298	−5.39	21.04	0.83 243.07	0.78 260.66	1.94 325.42	4.17 22.55	3.20 315.51	3.32 33.56	0.48 123.98	12.13 Mag 17.54 Phase
0.347	−6.69	24.60	1.01 208.63	0.69 255.13	2.23 1.91	6.84 71.26	3.00 302.38	1.12 24.52	2.07 201.13	15.78 Mag 47.87 Phase
0.347	−6.44	25.57	0.74 228.59	1.14 239.53	1.93 14.99	6.90 72.65	3.04 309.84	1.26 33.03	2.42 203.79	16.39 Mag 46.11 Phase

*1/2 Peak-to-peak

Table 18. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.112	−3.24	24.86	0.20 217.29	0.78 275.68	2.61 247.23	3.66 152.83	1.10 172.60	0.78 334.53	0.98 146.66	18.94 Mag 158.45 Phase
0.113	−3.69	24.01	0.14 248.58	0.67 264.45	1.18 245.80	2.87 158.46	0.64 166.80	0.88 9.06	1.03 146.21	20.05 Mag 159.86 Phase
0.125	−6.92	23.48	0.28 214.52	0.40 235.14	2.33 210.52	1.82 172.24	0.76 203.18	0.82 23.85	1.41 161.21	19.07 Mag 163.22 Phase
0.126	−6.77	25.46	0.27 231.39	0.46 245.60	2.70 203.95	1.89 164.96	0.46 197.24	0.90 32.49	1.68 177.52	20.33 Mag 169.36 Phase
0.147	−5.72	17.25	0.40 202.22	0.40 258.50	2.12 260.50	2.46 142.82	0.82 155.90	1.22 315.30	1.31 174.07	12.67 Mag 165.82 Phase
0.149	−5.48	18.81	0.43 203.33	0.45 239.03	2.47 258.15	2.37 155.26	0.45 150.31	1.25 345.14	1.29 198.88	13.89 Mag 192.36 Phase
0.172	−6.92	13.81	0.57 218.42	0.53 233.64	2.24 236.15	0.81 118.79	0.36 185.71	4.20 340.71	0.12 163.66	7.96 Mag 229.83 Phase
0.172	−6.81	14.22	0.47 210.23	0.45 227.71	2.37 234.89	0.92 123.25	0.49 204.35	4.10 344.13	0.35 143.69	8.32 Mag 233.10 Phase
0.198	−6.98	12.05	0.63 207.06	0.27 225.33	1.86 233.77	1.21 92.25	0.85 232.16	3.58 357.27	0.74 265.06	7.16 Mag 233.97 Phase
0.199	−5.94	9.28	0.52 207.52	0.34 215.14	2.24 225.00	1.06 89.87	1.15 230.30	3.11 7.73	0.59 264.64	4.77 Mag 249.25 Phase
0.224	−8.03	10.18	0.64 217.81	0.46 221.01	2.01 246.21	1.41 59.10	0.49 259.68	3.01 38.27	0.92 165.02	5.85 Mag 207.74 Phase
0.224	−8.15	10.17	0.49 217.46	0.46 218.04	2.09 245.14	1.22 59.05	0.30 271.75	3.07 32.20	0.82 159.28	5.86 Mag 200.64 Phase
0.250	−8.28	13.45	0.71 218.83	0.12 196.47	2.17 283.35	4.15 89.07	1.62 289.51	2.89 51.84	0.63 147.75	7.91 Mag 182.20 Phase
0.250	−7.61	14.02	0.66 219.64	0.16 280.31	1.83 279.55	4.20 81.31	1.53 286.48	2.59 34.03	0.83 108.84	9.09 Mag 165.42 Phase
0.299	−10.85	15.82	0.58 212.31	0.97 251.42	1.85 340.99	4.78 34.34	3.74 298.09	1.55 28.02	1.18 193.31	8.16 Mag 66.09 Phase
0.299	−10.60	16.39	0.63 208.84	0.49 262.13	2.45 333.53	4.73 42.04	4.03 309.01	1.58 49.08	1.82 214.51	7.81 Mag 70.40 Phase
0.347	−12.74	18.72	0.78 168.43	0.98 225.55	3.04 344.58	8.35 55.50	4.70 329.13	2.32 356.85	4.38 262.60	4.71 Mag 128.36 Phase
0.347	−12.25	17.98	0.92 169.78	1.61 254.43	2.49 318.67	8.31 53.68	4.69 321.73	2.00 352.39	4.14 258.28	5.04 Mag 109.85 Phase

*1/2 Peak-to-peak

Table 19. Fixed-System Loads Data for Axial Force T40 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−2.77	11.97	0.92 272.64	0.49 175.44	1.02 219.03	1.94 132.11	3.03 0.25	0.38 26.56	1.63 187.23	6.80 Mag 172.35 Phase
0.104	−2.92	12.11	0.86 272.55	0.38 154.20	0.85 218.01	1.91 122.69	3.11 353.30	0.13 210.43	1.57 176.25	7.08 Mag 160.67 Phase
0.126	−2.89	9.57	0.98 260.00	0.10 183.41	1.22 228.09	1.79 139.65	2.92 28.77	0.35 64.53	1.39 191.51	5.09 Mag 196.68 Phase
0.128	−2.88	9.63	0.90 262.42	0.08 226.36	1.19 220.63	1.87 129.24	2.97 27.19	0.36 71.00	1.01 181.45	5.16 Mag 190.76 Phase
0.151	−0.83	9.04	0.98 264.37	0.24 144.23	1.02 219.35	2.18 133.96	2.81 50.33	1.49 19.13	0.73 196.60	3.73 Mag 176.87 Phase
0.152	−1.01	8.81	1.00 263.84	0.23 144.39	1.15 221.40	2.23 128.83	2.72 39.56	1.67 16.97	0.70 155.07	3.74 Mag 172.97 Phase
0.201	−1.34	7.31	1.10 273.68	0.09 39.03	1.66 238.70	1.42 187.21	1.96 82.22	2.48 144.84	1.32 283.86	3.47 Mag 246.73 Phase
0.202	−1.22	8.05	1.26 262.92	0.18 84.31	1.48 228.89	1.41 162.10	2.28 75.26	2.55 117.73	1.54 249.82	3.69 Mag 204.50 Phase
0.226	−1.87	9.07	1.21 268.58	0.08 82.32	1.54 232.08	1.90 111.70	1.07 31.20	2.39 87.43	1.45 307.68	4.61 Mag 227.42 Phase
0.226	−1.93	8.37	1.10 269.33	0.08 157.23	1.58 237.55	1.44 116.68	1.04 31.73	2.38 88.94	1.53 303.47	4.27 Mag 225.74 Phase
0.250	−0.23	8.29	1.18 276.00	0.20 55.70	1.02 266.57	2.90 170.58	1.31 9.82	3.16 104.09	1.58 11.19	2.79 Mag 245.00 Phase
0.250	−0.09	8.77	1.10 278.35	0.35 53.87	1.37 244.75	2.91 168.03	1.12 32.02	3.07 86.28	1.76 342.20	3.02 Mag 220.93 Phase
0.299	−1.37	9.70	1.26 285.99	0.47 251.27	2.28 314.38	2.59 153.66	2.69 342.70	0.73 68.84	2.16 22.92	5.86 Mag 29.83 Phase
0.299	−1.29	10.17	1.24 294.82	0.25 273.15	2.34 305.00	2.48 168.70	2.54 357.54	0.65 85.05	2.83 19.53	5.52 Mag 45.33 Phase
0.349	−3.13	19.64	1.15 286.59	0.50 192.67	1.88 19.66	5.98 133.51	1.78 328.82	1.34 54.06	1.81 124.37	13.30 Mag 28.21 Phase
0.349	−3.32	21.21	1.16 294.12	0.77 180.82	2.29 12.06	5.62 128.76	2.27 326.06	1.35 37.14	2.84 139.59	13.69 Mag 21.58 Phase

*1/2 Peak-to-peak

Table 19. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	–4.40	31.66	0.73 273.31	0.51 218.83	1.44 216.04	2.73 76.06	1.06 328.27	1.59 8.80	0.85 208.21	27.30 Mag 144.32 Phase
0.105	–4.93	33.38	0.64 279.08	0.42 203.44	1.65 225.85	2.53 60.76	1.38 298.19	1.45 24.93	0.93 205.00	29.45 Mag 137.26 Phase
0.128	–4.97	22.78	0.59 257.01	0.53 280.47	1.21 221.14	2.11 78.25	1.63 15.10	1.16 45.40	1.28 182.01	18.35 Mag 161.34 Phase
0.129	–4.51	22.90	0.60 263.88	0.49 285.34	1.50 212.67	1.81 76.46	1.47 14.02	1.10 40.81	1.57 178.11	18.61 Mag 157.64 Phase
0.150	–3.56	17.43	0.82 277.47	0.26 213.00	1.24 240.18	3.27 82.35	1.47 71.21	1.13 14.28	1.52 221.03	12.08 Mag 171.81 Phase
0.150	–2.81	19.66	0.79 271.71	0.31 208.07	1.14 219.25	3.28 78.15	1.77 38.63	1.43 11.93	1.70 167.84	13.91 Mag 158.70 Phase
0.153	–2.63	17.25	0.82 261.79	0.25 180.72	1.43 220.39	2.96 90.91	1.80 42.19	1.99 27.13	1.35 208.16	11.41 Mag 177.98 Phase
0.155	–3.38	16.18	0.72 263.43	0.22 174.38	1.39 221.76	2.96 86.69	1.61 44.86	1.70 28.09	1.17 205.40	10.94 Mag 175.54 Phase
0.201	–3.57	15.69	0.88 264.37	0.13 82.85	1.36 250.91	2.21 86.25	1.37 356.90	2.42 68.78	0.92 297.04	11.82 Mag 218.08 Phase
0.203	–3.61	14.66	0.95 260.31	0.22 159.53	1.48 257.56	2.21 90.35	1.26 353.72	2.24 75.66	1.22 293.16	10.97 Mag 225.50 Phase
0.226	–4.31	15.09	0.93 260.58	0.08 327.02	0.91 263.48	3.06 86.54	2.04 353.16	2.48 83.46	0.25 36.74	10.37 Mag 223.09 Phase
0.226	–4.36	15.19	0.98 266.83	0.05 303.15	1.00 262.51	3.02 87.07	2.08 347.26	2.12 78.51	0.20 354.62	10.57 Mag 221.49 Phase
0.251	–2.90	13.83	1.03 269.84	0.15 24.90	1.18 279.60	4.15 123.44	2.58 352.90	2.43 85.02	1.84 62.13	6.44 Mag 217.02 Phase
0.251	–2.64	12.89	1.02 269.79	0.19 0.50	0.63 289.67	3.93 125.54	2.73 351.17	2.42 90.33	1.35 57.08	5.99 Mag 211.18 Phase
0.299	–4.93	16.41	0.78 268.85	0.55 246.34	1.74 331.00	3.88 119.94	3.75 321.54	0.94 62.45	0.66 102.32	10.02 Mag 30.49 Phase
0.299	–4.76	16.07	0.76 278.11	0.32 247.88	2.16 324.99	3.93 123.76	2.78 323.56	0.97 73.02	0.55 53.03	10.44 Mag 25.82 Phase
0.347	–7.30	19.57	0.64 251.24	0.83 200.90	2.87 27.23	6.64 115.77	2.95 318.06	0.90 28.37	1.20 181.71	10.93 Mag 52.24 Phase
0.349	–7.06	20.20	0.46 269.41	0.61 230.20	3.34 24.28	7.19 108.03	2.82 331.48	1.06 36.66	1.07 174.46	10.71 Mag 36.44 Phase

*1/2 Peak-to-peak

Table 19. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−5.38	29.13	0.37 258.06	0.41 198.19	2.11 191.62	4.76 58.57	3.09 223.56	0.93 344.59	1.14 227.22	22.79 Mag 136.45 Phase
0.107	−4.89	31.88	0.44 252.73	0.52 180.17	2.10 189.53	5.05 65.14	3.11 230.17	0.87 341.22	0.59 244.06	25.57 Mag 141.37 Phase
0.127	−6.07	28.81	0.50 263.72	0.41 299.68	1.29 233.24	3.24 65.02	2.02 230.22	1.36 40.86	0.91 200.74	24.64 Mag 158.49 Phase
0.127	−6.17	30.10	0.50 255.60	0.20 253.94	1.09 244.28	3.31 57.46	2.68 233.41	1.19 29.36	0.97 205.44	25.43 Mag 153.18 Phase
0.147	−4.43	29.29	0.64 266.55	0.17 137.84	1.76 273.14	4.35 92.63	1.55 214.16	1.29 25.73	0.38 144.88	24.15 Mag 174.14 Phase
0.149	−4.78	28.12	0.60 258.29	0.17 131.27	1.77 262.14	4.06 80.69	1.48 212.87	1.32 12.90	0.16 141.73	23.40 Mag 159.78 Phase
0.201	−6.53	20.98	0.75 258.79	0.18 120.01	1.10 279.79	3.44 86.31	1.22 312.87	2.02 50.17	1.07 182.90	17.07 Mag 233.63 Phase
0.202	−6.43	19.34	0.79 264.06	0.25 118.37	0.84 268.74	3.34 76.87	1.50 291.26	2.00 34.76	1.08 170.63	15.15 Mag 223.02 Phase
0.226	−7.65	20.10	0.81 254.94	0.20 179.52	1.01 303.94	3.43 90.16	1.14 296.00	2.02 65.48	1.23 197.23	16.28 Mag 211.15 Phase
0.226	−7.34	17.61	0.74 258.60	0.22 195.06	0.98 309.27	3.54 87.10	0.79 280.48	2.03 73.11	1.08 195.35	13.72 Mag 206.55 Phase
0.251	−6.65	18.45	0.74 254.88	0.24 311.38	1.25 330.11	4.89 106.27	2.02 299.62	2.09 75.76	0.38 191.67	12.49 Mag 190.02 Phase
0.251	−6.15	17.83	0.76 265.35	0.25 315.06	1.03 338.85	4.93 109.68	2.12 291.41	1.94 77.79	0.61 174.59	12.25 Mag 191.60 Phase
0.299	−9.61	20.65	0.52 247.03	0.72 239.69	1.54 344.68	4.57 108.98	4.07 294.90	0.44 58.92	2.14 221.30	11.29 Mag 80.98 Phase
0.300	−9.37	20.55	0.44 272.18	0.19 230.81	2.04 358.94	4.85 112.53	3.99 295.88	0.35 103.79	1.88 211.04	10.95 Mag 67.18 Phase
0.348	−13.34	15.01	0.51 196.11	0.56 183.94	3.19 359.76	7.22 91.46	2.55 351.78	1.76 0.72	2.97 280.62	5.68 Mag 117.14 Phase
0.348	−13.03	15.29	0.69 176.71	1.06 238.60	2.89 341.75	7.26 88.09	2.17 325.29	1.73 5.40	2.79 270.50	5.55 Mag 100.09 Phase

*1/2 Peak-to-peak

Table 20. Fixed-System Loads Data for Axial Force T50 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−2.65	11.44	0.68 265.67	0.24 261.62	0.87 229.19	2.18 174.68	1.50 37.50	0.27 175.11	1.26 241.92	7.46 Mag 143.98 Phase
0.107	−2.56	11.40	0.67 263.76	0.30 260.42	0.98 213.56	2.33 175.95	1.58 25.18	0.40 195.37	1.22 237.62	7.48 Mag 139.58 Phase
0.127	−3.32	10.08	0.79 251.75	0.25 270.82	1.12 228.43	1.99 180.89	1.68 42.85	0.26 242.70	0.78 195.22	6.41 Mag 156.72 Phase
0.130	−3.35	10.08	0.77 248.51	0.32 257.05	1.06 237.66	2.12 178.03	1.51 38.74	0.23 269.73	0.86 191.77	6.32 Mag 148.72 Phase
0.152	−1.66	8.36	0.89 247.70	0.09 24.67	1.23 227.25	1.47 185.44	1.75 66.74	1.16 23.67	1.01 134.74	5.00 Mag 167.09 Phase
0.153	−1.81	8.57	0.88 241.84	0.21 318.95	1.34 228.06	1.33 186.71	1.79 53.99	1.21 18.30	1.24 125.15	5.31 Mag 160.86 Phase
0.175	−2.02	7.74	0.91 245.91	0.06 251.18	1.16 214.93	1.37 192.34	1.41 81.05	1.44 43.26	1.28 105.39	4.75 Mag 178.63 Phase
0.175	−1.80	8.12	0.84 244.13	0.14 277.86	1.19 210.96	1.31 202.47	1.37 94.99	1.61 44.34	1.61 107.69	4.75 Mag 177.96 Phase
0.201	−1.64	9.48	0.89 249.97	0.08 69.73	1.31 229.44	1.76 267.05	1.25 90.97	2.02 116.18	1.06 181.47	5.22 Mag 181.96 Phase
0.201	−1.40	10.50	0.95 250.25	0.03 9.89	1.69 225.09	1.70 262.10	1.38 82.45	2.05 113.99	0.92 172.00	5.98 Mag 173.56 Phase
0.225	−0.74	7.70	0.92 245.24	0.27 15.03	1.73 235.00	1.56 317.52	0.39 92.59	1.86 93.55	1.25 218.77	4.25 Mag 164.64 Phase
0.225	−0.88	7.44	0.82 243.29	0.36 29.72	1.55 239.14	1.35 319.72	0.41 125.26	1.69 93.90	0.91 216.24	4.40 Mag 176.39 Phase
0.250	−1.77	5.85	0.85 254.25	0.45 40.43	1.10 257.41	1.68 268.81	0.66 337.64	2.18 99.04	0.92 289.35	3.08 Mag 121.97 Phase
0.251	−2.12	7.61	0.98 246.77	0.46 4.67	1.82 243.26	1.73 276.64	0.76 317.13	2.21 92.38	1.20 286.74	3.73 Mag 117.68 Phase
0.298	−2.42	14.56	0.82 265.43	0.17 210.97	3.01 302.69	3.07 335.51	2.48 348.46	1.32 47.64	1.87 328.61	7.32 Mag 45.31 Phase
0.298	−2.29	15.11	0.84 266.63	0.42 311.41	1.84 291.19	3.41 346.09	2.63 356.63	1.77 56.81	1.28 9.66	7.90 Mag 52.75 Phase
0.347	−3.91	26.95	0.89 255.47	0.67 222.52	1.27 322.82	4.05 55.17	1.23 358.12	1.59 86.25	1.14 173.07	21.35 Mag 63.19 Phase
0.347	−3.97	27.70	0.66 256.20	0.61 281.40	2.34 320.20	4.25 45.61	1.87 6.91	1.66 64.47	1.26 152.27	21.04 Mag 46.97 Phase

*1/2 1/2 Peak-to-peak

Table 20. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−4.70	27.14	0.39 265.82	0.32 265.38	1.72 242.44	1.82 125.96	0.95 319.60	1.45 17.97	2.03 172.03	23.10 Mag 121.25 Phase
0.106	−4.61	26.47	0.49 253.10	0.39 265.45	1.13 252.42	1.84 125.90	0.79 311.91	1.83 5.04	1.86 180.21	22.44 Mag 126.30 Phase
0.125	−5.28	19.42	0.48 237.49	0.44 259.02	1.52 224.95	1.50 163.92	0.79 7.38	1.12 17.19	3.18 199.30	14.10 Mag 152.17 Phase
0.125	−5.05	19.63	0.32 245.60	0.43 236.66	1.39 208.07	1.60 161.11	0.40 347.94	1.13 355.77	3.27 186.18	14.27 Mag 134.12 Phase
0.150	−3.77	18.69	0.68 238.28	0.17 326.26	1.41 235.06	1.19 127.41	1.99 42.71	1.68 3.78	2.24 158.73	13.63 Mag 135.91 Phase
0.151	−3.26	18.59	0.61 237.85	0.18 5.24	1.61 228.09	1.23 116.98	1.79 38.64	1.73 1.50	2.47 157.26	13.55 Mag 132.04 Phase
0.176	−4.38	14.46	0.57 242.53	0.07 59.45	1.45 237.55	1.25 110.25	1.31 61.57	2.83 27.72	2.03 184.08	9.74 Mag 172.28 Phase
0.176	−4.49	13.57	0.56 244.33	0.04 324.75	1.46 241.75	1.08 118.52	1.39 69.88	2.74 40.69	2.06 202.49	8.62 Mag 178.46 Phase
0.200	−3.78	14.72	0.64 241.68	0.06 333.05	1.55 236.67	0.44 21.74	0.89 69.56	1.64 72.09	2.09 244.39	11.42 Mag 186.41 Phase
0.200	−3.82	14.98	0.65 238.39	0.08 153.98	1.71 239.88	0.43 38.07	1.09 79.66	1.52 82.61	2.21 253.77	11.42 Mag 188.70 Phase
0.224	−4.67	11.45	0.76 241.79	0.17 136.44	1.81 249.98	1.26 35.24	0.38 9.64	1.41 131.03	0.79 317.67	7.59 Mag 164.89 Phase
0.224	−4.46	10.22	0.66 234.82	0.29 176.06	2.24 265.44	1.20 33.49	0.33 49.98	1.01 117.75	1.16 310.14	6.57 Mag 170.43 Phase
0.251	−5.00	12.83	0.77 234.31	0.52 51.00	1.80 286.37	1.11 106.62	1.80 321.27	1.38 80.17	1.66 67.74	7.88 Mag 116.22 Phase
0.251	−4.71	13.22	0.74 240.16	0.61 35.55	2.21 288.94	1.09 111.81	1.97 332.47	1.27 94.60	1.48 76.76	7.89 Mag 132.29 Phase
0.298	−6.11	23.05	0.55 230.74	0.62 231.32	2.14 334.50	3.20 13.09	2.96 338.70	1.43 29.35	1.28 77.46	16.09 Mag 41.37 Phase
0.299	−6.14	21.84	0.73 243.26	0.59 248.89	2.31 323.29	2.99 21.89	3.17 346.39	1.50 33.46	1.04 65.88	14.63 Mag 40.00 Phase
0.347	−8.18	27.66	0.56 195.66	0.72 211.98	2.13 340.95	6.22 45.28	1.37 317.06	0.49 330.02	1.46 242.30	21.46 Mag 51.24 Phase
0.347	−7.88	27.29	0.47 203.94	0.61 268.54	2.12 7.39	6.48 41.62	1.70 331.48	0.85 321.43	1.26 224.53	20.90 Mag 58.10 Phase

*1/2 Peak-to-peak

Table 20. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−5.64	28.90	0.42 192.13	0.41 229.66	1.51 222.86	2.53 96.40	1.64 225.64	1.05 342.32	0.46 55.27	25.67 Mag 107.42 Phase
0.126	−6.59	23.65	0.46 207.68	0.19 309.00	1.18 228.88	1.61 110.87	1.21 237.03	1.16 44.86	1.58 206.24	20.69 Mag 138.43 Phase
0.127	−6.85	24.34	0.48 204.09	0.13 282.98	1.12 215.38	1.43 111.68	0.98 206.50	1.47 27.10	1.67 174.11	21.75 Mag 113.62 Phase
0.152	−5.80	20.35	0.62 211.94	0.04 67.60	1.90 272.05	1.96 125.33	0.45 225.56	1.49 353.37	1.22 185.09	16.64 Mag 146.29 Phase
0.153	−5.84	21.23	0.57 209.10	0.06 173.18	1.80 271.29	1.88 125.43	0.84 157.31	1.26 340.78	1.52 164.36	17.51 Mag 134.85 Phase
0.175	−6.68	14.62	0.61 224.18	0.25 236.99	1.60 277.48	1.36 71.99	0.40 185.11	2.29 20.22	0.99 140.98	11.12 Mag 194.23 Phase
0.175	−6.81	14.18	0.48 221.48	0.23 210.73	1.47 284.13	1.39 76.30	0.26 165.61	2.65 5.38	0.60 143.31	10.47 Mag 188.74 Phase
0.201	−6.73	17.11	0.54 224.79	0.07 120.64	1.28 269.73	1.66 55.05	0.77 306.33	1.62 24.80	0.76 203.32	14.69 Mag 180.97 Phase
0.224	−6.45	18.00	0.74 222.20	0.54 197.26	1.03 265.43	1.92 56.63	0.17 154.42	0.65 20.29	1.17 131.32	15.22 Mag 171.72 Phase
0.225	−6.56	17.54	0.71 221.12	0.49 210.86	1.31 273.76	2.07 47.73	0.26 149.72	0.80 54.28	1.47 122.13	13.86 Mag 156.23 Phase
0.250	−8.30	20.67	0.83 217.66	0.39 273.46	1.45 317.31	2.27 77.84	1.58 308.19	1.33 62.68	1.93 172.62	16.26 Mag 126.16 Phase
0.299	−10.42	23.31	0.59 197.83	0.75 289.38	2.37 337.60	3.59 36.58	2.52 315.48	0.61 196.05	1.74 243.11	17.84 Mag 78.11 Phase
0.300	−10.92	24.14	0.52 209.31	0.70 268.40	2.29 335.29	3.50 42.74	2.48 308.92	0.22 131.07	1.81 242.49	18.54 Mag 80.21 Phase
0.346	−13.79	20.94	0.62 153.97	0.46 208.77	3.00 331.49	7.98 42.35	3.97 353.48	2.07 332.27	3.56 297.46	10.80 Mag 71.98 Phase
0.347	−13.78	21.80	0.68 133.28	0.89 229.95	3.28 321.69	8.24 37.76	3.78 340.16	1.99 347.64	2.75 284.90	11.32 Mag 73.01 Phase

*1/2 Peak-to-peak

Table 21. Fixed-System Loads Data for Axial Force T60 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−3.85	12.17	1.69 326.80	0.50 244.54	1.24 308.30	3.30 161.37	1.10 50.54	0.46 332.72	2.04 206.36	6.85 Mag 188.78 Phase
0.110	−3.84	12.15	1.68 323.06	0.61 218.99	1.27 312.21	3.37 165.57	1.07 42.76	0.37 47.27	2.47 213.27	6.70 Mag 192.45 Phase
0.128	−5.17	8.90.	1.87 325.62	0.32 286.96	0.41 310.25	2.45 180.45	1.11 82.42	0.68 14.86	2.03 212.19	4.18 Mag 211.99 Phase
0.131	−5.38	8.83	1.84 324.78	0.36 258.78	0.43 279.48	2.71 187.78	0.80 93.67	0.58 44.54	1.82 211.86	4.12 Mag 212.77 Phase
0.143	−2.32	5.06	0.74 242.08	0.21 63.16	0.90 227.98	1.75 126.58	1.68 45.97	1.05 350.14	0.60 104.25	1.59 Mag 167.60 Phase
0.145	−2.50	4.47	0.67 243.54	0.09 69.54	0.87 223.93	1.82 138.33	1.46 50.37	1.27 22.70	0.93 128.97	1.05 Mag 196.15 Phase
0.169	−1.04	5.56	0.78 245.09	0.10 15.22	1.05 217.39	1.95 147.91	1.09 60.76	1.77 49.95	1.02 81.11	0.72 Mag 243.70 Phase
0.169	−1.25	5.39	0.87 243.84	0.08 216.30	1.03 237.00	1.93 149.06	1.50 41.07	1.82 47.55	0.88 84.67	0.56 Mag 241.44 Phase
0.195	0.31	5.48	0.90 248.11	0.14 73.41	1.16 244.05	1.09 183.74	1.05 49.97	2.11 108.97	0.06 85.54	2.71 Mag 194.62 Phase
0.195	0.14	5.24	0.91 250.41	0.13 90.12	1.06 235.59	1.13 180.21	1.12 68.14	2.13 110.87	0.26 117.52	2.63 Mag 203.34 Phase
0.220	−2.80	5.92	0.79 257.98	0.16 106.68	1.23 252.57	1.44 86.69	0.49 33.54	1.44 103.81	0.42 7.45	3.17 Mag 247.21 Phase
0.220	−1.97	6.56	0.86 255.18	0.16 19.12	1.24 234.48	1.25 87.46	0.99 53.06	1.67 124.66	0.50 44.92	3.50 Mag 256.74 Phase
0.246	−3.29	5.45	0.71 267.83	0.27 112.83	0.99 223.94	1.51 155.64	1.43 337.10	1.42 84.91	0.47 36.20	2.14 Mag 253.89 Phase
0.246	−3.44	5.37	0.77 264.68	0.23 34.14	0.49 235.12	1.61 156.11	1.55 2.68	1.54 88.50	0.68 61.72	2.21 Mag 266.07 Phase
0.295	−3.14	9.38	0.65 267.76	0.30 310.61	1.38 320.80	0.39 59.78	2.51 348.04	0.95 10.14	2.06 7.97	4.01 Mag 47.14 Phase
0.295	−2.58	8.35	0.58 283.35	0.42 326.62	1.32 297.54	0.83 43.75	2.25 351.36	0.91 339.28	1.30 356.80	3.93 Mag 42.37 Phase

*1/2 Peak-to-peak

Table 21. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	−4.80	25.92	1.30 335.19	0.71 246.73	1.65 309.60	2.73 131.79	2.33 195.33	0.41 310.26	1.06 58.07	20.20 Mag 173.14 Phase
0.110	−4.71	25.62	1.24 338.05	0.72 245.61	1.74 293.22	2.56 130.06	1.52 190.22	0.75 335.52	1.24 54.66	20.50 Mag 163.43 Phase
0.132	−6.36	19.77	1.40 328.40	0.77 246.87	1.34 265.41	2.08 120.66	1.47 200.56	0.76 217.69	0.74 65.08	16.08 Mag 164.53 Phase
0.144	−5.19	15.58	0.42 249.19	0.16 211.36	1.46 230.08	2.18 100.43	1.39 54.84	0.76 29.43	1.09 155.02	12.05 Mag 188.71 Phase
0.154	−2.85	13.07	1.55 328.57	0.16 236.77	0.43 277.33	2.84 144.72	1.38 139.97	1.17 7.72	0.50 60.30	9.22 Mag 179.81 Phase
0.154	−2.78	13.28	1.55 327.03	0.21 267.04	0.71 275.86	2.66 150.38	1.20 151.69	1.27 10.86	0.45 65.44	9.23 Mag 192.20 Phase
0.170	−3.23	12.55	0.53 245.49	0.11 56.55	1.28 219.36	2.20 95.26	1.45 13.97	2.70 34.29	0.47 318.62	6.98 Mag 244.00 Phase
0.170	−3.28	11.30	0.52 252.02	0.18 356.10	1.32 206.19	2.05 98.41	1.36 6.60	2.34 46.74	0.12 230.02	6.84 Mag 248.72 Phase
0.180	−0.31	10.74	1.60 329.53	0.22 315.68	0.35 240.14	2.86 161.02	0.96 190.41	1.82 56.46	2.11 336.76	5.51 Mag 217.67 Phase
0.180	−0.39	10.98	1.56 327.45	0.13 259.62	0.26 252.64	2.74 155.89	0.73 203.37	1.68 15.40	2.37 327.58	6.00 Mag 203.84 Phase
0.201	−3.58	12.31	2.17 333.71	0.37 228.49	0.61 192.12	2.07 147.12	0.92 158.69	1.46 79.96	1.23 116.70	8.68 Mag 226.34 Phase
0.202	−2.69	12.70	2.17 335.04	0.44 226.21	0.75 205.93	2.26 146.03	0.76 142.38	1.20 67.70	1.18 123.70	8.75 Mag 203.10 Phase
0.226	−1.14	12.14	2.17 336.64	0.45 240.95	0.50 281.78	1.62 131.91	1.34 152.49	1.42 74.31	0.70 74.03	8.35 Mag 214.36 Phase
0.227	−1.17	10.72	2.23 336.08	0.18 254.77	1.01 305.71	1.71 139.77	1.03 161.60	1.63 93.75	0.37 76.05	6.73 Mag 216.69 Phase
0.249-	−4.62	9.96	2.08 334.11	0.11 304.93	1.08 1.67	3.25 139.48	0.87 196.90	2.35 81.41	0.66 96.64	5.21 Mag 196.64 Phase
0.296	−5.36	10.24	0.29 258.15	0.22 328.81	1.51 332.03	2.39 86.32	2.91 314.18	0.33 349.56	1.06 19.74	6.37 Mag 31.85 Phase
0.346	−5.46	16.61	0.24 210.64	0.53 251.82	3.16 11.60	5.06 93.68	2.98 350.27	1.53 338.67	0.99 283.10	9.76 Mag 57.05 Phase
0.346	−5.57	17.66	0.34 203.72	1.01 243.50	2.90 16.72	5.43 101.69	2.61 344.80	1.45 11.52	0.66 303.22	10.31 Mag 67.14 Phase

*1/2 Peak-to-peak

Table 21. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	−6.86	23.25	0.60 4.66	0.54 264.07	0.69 249.51	4.34 108.60	3.99 241.84	1.80 292.09	1.07 167.03	16.82 Mag 159.31 Phase
0.110	−6.24	25.44	0.54 1.68	0.38 262.62	0.92 280.55	4.35 111.64	4.15 244.00	1.62 291.71	1.06 178.57	18.80 Mag 167.63 Phase
0.128	−8.78	23.04	0.83 353.31	0.18 267.84	1.65 226.32	3.14 87.55	2.48 247.94	0.49 325.84	0.90 140.58	19.06 Mag 175.69 Phase
0.131	−8.45	22.25	0.71 349.73	0.33 276.74	1.25 235.43	3.17 90.05	3.11 256.05	0.36 314.54	1.27 144.63	18.06 Mag 169.84 Phase
0.144	−6.03	20.01	0.35 208.44	0.13 19.65	2.38 239.81	3.20 94.65	1.09 201.61	0.56 287.02	0.97 130.00	15.82 Mag 194.49 Phase
0.145	−6.14	20.42	0.30 206.31	0.06 135.73	2.03 237.56	3.26 87.50	1.15 209.47	0.46 296.93	1.07 121.59	16.25 Mag 192.40 Phase
0.170	−5.46	16.26	0.40 242.63	0.16 186.10	1.69 251.36	2.38 83.48	0.89 247.24	1.79 356.00	1.55 130.29	11.16 Mag 224.37 Phase
0.171	−5.73	16.21	0.35 243.82	0.11 195.85	1.56 243.82	2.63 71.87	0.88 253.74	1.97 352.28	1.63 106.47	10.93 Mag 215.05 Phase
0.194	−4.32	15.85	0.47 236.92	0.11 92.96	1.51 259.10	3.17 84.62	1.16 294.13	1.42 35.56	1.22 179.86	11.81 Mag 249.88 Phase
0.197	−4.79	16.22	0.41 236.22	0.29 248.32	1.57 238.42	3.13 79.09	1.02 288.37	1.39 340.30	0.79 162.27	12.60 Mag 232.80 Phase
0.221	−7.42	19.41	0.44 236.31	0.36 215.29	1.61 269.81	3.07 86.40	0.74 309.82	1.30 62.37	1.56 187.19	15.97 Mag 217.66 Phase
0.221	−7.52	19.81	0.34 243.67	0.30 188.57	1.38 277.88	3.05 79.45	0.99 300.71	1.18 84.57	1.30 192.24	16.55 Mag 222.38 Phase
0.245	−9.19	17.94	0.35 227.77	0.23 327.26	1.31 310.46	3.45 91.18	1.85 290.00	1.46 105.67	0.69 227.56	12.93 Mag 205.79 Phase
0.247	−8.83	17.65	0.35 230.82	0.35 299.29	0.98 335.29	3.28 87.46	1.58 294.29	1.07 105.87	0.91 242.89	13.51 Mag 202.43 Phase
0.295	−10.56	11.90	0.24 104.11	0.35 309.09	2.20 328.37	2.78 100.03	3.65 302.43	1.76 260.47	1.99 305.65	5.42 Mag 130.92 Phase
0.297	−10.09	12.09	0.24 140.88	0.48 269.42	1.95 321.91	2.97 99.75	3.81 302.55	1.89 261.21	2.08 303.70	5.45 Mag 124.03 Phase

*1/2 Peak-to-peak

Table 22. Fixed-System Loads Data for Axial Force T70 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	−3.45	13.35	0.56 259.11	0.12 224.93	0.82 273.80	4.73 199.94	1.73 47.36	0.90 303.43	2.00 202.06	7.69 Mag 197.83 Phase
0.103	−3.26	13.74	0.50 259.39	0.20 143.03	0.70 262.36	4.80 197.29	1.66 53.99	0.78 314.19	1.79 200.66	7.91 Mag 190.85 Phase
0.128	−2.40	8.37	0.75 241.42	0.18 258.65	0.81 252.05	3.24 203.17	1.15 54.13	0.46 245.39	1.42 185.65	4.34 Mag 203.88 Phase
0.129	−3.08	8.31	0.72 241.68	0.08 299.62	0.54 270.28	3.40 206.47	1.33 92.68	0.56 305.08	0.99 214.04	4.10 Mag 214.31 Phase
0.153	−3.40	7.61	0.73 232.09	0.07 18.51	1.24 244.75	2.10 213.89	1.34 81.67	1.61 14.71	0.75 179.87	3.08 Mag 203.15 Phase
0.153	−3.53	7.40	0.72 236.60	0.09 76.32	0.96 232.02	2.24 211.37	1.18 84.59	1.50 17.18	0.69 186.76	3.15 Mag 203.93 Phase
0.180	−1.26	6.93	0.79 231.21	0.17 317.73	1.25 221.17	1.91 254.65	0.49 97.21	1.71 45.45	0.31 148.00	3.29 Mag 189.14 Phase
0.181	−1.29	7.14	0.80 233.86	0.35 12.57	1.17 235.43	1.77 257.42	1.04 105.30	1.62 48.36	0.62 213.52	3.26 Mag 197.28 Phase
0.203	−1.86	9.47	0.87 240.68	0.29 5.55	1.61 238.88	3.26 292.98	0.91 75.90	1.95 113.07	0.83 234.88	4.39 Mag 211.74 Phase
0.203	−1.89	9.94	0.85 245.94	0.33 79.11	1.70 242.88	3.27 294.86	0.73 79.48	1.86 111.24	0.51 223.94	4.70 Mag 217.51 Phase
0.224	2.10	7.90	0.88 256.65	0.32 89.09	1.51 257.31	3.48 334.33	0.15 20.51	1.36 101.01	0.89 272.98	2.66 Mag 299.99 Phase
0.225	1.69	9.39	0.93 249.76	0.24 82.99	2.02 241.04	3.43 321.62	0.42 28.40	1.25 83.24	1.30 225.80	3.09 Mag 275.97 Phase
0.249	−3.30	5.43	1.07 258.31	0.18 132.22	1.34 253.96	2.21 322.58	0.95 6.69	1.16 60.93	0.37 334.81	1.81 Mag 319.97 Phase
0.249	−3.22	6.25	0.98 258.85	0.31 123.54	1.81 252.09	2.57 315.97	1.15 353.59	1.27 61.05	0.34 349.63	1.81 Mag 299.24 Phase
0.299	−3.71	16.97	1.00 272.36	0.33 171.53	2.05 328.49	4.98 334.21	2.73 23.41	1.75 21.28	1.30 20.79	7.68 Mag 16.79 Phase
0.300	−3.66	15.33	1.23 263.08	0.31 257.05	1.91 314.93	5.07 337.69	2.86 18.18	1.75 35.08	0.26 20.81	7.15 Mag 28.42 Phase
0.346	−3.28	20.65	0.68 265.65	0.69 189.64	1.37 3.88	1.99 42.66	2.30 350.39	1.20 57.22	0.98 175.33	16.75 Mag 57.06 Phase
0.346	−3.13	22.01	0.76 271.32	0.42 162.28	1.56 343.11	2.08 54.05	1.87 2.91	1.48 66.44	1.01 125.03	17.19 Mag 67.80 Phase

*1/2 Peak-to-peak

Table 22. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−4.93	31.57	0.40 234.99	0.33 185.17	0.87 245.79	4.09 180.41	0.89 312.06	1.07 25.95	1.86 163.27	27.26 Mag 175.23 Phase
0.103	−4.44	32.07	0.35 249.29	0.37 221.20	1.00 238.22	4.43 178.81	0.52 305.49	1.16 10.34	2.05 167.47	26.98 Mag 177.09 Phase
0.126	−4.18	25.72	0.51 242.07	0.47 259.47	1.22 220.07	3.59 199.06	1.25 9.95	1.38 27.88	2.98 192.61	20.08 Mag 206.63 Phase
0.127	−4.51	25.69	0.41 238.23	0.29 278.04	1.45 226.78	3.75 197.32	1.21 15.70	1.35 18.11	3.10 192.56	19.75 Mag 204.07 Phase
0.150	−3.58	14.65	0.56 231.77	0.07 94.32	1.36 226.18	2.42 172.66	1.01 33.59	1.98 5.36	1.96 205.50	9.86 Mag 214.18 Phase
0.150	−3.65	13.00	0.53 228.04	0.10 156.12	1.36 235.15	2.41 168.47	0.89 27.56	1.86 349.27	1.87 195.84	8.68 Mag 205.99 Phase
0.152	−4.87	16.46	0.48 226.74	0.27 117.80	1.27 239.14	2.59 166.40	0.76 60.78	1.93 4.14	2.06 192.27	11.93 Mag 199.53 Phase
0.153	−5.12	15.90	0.44 230.51	0.13 98.70	1.39 239.32	2.54 179.85	0.94 62.01	1.83 9.81	1.76 196.72	11.42 Mag 212.17 Phase
0.171	−3.64	14.22	0.55 226.38	0.07 279.06	1.74 219.55	1.30 178.31	0.99 38.76	2.86 38.02	1.65 239.98	9.01 Mag 245.67 Phase
0.174	−2.99	14.36	0.51 225.91	0.09 8.07	1.61 229.63	1.49 180.36	1.06 53.40	2.67 40.75	1.29 256.38	9.30 Mag 250.12 Phase
0.177	−3.34	14.28	0.55 224.29	0.18 354.47	1.70 231.57	1.40 194.11	1.17 44.63	2.55 57.08	1.07 252.86	9.29 Mag 264.89 Phase
0.179	−3.40	14.34	0.67 226.22	0.20 20.83	1.70 228.75	1.34 190.16	1.28 33.10	2.51 53.31	1.01 257.49	9.44 Mag 257.19 Phase
0.195	−3.04	10.89	0.89 240.96	0.54 62.28	1.79 258.43	1.59 126.69	0.89 49.89	1.91 91.34	1.38 279.94	7.12 Mag 208.78 Phase
0.199	−3.44	10.70	0.70 228.13	0.27 66.16	1.52 253.12	1.25 286.67	0.47 31.95	1.80 103.53	1.14 287.87	7.05 Mag 241.99 Phase
0.203	−4.24	11.30	0.70 239.79	0.13 142.80	1.48 242.22	1.09 287.51	0.27 21.74	1.38 74.18	0.58 294.21	8.68 Mag 251.73 Phase
0.205	−4.30	11.82	0.60 237.17	0.21 112.66	1.73 248.39	1.34 289.93	0.47 30.19	1.57 82.60	0.80 309.05	8.53 Mag 245.62 Phase
0.224	−0.89	7.95	0.59 243.22	1.13 185.42	1.36 221.84	1.60 324.99	0.21 139.39	0.39 208.46	0.91 311.58	5.08 Mag 276.00 Phase
0.225	−4.88	7.91	0.74 246.61	0.34 199.82	1.76 249.05	1.94 355.27	0.59 325.61	0.73 133.34	0.27 290.29	4.48 Mag 265.09 Phase
0.225	−4.59	8.21	0.80 244.23	0.25 239.57	1.44 249.86	1.83 357.65	0.78 323.38	0.74 120.12	0.58 331.44	5.28 Mag 263.49 Phase
0.247	−4.25	7.13	0.83 248.96	0.28 57.69	1.62 296.34	2.85 126.51	1.79 1.42	0.59 83.77	1.49 60.18	1.66 Mag 173.65 Phase
0.248	−6.00	7.36	0.73 243.35	0.09 2.95	1.72 293.34	0.98 28.33	1.65 353.31	2.18 74.23	1.01 106.55	3.17 Mag 242.20 Phase
0.248	−6.21	5.78	0.79 242.60	0.33 60.05	1.65 291.36	1.14 44.68	1.64 343.95	1.87 64.41	1.09 118.21	1.64 Mag 250.61 Phase
0.297	−6.49	20.21	0.72 239.49	0.61 223.25	2.34 357.50	1.83 73.52	3.93 350.12	2.99 41.42	1.10 108.59	12.53 Mag 48.73 Phase
0.300	−5.68	18.70	0.82 253.66	0.48 243.74	2.32 5.23	4.27 3.59	2.93 347.94	1.45 40.94	0.33 86.01	11.29 Mag 57.74 Phase

*1/2 Peak-to-peak

Table 22. Continued

(b) Concluded

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.301	−5.41	20.72	0.64 255.49	0.40 216.61	1.68 358.93	4.07 6.76	2.97 342.80	1.31 43.24	1.61 127.70	14.14 Mag 53.88 Phase
0.346	−7.51	20.21	0.76 206.78	0.58 181.53	2.85 41.61	4.00 64.31	2.50 331.27	0.99 346.66	0.69 194.15	14.50 Mag 72.30 Phase
0.347	−7.34	19.63	0.60 211.37	1.15 252.82	1.92 42.49	4.17 55.90	2.21 341.40	0.67 327.94	0.97 182.65	13.72 Mag 67.69 Phase
0.347	−8.35	19.92	0.67 232.42	0.97 239.80	2.99 25.74	3.26 77.86	2.03 357.05	0.57 20.70	0.76 168.47	15.43 Mag 74.76 Phase

*1/2 Peak-to-peak

Table 22. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	−5.86	21.45	0.41 186.95	0.25 232.67	1.29 283.86	5.31 166.55	2.27 234.61	0.60 338.23	0.60 162.27	14.51 Mag 179.35 Phase
0.106	−6.23	21.26	0.34 197.70	0.20 227.77	1.29 273.26	5.15 160.94	2.08 225.50	0.61 313.94	0.90 153.16	14.45 Mag 163.42 Phase
0.129	−6.69	22.07	0.37 202.00	0.19 1.45	1.48 258.13	3.49 173.03	1.58 233.26	0.90 54.88	1.79 186.81	17.22 Mag 187.49 Phase
0.129	−6.45	24.13	0.37 217.07	0.27 13.51	1.29 239.77	3.70 171.16	1.70 242.12	0.95 50.64	1.65 182.40	19.01 Mag 193.74 Phase
0.142	−7.90	24.47	0.39 194.92	0.05 24.00	2.38 290.29	3.68 171.35	1.51 240.67	0.36 335.27	1.52 172.84	19.08 Mag 201.94 Phase
0.152	−7.50	23.46	0.41 194.59	0.18 158.97	2.26 265.13	3.72 170.21	1.12 231.13	0.88 308.48	1.36 160.16	18.37 Mag 187.62 Phase
0.177	−5.98	19.23	0.50 212.63	0.15 234.49	1.44 234.86	1.33 144.17	0.90 293.27	2.58 344.32	1.30 125.05	14.82 Mag 221.98 Phase
0.179	−6.07	15.51	0.56 213.94	0.28 213.21	1.38 254.08	1.50 152.65	0.67 294.34	2.17 354.37	1.15 146.00	11.35 Mag 241.76 Phase
0.203	−7.17	17.53	0.64 215.00	0.21 213.88	1.42 286.34	0.15 20.24	1.05 301.22	1.82 1.53	1.26 171.90	14.40 Mag 238.20 Phase
0.203	−7.30	16.64	0.58 221.99	0.35 112.75	1.26 281.05	0.20 163.60	1.18 291.06	1.43 9.43	1.16 184.07	13.97 Mag 246.47 Phase
0.224	−7.08	15.84	0.62 230.68	0.49 200.24	1.25 293.98	1.10 0.85	1.15 306.74	1.66 51.64	1.72 148 90	11.82 Mag 243.88 Phase
0.224	−7.58	14.91	0.79 225.88	0.49 215.45	1.41 292.78	0.91 13.66	1.51 286.90	1.42 39.34	1.71 146.35	10.88 Mag 235.65 Phase
0.224	−7.69	18.14	0.65 220.35	0.28 239.78	1.06 284.58	0.66 10.29	1.29 292.12	1.55 34.39	1.56 148.88	14.89 Mag 237.98 Phase
0.225	−7.29	18.66	0.65 231.69	0.31 172.22	1.44 294.23	1.07 23.26	1.29 292.42	1.23 51.73	1.56 159.56	14.98 Mag 235.38 Phase
0.247	−8.98	14.55	0.82 225.00	0.29 231.71	1.67 328.00	1.18 41.96	2.15 309.23	2.21 63.42	1.57 169.05	10.72 Mag 231.59 Phase
0.248	−9.03	13.96	0.78 230.04	0.21 348.78	1.96 322.61	1.24 37.46	1.71 310.60	1.80 65.65	1.82 178.54	9.75 Mag 223.99 Phase
0.301	−11.09	10.76	0.64 218.31	0.76 251.71	1.77 359.89	3.44 10.87	3.44 327.96	0.23 270.54	0.37 229.08	5.30 Mag 75.08 Phase
0.301	−10.76	11.67	0.69 222.74	0.65 213.77	1.83 353.31	3.88 16.09	3.67 326.04	0.61 262.78	0.37 258.59	5.59 Mag 99.17 Phase
0.347	−14.02	12.30	1.08 156.33	1.14 248.33	3.02 350.07	5.46 53.01	3.96 341.85	2.54 348.24	0.71 339.90	3.73 Mag 103.52 Phase
0.347	−13.84	10.87	0.97 147.84	0.59 230.10	2.68 353.06	5.39 62.04	3.88 346.73	2.65 354.38	0.78 338.11	3.52 Mag 130.16 Phase

*1/2 Peak-to-peak

Table 23. Fixed-System Loads Data for Axial Force T75 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−2.44	9.74	0.41 229.94	0.27 137.89	0.74 349.18	2.52 189.25	0.81 54.88	0.74 302.13	1.15 250.12	5.96 Mag 181.56 Phase
0.103	−2.11	10.52	0.47 232.02	0.17 141.20	1.02 347.07	2.50 189.32	0.89 39.37	0.50 314.02	1.28 243.05	6.71 Mag 176.06 Phase
0.119	−3.07	7.30	0.70 221.48	0.21 283.59	0.56 321.85	2.22 197.58	0.77 60.75	0.83 303.64	0.85 223.25	4.16 Mag 194.87 Phase
0.122	−3.49	6.96	0.61 225.37	0.18 281.70	0.48 321.06	1.97 196.62	0.74 61.25	0.89 296.58	0.95 221.77	3.80 Mag 183.53 Phase
0.149	−2.22	6.89	0.61 216.75	0.08 141.77	0.45 286.73	1.40 179.41	0.90 117.34	1.33 8.74	0.60 237.33	3.20 Mag 187.02 Phase
0.150	−1.87	6.75	0.61 214.13	0.13 20.49	0.59 314.72	1.41 198.99	0.91 126.74	1.22 29.76	0.62 265.80	2.93 Mag 222.56 Phase
0.153	−1.92	6.76	0.62 218.51	0.12 84.31	0.87 282.73	1.36 176.32	0.59 124.37	1.38 4.26	0.95 214.84	3.03 Mag 185.52 Phase
0.153	−2.00	6.52	0.59 223.88	0.14 110.62	0.65 282.34	1.34 184.72	0.56 112.27	1.20 15.42	0.97 238.10	2.96 Mag 204.50 Phase
0.176	−2.39	7.05	0.66 220.58	0.36 19.97	0.34 262.21	0.38 202.34	0.46 165.83	1.45 51.25	0.27 315.43	4.83 Mag 206.01 Phase
0.176	−2.34	7.01	0.64 214.92	0.25 36.40	0.66 250.18	0.41 198.14	0.40 134.48	1.34 50.07	0.07 304.31	4.92 Mag 202.92 Phase
0.202	−0.81	7.89	0.68 226.12	0.29 60.29	0.74 245.25	1.47 67.42	0.78 105.29	1.78 104.36	1.09 221.58	4.40 Mag 203.25 Phase
0.203	−1.20	7.49	0.79 211.34	0.25 34.76	0.54 284.65	1.51 58.83	0.63 120.57	1.52 87.60	1.06 204.71	4.26 Mag 186.59 Phase
0.224	−2.54	7.42	0.82 235.21	0.51 29.68	1.19 284.35	3.30 70.92	0.62 114.36	1.59 98.54	1.59 268.44	2.63 Mag 239.52 Phase
0.225	−2.18	6.63	0.83 239.05	0.55 5.76	1.32 252.11	3.17 65.27	0.60 78.85	1.49 95.27	1.47 257.01	2.06 Mag 232.73 Phase
0.249	−0.88	6.93	0.66 236.58	0.08 157.08	0.77 244.49	2.55 83.56	0.54 338.16	1.90 97.16	1.56 328.92	0.68 Mag 134.31 Phase
0.249	−0.72	6.93	0.75 233.77	0.29 132.35	1.74 254.08	2.27 77.62	0.80 3.25	2.00 91.77	1.16 310.54	1.18 Mag 94.35 Phase
0.301	−2.36	14.68	0.94 265.21	0.28 246.13	1.20 319.78	5.69 79.14	2.32 29.34	1.32 47.20	0.80 71.40	7.72 Mag 53.69 Phase
0.301	−2.70	13.73	0.99 262.76	0.27 284.35	1.33 334.06	5.57 77.31	2.11 26.34	1.13 39.37	0.65 93.33	6.96 Mag 58.17 Phase
0.345	−3.13	27.25	0.85 259.90	0.26 275.92	0.52 19.35	9.88 113.99	2.53 44.22	1.65 116.83	0.63 197.98	18.07 Mag 66.81 Phase
0.345	−3.56	27.22	0.89 271.27	0.39 214.44	0.30 333.40	10.15 117.92	2.80 51.46	1.90 126.42	1.77 207.53	17.83 Mag 83.84 Phase

*1/2 Peak-to-peak

Table 23. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−4.56	25.92	0.29 256.71	0.64 246.26	1.02 278.18	1.92 178.12	0.76 302.08	1.19 349.40	1.96 173.96	22.26 Mag 194.22 Phase
0.109	−4.18	26.26	0.22 258.77	0.45 228.52	2.07 274.73	1.79 159.51	0.29 338.47	0.96 353.42	2.07 158.08	22.78 Mag 178.72 Phase
0.120	−4.91	22.57	0.27 237.07	0.33 338.98	1.78 219.92	1.28 174.71	0.49 325.76	1.99 1.02	3.48 183.48	17.74 Mag 188.43 Phase
0.123	−5.17	24.18	0.39 228.56	0.28 319.34	1.83 242.10	1.42 177.08	0.65 6.61	1.83 10.27	3.53 203.17	19.07 Mag 203.86 Phase
0.149	−3.78	13.12	0.38 209.26	0.27 87.44	1.69 264.69	2.09 126.04	0.75 60.50	2.06 2.44	2.58 196.13	8.95 Mag 211.11 Phase
0.150	−3.81	12.66	0.41 210.11	0.28 80.88	1.88 254.75	2.04 121.98	0.76 69.67	2.01 3.73	2.34 198.22	8.40 Mag 212.12 Phase
0.152	−3.32	13.45	0.40 214.10	0.22 93.12	1.92 256.73	2.23 120.50	0.93 58.05	2.00 355.99	2.40 192.34	8.95 Mag 205.50 Phase
0.153	−3.35	12.40	0.41 209.00	0.22 87.48	1.63 260.41	2.28 121.41	0.83 56.51	1.98 353.73	2.31 194.80	7.94 Mag 209.28 Phase
0.176	−4.59	12.60	0.52 215.37	0.13 34.91	1.53 262.01	1.96 131.81	0.67 80.22	2.02 59.89	1.35 258.34	8.36 Mag 266.88 Phase
0.177	−4.36	13.82	0.39 214.99	0.16 43.09	1.64 235.32	2.14 123.61	0.92 65.58	2.18 45.07	1.41 249.25	8.58 Mag 257.78 Phase
0.201	−3.71	11.34	0.64 221.18	0.34 44.31	1.56 266.23	3.45 81.03	0.85 133.31	0.83 123.17	1.68 279.22	7.38 Mag 219.75 Phase
0.202	−3.63	11.41	0.61 220.09	0.36 45.85	1.35 262.32	3.46 74.34	1.09 108.63	1.02 102.71	1.09 261.61	7.58 Mag 200.27 Phase
0.225	−4.61	11.41	0.73 228.97	0.10 242.98	2.23 271.61	4.97 78.98	0.19 139.95	0.55 214.39	0.44 352.84	5.92 Mag 208.51 Phase
0.225	−4.54	11.27	0.71 233.17	0.06 162.64	2.42 276.45	4.81 80.32	0.17 39.85	0.34 220.22	0.13 321.86	5.97 Mag 218.10 Phase
0.250	−3.51	9.30	0.66 230.62	0.30 81.88	1.56 289.57	4.32 102.02	0.81 324.00	0.80 55.50	1.46 66.69	4.22 Mag 114.83 Phase
0.251	−3.97	9.80	0.71 227.26	0.36 51.05	1.60 275.23	4.45 96.80	0.78 317.23	0.94 49.00	1.53 66.08	4.55 Mag 114.55 Phase
0.300	−6.09	19.55	0.62 246.89	0.40 251.42	2.03 337.10	6.89 80.49	2.18 355.87	2.21 69.62	1.77 178.84	11.49 Mag 62.83 Phase
0.301	−5.85	19.21	0.63 250.74	0.13 290.21	1.70 3.78	7.04 81.91	1.96 4.47	2.15 70.15	1.51 172.44	11.48 Mag 75.56 Phase
0.345	−7.18	23.97	0.44 232.46	0.10 194.52	1.66 12.99	11.32 100.90	1.42 352.36	0.63 356.00	1.06 245.23	14.02 Mag 67.52 Phase
0.346	−7.21	23.37	0.50 204.19	1.09 253.94	0.76 26.87	10.90 108.82	1.26 324.79	0.41 47.32	1.01 244.50	13.85 Mag 92.26 Phase

*1/2 Peak-to-peak

Table 23. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	−5.48	20.97	0.28 167.26	0.17 290.76	1.65 290.58	2.19 130.31	2.10 223.32	0.08 313.68	2.03 164.77	16.57 Mag 145.82 Phase
0.107	−6.34	21.04	0.24 197.83	0.28 208.27	2.16 285.00	2.36 136.17	1.89 240.46	0.35 218.92	1.88 166.19	16.56 Mag 155.67 Phase
0.120	−6.69	24.47	0.29 205.32	0.41 359.44	3.45 300.91	1.95 100.41	1.18 235.62	0.91 66.13	2.38 162.84	20.66 Mag 163.22 Phase
0.122	−6.86	20.12	0.20 200.46	0.39 46.70	2.44 300.15	2.17 105.72	1.09 237.72	1.26 56.98	2.49 181.87	17.19 Mag 173.15 Phase
0.148	−5.68	19.72	0.32 202.31	0.28 177.14	3.09 305.25	2.81 118.48	0.95 215.87	0.88 308.36	2.61 182.98	15.52 Mag 184.45 Phase
0.149	−5.59	18.04	0.38 200.52	0.40 171.60	3.27 296.62	2.55 116.43	0.67 206.01	1.25 314.67	2.32 180.63	13.90 Mag 181.19 Phase
0.150	−7.27	16.17	0.48 198.82	0.40 160.01	2.51 286.04	1.94 119.90	0.98 200.74	1.39 296.55	2.07 170.44	12.49 Mag 170.95 Phase
0.150	−7.45	17.12	0.46 206.17	0.23 153.51	2.71 291.23	1.97 127.07	1.13 223.98	1.30 295.81	2.19 177.79	13.09 Mag 190.41 Phase
0.150	−5.63	15.61	0.37 193.36	0.25 182.92	2.88 302.58	2.79 116.51	0.65 171.59	1.06 310.72	2.40 176.42	11.86 Mag 166.51 Phase
0.151	−5.89	19.20	0.39 201.90	0.41 220.40	3.36 297.99	2.70 116.85	1.05 196.29	1.18 308.59	2.12 188.51	14.96 Mag 176.32 Phase
0.174	−7.17	17.08	0.51 212.81	0.31 233.34	1.79 279.78	2.60 94.99	0.44 223.37	1.96 348.84	1.40 169.29	12.03 Mag 225.05 Phase
0.175	−7.01	16.60	0.45 208.87	0.29 261.81	1.56 291.25	2.54 101.65	0.47 226.18	1.87 353.72	1.20 169.06	11.54 Mag 234.46 Phase
0.200	−7.33	21.25	0.50 215.46	0.31 115.43	1.70 282.49	5.23 85.53	1.13 222.32	1.48 335.08	1.44 203.92	15.51 Mag 213.34 Phase
0.200	−6.60	17.75	0.61 216.17	0.32 162.27	1.51 286.73	5.01 79.15	0.93 206.53	1.29 340.56	0.92 198.49	12.20 Mag 196.82 Phase
0.224	−7.46	20.09	0.47 223.69	0.50 225.59	1.67 275.95	5.64 77.33	0.30 281.79	1.44 332.47	1.30 161.22	14.06 Mag 194.37 Phase
0.225	−7.70	18.97	0.68 208.15	0.49 231.12	1.85 282.52	5.69 86.15	0.16 174.23	1.83 338.01	1.37 175.59	12.35 Mag 204.30 Phase
0.250	−7.58	15.89	0.68 242.33	0.03 314.49	1.74 322.40	5.56 102.70	1.54 332.40	1.72 46.73	1.07 144.81	9.70 Mag 189.31 Phase
0.251	−6.77	16.42	0.65 216.91	0.13 297.37	1.92 299.67	5.63 96.24	1.86 325.00	1.74 38.89	1.16 153.59	10.45 Mag 175.79 Phase
0.300	−10.89	13.70	0.46 217.01	0.57 271.58	2.08 311.01	7.00 83.03	2.75 296.32	0.66 182.50	0.97 212.24	5.46 Mag 111.58 Phase
0.300	−10.89	13.77	0.44 218.70	0.69 278.99	2.58 322.88	6.72 78.56	2.83 297.29	0.95 201.73	0.88 206.38	5.61 Mag 113.42 Phase
0.346	−13.09	17.52	0.73 170.26	1.66 245.01	2.12 312.18	12.52 89.00	3.18 343.65	2.41 8.66	0.91 291.71	4.85 Mag 124.80 Phase
0.347	−12.93	18.21	0.65 165.06	1.65 260.88	2.75 340.35	12.54 90.03	3.38 341.90	2.66 17.33	1.42 279.19	5.20 Mag 139.40 Phase

*1/2 Peak-to-peak

Table 24. Fixed-System Loads Data for Axial Force T80 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.096	−3.26	13.74	0.88 297.00	0.40 67.87	0.85 215.17	3.09 172.44	3.40 25.15	0.41 53.06	1.25 179.60	8.16 Mag 203.68 Phase
0.099	−3.20	12.92	0.82 295.57	0.46 67.12	0.93 202.99	3.11 162.47	2.78 8.42	0.48 49.07	1.20 159.31	7.58 Mag 174.78 Phase
0.132	−2.90	8.58	0.88 262.49	0.50 22.91	1.03 231.53	2.62 168.89	2.77 33.14	0.67 82.95	1.84 183.61	3.84 Mag 194.38 Phase
0.132	−3.03	8.70	0.84 266.59	0.35 21.98	1.19 231.50	2.69 174.06	2.73 36.20	0.72 96.98	1.63 192.59	3.95 Mag 203.26 Phase
0.155	−3.09	6.53	0.95 252.90	0.17 72.37	1.22 236.39	2.54 155.53	2.37 74.02	1.27 55.70	0.95 163.74	1.20 Mag 155.60 Phase
0.155	−2.85	6.73	1.01 254.63	0.10 48.76	1.27 236.27	2.61 151.55	2.51 67.73	0.99 39.06	0.76 158.76	0.95 Mag 149.39 Phase
0.181	−0.73	6.18	1.05 254.60	0.13 97.87	1.63 234.98	2.74 149.37	1.56 61.11	1.40 81.37	0.49 284.40	1.10 Mag 164.19 Phase
0.181	−0.64	5.24	1.05 257.62	0.18 71.90	1.05 239.45	2.29 159.94	1.77 68.08	1.08 94.91	0.29 345.33	1.19 Mag 151.14 Phase
0.203	−0.13	5.58	1.02 256.73	0.32 133.38	1.25 241.84	1.79 176.06	2.22 73.93	1.23 143.39	0.42 284.55	1.98 Mag 177.17 Phase
0.203	−0.13	5.51	1.06 253.11	0.19 81.39	1.48 239.84	1.51 180.15	1.99 81.98	1.46 149.38	0.63 283.30	2.01 Mag 192.09 Phase
0.229	−1.99	5.98	1.02 254.92	0.49 30.57	1.94 238.82	2.10 128.29	1.25 69.37	1.21 109.49	0.84 312.45	1.17 Mag 278.25 Phase
0.229	−2.13	5.65	1.16 254.80	0.33 56.38	1.50 258.09	2.10 119.28	1.33 54.06	1.10 128.45	0.54 332.33	1.47 Mag 260.44 Phase
0.252	−1.25	5.87	1.15 266.56	0.35 85.56	1.61 250.60	1.67 178.28	1.49 35.64	1.13 91.69	1.06 37.94	2.24 Mag 43.33 Phase
0.253	−1.30	5.43	1.20 262.89	0.34 97.45	1.28 259.85	1.64 183.48	1.28 24.47	1.46 82.45	0.94 359.99	1.73 Mag 35.27 Phase
0.300	−2.61	13.25	0.96 268.88	0.61 298.20	1.66 313.07	0.78 115.83	2.78 21.88	1.27 66.82	0.73 319.76	9.02 Mag 41.97 Phase
0.302	−2.44	12.99	0.99 278.89	0.45 276.41	1.14 321.63	0.64 88.76	2.95 21.22	0.86 56.59	0.53 356.01	8.81 Mag 43.32 Phase
0.350	−3.41	23.53	0.77 280.90	0.61 231.65	1.30 316.53	3.59 128.28	1.75 0.08	0.43 54.10	1.00 167.00	18.98 Mag 64.19 Phase
0.350	−3.76	23.95	0.62 292.15	0.49 232.16	1.38 270.63	3.33 132.36	2.79 356.12	0.64 337.42	2.04 130.45	17.06 Mag 58.91 Phase

*1/2 Peak-to-peak

Table 24. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	−4.73	30.45	1.33 313.02	0.03 268.71	1.55 205.27	2.92 117.94	3.05 350.31	1.33 38.18	2.29 133.49	24.30 Mag 158.90 Phase
0.105	−4.97	26.76	1.28 318.07	0.35 125.42	1.61 226.05	3.03 121.90	2.19 356.44	0.98 81.81	2.23 166.21	22.02 Mag 184.06 Phase
0.130	−5.00	22.95	0.99 293.96	0.54 357.84	1.58 237.59	2.07 129.76	3.79 9.39	1.40 92.39	3.72 180.47	16.35 Mag 183.21 Phase
0.132	−4.83	22.43	0.94 294.95	0.45 350.65	1.41 223.86	2.19 129.41	3.85 7.37	0.97 108.83	3.98 175.21	15.91 Mag 177.55 Phase
0.153	−2.79	14.82	0.94 274.01	0.68 56.76	2.32 235.43	2.75 139.04	3.56 23.51	0.82 104.18	2.61 174.72	9.16 Mag 198.87 Phase
0.153	−2.85	13.97	0.91 276.23	0.70 59.72	2.16 239.89	2.71 141.42	3.35 24.83	0.96 97.18	2.53 193.08	8.36 Mag 212.52 Phase
0.153	−5.35	13.69	0.70 257.65	0.15 84.08	1.19 226.04	3.24 113.89	1.80 41.13	1.45 55.22	1.92 202.53	8.44 Mag 209.45 Phase
0.180	−2.74	11.34	0.75 250.71	0.49 197.36	1.86 196.02	3.43 118.56	2.33 28.20	1.00 52.94	0.35 303.18	4.57 Mag 233.16 Phase
0.181	−3.02	12.11	0.85 246.76	0.18 298.79	1.69 204.17	3.38 124.83	2.47 46.31	1.65 61.48	0.36 289.39	5.10 Mag 238.18 Phase
0.201	−2.16	10.51	0.87 259.54	0.39 177.39	1.42 238.28	2.17 113.43	2.33 36.34	0.64 132.49	0.16 237.99	6.24 Mag 232.91 Phase
0.202	−3.35	13.09	1.19 266.97	0.78 16.35	2.53 229.87	0.81 153.19	4.04 22.41	0.49 126.63	2.30 210.04	7.41 Mag 202.89 Phase
0.203	−3.25	13.18	1.14 266.59	0.61 28.89	2.78 234.09	0.79 150.37	4.18 26.98	0.82 138.97	2.41 204.42	7.52 Mag 207.09 Phase
0.228	−4.55	11.37	0.83 254.65	0.11 49.21	1.65 267.67	4.11 100.62	2.06 32.86	1.07 82.08	0.62 32.28	5.95 Mag 227.21 Phase
0.229	−4.61	11.57	0.80 253.18	0.04 109.77	2.00 267.77	4.13 100.75	2.14 38.77	1.33 80.62	0.64 58.45	6.25 Mag 227.58 Phase
0.251	−4.42	9.14	1.44 276.37	0.54 66.65	2.20 279.52	2.81 146.52	4.76 46.76	1.35 91.15	0.99 233.35	1.13 Mag 166.50 Phase
0.251	−4.80	8.80	1.50 274.11	0.58 57.76	1.73 276.70	2.90 147.40	4.54 38.16	0.91 94.21	1.11 213.17	1.42 Mag 176.66 Phase
0.252	−3.71	6.64	0.73 250.55	0.11 96.62	1.46 274.14	3.21 124.99	1.95 15.68	1.39 66.65	1.16 61.47	1.44 Mag 93.28 Phase
0.300	−5.39	16.99	1.66 290.04	0.93 35.08	1.52 333.99	1.58 158.67	2.37 87.89	0.72 201.26	0.51 12.71	13.77 Mag 49.69 Phase
0.301	−5.65	14.69	0.68 248.20	0.33 204.06	1.82 348.52	2.53 110.02	2.09 359.69	1.24 86.95	0.72 89.35	10.47 Mag 60.64 Phase
0.348	−8.99	22.39	1.96 305.60	0.88 161.56	3.09 4.81	3.06 118.72	3.23 129.00	0.29 274.17	1.33 153.29	17.06 Mag 77.72 Phase
0.349	−8.46	22.86	2.06 306.74	1.15 178.98	2.62 358.94	3.30 118.20	3.11 92.39	0.05 128.10	1.00 134.74	16.89 Mag 44.78 Phase
0.349	−7.86	18.31	0.40 244.18	1.42 253.93	1.34 34.45	5.10 115.31	1.66 6.66	0.90 5.47	0.22 254.41	12.34 Mag 69.86 Phase

*1/2 Peak-to-peak

Table 24. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.100	−5.33	25.31	1.66 320.33	0.43 31.92	1.94 236.21	5.78 98.19	3.38 276.24	0.51 39.83	2.38 223.59	17.17 Mag 153.41 Phase
0.100	−5.57	24.29	1.74 323.27	0.27 52.54	2.28 243.37	5.69 90.22	3.42 276.09	0.40 24.70	2.37 228.78	15.58 Mag 144.92 Phase
0.131	−6.49	25.03	1.39 308.69	0.58 19.60	2.62 281.77	3.50 96.90	2.87 310.81	0.98 46.95	3.01 224.04	19.38 Mag 182.07 Phase
0.133	−6.44	25.52	1.39 314.61	0.64 28.91	2.06 274.21	3.96 101.98	2.83 310.95	1.04 63.91	2.90 227.11	19.52 Mag 177.95 Phase
0.152	−6.98	17.94	0.52 243.01	0.22 208.00	1.95 280.99	4.35 96.65	0.91 260.36	1.05 309.68	1.94 188.84	13.25 Mag 192.29 Phase
0.153	−6.25	18.53	0.56 244.52	0.26 172.67	2.25 295.37	4.25 108.97	1.17 278.92	1.03 342.89	2.21 205.27	13.88 Mag 209.79 Phase
0.179	−6.00	19.42	0.69 241.93	0.20 268.08	0.68 238.34	4.79 91.01	2.05 323.49	2.09 356.81	0.80 159.07	13.05 Mag 229.68 Phase
0.181	−5.61	18.03	0.58 246.74	0.12 293.98	0.95 228.72	4.79 97.03	1.98 336.00	1.90 2.13	0.88 156.25	12.07 Mag 241.81 Phase
0.201	−4.37	16.53	0.70 254.95	0.15 164.91	0.86 247.53	4.15 99.84	1.37 328.46	1.42 14.34	1.25 218.05	11.47 Mag 227.14 Phase
0.202	−4.87	15.81	0.66 249.13	0.21 209.43	1.09 267.83	4.21 97.59	1.13 331.31	1.39 8.62	1.29 197.83	11.27 Mag 227.73 Phase
0.228	−7.70	18.05	0.64 243.51	0.53 201.32	1.68 276.50	4.23 89.54	1.66 353.16	1.31 35.94	1.75 167.37	13.76 Mag 200.57 Phase
0.228	−7.35	19.28	0.63 244.70	0.42 206.56	1.59 276.15	4.43 96.83	1.63 354.25	1.31 36.09	1.58 175.00	14.74 Mag 210.32 Phase
0.251	−6.93	15.11	0.65 240.82	0.10 272.00	1.67 320.62	4.40 119.74	2.19 345.69	1.48 74.39	0.91 186.42	9.30 Mag 190.41 Phase
0.251	−6.80	16.34	0.70 239.52	0.08 100.01	1.68 325.79	4.27 119.67	2.64 337.69	1.37 69.02	0.74 183.10	10.52 Mag 187.41 Phase
0.301	−10.46	10.28	0.43 208.59	0.27 268.63	1.54 317.59	3.10 108.37	2.75 311.25	0.86 252.53	1.18 319.50	4.73 Mag 136.88 Phase
0.303	−10.39	10.91	0.38 201.72	0.44 291.38	1.64 332.78	2.67 102.01	2.17 319.04	0.78 254.53	1.12 317.61	6.22 Mag 117.36 Phase
0.350	−13.30	15.29	0.56 159.47	2.01 234.95	2.10 348.70	6.66 105.05	4.77 4.27	2.52 38.34	2.19 339.54	5.27 Mag 116.41 Phase

*1/2 Peak-to-peak

Table 25. Fixed-System Loads Data for Axial Force T85 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.088	−2.73	10.53	0.75 258.74	0.05 167.24	0.80 262.13	1.62 143.27	3.14 26.77	0.35 128.55	1.23 218.58	6.43 Mag 208.45 Phase
0.089	−2.04	11.89	0.80 257.04	0.10 210.38	0.72 263.92	1.61 142.91	3.07 17.56	0.11 221.98	1.57 225.83	7.15 Mag 195.50 Phase
0.120	−3.29	7.53	0.85 241.38	0.26 279.04	1.12 261.56	1.85 136.35	2.89 30.74	0.31 183.03	0.61 214.54	3.54 Mag 216.85 Phase
0.121	−3.35	7.51	0.85 242.44	0.23 268.41	0.88 265.47	1.77 141.61	2.92 26.51	0.24 254.07	0.49 216.40	3.34 Mag 217.32 Phase
0.146	−1.95	6.71	0.98 239.07	0.04 67.69	1.58 248.43	2.42 141.31	2.98 45.28	1.06 31.70	1.10 96.51	1.79 Mag 171.34 Phase
0.149	−1.79	6.93	0.95 245.57	0.19 40.16	1.40 265.73	2.55 150.07	2.75 57.77	1.02 43.18	0.64 112.33	1.89 Mag 190.13 Phase
0.177	−1.22	6.72	1.10 250.97	0.26 37.16	1.32 233.53	2.76 156.03	2.79 62.37	1.33 78.42	0.52 126.89	1.30 Mag 134.20 Phase
0.178	−1.47	6.60	1.06 248.05	0.31 17.43	1.30 235.09	2.70 148.06	2.84 55.87	1.33 75.45	0.69 93.62	1.27 Mag 121.25 Phase
0.197	−1.96	6.11	1.07 250.74	0.17 4.80	1.69 244.45	1.34 198.45	2.72 82.22	1.54 104.32	1.15 218.30	1.40 Mag 173.10 Phase
0.200	−1.86	6.48	1.08 248.26	0.24 0.40	2.09 241.49	1.39 191.00	2.94 80.47	1.50 101.08	0.94 213.56	1.32 Mag 162.35 Phase
0.226	−2.66	5.13	0.97 254.99	0.24 62.31	2.03 255.73	1.20 144.36	2.15 96.20	1.02 136.93	1.12 277.11	1.06 Mag 279.41 Phase
0.227	−2.59	5.52	1.10 247.15	0.15 14.17	1.86 261.48	1.28 136.29	2.47 102.44	1.14 126.31	1.32 283.66	0.76 Mag 276.17 Phase
0.251	−2.64	8.02	1.05 253.15	0.34 59.82	1.82 256.07	2.59 185.82	1.33 92.82	1.47 98.35	1.51 351.32	1.88 Mag 27.14 Phase
0.252	−2.63	7.68	1.08 256.46	0.39 35.37	1.38 270.40	2.76 184.10	1.29 87.02	1.28 104.76	2.18 357.09	1.47 Mag 33.65 Phase
0.299	−2.91	18.17	0.96 258.84	0.23 265.39	2.96 320.13	1.93 224.17	3.14 36.01	1.26 75.53	2.23 357.28	12.42 Mag 65.66 Phase
0.300	−2.75	16.50	1.20 269.99	0.33 295.74	2.42 298.77	1.59 236.82	3.19 32.60	1.38 54.33	1.99 12.98	10.47 Mag 65.31 Phase
0.350	−3.31	23.05	0.94 246.86	0.16 245.17	1.04 8.88	2.80 180.04	2.87 48.59	1.07 112.08	0.38 121.95	18.89 Mag 76.28 Phase
0.350	−3.39	20.59	0.82 266.13	0.66 174.41	0.88 336.12	2.61 186.57	2.47 27.90	0.95 100.74	0.44 136.00	17.34 Mag 89.89 Phase

*1/2 Peak-to-peak

Table 25. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.092	−5.14	29.95	0.44 263.10	0.19 203.53	0.94 229.04	2.99 86.31	2.73 323.73	1.00 44.90	3.03 161.41	25.52 Mag 179.46 Phase
0.120	−5.88	23.39	0.63 246.02	0.53 263.31	1.50 221.66	1.92 87.79	3.07 356.99	0.97 34.42	3.43 177.66	17.55 Mag 191.40 Phase
0.120	−4.90	24.12	0.54 249.22	0.62 250.78	0.93 212.38	1.87 89.89	3.39 355.08	0.87 68.15	3.14 182.83	18.25 Mag 202.68 Phase
0.147	−3.47	16.58	0.76 241.83	0.14 46.21	1.77 231.99	2.95 105.10	3.10 36.85	1.34 47.39	2.41 197.10	10.35 Mag 219.78 Phase
0.149	−3.70	15.95	0.75 240.67	0.14 33.48	1.69 222.15	2.68 101.29	2.78 24.47	1.34 29.38	2.43 190.19	9.88 Mag 210.07 Phase
0.177	−2.97	12.28	0.92 252.02	0.43 19.79	1.49 229.32	3.71 124.17	3.29 44.91	2.42 73.57	0.90 225.52	4.90 Mag 261.95 Phase
0.177	−2.75	12.28	0.92 247.01	0.30 16.30	1.47 215.71	3.72 118.99	3.07 38.88	2.43 65.64	1.00 243.08	4.43 Mag 257.22 Phase
0.199	−4.03	10.02	0.85 246.06	0.20 28.51	1.75 236.09	1.89 108.96	2.64 48.07	0.62 100.38	1.27 301.41	4.65 Mag 272.18 Phase
0.200	−3.88	11.61	0.90 246.66	0.30 23.96	2.05 236.56	2.12 106.81	2.73 44.22	1.04 79.51	0.93 283.38	6.02 Mag 258.05 Phase
0.227	−4.84	8.56	0.84 248.48	0.12 274.19	2.11 261.03	3.17 106.29	1.68 60.55	0.36 137.80	0.97 28.85	3.55 Mag 242.54 Phase
0.227	−4.91	9.47	0.95 246.63	0.16 18.55	2.32 270.33	2.85 109.14	2.01 74.61	0.37 123.30	0.74 23.10	5.15 Mag 251.18 Phase
0.250	−5.77	8.40	0.91 246.26	0.48 17.55	1.67 291.07	3.97 141.75	1.89 13.98	1.35 95.85	2.01 65.20	1.41 Mag 169.94 Phase
0.252	−5.70	8.65	0.92 262.23	0.44 26.92	1.90 291.04	4.01 141.97	2.08 22.48	1.24 68.76	1.97 68.98	1.65 Mag 208.94 Phase
0.300	−6.26	20.72	0.69 232.33	0.31 264.34	1.89 335.60	2.09 151.81	3.62 14.43	1.93 78.91	1.97 65.18	14.72 Mag 69.97 Phase
0.301	−6.16	20.41	0.70 236.80	0.13 234.75	1.80 336.87	2.12 144.87	3.25 8.73	1.22 80.55	1.71 67.02	15.54 Mag 69.49 Phase
0.350	−7.14	16.98	0.80 198.81	0.66 242.85	1.91 29.25	3.34 131.53	2.43 24.93	0.20 20.27	0.63 250.58	12.26 Mag 80.93 Phase
0.352	−7.17	17.77	0.82 204.59	0.76 206.91	1.56 11.90	3.11 125.93	1.89 11.09	0.37 33.22	0.36 109.04	13.69 Mag 56.93 Phase

*1/2 Peak-to-peak

Table 25. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.120	−6.97	18.55	0.37 233.68	0.62 335.65	1.31 279.97	5.13 91.99	1.61 268.17	0.76 53.99	1.98 202.66	13.76 Mag 211.89 Phase
0.122	−7.48	20.13	0.50 239.39	0.40 335.95	2.22 275.68	4.94 81.58	1.24 258.76	0.64 36.53	2.25 191.40	15.83 Mag 198.33 Phase
0.144	−5.68	15.35	0.66 228.63	0.25 88.65	2.39 254.97	4.07 82.18	0.86 242.13	0.46 279.24	2.18 170.99	11.19 Mag 174.06 Phase
0.145	−5.16	15.08	0.59 239.87	0.15 90.51	2.31 267.60	4.27 101.66	0.84 288.92	0.32 297.96	2.18 194.84	10.91 Mag 207.64 Phase
0.175	−5.02	19.35	0.62 236.03	0.17 126.61	1.58 257.95	4.78 87.84	1.40 327.95	1.64 22.35	0.82 181.55	14.88 Mag 234.98 Phase
0.176	−4.98	19.30	0.59 236.48	0.20 127.27	1.24 246.02	4.86 92.20	1.03 344.06	1.75 22.70	0.56 192.65	14.32 Mag 244.28 Phase
0.197	−6.51	19.65	0.64 237.94	0.13 92.43	1.41 271.49	4.10 80.52	2.10 299.92	1.69 354.51	1.26 175.75	14.25 Mag 237.93 Phase
0.197	−6.80	18.07	0.65 240.11	0.26 109.24	1.54 264.81	4.10 86.83	2.16 307.36	1.77 6.71	1.13 197.88	13.04 Mag 250.82 Phase
0.225	−8.79	18.24	0.80 238.11	0.36 244.94	1.86 284.83	4.15 93.59	1.43 320.01	1.72 9.58	1.26 166.82	12.68 Mag 230.56 Phase
0.226	−7.83	18.40	0.75 241.34	0.51 206.80	1.64 279.15	4.08 99.29	1.49 348.08	1.54 20.26	0.88 168.29	13.85 Mag 238.52 Phase
0.251	−8.22	17.60	0.75 230.68	0.18 357.72	2.06 323.63	4.29 121.17	3.71 340.62	1.54 60.39	1.09 153.82	11.87 Mag 222.99 Phase
0.252	−8.02	16.70	0.75 227.70	0.13 353.15	1.74 320.75	4.43 119.16	2.91 326.26	1.49 56.94	1.05 133.99	11.47 Mag 201.12 Phase
0.300	−10.40	18.08	0.71 196.04	0.40 289.30	1.53 334.75	3.42 120.27	3.73 331.22	0.49 135.61	1.61 274.21	10.03 Mag 93.72 Phase
0.301	−10.68	18.16	0.49 190.25	0.67 261.51	1.57 323.87	3.57 130.63	3.75 342.61	0.68 120.91	1.75 305.20	9.38 Mag 124.49 Phase

*1/2 Peak-to-peak

Table 26. Fixed-System Loads Data for Axial Force S80 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−2.05	9.19	0.47 238.98	0.14 208.16	1.13 316.78	1.23 17.63	1.49 62.90	0.31 185.05	1.92 210.81	6.31 Mag 156.04 Phase
0.101	−2.03	9.78	0.55 229.13	0.35 234.51	1.19 337.55	1.36 32.97	1.17 43.19	0.23 208.06	1.40 212.92	7.18 Mag 163.89 Phase
0.131	−2.66	7.06	0.81 211.90	0.09 33.55	0.96 319.72	1.58 50.30	1.71 43.58	0.44 309.38	0.58 172.03	4.14 Mag 162.27 Phase
0.133	−2.81	6.70	0.82 216.64	0.05 279.18	0.60 317.14	1.44 56.90	1.54 35.29	0.63 321.65	0.55 134.47	4.11 Mag 165.15 Phase
0.150	−1.82	7.75	0.78 213.58	0.13 94.69	0.97 270.56	2.66 75.42	1.98 44.93	0.65 8.41	1.03 160.03	3.34 Mag 140.19 Phase
0.150	−2.04	7.10	0.78 216.81	0.08 75.79	0.69 258.79	2.53 79.16	1.72 40.44	0.83 3.16	0.88 158.30	3.07 Mag 151.71 Phase
0.175	−2.07	8.21	0.93 214.42	0.27 354.52	1.01 238.43	2.79 74.06	1.53 34.90	1.31 42.18	0.63 108.88	4.21 Mag 143.79 Phase
0.175	−1.87	7.73	0.89 221.60	0.19 357.34	1.09 240.74	2.96 82.14	1.81 44.55	1.37 58.85	1.03 142.08	3.13 Mag 173.80 Phase
0.200	−2.05	9.57	0.95 221.63	0.28 19.35	1.34 270.13	2.98 69.54	1.75 42.77	1.54 111.21	0.75 217.88	4.43 Mag 175.96 Phase
0.200	−1.99	9.05	0.98 224.94	0.19 113.67	1.11 263.31	2.88 69.59	1.37 31.05	1.44 102.31	0.82 186.54	4.43 Mag 172.89 Phase
0.223	−3.43	9.30	1.03 229.09	0.17 23.18	1.59 262.08	5.26 85.08	1.80 46.33	1.33 114.06	0.79 255.62	2.93 Mag 216.42 Phase
0.224	−3.72	9.09	0.96 229.39	0.33 19.69	1.19 261.69	5.27 86.83	1.53 54.08	1.28 113.00	0.61 279.84	2.95 Mag 218.68 Phase
0.248	−1.92	8.79	1.10 236.31	0.35 1.02	1.53 235.78	4.61 97.44	1.80 9.60	1.74 114.92	1.05 344.40	1.43 Mag 88.48 Phase
0.249	−1.72	9.67	0.88 241.74	0.24 45.40	1.72 253.90	4.75 100.76	2.02 25.17	1.79 125.04	1.49 0.77	0.82 Mag 146.04 Phase
0.299	−3.37	19.99	0.94 249.32	0.16 313.16	2.57 329.67	12.55 115.96	6.14 344.70	1.21 54.78	0.43 99.55	3.83 Mag 48.47 Phase
0.299	−3.27	32.26	1.18 249.12	0.43 334.90	1.77 319.03	24.70 124.27	5.76 286.73	1.00 53.36	0.77 60.50	2.66 Mag 77.90 Phase

*1/2 Peak-to-peak

Table 26. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	–4.39	24.06	0.23 224.80	0.09 326.55	2.05 238.09	3.82 27.85	0.56 255.74	1.17 314.09	1.78 162.97	19.90 Mag 162.64 Phase
0.104	–4.59	24.92	0.23 218.17	0.02 88.26	2.34 234.10	3.84 26.81	0.72 265.90	1.17 332.20	1.88 166.22	20.67 Mag 157.16 Phase
0.123	–5.07	17.38	0.47 204.58	0.36 326.54	2.89 256.62	3.99 29.95	0.69 295.34	0.48 336.11	3.05 186.68	12.34 Mag 177.07 Phase
0.127	–4.71	16.30	0.48 208.30	0.41 350.11	2.49 255.24	3.94 26.52	0.81 293.98	0.73 329.58	2.90 183.14	11.29 Mag 176.48 Phase
0.150	–3.64	13.11	0.57 201.65	0.23 74.87	2.14 256.61	4.85 59.31	0.76 40.53	0.99 10.98	2.11 174.94	7.86 Mag 174.24 Phase
0.150	–3.68	13.63	0.63 209.39	0.43 48.05	2.25 242.02	4.75 57.48	0.44 13.82	1.07 355.65	2.07 178.65	8.47 Mag 168.45 Phase
0.175	–3.46	10.52	0.76 214.28	0.30 349.08	1.66 232.70	4.85 68.89	1.36 355.66	1.40 21.47	0.79 211.71	4.63 Mag 198.20 Phase
0.175	–3.87	11.18	0.72 215.18	0.34 23.64	1.78 231.51	4.74 73.38	1.70 358.77	1.37 40.31	0.79 224.65	5.47 Mag 210.59 Phase
0.200	–4.35	12.56	0.81 218.63	0.30 63.03	1.55 269.42	5.11 70.71	0.34 8.94	0.65 91.04	0.62 277.52	7.51 Mag 208.48 Phase
0.200	–4.13	12.57	0.78 216.11	0.19 61.75	1.46 257.33	5.09 71.22	0.55 10.80	0.65 93.92	0.79 291.17	7.26 Mag 208.21 Phase
0.224	–6.60	15.22	0.97 221.51	0.09 316.37	1.99 263.58	7.07 78.41	0.97 320.42	0.38 235.67	1.09 58.95	7.39 Mag 204.74 Phase
0.225	–5.00	14.18	0.93 227.04	0.35 298.84	1.89 265.77	6.85 81.96	0.97 335.29	0.51 243.07	1.12 61.53	6.58 Mag 205.01 Phase
0.225	–6.80	13.42	0.95 217.46	0.30 280.69	1.45 271.92	7.03 78.70	0.92 334.24	0.50 220.85	1.15 73.42	6.16 Mag 205.89 Phase
0.249	–4.94	10.85	0.95 227.78	0.27 48.56	2.05 287.43	6.47 102.79	2.20 337.22	0.71 64.33	1.61 109.00	3.34 Mag 134.05 Phase
0.249	–4.24	11.31	0.85 217.93	0.33 50.80	1.75 274.53	6.64 95.89	1.89 316.64	0.78 83.93	2.28 95.04	4.40 Mag 102.05 Phase
0.301	–6.35	22.75	0.94 230.76	0.26 281.86	2.76 359.26	12.80 103.56	5.09 350.96	2.04 54.88	0.14 79.48	8.10 Mag 38.72 Phase
0.301	–6.30	22.98	0.90 227.83	0.15 302.29	2.26 343.92	13.13 105.46	5.21 346.42	1.47 67.57	0.61 120.53	9.04 Mag 38.76 Phase

*1/2 Peak-to-peak

Table 26. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−4.81	24.95	0.49 175.15	0.17 199.47	1.75 261.20	7.08 35.77	3.43 218.83	0.85 258.96	1.39 104.06	16.73 Mag 139.62 Phase
0.104	−5.79	22.48	0.47 173.73	0.08 220.51	1.74 289.72	6.73 30.02	3.03 225.36	0.68 251.90	1.54 104.31	15.01 Mag 135.91 Phase
0.127	−6.42	25.95	0.44 190.01	0.55 357.89	2.33 275.80	6.58 39.89	2.10 244.82	0.77 214.00	2.00 147.43	19.67 Mag 166.00 Phase
0.150	−6.10	20.98	0.64 189.88	0.19 111.65	2.93 264.14	6.11 41.21	2.27 209.82	1.01 281.09	1.45 139.72	13.97 Mag 144.38 Phase
0.150	−6.15	22.11	0.66 194.52	0.22 91.36	2.99 278.64	6.23 45.93	1.99 237.34	1.15 264.75	1.64 157.06	15.71 Mag 154.10 Phase
0.175	−6.42	19.42	0.72 197.32	0.34 288.48	1.58 229.73	7.00 51.34	1.72 261.77	2.30 320.17	1.06 119.51	12.14 Mag 192.19 Phase
0.175	−6.28	19.61	0.72 203.79	0.21 304.70	1.76 255.57	7.10 64.33	2.18 293.07	2.23 339.31	1.16 135.66	12.15 Mag 218.08 Phase
0.200	−7.31	24.48	0.75 217.84	0.24 138.68	1.66 292.78	7.11 69.35	1.68 291.71	2.36 340.74	1.16 166.88	16.78 Mag 219.70 Phase
0.200	−7.00	23.26	0.79 209.57	0.14 139.49	1.56 283.94	7.15 65.76	1.53 276.54	2.18 332.09	1.18 173.12	15.86 Mag 212.85 Phase
0.223	−10.02	27.66	0.87 213.96	0.53 274.77	1.68 269.77	8.34 67.40	1.18 304.23	1.90 344.94	1.56 126.01	19.31 Mag 201.52 Phase
0.224	−10.42	25.43	0.97 213.52	0.51 261.95	2.04 282.12	8.30 71.24	1.19 327.01	1.35 350.31	1.70 153.86	17.98 Mag 211.03 Phase
0.225	−7.50	24.90	0.83 214.25	0.47 239.92	2.14 272.00	7.84 72.14	1.29 323.61	1.70 335.27	1.59 142.36	17.22 Mag 209.30 Phase
0.225	−8.23	24.90	0.86 226.49	0.48 258.48	1.83 287.15	7.87 76.61	1.61 318.61	1.82 3.67	1.81 167.06	17.20 Mag 218.13 Phase
0.248	−8.64	20.55	1.01 218.71	0.29 337.00	2.27 308.37	8.02 85.78	2.57 312.82	1.70 41.50	1.46 138.17	12.32 Mag 188.69 Phase
0.248	−8.03	20.11	0.85 213.18	0.23 254.19	1.56 304.45	8.23 84.87	2.67 319.39	1.59 58.44	1.36 141.52	11.94 Mag 184.67 Phase
0.300	−11.99	16.21	0.67 179.95	0.82 260.97	2.98 333.75	11.39 96.31	3.88 314.07	0.99 229.16	1.06 324.47	3.00 Mag 114.25 Phase
0.301	−12.43	17.48	0.63 189.42	0.83 278.10	2.73 336.28	12.24 95.59	3.63 307.79	0.67 197.08	0.95 324.35	3.36 Mag 81.35 Phase

*1/2 Peak-to-peak

Table 27. Fixed-System Loads Data for Side Force Baseline Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−6.77	27.58	3.01 240.42	1.11 126.66	0.54 138.24	23.68 93.74	2.99 236.69	0.62 150.79	0.78 51.94	4.25 Mag 318.73 Phase
0.102	−6.57	27.35	3.13 240.65	0.98 119.87	0.35 127.45	23.42 94.67	2.41 247.94	0.65 149.43	0.82 49.49	4.10 Mag 324.96 Phase
0.130	−5.26	23.20	3.06 241.40	1.07 104.49	0.32 139.23	19.32 113.86	1.73 305.84	0.40 165.49	0.65 56.43	2.74 Mag 351.35 Phase
0.131	−5.29	23.38	3.05 241.97	1.00 108.73	0.15 150.69	19.64 120.65	1.91 323.58	0.43 182.99	0.50 76.96	2.45 Mag 2.22 Phase
0.147	−5.38	21.58	1.07 167.05	1.11 95.14	0.48 241.58	19.02 118.47	0.23 329.37	0.82 175.45	0.48 86.39	2.34 Mag 15.32 Phase
0.148	−5.63	20.97	1.12 173.76	1.05 97.58	0.42 235.17	18.44 116.82	0.25 319.67	0.83 165.38	0.60 80.40	2.51 Mag 11.19 Phase
0.153	−5.25	22.17	2.98 246.43	0.79 100.73	0.36 195.49	18.74 115.99	1.95 291.98	0.21 251.18	0.53 56.17	2.52 Mag 346.63 Phase
0.154	−5.01	22.73	3.04 237.60	1.52 107.14	0.28 150.62	19.07 116.12	1.83 302.62	0.43 230.97	0.38 53.01	2.34 Mag 350.16 Phase
0.174	−5.84	19.38	1.31 171.53	1.62 97.34	0.52 246.68	15.75 144.71	0.66 7.61	0.73 207.62	0.46 94.14	3.59 Mag 69.59 Phase
0.176	−5.86	19.05	1.13 184.23	1.50 91.27	0.53 255.55	15.49 149.13	0.48 6.36	0.69 217.23	0.38 115.69	3.70 Mag 75.30 Phase
0.179	−5.38	19.80	3.00 233.38	2.56 88.97	0.87 164.74	13.85 144.06	2.85 6.01	0.23 200.29	0.65 80.55	4.25 Mag 54.80 Phase
0.181	−5.39	20.63	2.94 242.97	2.35 89.94	0.82 182.87	14.71 145.14	2.93 10.13	0.31 187.30	0.65 70.61	4.11 Mag 58.96 Phase
0.200	−5.61	18.88	1.14 174.45	1.28 86.15	0.63 255.44	16.70 154.92	0.48 170.67	0.09 89.97	0.39 67.30	2.73 Mag 82.56 Phase
0.201	−5.57	18.79	0.79 183.69	1.22 79.48	0.62 255.78	16.86 146.98	0.56 123.58	0.12 109.05	0.37 53.71	2.75 Mag 61.17 Phase
0.223	−5.30	18.97	0.71 174.69	1.21 63.49	0.65 258.81	17.38 160.83	0.61 135.96	0.42 322.03	0.34 55.95	2.17 Mag 70.64 Phase
0.224	−5.22	18.84	0.83 203.23	1.10 66.56	0.53 265.86	17.62 165.27	0.86 140.36	0.41 341.60	0.33 60.19	2.17 Mag 72.40 Phase
0.248	−5.04	20.39	1.54 160.42	1.24 63.23	0.51 261.75	17.52 176.59	1.15 158.22	0.52 297.53	0.34 57.58	2.45 Mag 41.40 Phase
0.249	−5.10	20.48	1.65 183.89	1.08 50.38	0.58 268.76	17.97 172.77	0.97 165.17	0.54 285.57	0.27 78.61	2.56 Mag 34.73 Phase
0.298	−5.15	23.28	2.01 158.69	0.78 41.74	0.13 220.16	21.09 189.58	1.20 230.04	0.93 200.20	0.49 102.78	2.44 Mag 64.50 Phase
0.298	−4.94	23.35	0.70 227.20	0.65 62.23	0.38 260.91	21.40 184.59	1.32 206.09	1.14 195.22	0.70 88.70	2.50 Mag 66.04 Phase
0.347	−4.16	26.48	0.82 81.07	2.20 18.34	0.31 118.40	22.08 189.65	3.55 139.05	1.18 221.93	0.38 107.96	4.02 Mag 71.81 Phase
0.347	−4.04	25.86	0.78 170.50	2.06 28.73	0.81 101.96	22.24 186.27	4.31 145.16	1.19 225.17	0.36 120.74	3.58 Mag 57.41 Phase

*1/2 Peak-to-peak

Table 27. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	−9.11	36.45	3.08 250.71	2.49 146.93	2.08 252.70	28.20 90.40	6.48 95.60	0.65 196.20	0.35 236.14	5.85 Mag 310.28 Phase
0.100	−9.05	36.91	3.18 251.65	3.04 150.31	1.95 264.33	28.96 98.99	6.12 102.42	0.72 215.08	0.28 258.03	5.60 Mag 329.39 Phase
0.102	−9.77	34.71	3.17 248.72	2.50 142.69	2.38 254.32	26.88 93.43	6.53 75.16	0.84 176.63	0.25 253.13	5.66 Mag 318.31 Phase
0.130	−9.28	25.51	3.12 255.54	1.94 146.65	1.91 254.12	19.72 100.45	3.81 120.69	0.81 177.14	0.16 54.71	5.03 Mag 321.64 Phase
0.130	−8.07	25.80	3.28 257.32	2.81 141.11	2.13 255.39	19.69 98.14	4.14 114.62	0.84 182.48	0.12 31.23	5.02 Mag 318.40 Phase
0.147	−8.76	24.36	0.94 184.21	0.81 94.47	0.87 237.17	19.76 98.93	3.32 50.68	0.68 131.35	0.73 73.98	3.32 Mag 344.96 Phase
0.152	−9.02	20.90	3.20 252.02	0.51 86.60	1.95 248.05	17.38 103.44	1.13 108.15	0.47 191.17	0.18 191.99	2.31 Mag 310.62 Phase
0.152	−9.13	21.20	3.13 247.52	0.58 101.03	1.58 235.91	17.86 107.51	2.03 181.64	0.51 196.38	0.26 106.91	2.75 Mag 318.99 Phase
0.174	−8.49	24.87	0.99 188.50	0.64 54.12	0.73 233.72	19.04 114.52	4.01 68.40	0.34 240.82	0.66 68.04	4.57 Mag 21.47 Phase
0.174	−8.60	24.85	0.97 180.73	0.79 60.77	0.55 234.79	19.23 114.88	3.34 66.61	0.40 212.74	0.73 73.36	4.54 Mag 19.53 Phase
0.178	−8.16	20.67	2.52 245.96	1.74 91.02	1.24 217.69	14.46 112.36	2.31 9.37	0.72 165.33	0.69 148.60	5.48 Mag 0.12 Phase
0.180	−8.30	20.89	2.53 250.16	1.58 80.34	1.11 197.32	14.55 109.90	2.96 345.20	0.63 182.11	0.76 144.58	5.63 Mag 348.49 Phase
0.199	−8.30	23.40	0.79 194.81	1.01 67.92	0.62 256.82	19.22 127.42	3.29 69.18	0.13 153.79	0.74 71.68	3.07 Mag 23.22 Phase
0.224	−7.97	21.91	0.95 225.51	1.09 40.51	0.63 256.93	19.57 129.38	2.24 84.88	0.39 61.59	0.36 58.61	3.17 Mag 329.68 Phase
0.225	−7.92	22.47	0.49 158.34	0.97 49.85	0.66 254.71	19.37 139.22	3.05 95.72	0.37 54.67	0.38 74.84	3.02 Mag 349.07 Phase
0.249	−7.62	23.91	1.29 217.36	1.03 39.41	0.54 276.86	20.04 157.66	2.06 91.58	0.17 136.54	0.21 66.40	5.04 Mag 343.71 Phase
0.298	−5.78	25.75	0.72 162.79	1.18 14.95	0.65 184.30	23.88 173.99	0.65 150.76	0.70 189.88	0.53 60.05	3.41 Mag 9.33 Phase
0.349	−6.99	32.70	0.36 142.59	2.22 14.10	1.30 179.42	28.79 171.20	2.34 109.95	0.84 204.56	0.66 28.56	3.91 Mag 13.67 Phase

*1/2 Peak-to-peak

Table 27. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	−13.70	44.28	2.42 259.91	0.88 127.89	1.90 265.39	39.71 85.68	1.99 25.85	0.80 128.30	1.08 307.70	3.36 Mag 304.76 Phase
0.105	−15.69	43.64	2.50 264.56	0.83 122.40	2.33 270.40	38.68 92.15	1.93 10.68	0.67 144.38	1.39 322.86	3.04 Mag 327.99 Phase
0.129	−13.61	37.52	2.67 257.74	1.21 98.64	3.84 257.35	28.74 93.10	5.69 3.43	1.17 128.91	2.19 314.60	3.14 Mag 297.76 Phase
0.131	−12.10	37.74	2.76 258.01	1.11 104.29	3.76 261.14	29.93 96.53	4.85 34.58	1.11 121.09	2.15 314.05	2.70 Mag 295.96 Phase
0.147	−12.71	30.47	0.73 163.10	0.32 110.83	0.79 223.48	27.21 85.36	2.24 337.37	1.12 100.35	0.73 332.48	2.25 Mag 315.22 Phase
0.147	−12.84	31.40	0.74 177.65	0.37 116.66	0.77 237.50	28.18 98.67	2.45 3.60	1.21 1201	0.66 349.23	2.35 Mag 335.43 Phase
0.172	−12.34	30.20	0.83 161.74	0.45 135.76	0.77 222.14	26.12 105.25	3.99 356.67	0.54 139.10	0.46 356.23	2.25 Mag 339.97 Phase
0.173	−12.57	29.76	0.63 146.99	0.27 64.93	0.79 216.61	26.17 97.56	3.34 349.88	0.54 118.20	0.63 332.10	2.11 Mag 316.10 Phase
0.178	−11.95	28.81	1.89 258.34	1.64 107.10	3.11 237.17	22.86 103.89	5.05 48.51	1.16 162.37	1.25 278.48	3.73 Mag 354.68 Phase
0.178	−11.65	28.91	1.79 264.45	1.41 114.96	3.39 235.54	23.13 101.11	5.47 64.47	1.09 167.20	1.24 271.89	3.38 Mag 347.59 Phase
0.198	−12.18	29.65	0.59 143.37	0.61 53.72	0.64 210.58	25.82 115.75	3.06 355.60	0.56 150.65	0.62 348.23	3.34 Mag 341.99 Phase
0.199	−12.32	29.05	0.88 141.45	0.57 52.31	0.57 197.86	25.60 117.21	3.27 17.19	0.53 141.81	0.55 3.46	3.70 Mag 348.00 Phase
0.224	−11.81	27.82	0.58 170.80	0.66 357.43	0.70 202.97	24.66 123.56	2.73 4.99	0.70 90.38	0.78 351.36	2.51 Mag 314.71 Phase
0.225	−11.47	29.06	0.03 129.97	0.64 8.77	0.81 198.90	26.10 119.54	2.71 11.53	0.62 83.35	0.88 341.58	2.85 Mag 303.11 Phase
0.248	−11.06	32.70	0.60 211.11	0.85 28.47	0.52 209.90	27.12 137.64	4.22 28.43	0.42 99.08	0.94 11.54	4.74 Mag 313.15 Phase
0.248	−11.00	30.99	0.73 111.48	0.87 5.04	0.70 217.12	26.31 142.69	3.08 14.10	0.39 110.39	0.79 17.76	4.65 Mag 317.58 Phase
0.299	−10.29	37.01	1.76 82.90	1.31 19.71	1.01 195.60	32.13 159.76	1.50 337.23	1.02 176.51	0.95 34.99	7.14 Mag 331.52 Phase
0.299	−10.25	39.00	0.06 131.47	1.15 22.82	0.79 159.93	33.09 147.96	3.18 331.15	1.15 154.07	0.88 9.70	7.12 Mag 307.96 Phase
0.348	−10.87	39.97	1.55 26.75	1.40 121.54	1.01 218.95	37.11 159.64	1.23 166.27	1.00 195.58	0.56 58.19	2.97 Mag 320.65 Phase
0.349	−10.85	39.04	1.85 31.07	0.64 8.77	1.46 212.31	35.70 152.19	1.17 156.84	0.37 204.71	0.93 43.26	3.72 Mag 315.37 Phase

*1/2 Peak-to-peak

Table 28. Fixed-System Loads Data for Side Force T30 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.107	−6.35	28.81	0.76 176.07	1.47 91.78	0.40 277.07	23.06 101.05	2.56 27.63	0.51 168.80	0.46 92.97	6.41 Mag 340.83 Phase
0.109	−6.29	28.92	0.61 188.17	1.48 94.38	0.30 276.78	23.37 108.75	2.45 39.63	0.49 188.25	0.40 104.88	6.22 Mag 3.61 Phase
0.126	−6.09	26.43	0.80 172.62	1.36 98.68	0.62 272.58	21.07 116.06	2.53 48.28	0.32 155.63	0.36 111.97	5.49 Mag 15.24 Phase
0.128	−5.66	25.84.	0.53 173.95	1.61 101.03	0.55 262.92	20.85 117.01	2.38 46.58	0.50 149.36	0.37 122.12	5.26 Mag 12.52 Phase
0.151	−4.93	24.60	0.75 171.84	1.56 93.21	0.63 273.07	20.29 138.76	2.70 85.92	0.85 243.96	0.34 173.99	2.97 Mag 51.33 Phase
0.151	−4.95	24.33	0.65 162.93	1.72 95.02	0.70 258.44	20.11 134.95	2.64 74.15	0.78 229.59	0.33 154.29	2.65 Mag 41.53 Phase
0.175	−5.06	27.03	0.77 177.11	1.47 92.48	0.59 281.33	21.21 145.89	2.90 96.60	1.15 252.83	0.39 213.28	5.59 Mag 72.00 Phase
0.176	−5.03	27.06	0.99 164.73	1.79 95.79	0.68 317.20	20.69 158.70	2.87 108.35	1.20 262.99	0.38 225.92	5.33 Mag 98.13 Phase
0.200	−5.31	26.88	1.33 203.64	1.52 94.78	0.56 298.56	22.67 148.78	3.33 95.14	1.01 303.18	0.39 281.11	3.44 Mag 81.05 Phase
0.224	−4.98	26.62	0.78 174.00	1.23 83.66	0.65 309.41	22.64 160.93	3.92 120.55	1.58 315.54	0.42 305.43	2.61 Mag 60.55 Phase
0.224	−4.91	27.24	0.94 227.74	0.95 86.90	0.51 305.44	23.18 160.91	4.22 118.32	1.61 315.60	0.62 297.52	2.86 Mag 64.16 Phase
0.249	−4.82	24.45	0.15 167.02	1.55 83.96	0.54 302.25	22.08 174.83	2.40 137.10	1.35 297.07	0.62 31.26	1.58 Mag 63.10 Phase
0.250	−4.73	24.12	0.43 247.01	1.59 88.11	0.80 274.64	21.60 174.19	2.85 146.68	1.57 296.56	0.64 36.67	2.38 Mag 68.53 Phase
0.298	−3.47	25.84	0.66 306.53	1.44 80.24	0.87 293.89	22.13 178.95	2.43 181.47	0.89 212.22	0.87 113.28	4.04 Mag 135.83 Phase
0.299	−3.34	26.55	0.14 271.15	1.23 67.51	0.86 282.90	21.99 172.48	3.04 179.76	1.03 216.53	0.84 113.99	4.64 Mag 120.60 Phase
0.347	−2.30	28.17	0.44 94.79	1.89 34.43	0.57 169.35	24.18 181.35	3.76 103.27	1.65 228.80	0.21 33.17	2.21 Mag 200.31 Phase
0.347	−2.09	30.65	0.61 130.53	2.12 25.41	1.54 172.46	26.14 183.10	4.09 111.77	1.62 234.91	0.50 356.47	2.29 Mag 198.21 Phase

*1/2 Peak-to-peak

Table 28. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−10.02	37.31	0.99 199.46	2.99 120.20	0.83 253.47	27.75 90.04	7.11 21.63	0.94 163.06	0.93 53.53	7.18 Mag 326.31 Phase
0.113	−9.64	36.68	0.83 193.68	2.06 119.41	0.60 244.87	27.50 88.03	7.13 17.37	0.86 150.61	0.91 42.79	7.01 Mag 318.77 Phase
0.125	−9.51	35.54	0.64 200.63	1.33 139.21	0.71 227.73	27.02 99.43	5.69 45.69	0.65 118.88	0.78 74.39	7.16 Mag 330.09 Phase
0.125	−9.07	35.44	0.50 205.44	1.34 139.49	0.70 229.33	27.19 103.37	6.05 48.94	0.80 144.28	0.74 75.27	6.71 Mag 336.27 Phase
0.149	−8.14	29.61	0.51 153.93	0.73 112.12	0.68 238.41	24.60 115.11	4.43 68.50	0.83 203.58	0.71 111.11	4.89 Mag 348.18 Phase
0.150	−8.08	29.91	0.46 179.14	0.67 120.94	0.52 231.13	25.18 117.60	4.50 66.80	0.82 203.09	0.59 118.21	4.75 Mag 353.66 Phase
0.174	−7.68	30.14	0.47 182.41	0.94 82.91	0.42 244.59	23.04 133.18	5.37 89.37	1.36 252.07	0.22 146.04	6.69 Mag 36.28 Phase
0.175	−7.89	30.06	0.36 174.67	0.85 88.57	0.56 238.48	23.22 130.43	5.42 85.28	1.44 248.14	0.37 175.28	6.82 Mag 26.17 Phase
0.198	−8.41	27.67	0.95 201.22	1.03 100.30	0.47 294.43	23.18 139.79	4.38 87.90	1.03 266.41	0.06 144.74	4.14 Mag 41.27 Phase
0.201	−8.37	28.00	0.92 158.47	0.98 98.27	0.44 270.86	23.18 137.33	5.12 90.72	1.06 269.93	0.15 204.84	3.39 Mag 25.51 Phase
0.224	−7.94	28.79	0.36 247.14	0.83 53.47	0.31 293.35	24.57 153.12	4.39 108.25	1.25 318.86	0.14 126.68	3.30 Mag 353.07 Phase
0.224	−7.62	29.88	0.51 193.86	0.81 48.13	0.57 256.09	24.21 145.56	5.83 103.95	1.28 310.16	0.26 185.40	3.35 Mag 339.88 Phase
0.250	−8.06	27.34	0.51 221.02	1.07 66.75	0.53 253.89	23.09 167.43	3.68 117.37	1.30 312.58	0.52 146.51	3.43 Mag 342.31 Phase
0.250	−7.52	28.59	0.66 178.74	0.90 48.08	0.34 233.51	23.35 157.38	5.03 106.30	1.40 301.35	0.52 120.75	3.59 Mag 332.84 Phase
0.297	−6.82	26.84	1.18 120.43	0.77 18.27	0.72 232.03	23.63 171.54	2.27 114.50	1.36 223.43	0.27 96.98	0.61 Mag 155.01 Phase
0.298	−6.16	27.00	1.42 54.54	0.96 42.98	0.33 235.03	23.63 160.29	3.26 93.39	1.47 211.44	0.39 88.59	0.82 Mag 126.41 Phase
0.347	−5.19	32.43	1.81 86.36	1.30 13.46	2.51 186.75	28.29 165.12	2.99 95.69	2.03 215.92	0.98 350.02	1.62 Mag 280.76 Phase
0.347	−4.96	34.45	0.97 37.32	1.83 27.97	2.02 172.21	29.98 168.34	3.63 131.34	1.65 217.34	0.74 357.63	1.29 Mag 282.67 Phase

*1/2 Peak-to-peak

Table 28. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.112	−14.59	42.76	0.19	0.86	0.07	39.17	2.13	0.92	0.72	5.64 Mag
			162.01	153.78	192.69	84.62	112.48	142.53	26.71	333.73 Phase
0.113	−14.59	43.06	0.26	0.71	0.16	38.24	2.04	0.94	0.70	6.11 Mag
			162.34	138.97	121.04	82.48	63.90	121.47	37.44	333.07 Phase
0.125	−12.93	41.65	0.28	0.78	0.49	35.99	3.50	0.73	0.40	4.93 Mag
			230.63	139.97	173.28	91.07	51.19	107.61	44.83	334.88 Phase
0.126	−13.37	41.58	0.18	0.86	0.61	36.25	3.37	0.80	0.54	4.20 Mag
			154.16	136.38	186.28	95.93	58.54	124.16	31.78	346.50 Phase
0.147	−12.59	37.62	0.15	1.01	0.70	32.01	4.93	0.82	0.51	4.02 Mag
			125.23	151.85	233.95	100.87	37.54	108.88	34.72	339.38 Phase
0.149	−12.79	38.42	0.21	0.87	0.62	32.36	5.34	0.96	0.49	3.57 Mag
			131.83	157.49	240.63	113.34	57.12	121.10	54.14	4.59 Phase
0.172	−12.22	36.49	0.25	0.47	0.72	30.64	5.44	1.08	0.39	4.62 Mag
			200.12	151.21	221.15	110.40	39.43	196.13	85.61	356.12 Phase
0.172	−11.75	35.84	0.49	0.37	0.67	30.24	5.84	0.97	0.37	4.48 Mag
			197.89	143.22	231.06	112.71	48.42	195.33	84.63	0.17 Phase
0.198	−12.04	34.91	0.73	0.37	0.45	28.89	6.13	1.12	0.18	4.64 Mag
			206.73	97.70	261.32	127.31	61.11	229.24	84.32	22.41 Phase
0.199	−12.04	37.09	0.40	0.28	0.43	29.93	6.41	1.06	0.22	4.21 Mag
			178.87	102.50	238.54	128.47	48.25	234.18	106.10	25.73 Phase
0.224	−11.83	36.04	0.40	0.38	0.29	31.68	4.05	0.47	0.37	3.03 Mag
			21.02	344.59	231.41	136.02	70.23	298.24	194.24	306.55 Phase
0.224	−11.76	36.60	0.54	0.36	0.32	32.14	4.19	0.46	0.45	2.95 Mag
			71.62	343.09	256.49	135.68	71.83	275.14	172.49	307.14 Phase
0.250	−12.06	35.76	0.78	0.87	0.49	30.72	3.10	0.51	0.45	4.84 Mag
			42.70	30.64	213.54	144.35	47.20	278.37	125.01	297.32 Phase
0.250	−11.49	33.90	0.64	0.51	0.65	30.17	1.90	0.60	0.29	4.59 Mag
			58.87	42.50	192.50	137.97	25.62	274.82	60.52	289.50 Phase
0.299	−11.05	37.84	0.27	0.77	1.04	33.96	2.55	1.19	0.53	4.42 Mag
			144.71	17.51	175.11	157.27	263.88	201.74	261.66	298.25 Phase
0.299	−10.15	37.02	1.21	0.39	1.15	33.66	1.02	1.04	0.21	4.30 Mag
			97.54	13.54	176.31	159.37	261.12	217.56	292.35	307.51 Phase
0.347	−9.67	43.36	1.32	1.38	2.09	38.57	3.13	1.21	1.50	1.84 Mag
			70.84	39.11	207.62	159.31	192.56	229.59	43.54	305.88 Phase
0.347	−9.71	44.42	1.81	0.97	2.41	38.70	3.46	1.33	1.54	2.58 Mag
			34.43	76.58	199.29	156.83	192.52	208.37	37.81	300.34 Phase

*1/2 Peak-to-peak

Table 29. Fixed-System Loads Data for Side Force T40 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	–3.86	23.27	1.09 185.45	1.42 128.42	0.21 248.85	19.87 84.29	1.91 295.77	1.02 107.48	0.87 357.80	4.73 Mag 274.35 Phase
0.104	–3.90	23.17	1.14 191.69	1.35 124.46	0.25 241.54	19.93 79.10	1.86 288.81	0.76 99.13	0.89 352.48	5.08 Mag 263.05 Phase
0.126	–3.77	19.84	1.13 182.19	1.55 107.43	0.37 277.16	15.99 98.98	1.88 302.02	0.99 121.49	0.78 39.75	2.53 Mag 307.62 Phase
0.128	–3.73	19.48	1.24 189.48	1.50 106.20	0.39 264.98	15.68 97.48	1.73 310.32	1.03 116.34	0.80 37.32	2.65 Mag 301.37 Phase
0.151	-4.93	17.48	1.34 176.12	1.62 104.96	0.61 259.26	13.36 105.95	2.05 316.01	0.54 150.68	0.38 64.88	1.29 Mag 134.48 Phase
0.152	–4.99	17.86	1.34 181.27	1.66 97.88	0.64 263.45	13.44 102.79	2.15 313.73	0.67 148.37	0.39 62.55	1.34 Mag 119.10 Phase
0.201	–4.41	17.11	1.48 203.27	1.71 108.53	0.67 278.19	13.85 151.14	0.78 69.66	0.38 174.46	0.38 25.74	1.93 Mag 113.25 Phase
0.202	–4.38	17.40	1.49 190.94	1.39 100.06	0.64 269.33	13.98 134.41	1.23 36.09	0.38 140.85	0.37 359.92	2.24 Mag 72.22 Phase
0.226	–4.11	16.85	2.01 177.40	1.25 76.81	0.73 265.34	14.85 141.68	0.27 167.48	0.10 13.76	0.62 23.41	0.35 Mag 73.97 Phase
0.226	–4.19	17.47	1.48 231.96	1.30 78.09	0.61 257.04	15.17 141.23	0.51 61.71	0.13 307.80	0.59 19.99	0.35 Mag 74.17 Phase
0.250	–4.08	17.88	1.11 172.09	1.43 81.21	0.88 280.09	15.71 170.73	1.77 206.04	0.75 282.60	0.49 51.91	0.18 Msg 323.34 Phase
0.250	–4.07	17.57	2.03 243.65	1.36 80.10	0.74 279.37	15.37 163.55	1.84 160.54	0.70 264.79	0.50 31.23	0.37 Mag 323.27 Phase
0.299	–2.93	22.15	1.98 184.74	0.91 59.66	0.48 275.72	19.35 172.66	1.12 120.79	1.09 212.83	0.93 98.19	2.39 Mag 104.41 Phase
0.299	–3.07	21.80	1.40 229.26	0.83 78.90	0.63 287.58	18.68 174.33	2.07 141.37	1.16 224.90	0.95 109.24	2.39 Mag 125.86 Phase
0.349	–0.79	21.88	1.63 240.69	1.98 8.76	0.58 183.84	20.48 178.75	1.16 141.97	1.19 237.60	0.26 140.15	1.69 Mag 132.98 Phase
0.349	–0.84	25.61	1.80 262.23	2.33 34.35	0.41 235.70	22.51 174.05	1.26 92.43	0.98 244.01	0.44 161.40	1.72 Mag 111.35 Phase

*1/2 Peak-to-peak

Table 29. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−7.52	31.51	0.91 208.66	1.25 143.30	0.82 239.42	24.91 75.32	5.14 3.34	0.81 90.32	1.22 2.33	6.19 Mag 265.27 Phase
0.105	−7.55	30.83	0.94 210.54	1.09 117.37	0.87 262.67	24.81 75.42	4.77 356.52	1.01 74.85	1.23 359.37	6.41 Mag 260.59 Phase
0.128	−6.73	27.48	0.89 192.62	1.62 136.41	0.91 242.58	20.73 80.34	4.20 15.48	1.02 92.24	1.18 2.39	5.84 Mag 280.57 Phase
0.129	−7.10	27.27	0.91 202.85	1.73 136.29	0.94 239.63	20.41 77.01	4.30 11.48	0.95 91.34	1.16 1.28	5.79 Mag 275.96 Phase
0.150	−7.83	21.14	1.09 218.89	1.77 128.81	1.09 249.90	17.33 94.18	3.16 43.17	0.90 132.13	0.69 34.59	2.86 Mag 283.24 Phase
0.150	−7.90	21.56	1.17 204.80	1.89 127.40	1.12 246.64	17.16 84.43	3.91 17.36	0.76 136.73	0.78 6.29	2.30 Mag 268.09 Phase
0.153	−8.18	22.67	1.15 187.59	0.93 120.95	0.73 231.90	19.56 95.99	2.34 40.25	0.78 144.23	0.88 25.07	3.14 Mag 292.03 Phase
0.155	−8.05	21.73	0.95 210.53	1.13 128.43	0.83 234.75	18.35 93.26	2.75 44.46	0.84 152.62	0.84 32.20	3.50 Mag 287.98 Phase
0.201	−7.07	20.95	0.92 177.18	1.05 88.74	0.55 263.69	16.49 114.20	2.91 42.84	0.67 169.01	0.87 40.75	3.20 Mag 358.16 Phase
0.203	−7.22	21.48	1.11 203.96	0.89 87.10	0.70 261.27	16.90 115.79	3.46 43.87	0.82 185.83	1.09 40.91	3.16 Mag 7.93 Phase
0.226	−6.50	20.05	1.15 193.03	1.16 68.54	0.68 253.76	17.37 126.35	1.43 61.94	0.36 122.10	0.56 29.65	2.57 Mag 305.85 Phase
0.226	−6.58	20.26	1.46 212.19	1.28 53.45	0.64 250.26	17.36 126.48	2.16 72.82	0.44 99.80	0.57 33.56	2.65 Mag 302.73 Phase
0.251	−6.45	21.13	1.10 196.94	1.19 64.92	0.60 239.60	17.77 140.98	2.25 117.29	0.34 249.49	0.45 48.15	4.18 Mag 292.16 Phase
0.251	−6.58	20.82	0.58 154.18	1.31 68.45	0.49 257.93	17.36 141.14	2.82 105.76	0.28 235.40	0.44 44.14	4.03 Mag 295.76 Phase
0.299	−5.76	25.60	1.32 127.66	1.26 10.17	0.73 227.81	21.39 150.43	3.04 64.09	0.56 213.28	0.75 43.37	1.48 Mag 17.75 Phase
0.299	−5.59	26.05	0.29 14.80	0.78 18.64	0.65 210.21	21.89 151.04	4.21 83.47	0.82 228.22	0.59 53.55	1.56 Mag 18.84 Phase
0.347	−3.95	33.40	0.45 92.08	0.84 12.59	1.59 185.50	27.56 159.42	5.13 94.76	0.85 204.71	0.80 321.54	2.15 Mag 308.55 Phase
0.349	−3.96	31.43	0.50 350.08	0.39 44.44	1.08 183.02	27.24 156.34	4.19 81.20	1.12 204.43	0.54 292.28	2.18 Mag 288.52 Phase

*1/2 Peak-to-peak

Table 29. Concluded

(c) $T = 1.25T_{lg}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−11.80	37.93	0.34 179.91	1.20 129.80	0.68 209.05	35.54 60.26	1.30 221.29	0.59 95.82	1.27 336.18	3.49 Mag 259.26 Phase
0.107	−12.05	37.67	0.30 171.48	1.25 127.00	0.55 212.10	35.28 63.11	1.10 262.47	0.70 95.90	1.26 340.30	3.37 Mag 265.68 Phase
0.127	−11.15	31.96	0.62 202.35	0.99 108.23	0.74 221.28	28.54 75.16	2.74 339.10	0.86 86.67	1.22 343.54	3.39 Mag 250.55 Phase
0.127	−11.41	32.60	0.48 220.09	1.10 109.39	0.61 233.55	28.55 73.36	2.68 315.44	0.90 83.89	1.30 346.09	3.18 Mag 239.01 Phase
0.147	−11.95	29.53	0.75 201.53	0.98 128.67	1.08 248.27	24.12 87.93	4.09 353.18	1.18 99.78	1.31 342.73	2.44 Mag 225.22 Phase
0.149	−11.82	30.17	0.56 198.87	1.05 128.28	1.17 244.37	25.20 80.95	4.28 1.19	1.15 92.69	1.19 333.08	2.80 Mag 224.58 Phase
0.201	−10.61	26.10	1.11 219.40	0.66 104.44	1.00 244.26	22.80 112.30	3.30 40.77	0.97 182.96	0.87 350.89	3.90 Mag 349.70 Phase
0.202	−10.89	26.73	1.13 219.44	0.74 89.53	0.78 223.55	23.27 105.98	2.55 15.96	0.91 168.50	0.79 325.87	3.92 Mag 335.61 Phase
0.226	−10.27	28.67	0.65 190.03	0.91 50.36	0.83 231.69	23.18 118.80	4.21 16.27	0.76 120.17	1.01 337.80	2.64 Mag 264.86 Phase
0.226	−10.15	27.84	0.56 211.53	1.01 50.24	0.68 204.32	23.46 120.22	2.94 4.06	0.49 113.11	0.97 327.62	2.51 Mag 260.87 Phase
0.251	−9.99	30.28	0.36 249.95	0.58 58.33	0.48 200.33	24.51 131.26	3.60 39.47	0.20 263.35	0.90 340.85	5.52 Mag 271.56 Phase
0.251	−10.09	29.22	0.20 1.25	0.84 45.71	0.28 217.42	24.60 132.97	2.56 32.04	0.16 249.89	1.08 339.99	5.39 Mag 274.76 Phase
0.299	−9.71	35.01	0.15 210.48	0.81 13.46	1.03 213.73	30.81 144.76	2.90 14.68	0.69 152.91	0.86 328.92	3.87 Mag 313.88 Phase
0.300	−9.68	33.41	0.72 189.96	0.48 11.29	0.55 196.89	30.47 141.91	2.31 36.52	0.42 165.64	0.81 322.27	3.68 Mag 310.32 Phase
0.348	−7.79	37.72	1.45 25.85	0.62 289.50	1.34 228.46	33.60 148.68	2.85 112.22	0.79 221.85	0.53 44.06	3.17 Mag 270.16 Phase
0.348	−7.86	36.75	2.14 55.37	1.59 121.85	1.33 218.32	33.58 139.56	2.10 93.59	1.01 193.89	0.84 32.25	2.64 Mag 256.29 Phase

*1/2 Peak-to-peak

Table 30. Fixed-System Loads Data for Side Force T50 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−6.37	23.83	1.19 185.16	1.63 97.77	0.46 276.38	19.34 96.50	2.37 317.90	0.46 102.45	0.53 22.71	1.67 Mag 203.48 Phase
0.107	−6.44	24.01	1.20 184.21	1.73 99.50	0.59 280.79	19.07 94.95	2.66 313.77	0.49 102.42	0.56 34.05	1.76 Mag 200.34 Phase
0.127	−6.11	21.22	1.01 182.95	1.86 89.25	0.65 281.85	16.74 100.41	2.17 335.12	0.72 122.05	0.59 47.71	0.80 Mag 226.25 Phase
0.130	−6.03	21.67	1.05 176.40	1.86 88.60	0.64 278.42	17.09 96.81	2.29 330.57	0.71 118.71	0.48 36.37	0.94 Mag 215.11 Phase
0.152	−6.03	19.88	1.07 160.84	1.90 93.30	0.72 288.11	16.12 118.77	1.53 8.51	0.53 169.05	0.62 52.55	0.87 Mag 155.84 Phase
0.153	−5.88	19.37	1.07 165.72	1.73 94.30	0.69 275.84	15.83 114.34	1.57 10.38	0.47 159.16	0.68 54.20	0.86 Mag 142.01 Phase
0.175	−3.79	18.44	1.25 175.98	2.01 87.88	0.61 283.71	15.17 131.45	0.96 39.08	0.44 232.02	0.35 116.24	1.51 Mag 43.97 Phase
0.175	−5.37	18.48	0.94 186.82	2.12 86.29	0.64 280.00	15.20 130.29	0.77 34.91	0.50 225.01	0.24 102.74	1.40 Mag 44.61 Phase
0.201	−5.33	20.79	1.35 195.47	2.18 87.48	0.68 292.19	17.83 147.36	1.02 111.33	0.15 84.62	0.28 340.38	1.92 Mag 143.72 Phase
0.201	−5.53	20.76	1.05 169.31	2.11 84.01	0.62 279.49	17.21 145.87	1.46 107.15	0.17 82.36	0.12 305.63	1.98 Mag 128.67 Phase
0.225	−5.11	21.73	1.11 150.33	1.13 54.53	0.55 292.05	19.01 151.23	1.90 115.59	0.47 339.60	0.46 303.84	1.77 Mag 164.68 Phase
0.225	−5.24	22.44	1.00 147.80	1.20 64.41	0.56 294.57	19.30 155.58	2.42 114.00	0.43 319.54	0.53 303.39	1.68 Mag 178.09 Phase
0.250	−4.54	23.03	0.88 181.84	1.17 56.27	0.41 325.88	19.69 169.44	3.40 141.92	0.80 296.32	0.35 341.36	1.30 Mag 143.23 Phase
0.251	−4.56	21.58	0.59 166.19	1.20 62.21	0.62 320.17	18.24 166.63	3.01 146.26	0.89 262.53	0.20 331.77	1.40 Mag 138.98 Phase
0.298	−3.29	26.61	0.93 225.66	1.09 35.50	0.53 347.02	22.25 180.03	4.69 151.05	1.14 195.33	0.41 91.12	1.69 Mag 115.96 Phase
0.298	−3.34	28.38	0.71 216.49	1.10 41.24	0.55 325.94	22.73 179.79	5.64 156.41	1.34 192.19	0.46 108.28	1.89 Mag 103.29 Phase
0.347	−1.84	30.26	0.41 178.99	1.90 20.27	0.83 172.52	26.16 193.69	3.24 153.40	2.05 208.51	0.35 183.43	1.63 Mag 227.64 Phase
0.347	−1.83	29.76	0.45 102.04	1.49 22.38	0.51 145.22	26.49 187.39	1.78 141.44	1.94 200.00	0.59 155.07	2.69 Mag 201.94 Phase

*1/2 Peak-to-peak

Table 30. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−10.22	29.64	0.79 195.80	1.54 102.80	0.71 266.45	25.02 84.05	4.62 4.36	0.98 103.01	1.08 44.59	3.05 Mag 192.42 Phase
0.106	−10.15	29.43	0.81 187.47	1.31 97.92	0.56 243.16	24.28 82.81	4.73 353.12	1.11 96.25	1.05 50.83	3.10 Mag 191.05 Phase
0.125	−9.48	25.67	0.83 204.03	1.49 109.15	0.55 245.69	20.92 92.44	4.36 10.88	1.07 128.01	0.77 47.90	2.54 Mag 218.30 Phase
0.125	−9.43	25.76	0.84 192.55	1.63 104.28	0.56 242.50	20.48 83.97	4.89 4.41	1.03 114.49	0.77 28.01	2.76 Mag 197.76 Phase
0.150	−8.79	21.05	1.00 193.04	1.21 88.78	1.20 247.49	16.50 94.19	5.59 34.94	1.00 143.06	0.70 59.04	1.59 Mag 227.87 Phase
0.151	−9.04	21.69	0.79 191.04	1.16 82.85	0.97 247.04	16.95 91.90	6.06 27.01	0.99 138.43	0.61 53.38	1.54 Mag 220.07 Phase
0.176	−7.84	21.70	0.78 182.05	1.38 84.20	0.94 251.88	15.84 109.75	6.27 58.84	0.60 207.48	0.29 62.80	3.07 Mag 320.53 Phase
0.176	−7.64	21.80	1.02 167.90	1.35 75.99	0.76 260.14	16.37 112.84	5.20 58.39	0.49 223.69	0.36 64.45	3.19 Mag 327.88 Phase
0.200	−8.12	21.63	1.14 187.47	1.43 90.37	0.80 269.36	17.36 125.41	5.11 70.94	0.37 207.36	0.41 9.37	0.71 Mag 310.42 Phase
0.200	−8.21	21.14	1.42 190.83	1.39 77.99	0.79 276.47	16.97 125.85	4.98 77.45	0.41 223.47	0.49 8.50	0.82 Mag 320.01 Phase
0.224	−7.76	23.41	1.28 147.52	1.31 54.66	0.58 276.80	18.79 135.46	4.82 77.65	0.32 308.15	0.30 355.10	2.47 Mag 217.22 Phase
0.224	−7.71	23.80	1.36 131.02	1.27 46.11	0.35 292.64	19.48 139.39	4.75 85.61	0.20 309.60	0.38 12.10	2.80 Mag 220.96 Phase
0.251	−7.59	25.17	0.82 178.40	1.27 32.03	0.55 281.52	20.17 151.61	4.51 90.90	0.48 309.84	0.34 174.96	3.89 Mag 245.87 Phase
0.251	−7.20	24.48	0.17 265.15	1.14 54.36	0.59 276.73	19.44 154.77	5.09 101.39	0.57 307.83	0.48 173.34	3.76 Mag 249.17 Phase
0.298	−6.09	29.01	1.30 152.78	1.78 5.63	0.14 165.63	24.69 164.54	4.45 114.95	1.01 209.38	0.60 213.48	1.78 Mag 320.13 Phase
0.299	−5.88	27.48	1.39 139.67	1.51 8.75	0.44 199.95	23.22 165.27	4.38 123.54	0.83 216.83	0.33 198.97	1.29 Mag 336.74 Phase
0.347	−4.45	35.48	0.87 66.31	1.43 17.82	1.99 160.52	30.70 168.00	4.05 128.23	2.08 200.08	0.47 1.43	2.33 Mag 269.45 Phase
0.347	−4.65	36.45	0.64 37.56	0.89 11.35	1.47 173.90	31.32 168.41	2.89 185.87	1.93 203.37	0.51 0.28	3.04 Mag 263.83 Phase

*1/2 Peak-to-peak

Table 30. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−14.62	39.46	0.39 98.52	0.90 119.70	0.50 175.98	36.54 72.07	1.54 182.89	1.17 96.51	0.86 346.86	4.46 Mag 136.47 Phase
0.126	−13.77	35.22	0.31 113.81	1.01 107.58	0.64 217.65	31.41 93.02	1.34 215.55	1.18 125.20	0.75 20.03	4.96 Mag 164.22 Phase
0.127	−13.79	35.61	0.33 152.56	0.97 104.21	0.77 202.29	31.15 78.88	0.90 251.71	1.23 107.98	0.75 2.13	4.91 Mag 143.02 Phase
0.152	−13.04	29.25	0.60 126.66	0.94 104.23	0.82 227.35	25.25 98.45	1.05 323.43	1.37 134.22	0.66 327.11	3.38 Mag 148.01 Phase
0.153	−13.28	30.12	0.54 123.71	0.82 100.51	0.75 228.60	26.03 93.10	1.24 312.94	1.27 126.85	0.66 318.05	3.73 Mag 136.97 Phase
0.175	−11.33	28.76	0.32 120.08	0.92 104.23	0.83 226.34	25.12 111.26	2.55 13.02	1.04 199.43	0.36 331.17	1.81 Mag 264.19 Phase
0.175	−11.56	27.60	0.30 179.01	0.93 101.99	0.63 209.06	24.56 106.22	2.34 12.87	0.92 173.18	0.23 324.70	1.50 Mag 256.09 Phase
0.201	−11.91	27.59	0.93 118.96	1.09 68.58	0.39 201.00	23.96 116.34	2.41 9.48	0.96 192.07	0.09 291.03	1.77 Mag 245.02 Phase
0.224	−11.54	28.56	0.67 224.20	1.05 27.61	0.49 218.74	25.80 129.19	2.23 61.67	0.25 314.56	0.57 283.07	3.29 Mag 199.97 Phase
0.225	−11.87	29.86	1.09 146.79	0.60 32.09	0.30 217.69	26.86 124.72	2.99 61.73	0.30 276.61	0.41 277.48	2.94 Mag 187.01 Phase
0.250	−11.29	30.77	1.30 74.97	0.73 359.70	0.41 154.55	27.16 135.55	2.11 8.98	0.11 354.55	0.71 290.70	5.05 Mag 222.16 Phase
0.299	−10.07	37.41	1.31 106.25	0.17 24.01	0.71 157.28	33.40 162.57	0.53 249.90	1.24 203.96	0.59 273.98	5.54 Mag 326.11 Phase
0.300	−10.38	38.57	1.01 51.14	0.95 13.62	1.38 164.62	33.10 161.84	1.22 191.65	1.15 192.07	0.65 273.52	5.67 Mag 323.63 Phase
0.346	−9.11	43.86	1.49 46.45	1.50 341.20	1.91 212.18	40.08 164.72	2.74 170.88	0.58 236.53	0.60 64.78	2.58 Mag 280.44 Phase
0.347	−9.07	43.65	1.73 75.49	1.04 56.35	1.63 197.46	39.72 162.83	2.40 185.05	0.75 206.18	0.63 83.63	2.80 Mag 267.10 Phase

*1/2 Peak-to-peak

Table 31. Fixed-System Loads Data for Side Force T60 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−6.60	24.34	2.11 228.64	1.41 135.79	0.37 50.16	19.62 89.18	3.96 322.38	0.99 108.00	0.95 35.41	6.28 Mag 302.09 Phase
0.110	−6.29	25.33	2.12 228.46	1.74 128.71	0.22 47.08	19.73 89.83	4.32 319.66	1.18 128.23	1.00 45.16	6.24 Mag 308.34 Phase
0.128	−5.47	20.84	2.27 237.37	0.99 124.28	0.29 118.46	16.75 108.99	3.03 346.78	0.89 125.94	0.76 64.20	4.68 Mag 334.57 Phase
0.131	−5.37	22.48	2.16 234.88	1.30 109.35	0.11 130.45	18.38 115.49	2.59 351.88	0.83 125.72	0.80 59.51	4.00 Mag 342.26 Phase
0.143	−5.68	21.20	0.92 178.22	0.88 84.00	0.45 218.93	19.09 121.93	0.99 346.90	0.19 109.57	0.59 94.76	3.08 Mag 335.72 Phase
0.145	−5.51	22.34	0.98 165.59	1.08 87.82	0.51 244.48	19.89 129.17	1.05 6.20	0.35 145.54	0.59 117.55	2.85 Mag 356.97 Phase
0.169	−6.19	19.87	1.03 175.24	1.12 81.36	0.63 232.66	16.65 140.02	1.00 354.98	0.09 188.18	0.36 144.42	4.23 Mag 40.29 Phase
0.169	−5.83	20.10	0.98 178.51	1.31 80.45	0.57 235.07	16.65 140.03	1.31 350.71	0.07 241.50	0.44 131.14	4.27 Mag 35.51 Phase
0.195	−5.67	20.30	1.37 171.50	1.63 90.00	0.48 241.69	17.57 153.38	0.90 351.39	0.13 23.57	0.11 112.34	2.13 Mag 69.68 Phase
0.195	−5.97	19.35	1.26 175.02	1.62 90.96	0.61 228.79	17.07 156.83	0.52 337.99	0.20 12.98	0.06 119.73	2.28 Mag 74.50 Phase
0.220	−5.34	20.38	1.23 199.77	1.50 73.25	0.62 262.92	18.32 161.00	1.24 104.17	0.45 345.74	0.14 13.45	1.90 Mag 34.77 Phase
0.220	−5.66	20.34	1.23 170.81	1.18 70.53	0.57 260.92	18.65 159.52	0.68 87.25	0.32 17.70	0.28 49.90	1.74 Mag 34.05 Phase
0.246	−4.54	21.45	0.34 241.59	1.49 72.15	0.60 257.84	19.53 170.69	0.97 180.46	0.67 305.25	0.29 53.69	2.15 Mag 16.50 Phase
0.246	−4.41	20.29	0.80 180.36	1.33 77.10	0.61 277.50	18.34 177.21	0.99 185.79	0.32 303.59	0.30 57.68	2.12 Mag 31.53 Phase
0.295	−3.33	22.30	0.60 168.79	1.07 39.43	0.56 231.52	21.37 183.56	0.78 277.85	1.32 194.06	0.42 79.49	1.16 Mag 127.93 Phase
0.295	−2.97	23.02	1.09 131.20	1.33 39.38	0.22 271.80	21.69 183.10	0.74 232.77	1.05 194.13	0.48 53.18	0.92 Mag 123.39 Phase

*1/2 Peak-to-peak

Table 31. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	−9.89	29.04	1.72 245.24	1.34 131.31	0.96 239.80	24.53 93.06	2.79 28.72	1.00 122.46	0.68 92.90	7.94 Mag 299.44 Phase
0.110	−9.44	30.03	1.82 241.18	1.20 135.68	1.05 234.78	24.49 86.85	3.53 25.56	1.13 115.07	0.88 65.10	8.15 Mag 288.22 Phase
0.132	−8.70	26.32	1.36 240.42	1.80 146.62	1.21 227.12	20.26 81.36	4.23 358.79	0.85 115.45	0.94 62.83	6.86 Mag 288.93 Phase
0.144	−8.93	26.21	0.64 190.09	0.86 113.53	0.88 236.54	21.73 104.92	3.35 62.14	1.03 156.83	0.88 95.21	5.20 Mag 326.95 Phase
0.154	−7.78	21.63	2.03 237.68	0.54 127.60	1.03 225.79	17.45 92.96	3.27 15.56	1.02 152.11	0.77 77.29	4.75 Mag 308.46 Phase
0.154	−8.00	22.17	1.87 236.02	0.71 132.69	1.04 225.03	17.76 98.17	3.58 18.04	1.06 156.55	0.76 87.42	4.65 Mag 316.92 Phase
0.170	−8.62	25.44	0.83 182.37	0.61 34.64	0.52 211.68	20.97 118.19	3.05 42.26	0.25 176.73	0.61 65.01	4.55 Mag 3.03 Phase
0.170	−8.64	24.78	0.76 211.25	0.53 46.04	0.40 230.44	21.50 121.05	2.23 45.05	0.27 243.81	0.69 58.64	4.59 Mag 5.94 Phase
0.180	−8.57	21.93	2.04 238.21	0.84 79.02	0.63 217.93	15.98 116.44	3.68 21.20	0.86 176.06	0.46 98.42	5.95 Mag 6.82 Phase
0.180	−8.49	21.88	2.34 236.56	0.78 77.49	0.50 195.52	15.84 108.05	3.36 350.56	0.74 165.35	0.45 94.13	6.07 Mag 353.03 Phase
0.201	−7.57	21.91	2.82 249.74	2.40 111.31	1.43 264.79	16.77 129.57	3.09 78.00	0.61 214.71	0.22 23.37	3.82 Mag 20.27 Phase
0.202	−7.28	21.67	2.49 246.26	2.54 108.11	1.39 258.87	16.55 120.31	4.11 78.68	0.76 201.61	0.21 4.32	3.98 Mag 8.67 Phase
0.226	−6.94	21.37	2.76 246.51	2.16 86.12	0.86 227.56	17.13 131.02	1.09 82.77	0.31 112.51	0.27 309.09	2.90 Mag 317.44 Phase
0.227	−7.32	21.44	2.66 238.59	2.18 83.12	0.66 246.23	17.30 134.87	1.18 78.54	0.28 134.75	0.24 335.04	2.74 Mag 311.68 Phase
0.249	−6.60	22.78	2.79 240.18	1.40 71.34	0.59 240.38	17.97 139.88	1.78 100.72	0.59 281.56	0.17 306.79	4.52 Mag 286.53 Phase
0.296	−6.13	26.94	0.75 253.83	1.31 348.95	0.87 192.22	24.49 158.94	1.61 255.07	0.71 162.80	0.25 319.38	2.84 Mag 331.71 Phase
0.346	−5.24	32.19	1.05 59.71	1.02 26.64	1.13 179.88	29.13 168.85	2.05 140.64	1.31 203.93	0.94 19.23	2.58 Mag 12.71 Phase
0.346	−5.23	32.53	1.13 76.10	1.42 31.62	1.12 160.71	28.61 172.21	0.84 192.75	1.18 223.10	0.77 13.10	3.54 Mag 24.38 Phase

*1/2 Peak-to-peak

Table 31. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	−13.97	37.88	0.69 263.41	0.97 138.75	1.24 214.88	35.31 81.04	3.22 145.34	0.99 143.15	0.60 21.38	4.56 Mag 291.97 Phase
0.110	−14.28	38.83	0.59 262.95	1.03 146.90	0.98 218.81	36.05 85.10	3.38 154.22	0.93 148.77	0.66 35.18	4.55 Mag 301.51 Phase
0.128	−12.92	33.41	1.17 263.97	1.37 116.14	1.88 222.96	29.81 85.04	2.41 57.54	1.24 121.14	0.54 279.00	4.43 Mag 289.42 Phase
0.131	−12.75	33.21	1.22 262.85	1.13 110.66	2.04 215.27	29.37 81.25	2.16 51.12	1.15 112.24	0.73 269.36	4.50 Mag 286.60 Phase
0.144	−12.89	30.84	0.29 203.96	0.54 140.48	0.85 215.30	28.90 97.13	1.29 36.36	0.97 116.62	0.37 317.45	3.71 Mag 304.20 Phase
0.145	−12.59	31.03	0.31 215.79	0.58 143.68	0.89 208.47	28.99 95.87	1.21 52.05	1.03 114.74	0.35 293.97	3.99 Mag 304.63 Phase
0.170	−12.16	32.28	0.30 188.56	0.31 33.93	0.88 210.28	29.89 110.05	2.53 50.58	0.68 154.35	0.34 310.69	2.99 Mag 313.91 Phase
0.171	−12.35	32.09	0.38 161.82	0.30 33.82	0.88 212.83	29.94 102.94	1.85 28.62	0.67 150.80	0.17 322.51	2.97 Mag 301.58 Phase
0.194	−12.47	30.86	0.63 186.31	0.40 74.00	0.81 215.64	28.30 126.17	2.78 64.86	0.61 180.39	0.50 337.05	3.43 Mag 359.62 Phase
0.197	−12.89	30.77	0.55 194.06	0.74 136.32	0.77 214.57	28.62 118.03	2.20 58.93	0.68 211.64	0.22 344.81	3.59 Mag 345.09 Phase
0.221	−11.76	31.55	0.76 128.99	0.68 1.55	0.78 194.42	28.97 125.78	1.70 357.64	0.63 58.13	0.77 332.75	2.64 Mag 280.55 Phase
0.221	−11.14	30.52	0.23 147.27	0.66 11.45	0.73 220.83	28.30 125.86	1.20 358.54	0.58 56.34	0.80 333.58	3.02 Mag 282.11 Phase
0.245	−11.00	31.90	0.91 47.57	0.52 21.80	1.04 180.50	28.31 135.42	1.44 0.25	0.60 69.37	0.87 330.35	5.08 Mag 280.29 Phase
0.247	−11.35	31.83	0.56 36.80	0.81 357.41	0.88 189.82	28.09 133.26	2.30 330.39	0.72 75.02	0.91 331.43	5.11 Mag 273.94 Phase
0.295	−10.45	36.94	1.12 35.88	0.55 336.34	1.17 185.15	33.32 157.27	2.62 282.60	1.44 173.76	0.69 350.70	6.03 Mag 321.98 Phase
0.297	−10.79	36.85	1.12 60.50	0.76 26.69	1.33 196.48	33.11 152.05	2.22 273.50	1.42 166.57	0.80 352.29	6.15 Mag 316.33 Phase

*1/2 Peak-to-peak

Table 32. Fixed-System Loads Data for Side Force T70 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	−6.45	30.20	1.18 182.09	0.85 75.65	0.61 289.99	24.68 113.01	3.90 36.63	0.35 127.19	0.73 86.29	4.62 Mag 356.79 Phase
0.103	−6.20	30.21	1.16 183.89	1.07 71.62	0.56 288.17	24.64 111.27	4.00 29.09	0.39 141.76	0.71 77.67	4.56 Mag 353.78 Phase
0.128	−5.65	25.93	0.77 179.74	1.39 81.73	0.42 265.23	21.76 119.47	1.55 30.98	0.42 167.82	0.55 83.79	4.98 Mag 9.37 Phase
0.129	−5.64	26.40	0.96 162.14	1.33 81.12	0.39 273.48	22.38 128.07	1.51 17.43	0.54 166.47	0.49 105.27	4.91 Mag 21.62 Phase
0.153	−4.92	25.04	1.00 165.92	0.91 77.26	0.50 268.62	22.40 141.87	1.03 65.31	0.29 248.67	0.45 115.88	2.58 Mag 48.75 Phase
0.153	−4.72	25.61	1.22 169.63	1.30 80.15	0.48 275.49	22.51 144.27	1.41 52.92	0.33 238.30	0.44 123.48	2.24 Mag 52.48 Phase
0.180	−7.51	25.37	1.38 164.57	1.48 71.58	0.54 261.16	20.93 151.41	1.83 77.74	0.38 264.38	0.31 168.47	4.17 Mag 66.16 Phase
0.181	−7.56	24.17	1.36 184.32	1.03 74.78	0.60 270.22	20.46 154.98	1.75 100.70	0.26 288.23	0.22 163.80	4.31 Mag 73.36 Phase
0.203	−4.96	24.60	1.17 201.56	1.09 72.09	0.77 292.51	22.17 168.86	2.45 126.41	0.38 37.92	0.15 278.96	3.27 Mag 75.37 Phase
0.203	−4.81	25.12	1.08 172.14	1.40 79.63	0.85 289.30	21.90 174.72	2.22 127.84	0.25 353.62	0.22 251.76	3.22 Mag 87.52 Phase
0.224	−5.77	26.92	1.56 190.55	1.84 79.12	0.57 290.37	23.39 196.57	2.42 129.17	0.22 300.88	0.09 337.55	2.04 Mag 60.92 Phase
0.225	−6.05	26.03	1.35 173.64	1.87 74.07	0.56 287.02	22.75 188.41	1.93 131.02	0.30 345.14	0.23 312.74	2.15 Mag 43.23 Phase
0.249	−4.90	26.07	0.73 157.49	1.46 58.75	0.65 287.82	21.61 190.60	2.81 150.31	0.74 263.74	0.47 95.75	4.51 Mag 26.65 Phase
0.249	−4.31	27.35	0.76 164.95	1.85 62.25	0.98 290.28	22.53 182.87	2.73 129.71	0.97 261.69	0.55 89.74	4.33 Mag 18.72 Phase
0.299	−3.95	28.59	0.56 170.09	1.53 40.69	1.29 7.53	22.31 195.11	5.02 163.69	1.37 196.18	0.95 115.95	4.93 Mag 21.66 Phase
0.300	−3.73	27.39	1.34 133.98	2.11 41.99	0.95 34.39	22.26 200.13	3.89 167.21	1.53 204.96	0.98 113.32	5.03 Mag 35.45 Phase
0.346	−1.76	29.93	0.15 346.89	3.08 18.47	0.87 134.48	23.51 204.44	1.64 225.29	2.08 224.34	0.81 95.57	5.74 Mag 47.56 Phase
0.346	−1.56	27.65	0.47 116.54	2.21 16.95	1.45 147.11	22.81 209.53	2.97 147.76	2.07 224.76	0.75 107.29	5.10 Mag 55.12 Phase

*1/2 Peak-to-peak

Table 32. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−10.22	34.01	0.82 198.03	0.73 102.43	0.61 262.76	28.14 106.27	6.03 29.17	0.95 128.44	0.97 69.05	3.41 Mag 339.82 Phase
0.103	−10.12	34.38	0.84 189.99	0.76 122.09	0.66 258.65	28.53 107.12	5.91 32.53	0.98 122.71	1.08 71.55	3.48 Mag 341.70 Phase
0.126	−9.01	31.00	0.81 193.37	0.75 111.80	0.70 259.91	24.93 119.69	6.97 48.07	0.75 144.00	1.11 84.42	3.62 Mag 336.79 Phase
0.127	−8.50	31.98	0.77 184.43	0.82 110.80	0.79 260.09	25.13 118.66	7.26 54.93	0.78 146.63	1.08 75.76	3.83 Mag 338.02 Phase
0.150	−8.17	26.34	1.03 192.43	0.86 66.87	0.66 261.03	21.56 126.98	5.67 70.37	0.67 176.82	0.63 107.98	2.11 Mag 336.93 Phase
0.150	−8.22	25.35	0.73 189.60	0.80 65.45	0.70 258.15	21.02 120.44	4.79 55.62	0.68 169.38	0.74 94.52	2.03 Mag 328.31 Phase
0.152	−8.03	27.47	0.77 155.60	0.58 58.48	0.70 257.31	22.15 125.77	5.81 55.12	0.62 173.48	0.70 104.57	2.75 Mag 342.58 Phase
0.153	−7.72	27.13	0.59 190.81	0.62 53.56	0.81 259.19	22.57 129.33	5.59 72.50	0.58 183.66	0.78 105.76	3.47 Mag 338.00 Phase
0.171	−7.81	25.32	0.92 188.24	1.09 54.71	0.47 257.78	19.69 133.02	4.80 91.66	0.68 226.95	0.53 97.97	5.39 Mag 14.40 Phase
0.174	−8.32	25.83	0.75 174.58	1.17 64.02	0.56 260.84	19.85 140.86	5.21 95.32	0.72 233.20	0.51 116.21	5.73 Mag 21.55 Phase
0.177	−10.15	26.82	0.74 182.65	1.04 59.86	0.50 254.94	21.18 144.39	4.90 95.50	0.58 223.06	0.63 123.89	5.69 Mag 28.99 Phase
0.179	−9.96	26.67	1.17 184.90	1.03 58.28	0.43 250.88	20.65 140.44	5.32 89.95	0.66 230.04	0.51 120.62	5.65 Mag 20.32 Phase
0.195	−7.64	20.89	0.91 175.41	1.58 57.58	0.62 272.86	16.12 137.83	2.07 75.67	0.49 221.88	0.53 82.05	4.87 Mag 28.75 Phase
0.199	−8.19	23.36	1.08 178.92	1.01 52.16	0.27 257.99	20.29 149.28	3.41 105.87	0.18 244.89	0.29 117.47	2.95 Mag 16.50 Phase
0.203	−7.78	26.92	0.81 183.71	1.05 45.65	0.55 275.61	23.44 154.28	3.48 101.10	0.51 231.34	0.28 108.91	3.71 Mag 10.81 Phase
0.205	−7.71	25.87	0.33 201.22	0.95 52.05	0.48 270.86	22.48 150.44	3.59 101.15	0.24 219.53	0.36 110.92	3.77 Mag 358.93 Phase
0.224	−8.53	29.54	1.57 198.15	3.03 92.57	0.51 290.85	23.36 161.31	4.86 108.88	0.90 270.66	0.61 110.54	4.18 Mag 338.78 Phase
0.225	−7.85	28.68	0.93 227.15	1.85 82.19	0.55 303.07	22.76 162.02	5.27 100.38	0.27 250.95	0.79 136.27	4.08 Mag 359.80 Phase
0.225	−8.06	27.48	0.88 187.57	1.19 53.26	0.55 306.08	21.99 162.40	4.89 100.65	0.15 234.98	0.71 123.00	4.63 Mag 358.61 Phase
0.247	−7.75	24.12	0.58 284.32	1.90 39.00	0.56 311.60	18.16 166.30	4.28 115.72	0.54 227.26	0.47 111.54	5.55 Mag 334.50 Phase
0.248	−6.71	29.12	0.95 124.64	1.49 36.34	0.41 307.89	21.64 172.66	4.50 108.77	0.68 267.60	0.65 135.25	6.98 Mag 336.38 Phase
0.248	−7.16	28.48	0.79 162.65	1.39 34.27	0.54 303.75	21.50 165.43	4.86 104.61	0.57 254.04	0.57 121.74	6.56 Mag 317.58 Phase
0.297	−7.19	27.12	0.79 68.15	2.32 18.58	0.24 89.40	22.55 187.24	1.52 130.21	1.53 204.00	0.54 87.91	5.48 Mag 349.31 Phase
0.300	−6.95	28.99	0.92 153.85	1.97 14.63	0.94 151.23	23.76 187.62	3.05 107.93	1.44 212.57	0.23 141.13	6.04 Mag 354.63 Phase

*1/2 Peak-to-peak

Table 32. Continued

(b) Concluded

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.301	−6.46	29.96	0.72 110.02	2.15 22.90	0.16 226.88	24.13 188.22	2.94 133.64	1.45 218.93	0.54 143.17	6.13 Mag 358.52 Phase
0.346	−4.50	32.95	1.80 63.84	2.05 7.31	2.59 186.42	26.07 186.86	3.34 113.25	2.10 216.41	1.42 41.14	6.27 Mag 8.05 Phase
0.347	−5.18	32.63	0.73 7.05	2.08 54.31	2.37 183.44	27.80 182.42	2.60 91.05	2.80 200.90	1.36 41.00	6.16 Mag 352.57 Phase
0.347	−6.17	33.75	0.87 66.49	2.14 16.60	2.42 181.59	27.64 189.75	1.33 143.92	2.30 212.48	1.15 57.09	6.84 Mag 18.97 Phase

*1/2 Peak-to-peak

Table 32. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	−14.11	43.92	0.30 134.36	0.26 178.46	0.34 273.99	41.25 103.83	2.49 238.18	0.93 146.95	0.52 81.60	3.97 Mag 338.63 Phase
0.106	−14.39	44.38	0.31 124.96	0.45 157.13	0.35 261.19	41.94 95.78	1.86 227.84	1.00 123.31	0.64 70.55	4.22 Mag 324.38 Phase
0.129	−12.79	37.38	0.44 158.55	0.36 99.43	0.69 232.00	34.49 107.37	2.30 7.97	0.81 134.91	0.54 17.18	1.64 Mag 303.58 Phase
0.129	−13.12	37.22	0.43 152.24	0.38 124.81	0.71 234.35	34.25 112.58	2.30 14.69	0.77 144.33	0.71 31.85	1.50 Mag 295.07 Phase
0.142	−11.82	33.16	0.22 153.15	0.26 70.32	0.71 265.83	30.90 114.98	1.71 30.81	0.89 123.87	0.65 52.03	1.86 Mag 301.24 Phase
0.152	−12.03	33.27	0.51 137.33	0.12 359.73	0.94 237.79	30.40 116.42	2.61 39.48	0.70 158.18	0.48 36.07	1.39 Mag 303.05 Phase
0.177	−13.80	33.68	0.47 125.02	0.51 24.20	0.74 214.98	29.31 122.09	4.21 47.59	0.53 186.11	0.49 68.60	2.94 Mag 320.89 Phase
0.179	−13.67	32.38	0.37 177.82	0.59 18.08	0.63 229.49	29.40 128.37	2.50 48.29	0.62 200.55	0.32 78.71	3.34 Mag 342.71 Phase
0.203	−11.86	32.92	0.52 137.57	0.64 43.14	0.55 263.33	30.37 139.79	2.28 82.79	0.62 198.16	0.51 73.61	4.18 Mag 339.61 Phase
0.203	−11.82	32.65	0.32 198.70	0.86 34.24	0.45 257.86	30.04 144.25	2.41 89.80	0.64 223.26	0.39 75.81	4.28 Mag 352.74 Phase
0.224	−11.35	34.60	0.69 195.83	0.61 25.45	0.50 214.52	29.95 149.14	3.42 51.71	0.06 110.32	0.35 104.44	5.09 Mag 327.32 Phase
0.224	−11.91	34.53	1.16 148.41	1.04 18.12	0.21 210.25	29.28 146.79	3.52 38.31	0.26 165.22	0.48 124.09	4.98 Mag 320.28 Phase
0.224	−11.39	34.44	0.56 170.18	0.53 66.62	0.47 199.76	28.71 148.31	3.45 35.49	0.23 214.08	0.48 85.34	5.50 Mag 321.57 Phase
0.225	−11.32	35.54	0.23 183.93	0.83 16.01	0.56 230.89	28.77 146.17	4.15 22.01	0.32 164.40	0.69 70.97	5.41 Mag 318.66 Phase
0.247	−11.32	37.63	0.39 36.98	1.04 7.73	0.61 211.69	29.46 157.02	4.32 32.57	0.23 215.70	0.69 38.28	7.98 Mag 313.60 Phase
0.248	−11.32	37.10	1.02 124.13	1.16 9.62	0.58 185.71	29.95 155.16	3.27 35.30	0.32 208.59	0.62 48.95	7.99 Mag 310.91 Phase
0.301	−10.68	39.55	0.84 128.63	1.17 19.40	1.32 174.20	32.48 179.16	1.49 7.52	1.35 192.54	0.57 82.90	10.36 Mag 339.68 Phase
0.301	−10.56	38.75	0.95 88.29	1.25 21.68	1.25 192.28	32.74 180.84	0.65 341.93	1.23 198.99	0.67 64.06	9.59 Mag 340.63 Phase
0.347	−8.85	36.18	2.22 90.98	0.79 147.41	1.49 229.17	31.80 179.36	2.09 208.36	1.01 195.41	1.54 81.97	5.21 Mag 325.11 Phase
0.347	−8.89	39.03	1.83 45.98	0.82 12.69	1.79 217.02	35.65 180.63	2.04 330.37	0.99 220.18	1.45 83.93	5.79 Mag 340.08 Phase

*1/2 Peak-to-peak

Table 33. Fixed-System Loads Data for Side Force T75 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−8.69	28.13	0.73 178.80	1.18 71.51	0.56 293.03	24.12 123.42	2.59 60.07	0.07 184.33	0.33 131.16	5.30 Mag 1.87 Phase
0.103	−8.58	27.79	0.86 175.72	1.04 74.47	0.68 294.49	23.43 123.04	2.91 62.81	0.03 163.32	0.43 129.66	5.08 Mag 4.74 Phase
0.119	−6.30	24.96	0.90 182.44	1.33 77.16	0.65 283.79	21.25 133.90	2.04 75.11	0.09 73.57	0.44 181.01	5.23 Mag 18.15 Phase
0.122	−6.31	24.78	0.85 171.07	1.38 78.94	0.63 279.43	21.09 133.19	1.84 73.07	0.02 355.57	0.39 172.95	5.45 Mag 13.47 Phase
0.149	−4.80	22.11	0.86 167.91	1.41 79.63	0.60 268.56	19.31 149.03	1.41 100.08	0.32 331.72	0.16 209.32	2.51 Mag 59.77 Phase
0.150	−5.17	21.79	0.84 165.68	1.27 88.70	0.55 292.26	18.94 165.54	1.46 129.95	0.46 351.54	0.22 242.15	3.06 Mag 90.48 Phase
0.153	−5.31	22.10	0.75 154.66	1.29 78.49	0.62 285.55	19.13 146.64	1.71 97.15	0.38 310.41	0.14 196.49	2.59 Mag 56.41 Phase
0.153	−4.83	22.72	1.04 153.79	1.49 80.71	0.62 284.09	19.13 151.19	1.99 94.54	0.36 324.44	0.19 209.18	2.68 Mag 65.15 Phase
0.176	−4.83	21.15	1.02 169.35	1.28 78.66	0.76 294.15	17.69 170.45	2.03 137.67	0.55 3.08	0.33 248.43	3.76 Mag 91.13 Phase
0.176	−4.86	21.17	0.89 165.97	1.66 78.05	0.64 298.54	17.45 168.42	1.98 127.61	0.50 344.43	0.33 228.65	3.87 Mag 83.40 Phase
0.202	−5.15	17.51	0.84 184.18	1.46 77.93	0.85 281.17	14.79 163.31	2.14 152.43	1.00 21.63	0.34 290.33	1.97 Mag 102.19 Phase
0.203	−5.45	18.07	1.27 184.55	1.27 69.39	0.76 281.45	15.03 156.37	2.66 146.85	0.86 17.21	0.32 281.78	2.05 Mag 92.39 Phase
0.224	−5.32	17.16	1.05 179.66	1.11 54.04	0.83 311.09	14.52 177.17	3.32 167.44	0.55 23.91	0.28 327.12	1.64 Mag 67.11 Phase
0.225	−5.35	17.66	0.23 7.72	1.34 59.06	0.85 301.48	14.89 170.42	3.05 169.80	0.53 15.17	0.28 298.20	1.74 Mag 55.95 Phase
0.249	−5.22	18.80	0.57 74.30	1.21 45.83	0.82 311.81	13.86 196.94	3.69 184.08	0.61 353.24	0.47 8.36	2.70 Mag 50.43 Phase
0.249	−5.11	18.29	0.24 244.99	1.71 60.66	0.69 304.82	14.01 191.10	3.35 181.86	0.62 343.76	0.49 351.97	2.36 Mag 31.12 Phase
0.301	−4.06	20.79	0.75 138.69	1.30 54.41	1.07 328.01	14.88 190.18	5.50 191.36	0.94 168.16	0.39 120.92	3.09 Mag 47.86 Phase
0.301	−3.82	20.76	0.42 201.34	1.13 62.70	1.42 347.50	14.96 193.62	5.53 201.44	1.07 173.35	0.47 103.11	3.09 Mag 50.69 Phase
0.345	−2.75	18.09	0.97 251.57	1.54 32.71	0.70 52.55	14.55 191.35	2.22 219.63	1.58 228.12	0.74 128.34	4.74 Mag 103.44 Phase
0.345	−2.68	20.22	0.49 27.36	1.93 13.17	0.66 105.02	15.42 196.33	2.44 245.60	1.81 241.82	0.69 117.80	4.63 Mag 109.62 Phase

*1/2 Peak-to-peak

Table 33. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−12.18	34.98	0.79 194.28	0.92 138.67	0.48 272.81	30.11 116.73	4.16 74.11	0.86 130.69	1.24 105.39	1.86 Mag 301.75 Phase
0.109	−12.25	34.06	0.72 189.03	0.37 117.85	0.65 268.01	28.57 109.37	5.64 65.53	0.88 133.93	1.28 89.13	2.06 Mag 278.57 Phase
0.120	−9.69	31.73	0.72 179.37	0.54 338.62	1.04 256.90	26.19 114.38	6.44 63.50	0.77 114.97	1.31 86.66	3.51 Mag 301.94 Phase
0.123	−10.08	31.61	0.73 196.47	0.47 8.29	1.15 266.83	25.59 125.41	6.95 76.71	0.58 139.78	1.24 107.86	3.56 Mag 320.56 Phase
0.149	−8.01	26.88	0.44 167.45	0.63 31.13	0.79 261.90	22.99 131.98	4.96 88.49	0.55 194.09	0.87 142.10	2.83 Mag 327.89 Phase
0.150	−7.97	26.60	0.64 155.27	0.63 41.17	0.70 263.97	22.50 130.24	5.01 90.78	0.48 193.55	0.79 138.17	2.99 Mag 325.80 Phase
0.152	−8.41	25.47	0.64 188.30	0.63 39.25	0.69 262.39	21.29 125.28	5.02 86.57	0.44 187.36	0.88 124.54	2.47 Mag 300.59 Phase
0.153	−8.38	24.70	0.31 205.39	0.61 41.40	0.69 278.88	21.18 123.72	4.58 83.67	0.48 182.41	0.84 118.82	2.14 Mag 298.23 Phase
0.176	−7.02	24.23	0.85 147.19	0.96 54.37	0.55 293.60	20.04 152.99	4.43 123.86	0.22 281.96	0.48 157.69	6.02 Mag 31.33 Phase
0.177	−7.38	24.55	0.54 174.40	0.91 52.50	0.54 289.72	20.42 147.78	4.66 112.33	0.35 240.10	0.53 149.14	5.96 Mag 14.62 Phase
0.201	−7.83	22.08	1.14 153.92	1.13 58.10	0.71 289.27	18.64 147.67	4.09 136.92	0.24 6.62	0.12 203.93	3.19 Mag 355.66 Phase
0.202	-8.26	21.50	0.80 234.99	1.02 48.77	0.69 281.63	18.41 139.43	3.69 126.78	0.26 340.69	0.10 169.11	3.03 Mag 339.76 Phase
0.225	−8.60	25.80	0.68 153.10	1.45 20.64	0.75 290.87	19.30 147.93	5.30 138.84	0.50 357.51	0.15 204.81	5.27 Mag 331.55 Phase
0.225	−7.91	25.27	1.24 208.34	1.46 25.42	0.87 293.40	19.27 150.18	5.22 139.74	0.42 354.58	0.34 189.56	5.30 Mag 332.82 Phase
0.250	−7.85	25.45	0.62 258.55	1.03 26.43	0.47 312.87	17.64 168.07	5.35 161.85	0.60 307.09	0.49 238.05	5.73 Mag 333.19 Phase
0.251	−7.66	24.83	1.20 180.98	1.42 33.57	0.66 327.86	17.93 163.95	5.35 160.02	0.53 318.45	0.41 224.13	5.66 Mag 325.08 Phase
0.300	−6.87	29.28	0.51 319.41	1.48 15.06	0.29 44.92	21.22 169.20	5.28 193.77	1.19 194.69	0.29 259.75	4.70 Mag 340.13 Phase
0.301	−6.99	27.57	1.05 135.62	1.36 18.16	0.41 52.32	20.48 171.82	5.29 167.84	1.18 191.63	0.40 273.01	4.66 Mag 344.68 Phase
0.345	−4.86	28.04	0.18 251.06	1.56 340.77	1.67 137.86	24.29 170.75	2.11 274.63	1.45 225.33	0.83 77.74	2.71 Mag 43.65 Phase
0.346	−5.40	31.03	1.64 59.51	1.55 42.56	1.57 141.86	25.98 176.86	1.62 193.52	1.94 225.55	1.08 74.36	2.41 Mag 49.47 Phase

*1/2 Peak-to-peak

Table 33. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	−17.19	44.64	0.23 154.88	0.10 181.20	0.35 297.13	43.04 102.28	0.89 134.96	1.21 134.19	0.57 119.46	2.99 Mag 268.52 Phase
0.107	−17.16	46.18	0.31 130.08	0.11 79.81	0.37 294.37	44.40 110.49	0.64 119.45	1.15 141.43	0.63 118.93	3.63 Mag 275.14 Phase
0.120	−14.29	38.84	0.13 171.73	0.45 33.81	0.60 292.31	35.94 108.15	3.33 78.76	0.87 133.54	0.48 115.05	2.85 Mag 235.76 Phase
0.122	−14.88	40.16	0.44 162.94	0.70 15.82	0.32 288.24	37.05 113.08	3.56 75.52	1.00 133.99	0.67 147.93	2.47 Mag 260.15 Phase
0.148	−11.94	33.68	0.17 153.11	0.37 344.06	0.68 274.41	30.47 126.10	3.57 77.90	0.60 165.64	0.44 92.45	2.92 Mag 273.23 Phase
0.149	−11.82	34.10	0.36 127.41	0.27 355.08	0.71 278.81	30.37 121.47	4.47 72.15	0.55 164.71	0.45 81.50	2.49 Mag 276.97 Phase
0.150	−13.10	35.80	0.24 140.61	0.21 319.75	0.66 267.05	32.40 118.50	3.93 66.73	0.67 161.55	0.48 88.97	2.61 Mag 244.33 Phase
0.150	−12.27	35.86	0.21 157.01	0.21 322.56	0.70 271.44	32.43 125.75	3.72 74.49	0.44 174.72	0.51 102.18	2.69 Mag 254.85 Phase
0.150	−13.08	32.83	0.09 184.74	0.16 273.52	0.44 277.15	30.67 120.08	2.66 72.79	0.66 170.00	0.33 94.15	2.31 Mag 258.65 Phase
0.151	−12.24	32.38	0.26 133.24	0.19 304.80	0.62 265.11	29.84 121.42	2.85 77.62	0.58 176.81	0.49 83.91	2.98 Mag 253.75 Phase
0.174	−11.61	32.82	0.18 250.88	0.43 16.25	0.43 251.59	29.60 128.36	3.37 78.36	0.77 235.10	0.19 134.22	5.04 Mag 321.53 Phase
0.175	−11.84	33.40	0.46 99.12	0.32 13.21	0.48 230.01	30.00 131.56	3.12 78.06	0.87 231.61	0.13 202.72	5.06 Mag 326.89 Phase
0.200	−11.47	29.21	0.24 131.31	0.59 39.34	0.31 246.01	26.25 138.00	2.80 91.11	0.53 236.66	0.08 126.99	4.84 Mag 332.76 Phase
0.200	−11.74	29.55	0.53 165.77	0.75 18.89	0.40 245.69	27.07 135.69	2.71 107.74	0.38 237.14	0.02 268.59	4.26 Mag 327.60 Phase
0.224	−11.57	29.90	0.51 26.44	0.83 14.80	0.50 236.98	26.13 136.53	1.92 107.38	0.18 29.07	0.19 186.30	5.28 Mag 299.44 Phase
0.225	−12.11	29.34	0.76 128.10	0.94 6.49	0.17 222.00	26.12 145.96	1.86 117.59	0.27 15.19	0.26 175.61	5.03 Mag 314.08 Phase
0.250	−11.69	30.46	0.23 123.88	0.66 0.26	0.18 199.79	24.10 155.76	2.84 121.21	0.29 324.27	0.47 217.53	8.05 Mag 311.23 Phase
0.251	−11.73	32.17	0.67 124.18	0.90 12.05	0.18 143.10	25.39 149.22	3.33 133.40	0.22 287.66	0.36 196.07	8.23 Mag 299.92 Phase
0.300	−11.62	37.07	0.84 61.50	0.70 353.72	0.98 129.60	30.07 167.51	1.91 209.02	1.19 201.28	0.40 17.65	7.99 Mag 333.65 Phase
0.300	−10.95	37.30	0.73 41.43	1.01 15.93	0.95 135.31	29.62 163.25	1.99 219.93	1.25 195.07	0.19 328.86	8.46 Mag 324.35 Phase
0.346	−9.85	38.03	1.08 348.02	0.56 35.40	1.62 180.40	34.54 163.40	2.54 246.31	1.06 215.98	1.45 63.63	1.75 Mag 309.44 Phase
0.347	−8.94	38.84	0.82 71.48	0.87 93.39	1.49 163.03	34.91 163.99	2.37 244.15	0.89 228.18	1.11 82.81	1.51 Mag 284.96 Phase

*1/2 Peak-to-peak

Table 34. Fixed-System Loads Data for Side Force T80 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.096	−6.02	22.77	1.06 244.28	0.56 13.84	0.64 254.89	20.31 114.80	1.00 246.42	0.54 119.93	0.83 56.45	5.16 Mag 338.55 Phase
0.099	−5.97	22.82	0.93 236.37	0.59 12.36	0.65 248.05	20.26 102.26	0.74 240.90	0.56 99.53	0.84 32.43	5.37 Mag 313.54 Phase
0.132	−5.99	17.84	0.95 251.10	0.48 10.18	0.68 281.68	15.85 123.01	1.42 257.87	0.37 110.88	0.67 67.61	3.64 Mag 346.82 Phase
0.132	−5.82	17.84	0.98 254.34	0.47 10.89	0.78 279.74	16.04 128.76	1.12 255.78	0.48 120.65	0.75 83.03	3.78 Mag 352.59 Phase
0.155	−5.58	18.85	1.24 180.86	1.06 84.73	0.56 237.28	15.34 146.27	1.52 352.20	0.53 169.33	0.58 130.87	3.24 Mag 55.27 Phase
0.155	−5.56	18.87	1.16 184.82	1.15 85.20	0.66 230.12	15.15 143.60	1.86 347.54	0.41 182.84	0.53 125.67	3.10 Mag 46.31 Phase
0.181	−5.95	15.03	1.53 172.01	1.75 84.44	0.63 234.95	11.00 165.50	2.04 342.23	0.26 145.80	0.16 133.42	3.81 Mag 66.62 Phase
0.181	−5.88	16.37	1.65 182.46	1.92 89.34	0.63 245.51	11.69 169.70	2.19 3.31	0.40 207.57	0.21 181.77	3.92 Mag 77.86 Phase
0.203	−5.90	15.64	1.03 178.37	1.89 88.98	0.64 251.54	12.94 178.44	0.95 9.70	0.11 55.78	0.35 35.04	1.93 Mag 94.41 Phase
0.203	−5.87	15.74	1.49 163.55	1.91 92.86	0.70 248.54	13.11 180.79	0.87 355.07	0.10 52.98	0.30 28.48	2.12 Mag 105.20 Phase
0.229	−5.14	15.62	1.31 150.83	1.37 62.27	0.61 256.14	13.85 189.93	0.63 330.26	0.17 103.32	0.40 46.61	1.20 Mag 337.46 Phase
0.229	−5.12	15.10	1.24 195.97	1.57 63.03	0.65 259.66	13.68 187.44	0.39 239.32	0.19 13.64	0.55 41.72	1.21 Mag 334.29 Phase
0.252	−4.98	17.64	2.02 190.24	2.03 77.41	0.58 291.68	14.81 208.52	0.97 222.11	0.26 285.16	0.49 60.87	1.27 Mag 35.98 Phase
0.253	−4.71	17.10	1.53 145.76	1.41 64.17	0.63 269.42	14.89 206.96	0.99 263.99	0.19 286.03	0.55 54.98	1.03 Mag 3.23 Phase
0.300	−3.62	20.65	1.13 188.30	1.77 50.50	0.49 271.10	18.50 196.72	1.65 213.15	1.66 177.82	0.50 91.24	2.13 Mag 74.13 Phase
0.302	−3.42	21.04	1.10 153.28	1.87 50.46	0.28 247.57	19.25 201.08	1.46 210.42	1.44 190.60	0.43 109.27	2.29 Mag 82.51 Phase
0.350	−2.59	24.26	0.68 154.48	2.40 78.20	0.40 53.11	21.31 202.50	1.86 188.36	1.12 235.20	0.35 156.76	2.99 Mag 122.70 Phase
0.350	−2.38	23.48	1.42 205.92	2.20 57.04	0.20 174.69	21.14 204.76	1.78 195.70	1.16 234.65	0.23 56.41	3.12 Mag 121.56 Phase

*1/2 Peak-to-peak

Table 34. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	−9.18	33.14	2.00 248.42	0.24 237.74	3.03 262.28	24.20 93.55	9.35 44.95	0.98 99.16	1.46 343.24	3.62 Mag 290.77 Phase
0.105	−8.99	30.89	1.88 255.19	0.63 301.19	2.98 275.63	24.00 105.67	7.22 68.54	0.96 108.76	1.36 358.26	3.84 Mag 316.69 Phase
0.130	−8.76	25.09	1.50 249.19	0.45 314.20	2.04 281.51	19.57 101.40	6.38 58.60	0.81 127.70	1.20 18.59	4.32 Mag 300.74 Phase
0.132	−8.83	25.49	1.43 253.99	0.32 21.81	2.06 283.61	19.61 99.81	6.47 58.95	0.64 110.33	1.23 15.47	4.59 Mag 296.89 Phase
0.153	−8.54	19.66	0.88 252.83	1.14 330.14	1.46 280.72	17.57 115.37	2.68 126.59	0.87 163.68	1.07 54.31	2.80 Mag 318.16 Phase
0.153	−8.58	19.57	0.89 253.28	1.11 327.71	1.40 291.06	17.81 119.98	1.70 138.09	0.95 155.75	1.22 50.08	2.72 Mag 330.77 Phase
0.153	−8.44	23.32	1.05 186.25	1.01 79.27	0.84 244.57	19.34 118.77	2.81 55.43	1.05 176.68	0.63 98.13	3.12 Mag 342.85 Phase
0.180	−8.66	21.81	1.65 172.42	2.42 102.10	0.89 219.41	16.27 120.39	1.70 51.96	0.68 234.00	0.74 47.11	5.29 Mag 2.65 Phase
0.181	−8.79	21.35	1.52 193.84	1.37 95.51	0.75 221.50	15.99 124.70	2.56 57.79	0.62 203.57	0.62 58.86	5.33 Mag 12.62 Phase
0.201	−8.45	20.14	1.62 181.79	2.28 103.91	0.82 240.10	16.63 137.08	1.96 65.12	0.10 218.95	0.66 67.09	2.46 Mag 355.07 Phase
0.202	−6.94	19.04	1.43 231.08	1.02 342.74	1.64 300.95	14.96 130.05	4.58 138.68	1.04 151.34	1.36 47.51	2.55 Mag 330.90 Phase
0.203	−6.93	18.96	0.91 212.62	0.98 345.00	1.49 297.96	15.13 132.50	4.86 145.26	0.75 169.85	1.18 57.36	2.33 Mag 338.88 Phase
0.228	−7.84	21.70	0.97 167.60	1.33 37.82	0.43 237.88	17.73 147.68	0.62 64.90	0.26 133.46	0.54 66.36	5.10 Mag 304.84 Phase
0.229	−7.98	22.04	1.25 183.60	1.53 39.08	0.42 247.20	17.41 148.92	0.36 2.92	0.30 104.51	0.45 76.67	5.22 Mag 305.00 Phase
0.251	−6.13	25.48	1.03 207.01	2.08 352.40	1.45 327.80	16.25 166.70	7.13 155.93	0.61 200.20	0.92 71.98	4.99 Mag 317.81 Phase
0.251	−6.20	24.02	1.19 262.48	1.42 354.29	1.33 320.05	15.35 166.09	6.25 160.38	0.54 205.33	0.85 72.97	5.07 Mag 310.03 Phase
0.252	−7.24	21.85	0.51 73.32	1.24 60.21	0.62 255.15	17.53 158.19	2.20 111.59	0.36 211.30	0.45 108.38	5.19 Mag 299.91 Phase
0.300	−5.35	30.61	2.40 222.01	1.98 340.81	1.57 1.67	22.53 179.00	6.69 159.53	1.11 188.12	1.08 95.74	5.22 Mag 344.92 Phase
0.301	−6.22	25.13	0.64 115.79	1.88 19.01	0.85 169.74	22.82 184.69	0.35 67.26	1.13 193.69	0.28 9.84	3.59 Mag 351.49 Phase
0.348	−5.68	32.51	1.33 247.78	4.58 348.77	1.06 354.60	26.47 186.80	4.21 196.05	0.33 224.43	0.69 107.14	2.66 Mag 30.46 Phase
0.349	−5.38	35.11	1.49 279.85	5.38 344.94	1.50 344.00	25.99 172.64	6.40 162.72	0.50 192.07	0.73 114.26	3.42 Mag 16.40 Phase
0.349	−4.72	30.79	0.45 101.98	2.06 41.80	1.39 174.49	27.03 184.26	0.90 239.37	1.44 228.24	0.59 26.97	1.30 Mag 40.53 Phase

*1/2 Peak-to-peak

Table 34. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.100	−13.42	41.19	1.87 255.89	1.35 279.38	2.16 288.83	37.09 91.69	4.60 8.59	0.96 82.41	1.09 11.72	2.77 Mag 244.51 Phase
0.100	−13.21	41.87	2.21 256.53	1.31 283.11	2.23 283.31	37.38 90.12	4.84 9.75	0.96 77.60	0.80 3.73	2.73 Mag 241.93 Phase
0.131	−12.73	36.52.	1.78 255.72	1.23 300.48	2.95 297.88	28.66 102.76	8.12 46.27	1.22 78.70	1.67 2.12	3.07 Mag 242.64 Phase
0.133	−12.82	35.80	1.65 248.11	1.46 313.35	2.92 293.96	28.63 104.23	7.71 34.60	1.19 78.49	1.70 2.63	3.01 Mag 239.10 Phase
0.152	−12.56	32.15	0.59 170.95	0.39 114.36	1.01 247.71	27.01 113.54	3.61 8.33	0.76 149.71	0.77 30.29	2.43 Mag 263.87 Phase
0.153	−12.73	31.99	0.65 187.79	0.13 99.57	0.93 262.22	26.93 121.59	4.12 24.56	0.71 153.29	0.80 51.12	2.24 Mag 279.67 Phase
0.179	−12.14	29.04	0.91 170.38	0.52 100.86	0.84 213.14	23.85 112.45	4.26 5.50	0.40 163.01	0.68 28.87	5.17 Mag 312.41 Phase
0.181	−12.30	29.62	0.86 183.49	0.40 75.48	0.82 224.39	24.35 117.52	4.01 14.13	0.50 188.23	0.77 42.62	5.06 Mag 319.22 Phase
0.201	−12.17	30.49	1.31 201.58	0.56 65.91	0.62 252.64	24.85 135.12	2.88 19.62	0.51 175.84	0.66 48.21	4.45 Mag 309.81 Phase
0.202	−12.22	31.37	1.37 170.33	0.79 100.42	0.63 237.97	25.42 134.96	3.77 31.35	0.58 208.84	0.49 53.88	4.19 Mag 306.98 Phase
0.228	−11.72	31.42	0.80 190.08	0.91 353.94	0.71 207.38	25.71 133.90	2.11 3.60	0.71 91.55	0.85 5.38	6.89 Mag 271.96 Phase
0.228	−11.81	31.53	1.20 198.10	0.97 11.45	0.57 201.73	25.55 137.47	2.21 348.63	0.61 94.85	0.80 27.53	6.67 Mag 278.03 Phase
0.251	−11.11	32.35	0.92 209.78	0.63 26.46	0.73 214.37	25.42 157.49	2.63 352.51	0.52 154.91	0.90 22.49	7.60 Mag 297.87 Phase
0.251	−11.02	32.14	0.77 167.70	0.98 22.15	0.39 206.59	24.97 152.58	2.92 19.91	0.46 140.89	0.81 25.63	7.57 Mag 291.49 Phase
0.301	−10.46	35.04	0.86 247.67	0.89 39.44	1.19 192.59	31.63 170.83	1.73 304.59	1.20 189.44	0.82 36.27	6.29 Mag 322.94 Phase
0.303	−10.52	36.36	0.01 39.26	1.12 67.30	1.04 194.59	32.52 168.92	2.03 282.21	1.43 194.55	0.71 23.70	5.52 Mag 320.98 Phase
0.350	−8.83	39.88	1.46 81.12	2.26 57.26	1.43 212.94	34.84 167.92	3.43 246.57	0.52 261.70	0.83 46.49	2.23 Mag 298.91 Phase

*1/2 Peak-to-peak

Table 35. Fixed-System Loads Data for Side Force T85 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.088	−6.57	26.22	1.22 182.06	1.09 88.51	0.48 260.89	21.20 107.20	2.18 351.32	0.48 144.69	0.89 79.41	5.26 Mag 2.42 Phase
0.089	−6.77	26.47	1.24 178.20	1.23 84.59	0.47 253.86	21.48 102.47	2.11 341.13	0.43 140.56	0.89 73.13	5.20 Mag 351.49 Phase
0.120	−6.95	21.21	0.99 184.55	1.55 79.63	0.50 241.87	16.81 116.21	1.30 336.63	0.55 152.78	0.68 88.63	4.28 Mag 16.60 Phase
0.121	−6.46	20.72	0.93 187.20	1.57 82.07	0.39 242.55	16.52 119.68	1.13 334.23	0.57 146.80	0.73 89.93	4.38 Mag 21.96 Phase
0.146	−8.46	17.45	0.94 160.01	1.49 81.44	0.60 241.26	14.12 136.59	0.87 334.23	0.73 159.59	0.62 81.09	3.08 Mag 38.75 Phase
0.149	−6.60	17.27	1.14 175.43	1.43 87.91	0.64 245.41	13.93 144.90	0.83 344.69	0.61 174.67	0.62 110.70	3.02 Mag 54.98 Phase
0.177	−5.08	16.69	1.52 184.48	1.72 77.08	0.62 266.09	10.98 150.09	0.93 354.95	0.58 176.69	0.52 92.39	5.15 Mag 84.10 Phase
0.178	−5.15	16.72	1.28 181.47	1.64 75.39	0.72 252.89	11.03 143.39	1.07 334.05	0.59 162.23	0.39 78.48	5.16 Mag 69.86 Phase
0.197	−5.76	17.24	1.23 170.68	1.76 82.59	0.64 258.05	13.94 172.60	0.73 351.41	0.30 176.92	0.20 69.49	4.06 Mag 89.34 Phase
0.200	−5.70	16.88	1.16 165.48	1.67 84.73	0.75 253.70	13.79 173.52	0.60 355.36	0.31 170.77	0.28 53.29	4.05 Mag 90.06 Phase
0.226	−5.46	15.97	1.32 183.01	2.02 74.49	0.84 284.84	13.66 183.58	0.67 158.58	0.10 243.20	0.54 35.34	2.85 Mag 83.38 Phase
0.227	−5.43	15.99	1.32 164.70	1.89 72.18	0.84 276.86	13.78 185.22	0.50 230.86	0.13 139.38	0.40 45.05	2.49 Mag 89.85 Phase
0.251	−4.67	17.89	0.73 149.89	1.65 68.88	0.93 275.97	15.11 200.33	1.37 205.04	0.49 255.69	0.92 57.09	2.65 Mag 49.73 Phase
0.252	−4.69	18.47	1.56 160.98	1.70 64.13	0.76 296.40	15.52 198.77	1.32 195.69	0.49 248.18	0.71 50.76	2.23 Mag 47.03 Phase
0.299	−3.60	23.88	0.21 51.45	1.72 56.06	0.54 7.78	18.54 210.68	4.33 197.28	1.62 203.19	0.52 114.98	2.93 Mag 100.83 Phase
0.300	−3.55	25.12	1.14 186.92	1.79 62.67	0.95 356.07	19.26 209.72	4.99 183.64	1.37 192.09	0.76 96.05	2.92 Mag 88.09 Phase
0.350	−1.84	27.14	1.06 232.13	1.16 51.91	1.10 157.70	23.03 215.41	3.81 173.90	1.83 227.93	0.07 308.66	2.10 Mag 106.58 Phase
0.350	−1.71	26.75	0.79 186.50	3.05 4.93	1.07 119.98	22.47 216.70	4.29 178.39	1.57 232.61	0.34 201.98	2.32 Mag 125.53 Phase

*1/2 Peak-to-peak

Table 35. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.092	−9.71	34.58	0.93 197.89	1.07 113.02	0.89 241.53	27.36 100.57	5.52 19.18	1.30 126.94	1.12 65.94	5.72 Mag 338.80 Phase
0.120	−9.62	29.82	0.82 183.48	1.37 110.55	0.86 235.37	23.00 99.94	4.82 33.44	0.87 141.78	1.16 73.17	5.03 Mag 334.21 Phase
0.120	−9.80	29.59	1.01 183.15	1.52 110.12	0.74 229.41	22.53 103.97	4.84 24.09	0.86 155.54	1.29 82.84	4.63 Mag 345.06 Phase
0.147	−9.65	24.42	0.90 174.18	0.84 72.18	0.92 228.04	18.42 113.07	3.60 57.20	0.91 163.54	0.80 86.86	4.43 Mag 5.54 Phase
0.149	−9.53	24.14	0.89 177.41	0.76 72.45	0.83 219.83	18.98 108.34	3.08 52.65	0.88 167.48	0.77 79.00	4.06 Mag 355.04 Phase
0.177	−7.52	22.25	0.98 185.03	0.99 45.07	0.81 237.90	15.56 123.18	3.03 57.29	0.81 175.41	0.75 57.13	5.38 Mag 48.56 Phase
0.177	−7.24	21.78	0.94 172.39	0.87 47.88	0.75 230.38	15.98 118.19	2.55 33.86	0.84 172.43	0.70 45.44	4.94 Mag 36.38 Phase
0.199	−8.33	20.90	0.94 213.17	1.18 63.64	0.61 247.39	16.91 137.68	2.44 71.14	0.57 184.15	0.75 63.43	3.75 Mag 44.90 Phase
0.200	−8.39	20.96	1.01 181.15	1.27 65.93	0.74 242.02	16.38 134.49	2.34 70.12	0.66 177.64	0.70 59.21	4.25 Mag 28.64 Phase
0.227	−7.95	19.45	0.94 168.85	1.39 48.34	0.53 247.03	16.46 147.06	2.53 83.67	0.42 184.46	0.74 62.76	3.05 Mag 6.96 Phase
0.227	−7.93	19.52	0.98 212.58	1.40 47.64	0.67 259.69	16.29 146.55	3.26 93.88	0.41 167.26	0.74 75.65	3.15 Mag 19.72 Phase
0.250	−7.54	21.23	1.09 137.46	1.28 56.28	0.52 261.94	16.76 167.28	2.40 101.66	0.68 202.76	0.24 61.77	4.30 Mag 346.61 Phase
0.252	−7.11	21.71	1.12 189.94	1.45 51.17	0.60 280.01	16.64 167.52	3.49 108.31	0.36 198.93	0.49 91.06	4.48 Mag 355.88 Phase
0.300	−6.50	26.47	1.22 151.11	1.80 14.53	0.35 130.21	22.36 189.37	4.40 151.28	1.70 210.58	0.10 242.60	3.41 Mag 1.96 Phase
0.301	−6.41	26.93	0.55 193.29	1.30 21.81	0.05 19.36	21.93 189.82	4.88 148.11	1.29 214.49	0.17 196.61	3.48 Mag 10.26 Phase
0.350	−4.12	31.43	1.01 133.82	1.99 38.86	1.92 177.65	27.45 189.64	2.14 159.06	1.48 231.19	0.42 14.49	2.10 Mag 21.92 Phase
0.352	−4.50	30.63	0.13 66.07	2.44 12.93	1.93 178.84	28.21 182.76	1.25 110.51	1.52 214.10	0.41 20.07	1.72 Mag 340.79 Phase

*1/2 Peak-to-peak

Table 35. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.120	−13.95	36.85	0.70 182.40	0.60 125.74	0.93 251.45	32.16 111.20	3.66 358.23	0.95 139.02	0.92 64.95	1.58 Mag 356.02 Phase
0.122	−14.05	37.17	0.80 185.30	0.65 112.62	0.99 250.27	32.50 102.46	3.09 343.16	1.01 134.59	0.94 51.70	1.60 Mag 351.79 Phase
0.144	−13.11	32.45	0.62 210.12	0.45 62.32	1.12 237.12	27.68 92.45	2.98 322.60	1.01 100.49	0.63 4.65	1.47 Mag 330.70 Phase
0.145	−12.89	32.54	0.67 199.49	0.42 70.26	1.04 250.17	27.88 110.95	3.39 3.14	1.16 126.36	0.86 40.05	1.72 Mag 18.67 Phase
0.175	−10.67	28.84	0.77 144.69	0.70 7.97	1.15 235.22	22.85 108.80	4.31 341.90	0.99 133.46	1.04 39.56	2.10 Mag 12.40 Phase
0.176	−10.20	29.04	0.67 172.95	0.69 19.94	1.21 235.39	23.01 111.54	3.87 331.18	0.97 137.07	1.02 40.69	2.05 Mag 8.52 Phase
0.197	−12.29	28.45	1.22 178.12	0.86 44.65	0.85 233.90	23.39 121.22	4.04 18.94	0.84 156.36	0.77 39.81	3.61 Mag 3.74 Phase
0.197	−11.88	29.24	1.19 132.45	0.67 47.91	0.78 233.14	23.33 126.05	5.08 30.56	0.88 169.81	0.69 59.09	3.49 Mag 16.85 Phase
0.225	−10.80	27.36	0.73 194.63	0.57 45.24	0.61 255.03	23.01 136.64	3.02 9.28	0.41 141.85	0.45 60.59	2.19 Mag 336.08 Phase
0.226	−11.21	25.98	1.07 169.82	0.76 28.24	0.74 244.99	22.42 140.25	2.53 33.76	0.43 150.07	0.51 64.87	2.03 Mag 349.48 Phase
0.251	−10.77	28.87	0.34 192.87	0.79 14.42	0.52 216.50	24.62 154.15	1.67 48.87	0.44 177.31	0.54 21.01	5.71 Mag 319.29 Phase
0.252	−10.69	28.29	0.61 114.63	0.78 25.81	0.44 209.49	24.55 148.03	1.15 34.35	0.47 156.24	0.56 358.40	5.44 Mag 308.13 Phase
0.300	−9.98	37.36	0.73 92.12	0.88 359.62	1.38 177.60	30.67 165.44	2.36 231.48	1.29 176.71	0.98 336.31	7.20 Mag 326.24 Phase
0.301	−10.10	36.39	1.44 95.41	1.58 20.71	1.08 178.89	30.53 175.58	1.57 251.63	0.97 174.56	0.75 338.26	7.33 Mag 341.89 Phase

*1/2 Peak-to-peak

Table 36. Fixed-System Loads Data for Side Force S80 Configuration

(d) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−6.88	25.04	1.07 164.97	0.98 86.65	0.55 252.76	18.55 106.12	2.44 18.38	0.25 218.75	0.65 110.11	6.81 Mag 348.79 Phase
0.101	−7.00	25.36	1.17 161.87	1.10 93.00	0.50 260.05	18.56 104.75	2.48 15.99	0.15 219.93	0.71 101.67	6.72 Mag 352.22 Phase
0.131	−6.54	20.01	0.74 164.55	1.02 89.32	0.53 257.48	14.75 116.78	1.80 49.92	0.17 173.49	0.65 131.30	5.89 Mag 358.55 Phase
0.133	−6.47	16.17	0.77 178.02	1.18 97.22	0.59 278.02	12.58 125.01	1.08 37.61	0.23 100.17	0.55 139.85	5.13 Mag 354.83 Phase
0.150	−6.14	18.17	0.99 159.55	1.40 73.33	0.51 263.86	13.94 120.13	1.12 96.30	0.17 278.95	0.46 148.43	3.79 Mag 33.33 Phase
0.150	−6.14	18.23	1.18 149.31	1.46 72.84	0.58 260.24	14.20 127.02	1.13 101.44	0.09 324.27	0.46 136.44	3.31 Mag 30.71 Phase
0.175	−6.16	18.33	1.14 160.21	1.56 77.41	0.64 272.31	12.49 134.19	1.42 104.30	0.37 331.55	0.54 183.88	4.95 Mag 62.45 Phase
0.175	−6.17	18.94	1.09 161.37	1.63 79.63	0.69 284.57	12.96 138.52	1.84 113.72	0.25 337.78	0.57 200.04	4.96 Mag 69.33 Phase
0.200	−5.66	15.61	1.46 174.98	1.13 66.72	0.65 276.00	12.87 141.65	1.67 122.74	0.71 28.51	0.13 334.95	1.91 Mag 72.84 Phase
0.200	−5.85	15.53	1.07 174.93	1.56 72.41	0.66 280.00	12.72 141.67	1.30 123.66	0.67 15.34	0.21 265.98	2.04 Mag 73.70 Phase
0.223	−5.56	14.85	1.09 190.17	1.74 70.39	0.78 307.24	12.16 157.24	3.38 145.45	0.12 11.06	0.22 7.01	2.60 Mag 11.64 Phase
0.224	−5.76	14.55	1.03 187.08	1.62 68.33	0.97 309.87	12.15 155.05	3.46 149.22	0.30 354.48	0.29 334.78	2.51 Mag 22.31 Phase
0.248	−5.34	14.88	1.21 177.83	1.38 62.18	0.52 308.64	11.78 170.74	3.50 172.36	0.33 302.82	0.40 53.25	1.34 Mag 1.43 Phase
0.249	−5.38	15.09	1.08 165.88	1.48 59.89	0.80 318.35	11.73 171.47	3.86 177.10	0.60 335.14	0.42 38.13	1.57 Mag 19.00 Phase
0.299	−4.10	17.87	1.50 115.63	1.28 47.92	0.74 317.54	11.69 160.86	6.04 195.05	0.93 184.77	0.43 79.30	1.08 Mag 205.85 Phase
0.299	−4.15	16.82	1.31 116.56	1.41 76.79	0.76 308.00	10.78 139.17	5.62 173.02	0.75 164.16	0.50 75.89	1.83 Mag 195.27 Phase

*1/2 Peak-to-peak

Table 36. Continued

(e) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−10.77	33.18	0.86	0.20	0.41	26.62	4.38	1.11	1.66	5.23 Mag
			171.20	349.56	211.26	93.32	32.76	97.28	76.72	324.09 Phase
0.104	−10.49	32.58	0.87	0.45	0.61	25.31	5.04	1.27	1.54	5.24 Mag
			172.32	327.50	210.13	93.03	27.29	99.52	71.75	326.77 Phase
0.123	−9.70	27.89	0.64	0.41	0.90	21.53	4.46	0.67	1.22	4.99 Mag
			165.11	60.34	221.06	101.97	38.25	114.91	89.69	331.78 Phase
0.127	−10.01	27.42	0.69	0.26	0.65	21.62	3.58	0.87	1.32	4.96 Mag
			160.15	12.51	223.20	98.90	26.58	110.00	77.47	326.38 Phase
0.150	−9.41	23.66	0.82	0.73	0.69	18.12	4.02	0.52	1.04	3.64 Mag
			158.42	32.34	221.63	100.11	44.54	184.54	94.12	325.59 Phase
0.150	−9.05	23.99	1.15	0.78	0.65	18.32	4.01	0.37	0.95	3.70 Mag
			147.06	20.42	212.38	99.16	41.11	170.92	97.08	320.03 Phase
0.175	−9.74	24.29	0.88	0.93	0.54	16.63	4.64	0.53	0.62	6.09 Mag
			160.56	46.58	211.91	105.63	57.24	221.96	101.08	345.07 Phase
0.175	−9.22	24.63	1.04	1.03	0.59	16.78	4.74	0.42	0.65	6.19 Mag
			153.85	42.40	207.79	113.20	69.51	234.42	121.43	357.72 Phase
0.200	−8.83	21.52	0.82	0.94	0.56	17.09	4.87	0.27	0.21	3.63 Mag
			157.23	45.70	257.69	127.78	87.56	199.38	75.93	343.65 Phase
0.200	−9.07	21.26	1.02	1.01	0.45	17.50	4.19	0.28	0.27	3.43 Mag
			181.96	43.00	234.04	128.19	77.63	179.07	72.10	340.26 Phase
0.224	−8.73	23.25	0.77	1.48	0.41	17.45	4.06	0.25	0.40	5.99 Mag
			197.93	31.24	233.22	137.82	104.71	295.85	96.39	317.69 Phase
0.225	−9.03	22.73	1.28	1.43	0.37	17.19	4.36	0.15	0.37	5.26 Mag
			181.84	30.68	254.44	139.23	108.82	16.91	107.52	319.99 Phase
0.225	−8.84	22.92	0.71	1.32	0.40	17.61	3.92	0.26	0.38	5.76 Mag
			217.37	38.97	267.74	140.54	106.21	281.96	130.81	318.61 Phase
0.249	−8.69	23.38	1.42	1.30	0.33	15.95	4.79	0.79	0.52	6.68 Mag
			118.52	30.41	291.01	152.46	138.47	334.35	166.55	312.55 Phase
0.249	−8.04	23.88	0.44	1.10	0.58	16.76	3.74	0.58	0.62	7.10 Mag
			102.97	24.14	255.36	142.88	128.97	290.05	154.29	302.09 Phase
0.301	−7.12	24.42	1.18	1.19	0.27	19.02	3.58	1.01	0.18	3.80 Mag
			144.35	356.84	228.79	146.69	155.90	172.42	269.49	279.30 Phase
0.301	−6.62	25.60	2.12	1.31	0.82	19.72	2.89	1.08	0.36	4.18 Mag
			135.33	19.23	191.57	148.86	178.08	183.18	270.64	287.07 Phase

*1/2 Peak-to-peak

Table 36. Concluded

(f) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−16.14	41.07	0.70 107.40	0.18 249.70	0.06 223.66	38.90 87.13	1.62 221.05	1.10 126.80	1.06 68.60	4.78 Mag 328.46 Phase
0.104	−15.75	41.50	0.57 104.53	0.19 261.33	0.15 236.06	39.16 86.44	1.12 221.45	1.08 129.30	1.01 60.16	5.02 Mag 326.33 Phase
0.127	−14.42	34.72	0.45 124.39	0.31 137.51	0.43 221.91	32.02 100.40	1.43 35.64	1.04 123.75	1.08 61.97	1.63 Mag 310.64 Phase
0.150	−13.63	29.84	0.67 140.58	0.30 278.48	0.71 225.60	26.35 90.93	2.73 350.67	1.03 125.08	0.65 52.97	1.94 Mag 297.78 Phase
0.150	−13.35	29.44	0.61 153.57	0.27 274.08	0.69 232.35	26.28 97.10	2.55 3.73	1.00 140.92	0.85 49.01	1.66 Mag 314.93 Phase
0.175	−13.99	29.85	0.82 117.71	0.03 115.16	0.60 200.40	24.72 101.23	4.70 30.40	0.75 172.47	0.55 51.21	4.38 Mag 318.90 Phase
0.175	−13.49	29.29	0.70 146.27	0.05 32.09	0.68 213.19	24.42 113.14	4.59 53.99	0.68 194.12	0.67 69.59	4.14 Mag 344.96 Phase
0.200	−12.87	28.28	0.75 161.42	0.26 26.58	0.49 220.70	24.42 124.81	4.17 60.78	0.74 210.15	0.66 97.57	3.74 Mag 331.64 Phase
0.200	−12.85	28.58	0.88 135.21	0.49 26.44	0.43 228.74	24.97 120.94	3.55 60.88	0.71 197.95	0.56 84.68	3.88 Mag 325.80 Phase
0.223	−12.02	27.95	0.82 148.56	0.57 20.98	0.49 207.31	23.32 123.63	2.36 49.31	0.07 84.88	0.55 92.99	6.24 Mag 275.86 Phase
0.224	−12.04	28.90	1.55 160.69	0.51 1.53	0.60 212.78	23.94 129.28	2.52 59.39	0.05 60.03	0.69 106.90	6.49 Mag 288.22 Phase
0.225	−12.50	28.14	0.68 249.34	0.89 4.48	0.57 216.22	24.45 128.11	1.81 56.08	0.32 122.77	0.38 59.38	5.35 Mag 281.06 Phase
0.225	−12.20	29.20	0.29 162.81	0.82 12.17	0.64 218.52	24.31 133.89	2.63 40.17	0.34 149.27	0.39 114.02	5.75 Mag 291.66 Phase
0.248	−12.68	29.95	1.17 71.47	0.42 44.04	0.27 221.01	22.53 135.01	1.88 87.10	0.23 287.74	0.52 119.46	10.31 Mag 279.80 Phase
0.248	−12.12	31.55	1.11 82.87	0.95 358.21	0.45 177.08	23.83 133.79	1.00 42.48	0.16 350.11	0.25 75.28	10.35 Mag 284.98 Phase
0.300	−11.64	35.90	1.85 75.37	0.68 24.77	1.39 196.10	29.73 146.79	1.24 201.91	1.11 181.63	0.37 45.28	7.59 Mag 285.29 Phase
0.301	−11.73	34.53	0.79 5.55	0.80 66.82	1.30 190.73	28.80 147.29	1.41 301.84	1.14 188.26	0.50 347.53	8.49 Mag 282.29 Phase

*1/2 Peak-to-peak

Table 37. Fixed-System Loads Data for Pitching Moment Baseline Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	97.22	453.03	159.66 350.08	15.01 189.77	15.93 103.54	313.76 204.66	14.08 86.16	3.53 324.90	4.03 32.89	46.15 Mag 320.45 Phase
0.102	91.16	444.89	157.70 349.04	13.27 161.79	7.58 131.42	307.28 205.02	11.81 86.61	2.50 323.69	2.25 21.27	42.15 Mag 322.46 Phase
0.130	49.81	327.79	159.93 347.69	2.40 161.94	16.53 198.93	184.88 236.90	8.34 114.41	3.04 11.47	3.26 16.76	16.35 Mag 344.90 Phase
0.131	40.17	324.75	161.22 346.99	4.23 117.46	21.79 204.98	179.00 245.09	7.81 121.15	3.48 21.96	2.00 24.51	12.34 Mag 351.88 Phase
0.147	42.13	196.02	58.08 274.26	13.31 92.26	36.58 240.47	146.68 260.88	7.24 15.24	5.27 22.39	2.79 184.18	9.54 Mag 6.59 Phase
0.148	49.42	196.42	57.60 274.03	11.55 80.50	38.15 246.40	144.74 258.29	7.64 11.28	5.17 24.48	2.93 164.27	12.68 Mag 5.05 Phase
0.153	63.85	318.65	151.46 347.27	11.03 131.68	35.43 244.51	173.07 249.18	9.83 104.42	5.31 34.62	0.82 22.91	15.17 Mag 349.02 Phase
0.154	86.58	324.86	152.62 349.25	18.11 130.08	15.62 240.38	175.84 249.23	8.97 111.14	5.16 26.48	1.14 301.98	11.56 Mag 351.93 Phase
0.174	110.06	217.12	61.33 275.89	12.14 83.67	36.50 229.81	158.00 295.43	7.19 22.68	6.76 66.99	2.31 190.43	9.11 Mag 86.24 Phase
0.176	109.08	225.89	64.06 276.48	6.18 62.13	43.03 232.74	157.29 300.36	7.59 35.86	6.19 67.25	2.36 198.44	10.02 Mag 94.14 Phase
0.179	130.88	284.81	113.88 0.24	15.18 133.65	39.38 194.52	163.35 287.13	11.33 164.68	7.35 68.63	3.83 5.46	11.83 Mag 64.98 Phase
0.181	115.72	282.29	114.90 0.64	6.58 134.48	44.99 203.90	166.08 289.01	10.72 165.96	7.79 76.76	3.19 3.40	10.30 Mag 74.27 Phase
0.200	93.65	313.95	62.07 277.21	19.77 64.64	39.72 248.76	247.76 310.35	7.39 42.19	7.93 117.21	2.62 270.36	16.35 Mag 106.57 Phase
0.201	101.00	316.64	61.81 273.31	19.85 50.89	35.57 241.53	248.67 301.89	8.02 29.03	9.07 103.41	3.42 257.43	19.26 Mag 92.00 Phase
0.223	101.64	359.25	62.09 278.42	24.35 85.71	37.71 271.45	294.39 322.06	6.36 49.64	5.41 93.27	4.12 309.79	27.40 Mag 120.56 Phase
0.224	101.63	369.30	61.88 279.98	23.51 73.04	53.10 278.08	296.07 326.12	6.77 37.93	6.64 93.54	3.10 319.86	29.01 Mag 124.86 Phase
0.248	149.15	394.42	59.93 286.05	25.70 89.51	27.71 265.86	332.40 332.66	7.00 20.33	7.42 92.75	2.20 358.94	38.03 Mag 142.22 Phase
0.249	133.56	392.25	57.27 285.51	23.30 74.37	32.14 292.97	328.82 329.29	7.33 16.88	7.45 92.22	2.20 16.97	35.16 Mag 138.67 Phase
0.298	121.06	590.68	43.65 285.11	26.26 81.97	57.12 315.24	517.38 345.60	6.78 9.72	4.56 342.10	5.61 30.56	77.02 Mag 186.21 Phase
0.298	108.46	593.25	43.86 292.70	23.89 70.09	51.18 303.29	520.58 340.50	6.88 354.23	7.38 351.52	6.32 14.04	78.62 Mag 174.12 Phase
0.347	144.92	705.58	29.07 266.35	24.85 147.13	44.64 4.51	647.57 3.82	1.84 223.32	9.75 7.85	13.39 128.94	99.35 Mag 198.93 Phase
0.347	137.31	736.71	29.44 258.61	48.38 105.84	56.09 22.79	649.19 0.72	1.91 232.66	10.58 15.84	9.65 134.46	92.76 Mag 193.13 Phase

*1/2 Peak-to-peak

Table 37. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	69.22	552.29	143.81 352.92	27.73 210.17	26.22 160.39	409.38 206.09	20.21 174.59	7.76 296.81	17.41 135.72	136.71 Mag 313.14 Phase
0.100	95.04	558.42	145.55 354.51	36.03 222.39	18.59 183.79	409.55 213.32	18.04 179.02	7.67 313.47	16.00 152.34	148.93 Mag 325.39 Phase
0.102	109.69	542.99	145.27 353.87	35.78 227.72	16.80 230.67	405.47 208.07	24.08 183.96	7.47 279.12	19.89 141.09	131.14 Mag 316.89 Phase
0.130	39.63	405.46	156.58 352.41	9.61 263.12	7.40 275.10	266.55 217.28	13.48 171.33	8.31 302.31	18.77 159.22	71.95 Mag 341.73 Phase
0.130	74.50	412.05	156.38 352.79	15.06 249.22	10.32 199.66	270.20 216.09	14.91 172.17	11.11 307.50	22.36 155.46	77.40 Mag 336.52 Phase
0.147	32.53	276.37	41.23 265.02	17.52 117.37	51.47 278.15	218.86 219.65	2.29 131.00	3.41 71.18	3.91 235.26	41.98 Mag 351.45 Phase
0.152	63.62	364.91	154.02 352.12	13.28 152.03	24.10 284.96	221.05 224.73	11.79 150.30	2.77 344.79	10.89 149.07	52.89 Mag 348.57 Phase
0.152	71.08	362.61	156.56 352.80	11.95 134.20	22.17 270.08	215.28 222.86	15.95 182.94	3.28 315.00	14.72 177.08	45.52 Mag 339.76 Phase
0.174	88.89	195.92	49.01 272.57	9.36 116.75	39.78 269.89	144.65 251.45	2.99 323.95	7.99 71.12	2.69 331.40	30.91 Mag 35.39 Phase
0.174	87.85	198.41	47.46 272.67	11.28 128.34	38.90 270.40	146.70 250.05	2.38 305.70	7.68 72.97	3.46 314.54	34.03 Mag 35.57 Phase
0.178	95.72	274.39	102.02 17.77	12.69 115.78	24.62 240.39	159.05 235.90	7.04 185.53	8.33 355.92	4.36 168.44	27.15 Mag 345.41 Phase
0.180	64.24	271.24	102.49 17.77	14.99 117.46	18.65 259.27	158.66 232.98	10.36 174.14	7.20 355.99	3.34 151.05	29.52 Mag 336.14 Phase
0.199	75.51	240.51	47.87 271.46	28.88 81.95	49.79 268.38	192.52 279.16	4.03 231.88	7.67 94.04	5.71 358.57	36.32 Mag 48.50 Phase
0.203	58.50	386.25	157.46 354.32	9.48 83.34	17.19 301.30	230.05 273.51	18.08 232.51	5.45 64.81	14.20 238.25	38.20 Mag 10.63 Phase
0.204	50.74	408.49	161.87 355.55	18.68 71.48	16.95 284.44	230.75 275.33	10.83 229.01	5.81 85.04	9.31 211.96	48.80 Mag 19.81 Phase
0.224	90.65	263.20	44.46 270.13	23.28 105.80	48.95 275.98	215.92 296.24	2.12 334.13	5.02 113.38	2.94 358.38	30.26 Mag 40.33 Phase
0.225	90.55	268.03	45.21 270.65	20.15 118.84	54.04 298.03	211.46 307.54	3.16 323.12	7.16 127.47	5.99 28.35	36.63 Mag 56.37 Phase
0.249	136.36	295.06	40.12 281.09	23.39 73.67	64.84 333.07	227.26 326.38	4.58 316.09	6.27 122.51	6.67 34.04	12.46 Mag 61.86 Phase
0.298	65.34	555.19	32.55 250.54	20.63 71.50	59.66 347.80	482.95 347.73	9.99 322.58	5.67 341.83	3.68 87.52	43.70 Mag 191.09 Phase
0.349	99.62	784.79	36.65 205.40	31.27 157.52	98.88 43.42	671.07 1.61	6.51 334.68	4.48 351.65	8.52 170.43	35.53 Mag 208.80 Phase

*1/2 Peak-to-peak

Table 37. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	48.23	621.26	121.43 357.55	16.85 186.34	48.66 235.00	513.19 217.23	13.77 230.02	5.29 261.63	9.61 258.33	38.85 Mag 16.57 Phase
0.105	74.50	624.69	127.45 359.02	18.86 147.35	68.68 201.84	498.83 222.69	18.49 232.92	5.76 269.30	12.29 274.23	33.82 Mag 29.84 Phase
0.129	86.53	488.33	133.75 354.99	15.81 20.13	65.12 178.06	345.40 226.92	23.44 219.46	5.69 255.61	14.37 250.44	56.76 Mag 21.92 Phase
0.131	48.63	498.16	136.32 357.45	17.70 13.15	39.29 164.66	357.41 225.70	23.33 223.91	6.74 265.60	12.04 238.61	46.36 Mag 19.99 Phase
0.147	30.23	369.44	23.00 235.14	13.09 103.26	69.60 277.97	311.79 234.04	6.41 120.55	3.06 242.99	2.97 220.61	28.67 Mag 56.12 Phase
0.147	29.54	368.92	26.04 235.22	11.08 103.50	63.10 265.82	315.97 222.68	5.14 122.16	2.69 224.39	3.26 172.78	32.99 Mag 8.02 Phase
0.172	92.54	275.40	29.62 244.27	12.48 151.37	53.38 290.53	232.28 251.29	5.96 136.23	5.64 4.43	0.66 93.00	28.51 Mag 70.13 Phase
0.173	87.80	288.02	32.09 244.55	19.49 139.20	50.97 281.00	241.28 240.73	6.51 134.52	2.93 6.78	1.41 153.86	28.72 Mag 36.99 Phase
0.178	105.01	270.57	79.19 34.91	17.53 177.96	13.64 95.99	207.09 256.84	15.55 290.51	10.43 351.05	7.71 181.08	38.29 Mag 49.88 Phase
0.178	96.16	274.73	80.65 37.18	19.06 190.19	20.89 87.64	215.01 252.89	16.60 278.18	11.17 350.25	7.00 153.28	45.06 Mag 43.04 Phase
0.198	55.02	258.12	32.45 241.35	27.81 101.68	38.87 280.22	224.53 272.27	5.52 143.15	3.04 57.52	2.13 216.26	25.85 Mag 65.50 Phase
0.199	61.87	256.21	33.55 240.35	26.14 104.72	42.65 280.00	221.37 276.09	2.34 144.26	3.38 27.53	3.08 197.26	27.79 Mag 66.58 Phase
0.224	62.16	299.43	32.44 241.13	22.91 162.70	62.30 293.27	240.58 289.41	4.98 112.73	5.34 130.44	3.16 202.82	34.48 Mag 48.46 Phase
0.225	53.56	277.60	29.91 241.50	21.41 138.49	54.90 291.65	235.88 284.65	5.77 117.22	6.07 133.87	3.63 219.95	25.69 Mag 48.78 Phase
0.248	86.37	292.95	30.12 240.82	3.63 50.47	42.92 342.58	253.07 312.97	3.24 253.69	6.78 170.72	0.63 9.35	5.59 Mag 297.21 Phase
0.248	129.56	292.07	28.74 234.43	8.94 312.38	36.83 342.89	258.83 318.89	3.45 219.04	5.31 184.20	1.15 317.16	5.08 Mag 36.67 Phase
0.299	60.77	527.60	36.89 183.36	7.48 90.07	39.39 321.54	487.71 342.66	4.95 268.37	5.31 317.26	6.39 299.96	28.98 Mag 220.50 Phase
0.299	25.02	529.51	35.63 176.47	8.80 60.02	37.89 344.24	481.19 330.88	6.06 285.00	7.91 302.77	3.61 278.75	30.92 Mag 200.56 Phase
0.348	−1.49	764.99	62.38 169.57	11.37 236.37	75.91 26.25	676.62 1.01	13.12 327.33	11.50 25.89	9.43 307.11	11.50 Mag 258.76 Phase
0.349	12.93	755.37	65.41 164.87	13.65 147.64	59.63 347.20	673.00 354.41	11.87 316.30	8.77 27.64	11.61 292.49	13.24 Mag 237.11 Phase

*1/2 Peak-to-peak

Table 38. Fixed-System Loads Data for Pitching Moment T30 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.107	64.58	355.24	49.96 269.44	20.67 111.56	36.09 322.05	291.37 205.54	4.59 310.64	2.83 276.67	2.88 196.71	41.38 Mag 316.48 Phase
0.109	47.75	332.64	49.84 269.42	15.50 115.30	26.14 355.32	279.97 212.58	4.14 331.73	3.66 311.28	1.72 232.90	35.78 Mag 331.27 Phase
0.126	−19.90	280.65	54.65 264.55	13.30 41.24	23.83 300.59	224.86 224.68	2.75 312.96	4.36 300.45	1.61 208.59	27.93 Mag 343.75 Phase
0.128	−24.27	269.70	53.66 265.96	17.70 71.47	22.54 285.21	214.46 226.30	3.95 333.65	4.87 303.86	1.95 192.97	28.96 Mag 345.49 Phase
0.151	−16.84	250.47	59.28 270.23	19.36 84.44	24.23 266.13	191.95 270.65	4.14 4.69	12.01 356.17	2.35 191.15	23.26 Mag 38.94 Phase
0.151	−15.09	251.85	58.27 268.19	18.45 78.68	20.93 258.37	194.46 265.84	4.17 357.05	12.47 347.87	1.98 201.31	23.39 Mag 23.83 Phase
0.175	−8.10	291.99	58.07 270.78	17.82 33.91	19.78 217.74	233.26 287.97	3.60 13.74	15.48 17.52	3.00 168.03	23.98 Mag 74.07 Phase
0.176	40.99	286.97	58.06 273.26	14.76 49.48	22.51 223.79	230.31 300.23	3.12 33.36	15.50 36.02	2.53 175.70	22.24 Mag 98.97 Phase
0.200	190.38	367.82	57.73 274.13	18.32 69.86	31.51 218.68	311.76 298.93	3.71 32.75	13.36 63.29	5.23 227.62	32.02 Mag 82.16 Phase
0.224	157.17	448.26	57.40 277.73	11.98 62.94	48.96 242.14	376.43 322.19	4.14 11.11	16.53 51.49	6.98 289.44	43.91 Mag 102.33 Phase
0.224	124.65	456.89	55.99 277.68	28.07 50.48	47.10 231.34	384.26 320.37	3.05 12.42	16.16 54.78	8.47 271.63	45.88 Mag 99.74 Phase
0.249	140.95	503.53	58.33 277.70	26.58 72.22	32.32 284.43	431.86 330.32	6.54 26.31	15.26 69.43	6.99 358.25	40.08 Mag 134.04 Phase
0.250	116.69	489.06	57.89 278.93	36.83 94.04	31.21 266.73	426.42 329.87	6.28 33.78	15.17 73.28	5.85 353.39	46.73 Mag 127.56 Phase
0.298	179.46	739.85	51.96 287.45	10.04 104.41	58.28 331.15	646.29 340.82	11.64 330.70	12.56 6.68	4.28 22.12	91.64 Mag 166.65 Phase
0.299	170.89	715.56	54.35 282.39	10.92 132.69	44.44 302.73	637.04 333.85	9.26 329.35	11.70 11.15	4.98 347.98	92.24 Mag 147.63 Phase
0.347	192.61	855.46	35.29 247.21	19.69 125.09	73.37 349.65	769.34 359.42	6.78 273.02	18.67 27.33	13.31 168.02	101.60 Mag 196.03 Phase
0.347	197.22	846.95	31.37 246.43	13.64 176.03	51.54 35.53	766.51 358.37	4.33 231.92	12.37 23.32	19.08 156.38	113.89 Mag 188.12 Phase

*1/2 Peak-to-peak

Table 38. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	79.02	471.87	26.97 248.01	26.54 184.47	33.53 258.12	411.48 200.61	14.92 60.62	13.06 317.31	9.20 179.57	104.12 Mag 308.29 Phase
0.113	54.35	445.74	28.86 249.89	26.63 170.90	16.62 210.64	396.15 196.86	14.26 56.60	11.33 314.68	10.38 175.41	96.84 Mag 301.47 Phase
0.125	19.17	406.97	34.91 244.96	9.78 196.13	41.82 246.66	357.54 207.52	6.78 92.41	3.26 311.06	6.04 208.33	68.41 Mag 326.46 Phase
0.125	3.93	415.58	34.12 249.20	13.14 208.91	33.48 255.29	363.31 210.88	7.05 101.65	4.03 319.50	6.84 206.06	65.30 Mag 331.48 Phase
0.149	−11.75	295.61	39.85 254.50	19.45 127.17	44.61 266.57	239.06 225.46	0.85 129.25	10.13 345.51	3.13 216.15	40.61 Mag 343.83 Phase
0.150	−22.18	294.39	38.13 253.03	19.21 122.64	47.63 262.85	243.58 227.18	1.41 98.71	10.25 352.28	3.46 227.56	31.35 Mag 345.22 Phase
0.174	−10.52	258.14	44.25 262.52	4.87 116.22	44.44 253.30	207.23 251.46	1.95 300.00	16.38 29.20	6.31 292.00	37.06 Mag 36.26 Phase
0.175	−25.98	264.26	44.18 260.07	11.05 159.02	40.03 249.42	208.60 249.56	4.20 319.95	17.49 20.74	5.10 259.25	40.58 Mag 24.85 Phase
0.198	162.15	290.75	45.32 260.65	18.48 79.36	40.92 278.86	250.97 276.80	3.72 161.92	14.43 55.96	8.67 336.66	24.37 Mag 47.51 Phase
0.201	142.98	301.69	47.19 258.88	22.31 87.75	40.57 260.15	257.94 274.98	1.34 219.71	13.09 51.61	7.18 302.29	30.17 Mag 25.67 Phase
0.224	105.39	331.71	38.91 263.81	14.56 111.38	45.21 258.89	285.56 307.47	5.44 179.57	7.21 88.18	10.41 12.88	19.65 Mag 74.20 Phase
0.224	97.11	353.18	38.78 261.73	7.83 88.91	50.17 256.83	292.16 301.47	0.29 191.11	6.62 63.33	7.10 334.65	42.54 Mag 54.43 Phase
0.250	78.11	358.57	40.35 261.24	29.20 111.82	43.56 313.55	316.99 330.43	5.75 252.07	10.26 76.58	11.57 67.74	16.46 Mag 231.49 Phase
0.250	85.10	374.26	42.21 264.01	29.05 102.86	50.26 273.96	322.72 318.16	7.74 281.86	9.29 55.91	7.90 52.48	12.87 Mag 105.40 Phase
0.297	141.19	672.11	31.40 240.42	13.45 187.05	70.46 358.21	596.50 344.06	8.21 325.72	13.86 16.02	5.17 120.02	79.56 Mag 189.16 Phase
0.298	152.94	689.78	32.80 239.74	16.87 229.90	64.05 340.96	612.41 331.81	10.73 269.34	16.92 356.92	6.73 93.65	78.04 Mag 174.24 Phase
0.347	155.21	875.14	43.85 199.62	3.44 188.29	73.61 11.71	793.73 354.70	7.92 251.75	13.03 6.31	19.44 193.74	68.14 Mag 204.11 Phase
0.347	152.67	902.30	43.76 199.28	31.76 210.77	68.01 25.16	804.92 357.69	4.14 298.04	10.50 14.77	18.09 201.56	72.29 Mag 202.00 Phase

*1/2 Peak-to-peak

Table 38. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.112	102.67	604.00	31.10 181.92	21.07 251.29	84.23 270.24	531.36 214.76	13.00 71.16	1.51 212.33	1.56 148.18	60.74 Mag 348.41 Phase
0.113	96.50	569.02	29.74 182.98	24.20 234.81	44.95 276.11	532.68 217.44	12.63 68.89	1.33 119.35	3.20 70.99	64.28 Mag 339.84 Phase
0.125	21.93	530.01	26.44 195.76	20.00 173.65	67.12 241.88	465.08 223.86	10.17 84.74	3.72 71.60	2.58 74.61	62.85 Mag 339.53 Phase
0.126	30.49	538.22	27.15 197.37	18.05 186.42	80.27 234.84	459.70 227.69	12.58 75.80	3.64 78.78	2.43 154.72	64.50 Mag 343.29 Phase
0.147	−6.97	416.82	30.10 214.74	18.27 157.79	68.76 278.23	357.21 222.39	12.88 96.78	2.34 324.90	5.17 244.19	24.48 Mag 345.70 Phase
0.149	9.28	413.75	30.27 220.40	24.99 179.16	76.66 277.07	354.14 237.05	12.71 99.39	2.25 26.19	6.16 266.53	29.06 Mag 7.15 Phase
0.172	−37.25	367.32	32.77 225.90	35.97 182.04	62.93 257.00	287.52 238.70	12.06 99.47	12.69 2.13	6.35 292.19	23.98 Mag 68.91 Phase
0.172	−23.01	369.52	31.96 228.46	32.97 177.88	66.88 256.59	287.69 239.77	11.81 107.56	12.37 0.39	6.56 280.54	23.76 Mag 79.10 Phase
0.198	101.82	330.42	36.45 232.17	26.29 129.13	48.21 256.35	276.01 268.26	10.68 143.08	13.07 2.79	6.55 303.69	24.03 Mag 57.43 Phase
0.199	144.62	342.74	38.56 224.30	23.52 137.33	59.05 254.24	278.61 272.91	12.69 139.91	9.65 12.81	6.48 299.76	20.20 Mag 99.24 Phase
0.224	101.06	365.74	31.28 223.09	26.02 175.37	55.66 272.40	301.26 291.71	9.62 127.46	7.15 72.70	1.89 314.70	12.47 Mag 124.10 Phase
0.224	93.51	377.48	31.96 219.63	31.25 177.22	57.48 272.14	308.80 290.13	10.31 117.67	6.71 57.74	3.40 295.95	17.95 Mag 98.38 Phase
0.250	10.23	339.83	34.57 223.90	13.67 117.83	60.13 306.26	281.90 316.18	4.32 179.15	4.75 58.49	3.94 2.21	11.07 Mag 204.68 Phase
0.250	35.71	342.43	37.27 224.02	13.03 145.64	52.73 303.07	283.35 311.71	3.92 158.21	6.01 49.62	1.62 38.00	14.43 Mag 214.20 Phase
0.299	83.91	675.16	39.91 182.57	19.11 227.33	62.09 0.76	614.21 331.23	6.54 294.51	10.47 347.63	5.71 221.28	58.87 Mag 190.60 Phase
0.299	86.36	680.64	41.39 190.27	6.48 176.21	87.93 352.04	603.80 335.95	7.09 285.37	8.30 13.21	6.57 244.01	62.30 Mag 194.91 Phase
0.347	118.82	934.48	52.98 166.28	24.47 166.90	107.61 2.20	821.17 352.95	15.64 302.65	12.11 20.64	16.45 259.84	19.48 Mag 256.95 Phase
0.347	101.20	909.40	56.43 162.31	29.06 237.60	79.00 341.11	821.34 351.44	13.65 301.38	11.66 5.81	17.06 259.22	27.47 Mag 238.58 Phase

*1/2 Peak-to-peak

Table 39. Fixed-System Loads Data for Pitching Moment T40 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	70.21	316.50	53.81 285.05	35.24 125.52	37.39 235.68	244.06 199.14	7.17 336.00	2.18 54.25	2.92 239.40	35.16 Mag 272.24 Phase
0.104	72.61	312.71	56.47 282.98	37.81 113.61	28.14 237.23	241.99 193.78	8.22 326.23	2.21 53.68	2.47 222.21	35.49 Mag 262.16 Phase
0.126	112.67	236.75	60.51 283.86	19.33 91.49	40.48 250.23	166.20 224.02	7.46 4.94	1.52 67.82	1.66 236.01	22.38 Mag 294.40 Phase
0.128	114.18	234.48	63.37 280.67	19.37 84.79	37.52 244.51	164.32 222.04	7.91 353.96	1.35 84.22	1.57 210.34	22.40 Mag 293.56 Phase
0.151	29.28	207.65	68.09 288.19	20.81 108.08	37.86 236.22	147.64 254.35	7.31 28.56	5.42 28.46	1.65 187.22	6.83 Mag 325.29 Phase
0.152	34.26	208.57	68.82 286.24	22.62 106.40	41.24 240.39	146.45 252.47	8.17 19.25	5.23 20.67	1.81 166.61	6.02 Mag 322.97 Phase
0.201	33.40	316.23	71.56 294.91	18.90 68.67	47.16 256.94	246.86 314.73	7.28 53.19	9.80 143.47	3.46 286.25	13.56 Mag 107.98 Phase
0.202	35.48	320.12	74.45 287.35	26.61 81.65	44.83 245.79	246.19 297.23	8.19 45.68	10.28 116.10	4.67 244.60	17.37 Mag 67.82 Phase
0.226	52.16	342.70	75.31 293.37	17.43 93.54	47.58 247.23	273.66 315.47	5.92 44.12	7.29 87.60	4.19 288.73	25.50 Mag 104.83 Phase
0.226	49.80	343.94	72.79 294.53	14.70 107.78	46.60 251.39	280.12 313.08	5.14 26.77	8.68 84.00	5.26 304.52	21.74 Mag 103.56 Phase
0.250	218.81	406.29	73.89 300.44	19.69 78.87	32.49 290.72	336.21 328.07	6.46 50.85	11.57 102.78	5.13 13.48	34.66 Mag 139.84 Phase
0.250	224.57	408.08	72.44 300.07	24.80 71.07	37.30 262.66	339.37 320.45	7.34 28.70	11.20 90.74	4.47 346.56	33.71 Mag 119.99 Phase
0.299	171.68	633.19	66.01 305.52	4.57 159.50	80.72 330.07	519.43 334.40	5.28 336.33	2.20 351.24	5.24 69.80	78.86 Mag 163.30 Phase
0.299	171.49	637.76	66.23 309.78	7.32 77.47	83.66 321.82	524.93 339.18	4.58 26.11	0.34 258.53	5.15 44.89	77.67 Mag 170.71 Phase
0.349	45.56	742.04	43.27 300.92	14.64 109.81	51.32 28.38	662.24 350.49	6.12 305.60	8.59 337.66	18.13 170.55	97.20 Mag 172.01 Phase
0.349	37.05	754.43	41.07 306.38	27.56 135.56	72.96 14.40	662.50 348.86	5.37 296.62	8.62 352.96	15.42 147.60	95.39 Mag 169.36 Phase

*1/2 Peak-to-peak

Table 39. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	104.83	435.01	34.38 290.55	32.47 168.29	63.10 232.92	350.96 196.46	6.65 108.24	5.89 22.81	5.33 172.26	123.60 Mag 291.75 Phase
0.105	84.89	442.85	29.05 288.66	27.69 166.80	69.73 239.56	340.00 196.97	6.21 93.90	6.23 55.75	7.25 171.94	136.60 Mag 286.67 Phase
0.128	86.43	348.13	42.50 280.28	4.30 251.27	52.49 242.59	276.71 200.60	7.90 115.20	4.30 71.71	6.49 207.98	69.17 Mag 309.16 Phase
0.129	118.39	352.96	42.12 282.60	3.91 97.77	65.08 238.20	274.07 197.83	9.29 114.74	4.24 83.47	7.41 203.25	67.84 Mag 305.89 Phase
0.150	45.73	262.48	47.11 293.31	23.53 135.98	50.92 254.65	191.87 216.34	5.52 130.76	5.68 34.05	5.88 232.36	42.04 Mag 319.07 Phase
0.150	36.05	258.02	50.30 289.72	23.08 131.85	51.89 237.51	187.36 207.01	8.06 120.32	6.98 12.17	7.20 200.95	48.50 Mag 308.92 Phase
0.153	106.10	252.34	53.11 285.53	27.99 133.95	57.65 245.29	181.59 213.19	3.65 70.07	7.23 44.56	4.72 250.69	37.13 Mag 320.90 Phase
0.155	86.87	254.71	52.67 286.66	27.62 130.18	53.94 248.52	182.65 211.75	2.72 130.53	6.52 42.50	4.34 254.58	40.86 Mag 314.85 Phase
0.201	14.74	261.85	53.32 290.04	24.05 93.05	53.19 264.94	196.13 267.06	4.49 221.10	9.22 74.81	7.97 334.35	46.51 Mag 25.55 Phase
0.203	5.06	259.20	56.52 289.76	24.31 124.17	57.52 270.38	192.42 268.97	7.88 211.08	10.19 85.42	11.05 336.99	37.69 Mag 34.02 Phase
0.226	31.24	259.37	54.57 296.58	12.02 76.95	32.52 285.61	202.97 296.78	3.93 270.90	9.65 93.87	6.51 10.97	27.27 Mag 40.72 Phase
0.226	26.71	260.03	55.85 297.46	10.94 88.43	41.15 278.32	201.92 296.12	5.68 247.29	7.60 95.83	4.97 11.27	28.42 Mag 38.72 Phase
0.251	187.08	285.50	57.72 295.18	18.90 75.53	45.19 294.94	235.59 310.32	7.90 323.86	9.43 83.99	7.07 51.98	9.81 Mag 10.60 Phase
0.251	198.22	287.57	54.08 299.00	13.21 54.71	25.43 313.86	236.82 310.13	9.69 311.27	9.49 94.70	8.50 47.67	10.77 Mag 352.66 Phase
0.299	140.23	557.70	32.95 293.01	8.06 226.16	62.21 346.47	473.67 330.83	16.35 307.00	5.99 330.67	4.93 85.48	56.26 Mag 173.54 Phase
0.299	136.81	562.91	35.97 293.69	7.37 124.11	81.09 333.23	465.72 331.64	13.16 274.63	5.61 4.09	3.05 60.32	63.05 Mag 173.32 Phase
0.347	13.05	763.17	25.42 229.49	24.62 176.98	101.32 35.49	660.17 355.82	5.05 281.13	5.37 354.86	15.81 170.70	51.41 Mag 204.78 Phase
0.349	11.62	780.69	20.16 228.38	12.07 209.05	112.47 31.29	671.48 352.03	4.52 289.63	7.65 348.81	11.92 149.61	59.43 Mag 186.20 Phase

*1/2 Peak-to-peak

Table 39. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	116.23	536.81	4.67 209.98	28.95 163.66	79.59 207.10	440.92 202.27	3.91 186.01	3.72 64.88	2.52 227.32	43.74 Mag 326.79 Phase
0.107	125.12	537.43	1.86 218.38	36.44 160.51	77.10 204.43	441.63 206.02	3.54 226.90	2.56 33.72	0.57 163.73	51.55 Mag 320.20 Phase
0.127	130.07	412.03	16.88 284.88	3.56 351.98	48.84 250.48	352.86 217.93	5.25 146.98	3.17 120.28	2.39 247.10	52.64 Mag 329.28 Phase
0.127	118.80	403.74	16.36 274.50	9.05 147.71	44.64 262.39	354.57 216.06	5.48 174.10	3.13 101.82	3.75 239.03	54.94 Mag 323.35 Phase
0.147	25.17	335.68	27.63 284.23	25.13 125.87	67.13 279.90	276.48 221.97	11.85 157.49	5.02 55.24	3.97 254.08	48.62 Mag 340.94 Phase
0.149	15.04	331.79	26.74 279.43	26.27 120.76	65.89 267.03	275.36 213.99	10.58 150.66	4.83 38.48	2.80 233.96	43.80 Mag 329.43 Phase
0.201	–9.53	250.98	33.34 285.88	26.24 113.94	41.74 280.93	208.83 267.87	3.89 205.01	5.26 68.21	1.74 260.29	44.51 Mag 59.70 Phase
0.202	–8.34	245.70	35.28 279.37	26.81 112.74	33.28 260.35	211.53 262.15	4.52 147.72	5.99 64.80	1.67 273.51	37.12 Mag 60.04 Phase
0.226	5.57	270.97	34.09 279.49	16.50 133.01	33.99 316.00	224.60 285.10	8.24 196.36	7.47 101.50	0.79 284.52	24.39 Mag 46.58 Phase
0.226	8.90	265.75	31.49 280.31	14.82 138.30	31.56 314.13	227.43 287.05	7.29 173.25	8.70 106.57	0.95 139.72	14.41 Mag 62.10 Phase
0.251	135.30	278.08	29.91 278.63	7.56 39.77	36.10 335.89	238.41 312.52	6.43 266.66	6.18 85.54	1.34 63.05	15.12 Mag 286.31 Phase
0.251	155.58	274.25	26.70 282.75	7.77 30.54	34.13 344.79	232.57 313.14	7.95 266.01	3.65 101.64	0.69 222.16	19.27 Mag 274.93 Phase
0.299	90.91	521.36	17.32 210.68	16.70 233.65	50.17 356.73	479.25 334.32	9.13 267.69	2.67 343.27	10.13 247.46	49.45 Mag 204.83 Phase
0.300	94.19	558.50	15.95 221.15	13.83 106.16	70.95 11.08	478.80 332.21	8.27 281.25	2.86 31.38	5.95 223.08	55.03 Mag 193.56 Phase
0.348	–49.31	826.84	39.46 164.86	24.10 125.99	109.59 11.79	709.82 351.89	5.22 304.07	9.47 22.34	12.13 307.72	21.59 Mag 230.15 Phase
0.348	–56.72	781.43	46.85 170.73	21.24 229.51	102.04 353.83	700.05 346.26	8.11 258.01	10.99 23.52	11.92 286.43	20.15 Mag 215.83 Phase

*1/2 Peak-to-peak

Table 40. Fixed-System Loads Data for Pitching Moment T50 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	57.69	318.86	45.55 267.83	19.26 97.15	25.84 261.98	265.37 210.32	1.38 345.03	1.28 130.54	3.05 269.90	20.64 Mag 240.77 Phase
0.107	46.46	322.56	45.02 266.06	17.41 97.74	27.94 245.37	269.61 208.95	2.01 270.05	0.92 143.78	3.10 250.74	22.78 Mag 247.50 Phase
0.127	32.57	259.49	54.89 268.75	14.42 88.09	33.04 257.56	194.02 223.37	3.07 330.25	1.62 235.46	1.02 254.54	19.78 Mag 249.38 Phase
0.130	25.59	259.21	52.64 266.02	14.15 89.91	31.44 270.25	194.56 219.57	2.56 324.99	1.38 254.20	1.84 265.97	19.91 Mag 235.47 Phase
0.152	94.04	201.99	60.85 271.53	24.18 78.91	37.24 250.97	154.09 260.34	4.12 4.10	3.80 19.79	1.97 131.02	10.65 Mag 267.76 Phase
0.153	89.25	200.43	59.55 270.00	18.25 77.14	41.10 252.28	150.28 258.84	5.63 358.41	4.46 13.89	1.96 113.17	11.77 Mag 265.46 Phase
0.175	89.33	216.44	62.90 268.21	18.56 91.29	34.69 227.57	160.33 279.04	5.07 13.36	6.92 28.96	3.43 135.43	9.29 Mag 304.60 Phase
0.175	94.97	215.15	59.56 272.96	13.63 84.14	33.98 224.57	162.33 276.59	3.48 34.98	6.71 30.58	3.93 128.83	10.02 Mag 297.02 Phase
0.201	110.55	308.26	62.55 275.24	25.48 80.21	31.03 246.16	252.32 300.02	4.74 37.92	7.02 106.26	4.03 200.14	3.40 Mag 125.08 Phase
0.201	119.04	307.18	59.85 272.97	22.34 80.21	40.13 239.34	249.82 297.19	5.54 10.75	6.56 99.10	4.87 197.38	6.05 Mag 46.65 Phase
0.225	99.37	365.71	56.42 272.79	20.80 58.99	38.14 253.71	301.55 312.62	6.51 20.71	5.55 61.37	5.04 244.70	23.87 Mag 114.72 Phase
0.225	80.46	357.99	54.90 273.78	27.46 68.72	34.50 247.86	298.25 315.57	4.50 21.84	5.44 49.55	4.15 238.48	23.73 Mag 119.83 Phase
0.250	51.69	402.84	51.74 278.85	31.68 82.87	19.12 261.87	351.94 321.54	5.41 9.36	7.32 97.91	4.47 301.49	44.18 Mag 144.32 Phase
0.251	62.17	417.51	51.92 274.81	23.43 65.22	41.02 251.95	349.57 320.60	10.28 13.17	6.42 85.52	4.48 314.79	42.49 Mag 144.92 Phase
0.298	164.09	658.79	42.34 279.92	28.31 119.09	85.09 328.47	555.10 337.93	5.77 297.13	10.42 341.11	13.37 22.48	105.80 Mag 168.32 Phase
0.298	165.88	640.73	43.42 280.94	16.72 81.38	50.54 322.73	559.94 339.69	3.63 339.02	11.40 347.11	11.18 16.43	97.58 Mag 171.04 Phase
0.347	108.00	779.75	26.88 249.49	27.04 143.64	36.17 338.70	702.66 1.64	7.07 252.44	14.22 344.60	12.15 169.80	132.14 Mag 201.55 Phase
0.347	93.05	827.28	23.66 240.17	16.44 59.91	75.81 337.14	707.13 355.14	2.95 181.03	15.18 332.81	8.36 143.30	139.40 Mag 184.80 Phase

*1/2 Peak-to-peak

Table 40. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	48.95	444.26	24.18 226.83	17.08 124.90	71.68 255.90	383.47 197.51	7.91 64.45	6.16 21.43	8.32 188.39	73.07 Mag 278.39 Phase
0.106	53.12	431.99	24.38 227.56	16.67 142.28	53.93 263.60	379.93 198.50	7.33 67.05	6.77 28.07	6.36 195.40	67.74 Mag 280.23 Phase
0.125	38.77	365.81	32.25 239.85	16.98 134.85	59.95 243.94	313.97 210.02	5.68 102.03	5.21 51.55	5.32 233.85	20.72 Mag 283.93 Phase
0.125	46.58	375.03	31.15 233.69	24.11 128.44	57.27 227.34	316.93 200.89	6.25 102.32	5.17 33.99	4.85 225.43	24.29 Mag 265.18 Phase
0.150	69.91	275.62	42.29 253.97	20.01 103.09	53.18 255.91	209.89 211.93	1.70 112.92	4.42 12.66	3.88 162.97	43.64 Mag 295.13 Phase
0.151	98.57	265.76	41.07 250.30	25.26 92.67	56.74 248.69	206.95 211.22	2.95 128.62	5.92 14.12	4.12 170.31	39.54 Mag 287.67 Phase
0.176	35.51	214.09	44.41 258.45	27.38 112.52	49.48 258.40	155.28 236.78	2.84 216.86	10.29 28.42	4.37 245.39	31.71 Mag 319.26 Phase
0.176	27.44	210.20	42.99 255.84	22.96 119.83	48.17 260.60	157.79 240.03	1.94 179.83	9.81 43.60	4.75 281.97	27.16 Mag 325.41 Phase
0.200	91.25	241.59	42.53 257.54	29.89 98.98	51.89 252.29	194.58 270.49	2.58 151.35	7.68 72.76	7.54 296.27	28.53 Mag 358.00 Phase
0.200	92.71	236.93	43.42 259.50	33.35 108.73	54.52 255.69	188.58 269.80	3.62 136.00	7.71 84.72	7.32 312.20	27.23 Mag 358.13 Phase
0.224	40.47	262.90	42.17 257.10	26.66 114.13	58.58 271.12	208.37 293.84	2.50 193.92	5.75 135.77	8.63 357.13	11.36 Mag 247.58 Phase
0.224	44.51	281.87	39.42 257.99	27.47 137.05	67.43 283.88	215.09 296.99	2.98 198.90	5.72 146.16	9.42 349.17	12.05 Mag 236.80 Phase
0.251	59.40	299.97	32.76 240.50	34.29 81.25	47.75 307.69	248.02 310.77	7.04 266.63	2.71 85.89	7.27 59.88	25.98 Mag 219.52 Phase
0.251	55.82	303.74	33.25 249.05	35.21 71.71	63.91 313.83	237.78 313.12	8.68 275.26	3.57 85.08	5.39 67.56	27.33 Mag 219.29 Phase
0.298	113.10	588.35	32.07 230.90	22.32 161.59	80.26 351.80	513.33 337.36	5.61 242.61	13.83 321.12	10.79 81.28	91.61 Mag 182.01 Phase
0.299	121.62	609.60	30.95 232.34	18.26 172.57	79.14 344.21	515.87 340.99	2.71 299.70	12.51 326.78	10.51 95.13	108.17 Mag 179.51 Phase
0.347	50.02	826.35	42.56 182.89	31.85 138.05	77.80 0.07	727.40 357.44	4.82 241.27	11.76 349.56	10.94 203.46	90.40 Mag 196.80 Phase
0.347	56.65	840.00	38.61 181.52	18.39 106.06	67.21 16.78	736.63 357.77	5.16 322.87	12.69 344.72	15.47 202.50	84.42 Mag 198.73 Phase

*1/2 Peak-to-peak

Table 40. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	69.19	567.80	42.76 163.38	25.32 169.96	58.06 237.92	499.96 208.38	4.88 49.00	2.76 69.62	1.98 59.05	35.65 Mag 277.82 Phase
0.126	59.64	472.57	36.64 180.00	18.40 107.68	50.95 241.34	413.53 227.23	9.03 75.78	4.08 71.49	4.06 239.98	18.29 Mag 301.03 Phase
0.127	40.29	477.26	36.03 176.67	19.42 123.16	48.64 230.21	418.85 213.64	6.90 70.87	5.26 54.01	3.15 206.93	28.79 Mag 279.30 Phase
0.152	77.15	386.41	32.01 200.98	26.25 115.10	74.72 283.37	316.37 227.11	7.41 105.96	4.17 20.07	4.41 239.19	11.98 Mag 283.91 Phase
0.153	72.84	394.14	33.40 197.02	24.63 124.68	75.02 281.40	319.74 222.70	11.54 96.14	3.10 22.64	6.38 206.26	14.10 Mag 273.73 Phase
0.175	38.98	290.26	29.04 218.79	29.78 151.66	60.21 285.59	227.27 255.12	9.71 123.76	8.18 34.72	1.39 193.80	13.88 Mag 84.25 Phase
0.175	26.16	287.47	31.60 217.88	32.58 148.30	58.24 288.38	221.36 249.78	11.76 116.56	7.95 33.89	1.00 227.26	16.16 Mag 86.06 Phase
0.201	78.47	287.75	34.34 213.65	32.09 106.97	56.93 278.79	227.46 270.40	8.54 115.56	3.84 39.24	3.77 308.49	20.90 Mag 23.42 Phase
0.224	42.88	299.48	34.41 212.93	30.15 166.54	49.46 282.16	244.73 293.36	9.87 145.05	2.28 221.81	2.91 132.31	12.61 Mag 4.62 Phase
0.225	52.31	309.31	35.11 220.02	27.50 160.06	57.06 284.38	251.83 290.58	9.07 133.97	2.46 167.46	3.96 107.83	8.17 Mag 21.94 Phase
0.250	66.43	319.48	39.00 198.77	6.50 198.78	52.54 336.47	252.20 310.88	2.42 125.94	1.14 327.94	4.00 212.09	34.12 Mag 230.47 Phase
0.299	89.01	594.92	45.49 181.06	3.57 13.44	81.16 353.36	519.96 349.19	3.08 187.44	7.75 328.14	10.81 287.04	87.62 Mag 210.65 Phase
0.300	81.00	583.39	45.40 181.70	6.04 194.35	81.25 349.62	511.84 349.19	4.91 215.06	6.41 321.57	11.22 267.56	86.73 Mag 214.00 Phase
0.346	55.58	863.51	60.29 149.48	27.70 103.31	89.53 349.55	766.56 3.26	8.15 305.79	12.89 2.24	15.83 294.45	39.02 Mag 206.52 Phase
0.347	33.12	854.98	60.86 149.26	17.00 156.89	102.33 344.61	769.24 359.62	10.14 286.87	10.10 6.58	15.25 291.38	38.60 Mag 211.63 Phase

*1/2 Peak-to-peak

Table 41. Fixed-System Loads Data for Pitching Moment T60 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−2.12	340.41	79.43 1.84	14.18 159.91	32.11 321.10	278.95 203.14	7.19 123.78	2.40 24.84	5.69 281.49	41.39 Mag 309.62 Phase
0.110	−14.99	338.20	80.35 2.97	22.39 145.20	34.78 316.75	280.00 203.45	6.75 127.58	3.12 43.03	3.22 258.38	36.93 Mag 312.70 Phase
0.128	3.98	278.27	97.75 0.74	5.63 123.11	7.96 246.55	181.67 230.27	5.72 135.25	3.73 60.64	2.02 288.23	24.02 Mag 338.29 Phase
0.131	−31.99	281.00	97.25 0.11	5.49 166.53	18.34 251.29	184.30 236.37	4.78 144.10	3.15 66.94	2.62 283.26	16.92 Mag 335.76 Phase
0.143	37.60	178.49	49.31 283.74	17.51 68.31	22.58 252.05	135.62 245.56	6.32 19.00	3.37 354.13	2.73 116.33	9.78 Mag 341.43 Phase
0.145	34.78	175.64	47.46 283.36	12.07 66.33	22.37 251.05	134.10 255.46	5.55 20.13	3.96 13.90	3.70 148.33	10.28 Mag 13.38 Phase
0.169	93.23	183.86	55.81 282.69	10.97 61.69	22.92 229.15	138.79 277.93	5.12 16.93	5.60 53.63	3.75 138.16	13.06 Mag 50.01 Phase
0.169	77.95	189.95	53.84 286.42	8.20 62.73	22.28 256.58	144.92 277.40	5.88 25.70	6.54 51.65	3.98 132.84	13.13 Mag 52.72 Phase
0.195	137.43	264.33	55.53 287.53	23.02 55.58	21.93 260.09	217.98 298.03	3.48 12.19	8.19 103.24	1.77 148.82	12.70 Mag 88.74 Phase
0.195	123.26	263.72	56.20 288.93	21.43 66.08	21.63 251.83	215.53 301.80	4.63 46.34	7.62 113.76	1.84 162.54	11.34 Mag 95.79 Phase
0.220	73.51	293.85	48.00 287.66	23.23 90.19	21.42 260.48	251.44 322.40	2.92 14.62	3.09 104.73	0.78 283.04	16.92 Mag 110.91 Phase
0.220	121.62	295.27	46.27 292.53	16.66 61.77	28.24 248.06	246.12 323.06	2.82 57.61	4.07 120.30	0.72 11.64	19.03 Mag 112.78 Phase
0.246	99.83	333.23	36.42 299.70	23.38 101.58	19.15 242.98	298.25 325.91	3.97 321.74	6.66 78.01	0.33 209.33	22.03 Mag 136.39 Phase
0.246	94.82	332.08	39.90 299.24	21.14 75.06	8.60 221.61	296.14 332.84	5.96 16.41	6.07 78.85	0.37 320.71	22.06 Mag 145.48 Phase
0.295	66.32	560.59	27.75 306.79	14.41 45.11	41.18 351.05	484.60 342.95	7.47 345.32	11.10 1.70	4.48 11.57	64.53 Mag 184.88 Phase
0.295	95.55	562.12	27.44 311.16	18.73 40.74	33.27 323.77	491.93 344.89	7.59 344.64	10.13 341.48	7.11 350.39	67.21 Mag 185.53 Phase

*1/2 Peak-to-peak

Table 41. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	49.12	462.54	66.07 24.57	23.15 189.63	67.34 323.84	375.79 206.09	12.29 192.05	3.17 296.51	10.17 125.18	85.42 Mag 323.43 Phase
0.110	29.74	462.28	64.29 21.71	23.93 192.75	70.24 307.58	373.38 201.82	9.81 187.97	3.20 315.30	11.28 114.00	92.72 Mag 313.42 Phase
0.132	−16.82	356.53	69.56 19.53	17.36 182.84	62.10 279.52	273.23 200.76	11.26 184.26	4.91 246.94	10.66 121.88	71.22 Mag 313.44 Phase
0.144	−2.14	260.10	19.25 275.60	12.04 124.67	49.06 264.96	218.27 212.49	4.39 93.30	2.87 44.34	2.08 159.40	49.59 Mag 335.67 Phase
0.154	44.61	292.29	81.27 11.55	14.76 146.18	34.90 274.88	202.43 220.79	10.40 177.52	3.43 356.97	5.66 157.13	44.74 Mag 335.33 Phase
0.154	18.24	295.05	81.03 10.79	17.34 146.34	29.05 256.30	203.07 214.92	11.37 167.49	2.10 14.85	5.03 136.90	49.38 Mag 325.77 Phase
0.170	73.32	184.93	30.77 280.50	9.63 137.00	36.05 246.94	152.90 240.78	0.43 342.47	7.70 48.36	4.78 347.19	17.44 Mag 38.98 Phase
0.170	58.14	185.39	29.20 287.63	5.26 119.32	35.58 231.32	155.37 242.22	0.84 185.60	7.22 49.98	3.92 346.20	14.33 Mag 37.24 Phase
0.180	195.93	275.13	87.48 12.21	8.84 87.62	30.40 242.89	166.70 240.54	9.79 183.41	5.12 54.32	3.48 314.42	28.88 Mag 356.59 Phase
0.180	196.33	271.60	89.16 11.50	11.27 122.65	30.78 239.82	165.97 233.27	11.04 167.67	4.75 12.69	3.86 317.98	32.36 Mag 345.72 Phase
0.196	87.91	216.40	33.03 285.34	23.85 93.07	39.66 223.10	170.74 268.95	4.94 40.35	7.36 63.22	3.49 12.69	14.54 Mag 48.40 Phase
0.201	52.79	329.55	114.49 359.91	20.50 107.58	28.38 209.56	199.50 274.37	14.69 208.86	11.73 39.69	7.86 219.71	36.85 Mag 20.66 Phase
0.202	63.48	334.66	114.45 359.50	20.15 105.33	34.00 216.71	198.00 265.02	15.46 202.84	13.76 18.03	9.92 205.91	39.24 Mag 357.46 Phase
0.220	103.86	212.00	21.90 292.76	11.93 110.41	46.04 287.19	173.36 303.89	1.64 246.97	7.15 116.29	4.94 45.31	15.07 Mag 68.82 Phase
0.222	64.42	217.05	20.23 289.33	13.97 78.01	45.11 285.28	176.80 302.68	1.25 306.04	6.12 115.69	2.70 40.86	15.38 Mag 63.78 Phase
0.226	142.11	339.09	121.37 1.26	11.17 113.46	23.68 268.16	217.45 293.22	10.47 193.32	8.19 42.94	4.95 237.13	28.84 Mag 357.90 Phase
0.227	145.86	340.24	121.53 0.94	20.00 92.19	36.70 308.37	217.40 295.08	8.92 210.77	8.18 67.87	5.47 272.48	18.72 Mag 332.56 Phase
0.247	101.58	246.14	12.73 313.03	22.38 56.88	32.44 328.42	207.77 311.91	3.87 285.71	6.08 74.28	2.82 24.94	10.28 Mag 46.29 Phase
0.249	103.75	345.02	116.15 2.96	20.20 79.92	26.97 4.81	233.02 301.13	8.75 238.20	12.04 59.75	5.90 254.30	11.58 Mag 286.74 Phase
0.296	100.96	505.62	6.29 268.69	13.03 59.62	51.27 344.22	438.68 335.60	10.56 305.94	7.10 304.83	2.17 106.84	42.12 Mag 183.36 Phase
0.346	121.71	785.35	23.88 161.83	9.01 130.92	106.69 32.09	664.12 2.38	7.71 338.56	11.53 349.47	8.73 206.99	39.87 Mag 215.27 Phase
0.346	120.50	758.52	24.03 169.64	24.27 209.33	94.50 35.98	662.79 10.32	5.84 347.86	8.94 350.33	7.34 171.58	49.05 Mag 225.55 Phase

*1/2 Peak-to-peak

Table 41. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	30.90	547.18	60.67 76.56	12.89 205.68	34.94 303.27	489.76 215.61	13.29 278.44	7.54 276.25	6.00 205.14	39.25 Mag 12.53 Phase
0.110	52.70	545.17	60.75 77.54	11.71 163.95	45.99 319.92	489.46 221.40	12.12 272.53	8.07 279.35	6.12 207.02	47.38 Mag 9.79 Phase
0.128	−11.67	407.35	63.24 55.87	9.27 100.78	58.53 255.86	348.70 220.70	11.42 280.96	2.81 273.53	5.64 189.73	47.03 Mag 5.24 Phase
0.131	−8.65	399.83	64.71 54.87	2.54 123.09	46.50 274.66	337.88 217.54	14.47 277.59	2.92 259.20	7.93 185.06	45.17 Mag 3.33 Phase
0.144	27.30	389.93	8.30 158.55	13.14 93.00	90.51 270.92	302.62 222.78	6.71 142.45	2.82 252.15	3.10 167.38	32.98 Mag 21.81 Phase
0.145	30.61	364.02	9.85 144.54	15.31 114.64	77.64 268.89	291.90 222.02	5.94 134.46	1.93 268.31	3.04 144.02	32.21 Mag 18.97 Phase
0.170	71.79	282.49	3.33 293.99	20.92 165.29	54.58 276.91	238.56 249.38	3.25 154.79	3.99 22.28	3.51 143.08	31.64 Mag 52.53 Phase
0.171	55.43	277.74	5.77 270.05	18.01 168.08	52.73 268.74	232.39 239.70	3.44 123.76	4.06 14.29	2.38 127.24	29.90 Mag 51.42 Phase
0.194	96.02	228.94	10.50 271.50	19.99 105.85	41.53 282.08	195.97 278.47	1.40 237.39	3.17 9.42	2.07 189.02	33.01 Mag 67.43 Phase
0.197	76.87	244.64	7.47 271.01	16.35 121.02	48.15 268.06	198.62 267.29	0.68 169.03	7.91 336.27	2.29 196.36	29.74 Mag 48.93 Phase
0.221	80.69	264.87	5.10 213.58	19.88 194.81	45.41 302.57	223.74 287.64	1.28 154.29	3.78 147.55	3.72 189.67	28.58 Mag 49.97 Phase
0.221	64.70	263.35	0.67 257.01	19.64 173.33	42.12 309.12	228.71 292.79	0.62 319.71	4.71 143.42	3.90 196.10	32.59 Mag 51.52 Phase
0.245	61.49	286.96	11.47 151.57	1.65 235.19	43.41 340.14	244.63 313.05	4.21 314.62	4.36 142.57	0.80 270.49	9.79 Mag 298.69 Phase
0.247	83.51	291.53	9.50 151.60	5.00 295.38	35.99 3.66	253.89 309.29	3.36 337.20	5.65 178.10	3.07 316.50	7.55 Mag 299.73 Phase
0.295	40.95	538.30	35.12 128.42	16.79 42.57	76.10 352.52	451.67 344.47	9.08 310.54	11.60 310.58	9.87 327.78	20.73 Mag 219.94 Phase
0.297	52.72	524.16	34.41 133.48	2.09 264.36	68.28 349.98	453.44 342.08	9.38 290.17	11.63 294.23	8.15 317.52	22.83 Mag 215.02 Phase

*1/2 Peak-to-peak

Table 42. Fixed-System Loads Data for Pitching Moment T70 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	–4.74	416.85	49.25 264.52	15.46 104.59	23.76 340.07	364.61 222.06	2.50 299.81	3.15 243.72	6.45 235.87	55.87 Mag 2.06 Phase
0.103	6.01	409.97	46.70 264.72	22.36 103.38	18.27 342.67	361.49 220.08	2.17 303.75	2.70 244.03	7.09 232.59	58.59 Mag 358.69 Phase
0.128	0.73	283.76	56.94 270.37	13.31 56.21	19.29 320.92	229.55 234.54	4.61 334.86	2.48 271.65	0.72 158.15	31.71 Mag 12.06 Phase
0.129	–46.19	280.43	55.01 271.09	16.00 54.39	17.33 350.36	232.15 241.73	3.07 357.61	2.34 312.28	0.88 186.06	33.33 Mag 25.85 Phase
0.153	–23.70	250.40	57.67 270.21	16.50 90.49	20.69 281.62	198.70 275.43	5.79 5.03	5.34 5.12	3.12 167.10	18.77 Mag 53.01 Phase
0.153	–36.56	243.98	57.03 272.65	18.29 89.27	14.74 259.61	198.46 276.15	4.77 358.94	5.36 7.76	2.35 163.30	15.74 Mag 54.28 Phase
0.180	79.53	278.72	59.59 271.39	14.91 51.78	23.69 230.54	218.19 297.97	4.34 9.79	6.28 28.10	3.47 176.78	19.50 Mag 88.70 Phase
0.181	72.19	276.47	60.50 271.20	22.17 55.55	18.07 242.37	214.83 302.96	4.83 14.75	5.79 38.42	2.10 193.41	18.61 Mag 93.41 Phase
0.203	92.46	369.48	59.07 276.77	24.25 61.95	22.91 246.84	308.57 316.29	8.39 9.06	5.86 96.17	5.97 245.81	26.65 Mag 105.17 Phase
0.203	88.39	367.77	59.38 276.16	35.21 84.09	28.40 254.38	308.59 321.64	9.08 17.97	6.53 97.62	5.46 240.20	27.67 Mag 118.66 Phase
0.224	148.99	453.76	66.83 281.82	37.33 77.09	24.14 250.03	378.10 345.58	5.43 27.23	6.04 58.56	3.44 311.51	36.94 Mag 167.16 Phase
0.225	126.31	458.12	66.02 280.07	30.93 69.16	33.33 251.97	380.77 336.71	6.40 33.17	7.39 36.78	5.42 267.99	37.52 Mag 145.14 Phase
0.249	62.29	458.51	56.10 283.66	25.82 100.58	23.53 249.53	400.28 341.04	6.38 20.51	5.17 50.34	2.85 333.06	39.12 Mag 153.81 Phase
0.249	69.55	467.42	56.55 279.76	31.07 96.60	31.91 268.38	406.17 334.24	7.30 6.80	6.56 36.16	4.03 314.76	42.51 Mag 142.01 Phase
0.299	151.29	694.16	49.86 280.76	28.38 125.06	59.10 354.68	616.31 347.78	5.74 329.06	16.16 334.87	11.74 34.26	86.49 Mag 182.81 Phase
0.300	138.62	698.99	51.27 282.23	14.58 116.73	51.70 331.93	617.02 353.32	2.93 18.41	16.03 341.47	12.78 56.39	84.39 Mag 194.87 Phase
0.346	159.74	798.20	26.53 250.88	28.60 134.67	29.31 17.56	739.31 8.52	1.03 270.00	17.23 354.48	10.52 173.25	89.11 Mag 221.63 Phase
0.346	167.94	802.72	25.91 245.82	27.64 123.28	33.70 353.81	741.67 13.18	9.21 194.66	16.47 347.48	13.72 158.85	96.72 Mag 232.57 Phase

*1/2 Peak-to-peak

Table 42. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	42.32	565.94	28.68 239.99	25.00 146.08	35.84 289.49	497.05 226.97	10.09 102.04	3.85 76.23	8.02 168.38	123.97 Mag 340.70 Phase
0.103	13.94	560.64	27.10 235.73	19.43 158.75	41.10 281.25	497.48 226.89	10.32 99.52	2.72 65.42	8.62 166.56	121.67 Mag 342.16 Phase
0.126	6.56	429.20	32.91 251.63	9.94 186.47	35.36 265.25	379.65 236.00	6.49 119.79	4.91 78.18	9.39 206.00	74.97 Mag 9.75 Phase
0.127	−16.06	433.14	33.44 256.59	7.29 131.97	45.39 268.24	380.37 234.40	7.86 125.37	3.62 54.08	10.45 208.98	79.42 Mag 7.34 Phase
0.150	24.81	290.60	43.99 254.43	24.72 121.12	39.79 265.20	240.51 236.12	7.13 156.52	1.95 17.88	3.32 305.41	10.76 Mag 312.93 Phase
0.150	11.76	286.00	43.52 257.65	22.87 114.77	37.36 257.19	240.63 243.03	4.07 169.58	2.77 18.60	3.33 276.77	18.85 Mag 349.10 Phase
0.152	−24.08	299.49	38.78 253.36	26.79 121.67	34.07 273.17	249.28 242.12	5.27 156.46	3.16 25.20	5.02 239.13	37.81 Mag 357.44 Phase
0.153	−38.68	305.76	38.99 257.28	21.86 122.98	39.82 270.19	255.28 245.07	4.89 151.90	3.22 36.64	4.12 244.99	39.75 Mag 8.08 Phase
0.171	58.12	241.22	47.72 260.09	14.95 128.40	46.17 243.91	190.75 259.71	3.18 144.70	7.56 49.12	6.09 346.93	23.87 Mag 35.05 Phase
0.174	87.26	241.64	45.20 261.01	14.50 112.14	40.80 250.45	195.53 266.18	1.80 184.78	6.50 46.36	4.91 347.79	26.21 Mag 31.67 Phase
0.177	59.59	253.15	42.83 262.18	9.06 107.97	45.65 256.73	205.14 273.10	3.53 194.61	5.50 69.43	5.66 340.23	20.69 Mag 56.32 Phase
0.179	51.46	245.50	46.01 260.08	16.38 93.82	45.03 250.46	201.05 271.01	3.39 171.96	5.58 57.80	5.79 338.88	22.49 Mag 50.91 Phase
0.195	134.70	252.61	55.37 267.94	36.19 85.86	55.19 270.52	199.76 294.19	1.09 15.63	8.05 81.76	6.43 7.15	22.08 Mag 11.79 Phase
0.199	119.41	291.97	41.25 259.00	30.53 88.04	37.50 274.57	252.35 291.17	3.28 155.73	6.74 122.57	6.50 8.18	12.09 Mag 342.44 Phase
0.203	69.76	307.00	40.31 267.65	24.65 116.32	42.32 268.49	270.95 294.17	4.82 188.87	3.80 124.64	7.51 345.50	13.37 Mag 30.97 Phase
0.205	69.37	311.33	41.33 268.95	29.30 100.67	45.18 273.56	274.95 293.33	4.29 197.04	4.99 109.68	9.03 349.91	16.61 Mag 25.84 Phase
0.224	105.12	342.95	50.23 267.45	44.03 140.11	40.20 246.93	288.76 315.66	11.44 166.23	2.03 171.78	8.29 10.67	7.62 Mag 227.60 Phase
0.225	52.79	338.12	45.92 265.03	15.02 133.04	39.23 267.69	287.38 321.24	6.16 215.34	2.62 202.29	6.79 32.64	5.31 Mag 103.21 Phase
0.225	32.59	336.95	47.20 268.48	24.86 104.13	42.89 272.58	287.61 321.13	9.22 197.53	3.11 162.27	6.36 59.11	4.45 Mag 128.56 Phase
0.247	165.66	322.54	46.62 270.14	25.87 85.75	50.17 310.50	259.61 339.10	10.07 282.78	1.83 335.99	9.64 75.06	21.39 Mag 258.99 Phase

*1/2 Peak-to-peak

Table 42. Continued

(b) Concluded

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.248	34.74	356.63	36.55 268.17	15.74 104.86	50.29 320.84	309.12 332.95	7.25 299.80	4.49 16.83	6.05 68.18	9.90 Mag 229.77 Phase
0.248	29.46	345.61	35.85 260.76	26.81 83.94	45.20 321.17	302.29 328.60	8.81 273.48	3.79 359.73	3.87 65.66	17.16 Mag 226.12 Phase
0.297	179.30	613.72	27.19 246.44	24.66 178.98	67.89 19.15	541.67 357.47	7.93 307.70	16.48 348.82	5.98 142.98	75.18 Mag 215.82 Phase
0.300	133.11	655.94	33.24 248.49	14.68 169.74	75.26 22.89	588.50 355.82	6.66 240.89	13.48 353.65	7.86 131.33	64.32 Mag 218.97 Phase
0.301	117.65	649.25	27.27 252.66	18.94 156.23	52.61 15.15	590.24 357.43	6.75 293.42	14.67 347.18	6.54 131.79	77.81 Mag 217.71 Phase
0.346	123.90	905.61	44.39 192.50	27.69 135.17	104.92 55.33	770.52 13.32	5.26 243.24	11.06 2.26	17.31 206.47	74.22 Mag 245.70 Phase
0.347	150.27	855.76	34.30 195.96	24.88 235.00	72.56 62.97	779.96 8.32	1.72 229.15	15.00 341.92	16.91 198.12	65.05 Mag 238.32 Phase
0.347	183.72	864.45	30.21 198.48	20.50 206.89	101.45 41.92	760.59 15.79	3.61 164.90	12.03 350.60	13.12 215.70	76.95 Mag 252.92 Phase

*1/2 Peak-to-peak

Table 42. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	25.46	684.35	35.65 170.14	18.42 176.18	55.12 312.46	631.15 237.16	6.92 106.14	1.68 201.47	1.04 154.26	34.97 Mag 50.97 Phase
0.106	20.23	688.81	32.02 167.36	19.24 168.15	54.54 302.02	637.26 229.44	6.30 92.86	1.72 196.62	1.51 165.96	36.75 Mag 33.17 Phase
0.129	−47.14	548.59	24.78 190.57	15.36 100.06	59.76 290.50	489.44 240.86	8.02 113.23	2.82 136.67	4.58 182.96	49.86 Mag 28.19 Phase
0.129	−38.41	538.89	26.03 191.37	16.14 86.05	51.56 279.07	492.45 244.59	6.99 116.40	1.17 191.06	5.43 176.07	47.38 Mag 27.47 Phase
0.142	0.00	−32.71	492.83 23.38	198.30 16.79	122.60 85.73	317.33 408.27	241.31 8.85	141.47 3.26	185.16 3.80	213.74 Mag 47.52 Phase
0.152	−31.01	456.16	24.55 205.25	26.70 143.90	80.51 291.92	392.75 242.71	9.14 138.94	2.12 219.28	4.31 176.49	35.98 Mag 7.00 Phase
0.177	30.54	338.42	25.19 214.92	18.77 165.53	48.62 268.32	283.46 263.29	3.93 112.15	3.71 310.60	3.21 157.70	39.21 Mag 57.23 Phase
0.179	19.84	327.48	25.55 218.21	26.54 170.78	49.15 279.86	273.57 269.48	6.87 113.43	2.18 348.68	2.20 187.66	30.72 Mag 87.60 Phase
0.203	63.37	357.18	26.73 223.70	21.69 135.46	45.82 311.60	316.91 294.83	5.72 114.98	4.95 332.98	2.54 210.76	32.77 Mag 86.05 Phase
0.203	51.61	353.92	24.96 228.99	26.50 124.19	41.20 307.61	314.27 295.76	5.12 140.07	2.71 329.73	2.19 205.96	33.81 Mag 94.01 Phase
0.224	58.49	365.13	30.71 241.77	26.71 160.12	48.45 315.29	317.54 312.76	5.98 159.27	2.61 90.51	3.14 159.60	33.49 Mag 107.31 Phase
0.224	31.74	360.28	33.49 237.50	25.76 177.98	55.03 312.61	309.96 307.08	8.19 160.36	1.91 161.13	2.87 191.04	25.13 Mag 103.00 Phase
0.224	78.18	353.28	27.46 220.27	15.97 142.76	38.80 315.84	309.11 305.38	6.05 142.31	3.56 52.08	3.93 143.28	33.43 Mag 79.46 Phase
0.225	77.17	360.38	29.68 235.40	26.89 147.07	49.49 323.28	310.92 308.78	6.82 166.58	2.34 121.98	2.10 183.09	34.34 Mag 78.52 Phase
0.247	40.27	396.58	26.95 213.59	15.20 196.53	58.14 355.03	346.57 326.65	2.64 240.16	2.53 85.72	1.65 213.54	16.14 Mag 129.31 Phase
0.248	42.33	406.07	32.75 210.54	9.93 72.87	69.79 351.68	342.98 324.85	3.43 132.07	2.36 19.17	2.72 173.66	13.72 Mag 150.94 Phase
0.301	86.17	645.44	32.30 191.35	12.68 223.83	60.25 22.40	585.39 355.38	4.03 303.80	7.40 344.23	4.94 257.66	49.22 Mag 226.22 Phase
0.301	82.82	650.02	31.63 189.20	24.33 178.63	61.28 14.41	588.80 358.20	5.14 246.22	4.45 338.47	6.77 294.36	49.02 Mag 237.85 Phase
0.347	70.84	842.12	62.38 152.88	22.16 235.08	86.70 8.23	755.92 13.11	14.02 330.93	12.64 348.15	7.11 315.16	28.38 Mag 246.67 Phase
0.347	65.78	894.65	62.26 155.95	15.19 144.70	85.75 12.61	798.07 18.25	10.18 315.81	11.84 17.51	6.15 307.89	25.20 Mag 265.04 Phase

*1/2 Peak-to-peak

Table 43. Fixed-System Loads Data for Pitching Moment T75 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	11.23	371.71	51.56 267.53	26.69 94.09	31.14 26.71	313.07 234.03	4.55 324.62	4.55 245.94	5.49 256.99	46.17 Mag 13.43 Phase
0.103	37.55	372.53	51.07 265.99	26.97 89.75	36.55 20.90	308.35 233.77	4.80 308.10	3.68 230.55	6.68 250.06	49.79 Mag 11.20 Phase
0.119	5.10	283.48	58.07 268.16	18.17 30.76	21.90 23.13	231.77 249.58	5.62 325.93	4.24 284.03	5.22 232.91	30.69 Mag 36.53 Phase
0.122	−28.00	274.08	57.09 267.79	19.21 39.35	19.60 22.18	224.76 247.71	5.74 328.50	4.46 284.39	4.56 234.98	26.84 Mag 29.13 Phase
0.149	−18.95	223.75	60.73 271.55	17.18 67.80	6.81 349.60	173.45 287.30	5.18 29.36	6.05 358.85	1.66 234.07	11.87 Mag 85.85 Phase
0.150	−7.02	227.04	61.50 274.07	19.52 58.40	11.90 12.29	170.73 306.03	6.01 38.18	5.75 14.34	2.63 266.53	12.56 Mag 114.85 Phase
0.153	−10.91	224.43	62.49 267.95	21.37 70.39	16.09 323.59	172.17 288.43	5.38 11.21	6.23 348.36	3.11 224.37	11.80 Mag 92.67 Phase
0.153	−14.64	225.91	62.21 268.64	22.47 67.11	7.69 326.41	169.37 292.22	5.54 8.85	6.03 355.80	3.51 251.85	17.33 Mag 89.02 Phase
0.176	−10.56	284.06	65.84 271.96	29.18 51.88	6.96 139.95	213.80 322.75	5.73 45.93	6.59 28.84	2.54 277.57	18.27 Mag 156.78 Phase
0.176	−1.64	279.98	64.78 272.06	31.40 51.58	5.67 187.12	208.91 319.68	5.39 25.49	6.86 25.52	2.29 274.01	19.14 Mag 143.31 Phase
0.202	103.20	341.48	65.37 273.29	35.19 71.16	12.86 205.99	273.97 334.39	7.38 55.15	6.01 75.01	3.93 256.31	25.43 Mag 158.01 Phase
0.203	83.00	337.23	68.06 269.02	31.91 67.29	3.62 111.17	270.11 328.08	6.97 56.11	5.80 53.45	3.66 239.77	24.99 Mag 156.19 Phase
0.224	113.76	422.53	62.29 273.04	38.29 59.24	12.71 283.65	339.47 357.88	7.98 83.53	6.91 41.46	5.51 314.62	32.65 Mag 179.58 Phase
0.225	125.57	426.46	62.38 274.12	36.46 43.33	21.24 231.48	336.91 351.69	8.69 73.62	7.16 35.38	5.42 297.32	35.38 Mag 168.50 Phase
0.249	183.71	460.84	61.42 277.66	24.40 113.22	24.34 208.34	399.77 4.02	5.30 58.68	7.66 69.56	2.04 2.74	35.91 Mag 201.94 Phase
0.249	186.75	470.28	61.48 277.11	33.24 98.56	32.08 247.14	401.75 356.58	5.51 64.56	7.20 60.46	4.04 313.37	41.26 Mag 185.07 Phase
0.301	225.07	658.92	49.21 279.72	27.47 104.17	19.54 16.41	590.42 10.97	1.18 47.27	13.46 358.37	7.36 40.50	81.87 Mag 211.48 Phase
0.301	199.30	662.54	49.16 283.10	26.40 100.57	25.18 30.43	595.17 12.70	2.21 104.43	13.04 353.62	7.61 39.00	79.84 Mag 212.05 Phase
0.345	169.01	783.95	27.12 260.04	21.49 79.35	15.15 89.76	722.09 29.05	4.10 91.06	13.06 20.26	8.01 167.77	80.76 Mag 213.23 Phase
0.345	140.82	786.12	25.35 267.72	22.63 136.80	7.59 146.14	726.67 35.23	4.29 34.77	12.13 33.95	12.30 218.90	72.16 Mag 226.95 Phase

*1/2 Peak-to-peak

Table 43. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	42.50	541.04	25.61 250.87	18.94 184.23	35.82 316.88	481.20 238.31	8.80 98.53	1.62 21.38	4.85 184.17	76.76 Mag 356.27 Phase
0.109	45.62	531.55	27.32 251.23	21.85 174.60	62.35 304.62	451.01 233.80	10.66 89.72	2.22 103.98	6.78 176.23	83.38 Mag 344.33 Phase
0.120	10.58	420.51	34.62 250.47	8.32 75.55	45.32 252.29	371.43 234.31	8.55 97.59	3.57 142.47	14.59 205.71	58.78 Mag 351.43 Phase
0.123	4.38	435.52	38.13 253.66	4.63 136.53	46.92 272.48	369.86 243.78	9.31 111.55	4.38 161.49	15.95 225.20	72.07 Mag 7.24 Phase
0.149	−21.27	277.40	43.99 257.03	25.64 104.25	41.72 279.61	223.51 254.74	3.98 94.31	3.09 326.93	7.13 238.93	19.09 Mag 344.14 Phase
0.150	−23.04	272.14	44.41 257.10	24.11 98.71	43.03 270.51	222.05 254.00	3.89 71.81	4.06 330.47	5.53 249.84	18.66 Mag 345.05 Phase
0.152	−5.99	271.37	45.91 257.66	25.13 111.45	45.05 272.99	215.33 248.46	3.39 90.22	3.99 331.05	3.08 237.81	17.56 Mag 343.80 Phase
0.153	−3.62	261.13	44.19 254.92	25.18 106.17	42.76 278.02	211.28 248.38	6.17 120.96	3.56 323.43	3.31 276.98	8.87 Mag 335.66 Phase
0.176	−28.24	215.87	49.40 258.95	17.72 96.83	36.45 266.66	168.56 291.11	5.41 140.63	3.76 45.41	4.21 343.33	16.44 Mag 45.41 Phase
0.177	−20.24	220.21	48.53 259.42	17.64 96.16	40.62 242.74	169.26 285.41	6.18 119.58	4.19 27.11	4.89 342.48	14.07 Mag 31.03 Phase
0.201	77.01	271.15	53.11 260.91	38.00 70.01	29.88 265.34	205.41 317.67	6.83 132.69	0.57 198.41	7.49 336.69	15.56 Mag 357.17 Phase
0.202	85.08	260.31	49.41 260.03	33.88 68.05	28.00 268.16	203.30 309.02	7.55 109.70	2.66 130.47	4.29 329.45	15.38 Mag 332.24 Phase
0.225	104.82	301.74	50.25 256.62	18.74 111.52	46.70 283.59	235.69 339.42	1.74 152.39	5.92 261.79	6.54 19.30	8.81 Mag 314.38 Phase
0.225	113.13	304.84	49.15 259.62	22.69 107.35	51.27 294.03	240.83 341.63	3.83 158.15	6.09 280.03	6.36 2.50	5.97 Mag 326.34 Phase
0.250	178.99	353.99	45.07 261.77	31.37 92.81	33.68 308.97	296.11 356.50	4.84 244.36	4.72 339.23	7.34 78.00	24.88 Mag 251.06 Phase
0.251	158.89	371.25	47.23 258.51	37.40 74.64	29.31 298.12	302.88 353.72	3.96 271.97	7.51 337.32	7.72 61.29	22.59 Mag 240.88 Phase
0.300	181.62	617.57	27.79 257.98	17.63 158.54	59.75 4.21	563.67 7.53	8.17 274.86	11.46 10.40	7.32 151.31	48.88 Mag 211.49 Phase
0.301	200.02	630.71	34.47 239.88	20.86 106.15	56.75 30.90	568.82 9.62	6.12 233.04	11.10 16.54	8.07 140.30	46.28 Mag 224.77 Phase
0.345	104.80	830.95	29.81 208.22	30.81 106.86	51.74 42.66	752.93 26.75	2.25 268.53	8.26 24.58	16.67 221.76	36.41 Mag 203.16 Phase
0.346	122.42	823.67	38.02 189.34	26.29 216.26	32.58 72.91	752.57 33.59	5.00 236.16	7.34 6.00	15.93 233.68	26.33 Mag 225.36 Phase

*1/2 Peak-to-peak

Table 43. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	58.53	673.61	34.29 166.31	8.12 194.09	62.22 322.53	614.27 241.75	6.83 94.73	3.73 196.13	2.47 148.91	19.44 Mag 64.36 Phase
0.107	29.87	684.39	28.61 166.30	22.52 188.32	75.15 317.39	622.46 245.31	5.86 94.20	4.45 181.40	2.96 187.21	17.07 Mag 88.63 Phase
0.120	23.07	596.78	22.17 197.41	13.00 38.48	107.85 324.73	484.31 249.53	7.20 107.17	2.73 151.97	2.04 141.39	45.96 Mag 6.43 Phase
0.122	23.81	567.96	22.67 200.39	17.24 70.07	83.02 325.21	477.06 253.87	8.14 108.95	4.20 110.99	2.42 158.32	33.93 Mag 28.39 Phase
0.148	−10.62	442.96	24.69 224.19	32.28 160.63	90.90 323.39	348.40 259.92	9.96 145.28	3.48 200.24	5.79 221.67	17.17 Mag 1.93 Phase
0.149	−11.85	441.37	27.26 229.76	36.50 150.51	95.41 313.71	347.44 258.20	10.67 133.84	2.06 201.79	5.20 235.09	17.07 Mag 18.79 Phase
0.150	−19.56	448.65	27.69 225.36	32.33 141.33	79.46 305.08	368.39 251.67	12.14 123.08	2.70 249.32	5.91 220.81	7.69 Mag 26.59 Phase
0.150	−30.48	442.75	25.87 226.05	30.82 140.46	85.38 310.07	363.38 259.34	11.28 143.68	3.58 243.42	5.55 229.81	15.24 Mag 36.06 Phase
0.150	0.97	439.98	29.11 214.18	34.38 159.74	85.92 319.99	347.09 257.47	12.55 121.36	0.25 201.71	3.35 212.16	3.69 Mag 219.09 Phase
0.151	−14.58	440.17	27.19 221.64	32.95 172.39	96.57 316.03	348.85 257.48	11.60 131.40	1.41 167.91	3.08 244.40	14.95 Mag 356.77 Phase
0.174	−46.37	320.03	32.27 231.32	23.65 177.71	54.17 298.38	270.58 280.43	10.54 129.98	2.21 302.29	1.89 236.36	26.66 Mag 87.41 Phase
0.175	−33.70	316.54	33.62 229.16	24.09 184.49	48.70 305.33	271.69 283.50	11.11 133.96	1.52 321.14	1.46 259.67	27.14 Mag 100.65 Phase
0.200	30.92	288.40	35.52 234.98	32.66 111.39	44.93 303.74	249.99 309.87	13.87 158.71	4.68 331.79	2.32 281.04	8.97 Mag 23.63 Phase
0.200	63.67	302.98	35.86 241.30	28.78 135.86	42.87 306.64	264.38 308.26	12.41 152.84	2.99 308.04	3.07 290.80	4.76 Mag 237.03 Phase
0.224	80.20	317.26	32.84 230.34	30.20 183.53	48.22 303.34	257.87 321.80	9.17 142.94	3.37 279.98	0.71 204.73	10.76 Mag 291.83 Phase
0.225	70.21	319.37	39.87 232.74	29.94 193.62	51.83 309.85	253.06 328.51	13.24 161.00	4.80 286.93	1.29 165.02	17.19 Mag 283.19 Phase
0.250	126.32	338.79	35.23 235.67	18.41 127.00	56.95 344.42	290.42 351.14	2.98 186.22	2.65 19.84	0.69 118.45	13.65 Mag 270.58 Phase
0.251	154.51	344.81	34.68 231.03	14.59 121.80	51.43 324.80	295.65 344.90	3.52 238.34	4.36 10.35	0.74 222.14	15.46 Mag 265.13 Phase
0.300	156.73	632.96	40.06 176.00	5.20 97.03	54.15 342.63	578.29 5.73	5.06 253.76	3.74 331.85	2.36 230.16	24.23 Mag 230.28 Phase
0.300	151.08	631.44	32.42 179.96	1.59 31.61	67.35 352.98	578.67 1.98	5.07 245.45	4.15 293.74	3.25 270.44	27.18 Mag 219.70 Phase
0.346	81.18	847.08	49.30 155.27	36.78 228.00	46.26 353.14	775.63 24.74	10.07 319.06	9.96 25.57	5.28 298.65	10.56 Mag 319.30 Phase
0.347	66.99	873.37	52.75 156.44	36.25 256.56	83.41 0.02	780.65 26.34	10.41 331.02	11.12 26.34	8.43 310.04	19.20 Mag 345.43 Phase

*1/2 Peak-to-peak

Table 44. Fixed-System Loads Data for Pitching Moment T80 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.096	57.43	438.94	111.37 303.26	22.21 100.81	35.10 266.87	331.45 233.87	10.72 25.59	1.90 146.86	4.55 180.37	40.61 Mag 3.57 Phase
0.099	45.39	439.40	108.54 300.46	23.38 93.50	33.05 252.68	332.95 221.62	10.10 5.31	1.93 122.55	5.60 149.45	42.83 Mag 337.31 Phase
0.132	82.11	297.39	118.99 289.64	16.23 42.78	36.83 283.85	185.26 256.33	12.07 19.17	4.09 111.56	3.52 178.63	8.79 Mag 7.46 Phase
0.132	69.26	303.42	117.27 292.33	9.61 57.56	41.66 282.24	185.89 261.44	12.07 23.08	4.50 137.40	6.11 187.96	12.29 Mag 19.24 Phase
0.155	49.81	202.73	68.92 286.79	20.73 89.91	25.61 263.43	146.57 305.22	8.21 54.04	3.35 47.54	3.35 181.76	8.18 Mag 142.04 Phase
0.155	58.66	206.90	69.98 287.38	17.16 75.45	29.25 260.14	145.48 301.59	7.86 56.30	4.06 45.81	2.86 171.82	6.59 Mag 162.03 Phase
0.181	120.42	269.30	71.03 285.43	23.35 63.87	35.05 249.59	194.78 322.47	6.04 56.68	5.33 69.11	1.93 211.75	19.37 Mag 148.24 Phase
0.181	119.27	268.00	72.27 287.66	29.25 67.62	18.29 233.75	197.71 330.00	6.13 51.49	5.28 79.08	1.61 219.26	16.72 Mag 175.32 Phase
0.203	138.20	333.94	68.24 287.35	30.78 93.08	26.54 245.19	266.50 331.77	7.99 64.35	5.28 109.95	2.11 251.72	24.00 Mag 178.62 Phase
0.203	126.67	343.75	69.56 288.83	31.82 75.43	31.88 243.10	269.13 338.42	7.19 75.47	7.03 116.34	2.80 276.68	24.26 Mag 187.76 Phase
0.229	117.25	408.12	66.63 287.03	35.18 52.62	47.81 254.13	316.03 349.69	6.34 76.57	5.34 80.04	2.91 316.45	30.31 Mag 183.18 Phase
0.229	103.73	394.71	69.04 286.97	31.13 65.57	28.11 268.50	313.16 346.86	6.21 51.18	4.96 84.68	1.88 337.43	29.41 Mag 174.15 Phase
0.252	151.37	455.85	69.05 290.67	34.69 80.85	31.52 254.42	370.64 354.60	7.26 70.69	6.08 77.71	4.53 16.06	48.20 Mag 192.99 Phase
0.253	151.16	451.36	68.84 290.88	33.60 98.82	18.66 272.02	381.02 349.51	6.58 63.52	4.73 72.22	3.79 9.12	46.76 Mag 184.60 Phase
0.300	129.27	635.83	47.44 295.12	22.57 28.97	43.35 347.26	542.25 354.60	4.27 9.22	11.14 351.66	3.34 64.05	85.61 Mag 196.08 Phase
0.302	119.64	628.89	48.40 298.00	13.33 57.57	29.67 355.68	553.40 356.84	3.99 13.14	11.25 5.61	4.08 70.36	87.33 Mag 196.75 Phase
0.350	135.08	725.01	29.86 291.66	15.27 142.15	33.58 314.08	672.08 18.62	6.29 280.50	10.15 356.17	7.34 199.50	103.68 Mag 210.66 Phase
0.350	112.28	744.01	24.19 302.42	14.93 117.13	44.98 273.86	673.71 15.82	7.34 320.14	12.38 351.12	13.99 180.71	103.62 Mag 202.23 Phase

*1/2 Peak-to-peak

Table 44. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	64.82	611.25	127.00 313.80	15.47 173.10	82.72 207.32	452.86 224.31	22.82 150.85	8.84 123.59	27.87 173.87	125.30 Mag 321.33 Phase
0.105	58.62	580.04	123.99 317.50	26.57 160.53	75.31 226.30	433.97 235.80	22.96 174.21	12.22 139.73	25.68 209.16	110.63 Mag 349.76 Phase
0.130	64.99	450.40	124.36 304.40	8.27 343.34	71.64 270.02	294.34 235.86	11.31 150.32	7.62 103.90	20.26 219.04	71.63 Mag 348.78 Phase
0.132	74.34	444.49	123.58 303.96	7.59 331.85	59.40 256.54	296.92 232.24	12.57 145.15	6.73 101.30	21.22 211.50	71.05 Mag 340.98 Phase
0.153	92.84	364.36	126.12 299.04	12.26 99.42	93.56 277.96	212.37 251.33	5.16 6.74	6.20 120.22	8.95 242.53	33.51 Mag 20.79 Phase
0.153	91.32	352.44	123.04 301.86	14.16 100.34	86.40 281.03	213.42 254.53	1.38 42.33	6.71 128.97	9.18 275.77	28.44 Mag 37.30 Phase
0.153	30.18	228.59	45.89 285.15	18.39 106.97	34.38 264.73	179.27 252.75	0.39 79.04	4.61 80.07	3.77 261.40	21.96 Mag 6.76 Phase
0.180	99.49	196.00	53.86 281.99	21.94 113.63	47.47 218.17	139.41 278.56	4.35 33.24	8.54 50.98	4.86 43.82	11.55 Mag 21.08 Phase
0.181	92.39	194.56	55.22 283.38	13.55 82.69	44.72 226.84	140.27 283.65	3.52 47.26	7.50 68.38	3.75 41.94	16.38 Mag 29.61 Phase
0.201	114.95	243.56	54.64 284.53	36.34 100.74	27.75 263.77	196.11 307.87	5.59 23.75	8.62 86.79	5.54 70.95	16.71 Mag 46.47 Phase
0.202	115.62	362.86	135.71 292.60	20.45 5.61	79.33 269.68	224.35 297.98	3.92 332.29	6.36 143.80	8.94 314.77	26.40 Mag 31.41 Phase
0.203	115.77	359.14	134.32 292.96	14.23 16.73	86.31 272.84	226.47 300.57	7.99 355.01	6.16 139.34	6.91 295.74	26.62 Mag 38.70 Phase
0.228	93.89	272.61	43.80 287.23	17.75 79.76	45.92 289.59	216.99 332.01	2.28 4.13	3.06 97.04	5.26 60.57	4.07 Mag 358.38 Phase
0.229	99.12	279.62	45.10 284.45	14.80 88.42	56.57 298.21	222.09 333.18	2.77 68.80	3.24 108.43	5.03 55.20	4.12 Mag 24.96 Phase
0.251	86.41	415.01	134.14 296.42	8.89 63.92	76.83 312.27	282.39 338.20	13.12 321.89	2.10 202.76	10.15 55.70	18.65 Mag 185.39 Phase
0.251	71.06	416.93	131.65 296.34	9.74 76.01	89.71 317.60	280.95 341.82	11.81 336.81	1.31 296.67	11.09 29.24	13.60 Mag 190.27 Phase
0.252	137.01	324.92	40.77 286.04	22.33 93.34	33.26 294.51	280.39 335.77	9.34 309.09	4.99 60.24	6.52 79.24	13.36 Mag 213.03 Phase
0.300	56.00	656.32	117.13 308.11	30.77 2.22	69.55 317.23	527.56 355.70	19.59 270.43	7.10 294.47	7.88 64.34	65.75 Mag 202.75 Phase
0.301	114.60	586.95	19.92 259.92	17.24 116.98	57.71 7.45	526.78 0.48	4.92 322.36	6.98 358.76	5.73 129.10	46.94 Mag 212.51 Phase
0.348	72.45	841.69	103.74 322.30	32.32 229.34	104.74 353.46	706.96 22.26	8.13 279.09	4.52 232.77	9.30 185.42	50.63 Mag 222.05 Phase
0.349	66.96	838.17	110.07 321.42	49.35 232.13	87.09 340.97	686.86 8.72	12.07 319.55	5.51 255.86	6.82 110.73	57.01 Mag 193.82 Phase
0.349	64.13	734.35	16.22 218.83	32.02 249.48	43.01 45.73	684.62 21.65	1.72 133.72	9.26 346.21	13.44 202.92	41.73 Mag 212.02 Phase

*1/2 Peak-to-peak

Table 44. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.100	90.09	696.07	137.29 325.97	15.22 172.34	75.28 245.71	570.57 233.31	16.05 220.31	6.79 120.75	12.35 271.75	31.26 Mag 56.52 Phase
0.100	94.19	681.21	134.41 326.19	9.07 148.12	63.47 236.15	569.94 236.75	18.17 225.19	6.12 129.13	12.69 281.73	36.56 Mag 51.90 Phase
0.131	82.06	578.20	134.96 316.62	3.31 23.17	84.96 281.96	416.67 250.47	24.03 203.98	8.91 174.86	17.06 250.53	52.39 Mag 27.37 Phase
0.131	80.05	560.00	131.92 317.05	5.15 31.83	73.06 274.47	411.82 248.94	23.87 198.91	10.98 163.03	18.07 245.25	43.20 Mag 22.77 Phase
0.152	34.61	380.24	20.14 257.34	25.71 155.14	72.70 303.92	317.88 260.69	6.78 158.94	3.15 268.70	6.50 229.11	14.03 Mag 27.88 Phase
0.153	59.42	388.69	18.58 267.46	25.84 155.96	80.34 321.59	320.52 271.70	5.91 201.15	1.92 268.67	7.54 245.26	20.83 Mag 48.21 Phase
0.179	60.99	242.45	28.07 272.03	13.57 143.46	26.52 267.60	204.83 276.54	2.03 260.78	4.88 348.75	1.27 345.31	31.20 Mag 58.42 Phase
0.181	74.31	247.42	28.33 276.14	12.50 142.29	37.52 261.95	205.86 280.57	0.59 187.60	3.79 351.77	1.80 301.30	26.57 Mag 80.27 Phase
0.201	105.03	278.92	32.77 280.88	23.43 127.38	30.04 277.30	249.44 304.77	4.90 202.27	2.80 351.72	2.75 287.17	10.06 Mag 59.46 Phase
0.202	97.82	287.98	32.96 276.42	22.10 119.05	38.73 294.11	251.26 303.13	4.39 182.54	4.59 358.97	3.36 291.20	14.76 Mag 68.76 Phase
0.228	80.77	334.59	22.36 264.85	24.98 182.07	62.17 308.23	269.87 311.73	3.01 334.31	3.11 185.41	3.74 203.33	12.26 Mag 351.82 Phase
0.228	91.75	329.53	25.60 262.68	20.65 181.16	59.93 308.41	265.90 316.95	0.77 63.17	1.17 164.97	2.66 196.45	14.09 Mag 342.01 Phase
0.251	127.91	358.13	21.47 259.51	10.50 112.54	60.26 340.20	299.64 343.11	3.33 316.59	2.59 11.50	4.00 276.26	30.12 Mag 291.81 Phase
0.251	131.09	354.41	22.99 254.81	13.40 118.83	60.73 348.27	296.21 337.36	6.52 294.57	1.52 2.56	1.35 344.33	29.88 Mag 295.74 Phase
0.301	69.15	609.19	23.23 163.40	14.58 78.83	53.10 343.78	556.37 356.03	7.50 308.83	6.93 331.28	7.99 326.27	22.39 Mag 237.04 Phase
0.350	7.42	782.73	43.90 150.63	52.27 236.45	64.35 3.99	701.01 18.54	15.05 352.37	5.59 54.91	5.69 333.44	16.97 Mag 244.00 Phase

*1/2 Peak-to-peak

Table 45. Fixed-System Loads Data for Pitching Moment T85 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.088	60.20	343.71	55.15 271.78	17.52 88.36	23.47 319.40	286.83 228.99	7.80 1.17	2.21 186.08	2.22 233.24	45.62 Mag 358.21 Phase
0.089	91.24	343.44	54.42 273.05	14.65 76.80	22.90 330.25	287.90 223.19	7.10 355.11	1.89 188.99	2.91 243.08	47.15 Mag 347.66 Phase
0.120	57.57	233.12	61.01 275.15	12.11 22.59	27.95 309.75	170.25 244.78	7.90 14.47	1.33 241.76	0.52 157.67	13.24 Mag 10.54 Phase
0.121	47.54	230.72	59.43 277.44	11.14 30.90	24.24 316.11	169.66 248.77	8.16 9.16	1.30 259.52	0.99 146.41	14.51 Mag 16.66 Phase
0.146	48.14	201.25	63.85 276.69	20.16 69.88	39.26 270.97	140.66 286.33	9.55 27.00	3.75 23.42	3.32 103.61	1.55 Mag 148.20 Phase
0.149	53.84	199.23	64.57 277.90	26.06 65.31	31.22 292.45	141.06 295.50	8.35 37.17	2.67 41.16	2.59 132.69	1.58 Mag 172.40 Phase
0.177	54.52	252.73	76.65 275.95	23.70 61.71	31.30 247.21	168.50 319.42	8.62 40.60	4.29 71.25	2.26 142.37	17.39 Mag 139.46 Phase
0.178	60.51	248.65	72.29 276.79	22.10 46.42	31.82 250.26	165.19 313.94	9.33 40.87	5.39 62.19	2.50 128.95	18.61 Mag 120.36 Phase
0.197	60.66	326.92	65.81 281.61	25.59 62.24	41.31 259.16	252.42 328.34	8.80 54.79	6.58 91.67	3.34 233.26	20.17 Mag 153.90 Phase
0.200	63.86	341.24	66.43 279.62	26.21 56.44	54.08 258.64	257.08 328.31	10.80 56.01	6.72 88.52	2.11 228.48	19.05 Mag 152.44 Phase
0.226	108.49	393.52	67.86 279.73	32.29 73.97	42.57 276.35	309.06 347.48	9.10 75.27	4.18 68.25	3.71 305.35	28.77 Mag 161.39 Phase
0.227	115.89	387.09	67.11 279.68	23.08 67.21	36.51 283.19	304.28 350.78	9.44 81.44	4.20 67.04	3.71 305.02	26.78 Mag 171.28 Phase
0.251	114.77	412.16	61.51 284.00	32.60 91.84	37.57 265.43	338.07 348.99	8.25 69.60	5.87 84.03	4.82 10.93	37.46 Mag 177.49 Phase
0.252	120.07	424.81	64.14 280.26	31.99 75.21	21.65 292.26	347.94 347.52	5.65 62.46	6.02 79.09	5.40 9.46	35.95 Mag 176.22 Phase
0.299	134.35	651.05	48.92 285.07	16.51 113.01	84.89 343.40	535.92 1.45	7.27 3.85	14.54 5.29	15.95 52.03	99.08 Mag 210.55 Phase
0.300	124.84	636.96	52.05 285.35	18.28 86.81	69.77 321.62	544.23 359.28	3.78 346.40	13.73 358.01	12.89 43.61	91.97 Mag 204.59 Phase
0.350	95.46	728.64	30.54 254.91	19.29 100.29	29.15 40.28	659.86 23.84	4.86 235.98	12.96 8.97	10.91 156.13	92.73 Mag 229.92 Phase
0.350	91.86	723.18	31.05 255.45	37.52 135.50	11.06 309.09	644.46 28.81	5.24 288.22	16.24 7.66	11.04 141.45	89.83 Mag 237.59 Phase

*1/2 Peak-to-peak

Table 45. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.092	24.66	474.53	28.01 273.24	14.34 146.55	37.01 273.00	400.17 226.92	3.13 87.05	3.55 71.94	12.05 164.23	126.28 Mag 342.80 Phase
0.120	7.68	350.53	38.85 265.34	4.12 128.74	47.76 263.84	291.52 227.08	3.55 40.58	3.48 51.17	9.94 189.52	70.47 Mag 354.52 Phase
0.120	57.06	346.05	37.84 267.05	8.39 165.73	30.22 264.77	293.06 233.87	4.35 41.72	4.44 56.23	7.59 182.59	68.00 Mag 4.82 Phase
0.147	77.94	235.71	45.07 271.69	18.69 95.22	52.75 269.41	178.37 247.72	3.55 30.51	3.00 86.01	4.88 220.89	42.00 Mag 22.64 Phase
0.149	64.70	228.72	43.06 271.06	21.85 91.73	46.55 257.36	180.20 241.49	2.92 9.58	2.90 74.37	4.89 209.94	38.75 Mag 9.96 Phase
0.177	16.08	190.17	54.18 268.29	13.67 77.62	50.98 233.04	127.72 283.10	4.73 23.80	6.96 74.63	3.83 310.46	16.35 Mag 73.69 Phase
0.177	30.34	188.19	56.19 271.85	15.81 65.70	49.56 247.28	123.87 287.63	5.43 22.35	6.53 80.52	2.00 331.20	22.86 Mag 73.81 Phase
0.199	43.98	255.50	48.74 276.94	26.38 82.75	53.16 258.55	197.41 302.40	2.84 347.73	4.16 118.79	7.61 13.84	13.52 Mag 80.37 Phase
0.200	50.72	259.89	49.84 274.65	30.57 75.51	57.90 261.41	197.99 301.79	4.55 20.67	4.72 96.55	5.43 5.34	26.99 Mag 67.32 Phase
0.227	104.18	291.29	48.24 274.63	13.25 101.61	67.83 285.39	219.04 333.82	2.60 210.11	2.79 218.43	8.14 41.35	4.86 Mag 359.56 Phase
0.227	95.44	289.50	50.84 273.28	23.69 85.37	72.93 295.88	219.18 333.02	2.13 153.57	2.20 202.20	6.48 38.45	14.75 Mag 79.82 Phase
0.250	106.07	324.12	40.99 268.25	24.39 57.09	49.27 309.10	259.52 341.48	6.91 320.14	5.08 71.50	8.56 64.95	9.06 Mag 266.60 Phase
0.252	96.33	320.35	45.48 274.95	30.04 71.67	61.08 318.54	252.09 344.52	3.95 327.56	3.43 47.44	9.76 61.93	3.20 Mag 205.52 Phase
0.300	115.48	586.87	28.50 241.57	7.16 156.37	63.79 348.45	517.03 1.60	6.65 323.54	12.90 3.69	6.98 104.88	66.24 Mag 221.40 Phase
0.301	107.19	588.18	24.70 252.15	18.66 118.11	62.17 353.78	514.62 3.73	9.40 311.60	9.59 350.93	6.66 97.32	77.04 Mag 219.79 Phase
0.350	58.42	756.01	37.39 189.34	17.57 187.51	69.98 48.50	672.45 23.50	0.65 142.50	6.63 351.43	15.59 222.07	38.35 Mag 236.31 Phase
0.352	75.28	771.34	34.54 193.97	32.69 171.38	52.80 25.68	685.15 13.44	1.74 320.37	4.50 6.70	14.47 202.59	40.81 Mag 204.20 Phase

*1/2 Peak-to-peak

Table 45. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.120	24.82	485.93	17.77 233.71	18.18 49.26	86.17 303.94	397.93 247.46	6.15 149.94	3.12 235.93	6.78 215.35	46.45 Mag 42.13 Phase
0.120	41.35	449.70	18.37 223.16	15.82 29.14	54.44 310.10	391.40 255.13	5.12 156.21	3.55 237.99	4.63 226.96	37.70 Mag 57.66 Phase
0.144	25.54	379.52	20.50 235.00	22.99 96.51	89.28 276.30	309.30 238.22	5.39 102.98	3.03 204.62	6.68 197.80	21.44 Mag 36.49 Phase
0.145	47.28	381.93	20.39 248.29	22.76 117.18	87.36 289.87	314.53 255.03	4.82 132.15	2.79 215.03	5.76 224.35	20.03 Mag 77.44 Phase
0.175	–0.53	245.22	25.50 243.39	24.58 142.40	61.48 275.82	187.33 276.38	3.16 156.28	1.75 180.62	4.60 208.73	39.00 Mag 60.73 Phase
0.176	–32.49	235.61	26.13 241.46	23.91 146.95	50.46 266.22	186.30 278.36	5.94 132.41	0.80 134.37	3.21 211.41	36.81 Mag 73.41 Phase
0.197	36.14	285.84	25.19 247.89	24.68 100.35	52.71 296.93	237.91 293.17	4.13 209.07	2.98 334.37	3.49 219.20	41.09 Mag 69.10 Phase
0.197	22.97	288.02	27.14 243.05	30.67 116.65	59.83 293.05	237.06 299.99	3.64 199.36	2.37 22.28	2.99 242.81	38.72 Mag 85.46 Phase
0.225	37.80	316.80	31.51 250.19	17.77 165.63	71.64 305.46	247.84 322.91	5.36 189.34	3.44 332.58	3.60 199.95	18.07 Mag 68.21 Phase
0.226	76.47	316.71	32.98 254.08	31.45 170.91	63.05 306.04	250.78 325.79	4.27 189.99	0.90 0.03	1.54 153.06	26.54 Mag 79.96 Phase
0.251	79.80	364.44	28.38 232.10	13.92 97.99	76.03 344.41	291.34 342.54	9.93 325.75	5.93 22.29	0.28 280.48	8.06 Mag 356.96 Phase
0.252	87.86	336.07	31.56 226.38	12.91 116.42	66.09 338.33	277.34 337.64	4.71 293.54	4.17 25.73	3.02 133.40	16.43 Mag 304.30 Phase
0.300	77.39	582.39	39.73 173.27	5.88 16.87	51.56 354.13	523.46 351.52	8.08 312.10	7.48 334.06	10.32 269.38	50.46 Mag 226.52 Phase
0.301	87.28	582.16	43.08 173.36	5.50 243.04	57.96 342.99	522.11 0.42	7.31 342.19	3.74 0.53	10.76 318.06	45.12 Mag 252.88 Phase

*1/2 Peak-to-peak

Table 46. Fixed-System Loads Data for Pitching Moment S80 Configuration

[See fig. 14.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	22.27	334.94	55.20 253.20	15.09 94.92	33.21 348.83	270.02 226.54	4.59 322.10	3.70 212.98	4.64 203.88	43.88 Mag 339.98 Phase
0.101	16.92	330.74	55.35 254.09	8.47 111.24	37.23 359.32	266.99 226.16	5.05 327.36	1.99 209.74	3.16 209.27	43.14 Mag 342.48 Phase
0.131	2.35	210.89	64.85 255.60	23.80 54.61	29.91 355.49	149.10 253.73	8.87 350.31	2.67 283.37	4.39 185.86	19.77 Mag 359.58 Phase
0.133	−14.63	198.88	63.82 258.68	19.20 59.27	19.85 357.15	141.63 256.55	8.07 354.56	2.51 310.95	3.12 184.00	16.20 Mag 0.78 Phase
0.150	68.74	181.34	70.58 256.93	19.42 64.68	21.60 313.12	115.48 293.09	11.18 5.16	4.05 330.92	4.37 175.45	7.71 Mag 42.18 Phase
0.150	62.02	184.64	69.01 258.93	17.29 56.24	12.43 300.97	118.35 290.88	9.52 3.27	4.12 332.56	3.69 180.15	5.84 Mag 42.81 Phase
0.175	78.61	249.51	71.43 259.26	22.58 32.13	17.21 253.86	165.12 321.16	10.27 9.35	6.22 20.89	3.25 180.94	10.32 Mag 134.45 Phase
0.175	93.41	240.36	71.60 260.73	21.39 37.62	17.04 255.51	157.53 326.04	11.47 10.16	5.75 33.47	3.59 195.27	10.63 Mag 122.48 Phase
0.200	113.29	313.10	70.35 260.60	26.09 61.60	20.08 292.22	238.38 334.41	12.46 17.71	5.21 106.54	3.11 231.36	13.15 Mag 149.56 Phase
0.200	109.93	303.83	70.69 261.56	28.21 85.22	16.11 273.84	238.87 330.45	9.45 20.94	5.23 83.15	4.41 216.77	14.54 Mag 145.17 Phase
0.223	105.91	366.08	67.60 262.35	27.50 60.28	20.55 290.68	285.74 355.72	11.02 30.91	5.67 62.74	3.11 293.55	17.54 Mag 159.31 Phase
0.224	93.14	368.71	69.45 263.24	33.76 59.13	10.68 254.06	284.09 357.57	13.58 36.96	6.63 64.10	3.89 308.32	22.83 Mag 159.37 Phase
0.248	148.62	427.03	64.60 261.41	23.00 52.45	29.42 236.38	340.66 353.41	10.30 28.32	5.70 87.37	3.86 11.82	37.23 Mag 172.57 Phase
0.249	160.26	417.80	63.81 262.48	25.88 87.57	24.96 251.83	340.77 358.30	14.25 33.79	5.37 88.79	6.03 1.17	37.97 Mag 179.41 Phase
0.299	150.25	554.52	48.45 259.16	26.49 85.25	77.58 2.13	445.70 13.65	21.13 342.08	10.50 25.34	7.62 63.79	65.22 Mag 200.23 Phase
0.299	149.47	422.30	54.65 263.03	30.08 62.49	48.12 355.38	355.08 30.00	25.28 279.87	6.55 34.66	5.45 31.97	57.30 Mag 196.07 Phase

*1/2 Peak-to-peak

Table 46. Continued

[See fig. 15.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	14.28	450.25	34.59 222.45	10.11 172.89	61.92 267.34	388.55 225.18	9.66 83.30	2.75 138.59	3.22 163.04	63.43 Mag 311.97 Phase
0.104	−2.98	461.54	32.39 222.95	19.16 169.77	66.12 259.76	391.17 225.88	7.98 70.24	4.37 106.07	3.91 170.93	79.23 Mag 309.39 Phase
0.123	−19.08	352.19	48.70 234.50	5.29 17.54	79.82 276.92	270.57 233.84	4.61 88.63	3.90 158.00	7.13 216.63	36.77 Mag 327.77 Phase
0.127	−6.91	332.32	48.06 234.26	9.92 31.22	69.33 276.57	266.85 230.66	5.27 85.34	3.87 146.52	4.30 213.56	23.07 Mag 319.09 Phase
0.150	55.23	215.66	56.07 239.07	22.17 94.09	55.20 278.00	146.39 234.51	3.46 105.48	1.01 72.03	0.88 157.40	24.63 Mag 298.18 Phase
0.150	54.00	211.27	53.55 239.25	23.13 80.37	58.14 264.30	146.38 235.40	1.82 62.76	1.50 118.60	3.63 198.60	28.50 Mag 299.74 Phase
0.175	93.43	166.34	57.84 240.66	14.15 60.36	42.59 247.67	106.12 262.11	1.78 55.44	3.19 21.48	2.51 1.85	13.74 Mag 307.98 Phase
0.175	76.68	169.78	55.54 244.23	19.34 58.95	47.40 247.33	107.92 271.28	4.23 335.58	3.09 62.10	1.18 17.22	18.44 Mag 333.85 Phase
0.200	97.27	231.66	56.34 244.77	31.32 83.36	36.46 289.78	168.64 310.42	1.58 118.43	3.26 132.70	6.21 353.08	20.00 Mag 327.54 Phase
0.200	109.20	226.37	53.31 246.81	27.28 85.97	34.38 279.19	166.57 309.79	3.80 121.16	3.01 136.77	6.36 348.49	19.41 Mag 318.21 Phase
0.224	77.74	277.06	51.87 242.90	10.50 93.30	54.30 288.26	199.42 339.79	2.62 250.66	4.46 260.42	6.54 38.86	20.54 Mag 306.22 Phase
0.225	96.11	278.80	54.88 248.05	3.86 304.89	46.85 292.17	198.26 341.84	1.70 253.78	4.16 246.43	7.27 37.25	22.62 Mag 298.43 Phase
0.225	87.57	279.40	52.86 239.69	8.13 80.64	42.67 299.48	207.21 339.42	4.17 207.03	4.90 270.98	6.52 30.59	24.62 Mag 292.85 Phase
0.249	113.26	310.94	54.80 238.12	24.36 85.13	53.02 312.22	245.71 350.62	6.58 296.93	2.14 337.32	5.44 92.08	24.21 Mag 264.97 Phase
0.249	124.37	306.28	52.16 241.61	26.46 89.51	52.39 308.62	242.16 344.25	9.42 258.95	2.86 350.55	7.42 80.09	29.88 Mag 252.65 Phase
0.301	156.35	545.58	43.44 226.23	15.33 102.68	99.24 21.54	448.13 4.97	7.82 330.15	9.17 25.69	8.10 119.72	37.97 Mag 194.06 Phase
0.301	149.27	536.46	44.32 224.13	17.37 98.83	84.45 9.99	452.02 7.95	12.28 335.96	9.26 20.27	9.11 133.50	38.65 Mag 202.62 Phase

*1/2 Peak-to-peak

Table 46. Concluded

[See fig. 16.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	64.37	628.03	54.04 171.39	24.64 185.91	64.11 295.29	553.20 241.25	6.97 142.66	3.40 190.35	2.90 80.13	4.07 Mag 233.39 Phase
0.104	28.88	624.00	51.03 170.77	20.52 179.09	69.38 314.95	554.65 238.43	5.24 133.54	3.46 177.77	3.70 77.86	13.72 Mag 159.74 Phase
0.127	14.64	495.07	45.33 193.03	15.21 30.50	84.01 301.50	407.28 249.62	7.04 125.33	7.64 204.94	1.51 137.63	28.32 Mag 334.37 Phase
0.150	51.60	375.84	44.33 207.49	30.41 133.89	101.59 289.22	289.85 240.90	12.23 134.73	2.68 160.33	1.24 229.83	18.04 Mag 244.96 Phase
0.150	52.13	381.96	43.86 207.36	28.87 131.19	99.31 301.84	289.39 248.82	9.47 145.00	3.37 213.32	1.90 252.93	20.58 Mag 267.07 Phase
0.175	69.10	269.96	49.11 215.10	11.59 159.60	61.24 263.52	198.44 269.49	9.48 131.06	4.62 288.29	1.70 316.62	7.90 Mag 4.33 Phase
0.175	71.13	265.72	46.26 219.52	15.24 153.03	65.10 284.05	193.73 282.78	6.42 151.48	4.88 327.56	1.89 2.62	8.32 Mag 28.94 Phase
0.200	78.48	294.24	47.82 221.78	32.51 130.81	59.50 315.52	228.77 305.77	5.97 147.21	7.40 344.47	1.89 345.38	13.75 Mag 17.19 Phase
0.200	91.37	288.80	46.42 220.98	25.47 134.93	56.94 306.16	231.19 302.87	9.11 144.44	5.55 327.38	2.55 305.72	11.11 Mag 10.05 Phase
0.223	59.68	329.75	42.88 222.50	13.56 209.95	62.32 294.19	246.90 321.45	3.88 140.00	5.08 324.35	3.45 69.48	20.85 Mag 355.93 Phase
0.224	62.86	318.61	42.40 226.32	23.69 207.42	59.15 313.91	239.37 326.59	3.61 188.81	4.50 330.15	1.73 111.20	12.53 Mag 353.86 Phase
0.224	44.35	337.00	48.57 224.54	18.69 204.30	68.59 306.85	247.92 326.28	5.29 144.24	3.51 323.81	2.46 91.13	15.85 Mag 0.66 Phase
0.225	0.00	40.12	589.25 30.07	200.52 35.72	219.10 56.42	323.55 526.18	306.25 2.26	89.03 5.03	171.84 7.94	222.12 Mag 6.90 Phase
0.225	95.04	329.81	41.93 220.50	27.52 195.28	69.25 301.71	239.26 322.22	3.41 171.65	4.90 315.98	2.26 37.57	14.07 Mag 340.51 Phase
0.248	95.28	340.69	47.31 219.17	15.66 98.33	77.25 328.30	263.54 333.99	2.31 293.65	5.51 17.29	0.51 27.21	18.67 Mag 301.95 Phase
0.248	108.75	340.40	47.01 215.62	14.17 169.97	58.04 325.86	267.39 338.60	1.82 286.93	2.80 33.40	0.16 357.82	19.52 Mag 297.29 Phase
0.300	110.46	583.02	57.79 171.17	6.16 213.66	95.39 0.06	496.92 358.50	6.37 288.20	4.80 315.48	7.23 334.72	18.87 Mag 216.25 Phase
0.301	82.52	573.65	48.71 170.03	5.65 315.20	90.62 0.47	496.46 359.87	5.51 278.12	2.84 333.68	7.16 343.22	22.41 Mag 209.38 Phase

*1/2 Peak-to-peak

Table 47. Fixed-System Loads Data for Rolling Moment Baseline Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	57.45	583.47	152.78 255.87	29.84 100.84	25.08 166.38	437.21 143.69	40.78 237.47	3.50 175.55	5.52 178.92	22.56 Mag 63.71 Phase
0.102	36.16	584.40	153.72 255.38	28.84 94.82	16.34 164.80	439.90 144.58	34.83 244.17	4.21 189.56	4.80 171.12	23.36 Mag 60.63 Phase
0.130	27.70	554.59	154.81 255.04	36.53 82.02	12.47 155.64	420.15 164.45	22.67 282.54	3.13 197.93	3.01 191.43	8.46 Mag 66.26 Phase
0.131	−3.71	561.98	156.32 254.80	34.90 82.40	5.67 197.99	424.37 172.00	22.13 297.95	4.18 196.53	1.64 188.88	10.91 Mag 63.54 Phase
0.147	−103.94	478.77	59.82 191.58	46.44 60.28	22.49 278.89	416.35 168.59	12.54 239.71	6.00 154.04	2.31 30.80	7.46 Mag 271.32 Phase
0.148	−107.09	467.32	61.49 191.14	45.17 61.42	17.42 278.27	404.17 167.95	12.54 240.69	5.91 149.96	3.38 55.34	8.22 Mag 258.00 Phase
0.153	−31.22	511.24	149.01 254.97	29.85 68.55	13.49 217.62	388.88 172.69	29.48 279.88	1.53 232.93	1.37 239.74	8.60 Mag 349.38 Phase
0.154	17.52	530.87	150.45 254.65	49.47 92.43	9.05 179.58	397.67 172.11	26.28 291.92	2.96 235.42	2.00 158.15	7.43 Mag 333.72 Phase
0.174	−46.38	495.87	68.05 189.22	63.15 72.28	20.76 284.93	417.66 194.06	13.27 280.26	5.28 196.69	4.18 61.29	11.17 Mag 281.62 Phase
0.176	−55.52	502.21	67.24 191.48	61.27 67.78	20.57 291.37	424.77 197.37	13.72 273.61	4.92 197.18	3.30 75.74	14.92 Mag 292.42 Phase
0.179	−48.43	540.34	126.27 262.41	80.44 77.49	24.07 173.23	409.81 192.72	27.25 341.31	5.08 211.06	0.85 201.19	20.08 Mag 278.62 Phase
0.181	−57.68	543.67	128.15 264.07	73.73 75.07	22.98 189.84	418.16 192.88	27.58 342.45	5.10 203.54	1.53 274.39	19.50 Mag 288.22 Phase
0.200	−25.95	523.46	67.21 189.86	63.69 57.72	21.01 291.90	439.63 205.81	17.62 252.17	3.02 140.02	5.44 41.81	20.31 Mag 305.93 Phase
0.201	−28.09	526.83	62.56 188.02	63.32 51.81	21.34 286.21	445.97 197.10	14.83 239.08	3.77 126.53	5.45 28.88	20.25 Mag 285.35 Phase
0.223	12.26	555.87	61.29 189.15	65.08 49.80	21.37 299.61	474.01 210.06	18.19 250.80	2.94 212.34	7.41 50.30	31.14 Mag 298.60 Phase
0.224	18.90	564.12	61.41 194.77	60.26 48.07	19.63 305.99	482.05 213.35	17.66 249.16	1.90 229.75	8.05 58.67	34.30 Mag 304.67 Phase
0.248	35.76	589.63	64.93 189.39	62.80 46.31	17.32 284.83	499.75 225.21	17.93 250.91	3.07 245.50	8.09 61.30	44.65 Mag 296.45 Phase
0.249	32.39	601.45	66.60 194.35	62.96 41.13	16.58 282.72	510.80 220.69	19.67 244.93	4.17 257.21	8.50 53.78	44.06 Mag 284.03 Phase
0.298	92.96	640.06	50.71 186.18	64.83 49.96	13.71 278.81	566.40 241.95	23.75 266.85	11.83 229.70	8.88 87.26	54.55 Mag 326.27 Phase
0.298	94.85	633.22	42.06 206.28	62.57 50.55	21.26 271.16	572.86 236.09	21.50 259.28	12.64 231.41	6.01 70.95	54.62 Mag 314.54 Phase
0.347	51.97	612.95	23.32 161.10	68.16 33.53	42.10 184.09	557.39 260.10	25.08 146.93	7.38 257.04	7.68 115.23	59.88 Mag 314.01 Phase
0.347	28.23	609.17	31.76 175.05	63.45 35.32	41.79 172.36	546.95 256.34	33.53 156.32	7.98 254.00	7.51 113.60	56.77 Mag 305.61 Phase

*1/2 Peak-to-peak

Table 47. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	−96.67	624.60	145.27 262.85	52.07 147.79	81.61 256.49	413.95 139.03	59.06 114.44	2.44 29.29	15.77 101.16	63.86 Mag 19.59 Phase
0.100	−104.56	645.43	147.73 264.11	65.32 151.17	73.08 268.32	429.45 147.41	53.83 122.84	1.43 10.14	14.09 115.77	67.98 Mag 33.68 Phase
0.102	−46.30	607.86	145.73 262.83	50.94 139.82	90.49 259.41	386.88 143.97	51.49 93.40	2.32 116.15	16.77 107.09	62.75 Mag 27.80 Phase
0.130	−10.98	542.35	150.98 261.79	43.31 134.24	75.73 258.05	341.15 159.76	32.20 148.08	1.51 23.72	10.00 112.47	16.88 Mag 45.19 Phase
0.130	−38.11	544.16	151.47 261.64	66.04 135.01	81.11 260.39	323.34 158.75	35.20 137.24	1.11 348.21	11.91 108.38	18.69 Mag 61.12 Phase
0.147	−184.45	409.96	40.87 195.77	38.26 56.48	37.54 265.67	322.42 158.89	23.72 46.28	3.38 88.21	3.39 166.10	15.68 Mag 198.45 Phase
0.152	−8.54	493.24	150.60 259.13	23.70 65.96	71.49 245.26	325.80 171.39	28.28 212.99	0.49 332.15	8.84 121.80	8.00 Mag 103.63 Phase
0.152	−10.18	491.14	153.42 260.56	22.64 60.15	82.10 254.95	307.65 169.24	10.19 176.90	0.90 94.78	14.00 107.59	17.56 Mag 80.89 Phase
0.174	−116.67	382.71	47.26 190.74	48.04 37.88	27.54 271.16	307.88 175.12	22.29 73.08	1.85 144.97	2.40 86.06	15.84 Mag 231.17 Phase
0.174	−105.10	376.27	46.61 191.90	45.62 35.46	27.13 272.25	298.98 176.52	28.40 73.85	1.74 169.53	2.20 84.65	17.97 Mag 234.07 Phase
0.178	−123.07	427.56	111.43 275.44	50.81 72.21	49.71 223.00	309.18 174.62	19.79 338.80	6.66 134.19	6.69 72.25	12.22 Mag 280.19 Phase
0.180	−153.73	427.37	109.74 275.51	52.04 64.26	43.98 204.27	307.48 172.19	30.74 326.65	5.84 131.42	6.13 59.73	12.14 Mag 259.15 Phase
0.199	−77.58	378.32	44.88 191.04	56.78 48.11	20.34 284.90	299.43 191.53	22.99 63.95	2.04 185.59	1.41 165.38	22.52 Mag 257.83 Phase
0.203	−47.50	502.42	152.76 261.22	39.87 57.81	86.89 273.64	333.33 196.36	2.37 291.93	4.24 104.89	13.47 155.79	1.92 Mag 261.96 Phase
0.204	−28.68	484.69	153.63 261.65	40.81 52.32	87.81 257.03	320.73 198.87	20.79 240.37	4.41 104.36	12.30 154.87	4.17 Mag 226.26 Phase
0.224	−43.61	394.98	40.08 198.24	64.81 35.35	23.46 282.55	316.63 194.19	10.05 95.90	2.19 79.88	1.70 344.79	32.41 Mag 255.92 Phase
0.225	−40.59	382.67	38.27 191.01	61.30 39.87	23.07 288.23	304.37 205.82	20.29 99.21	1.03 151.47	1.28 343.86	35.23 Mag 274.84 Phase
0.249	−19.99	435.31	44.35 207.08	62.08 41.91	15.48 293.14	353.16 219.52	9.06 85.85	1.86 267.62	2.70 38.64	39.58 Mag 256.91 Phase
0.298	40.69	471.24	28.55 167.08	63.03 36.46	25.64 233.97	418.54 237.55	4.48 243.37	5.00 261.93	3.84 78.09	45.16 Mag 259.49 Phase
0.349	−40.10	580.83	31.09 121.96	67.44 18.38	68.54 203.26	507.54 243.70	20.69 113.44	5.83 267.69	11.49 138.94	76.02 Mag 249.82 Phase

*1/2 Peak-to-peak

Table 47. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	−235.99	816.96	122.06 267.74	12.80 91.78	61.47 267.47	668.33 128.70	21.06 52.56	6.30 131.66	3.79 88.62	121.30 Mag 356.65 Phase
0.105	−184.55	833.48	123.07 269.62	13.60 89.04	74.08 273.31	682.21 136.87	19.57 49.78	6.40 138.93	4.92 118.04	121.11 Mag 9.44 Phase
0.129	−75.43	673.12	130.95 265.55	33.48 85.31	140.80 261.83	457.67 144.79	44.75 14.36	2.13 111.29	17.00 127.57	67.01 Mag 11.88 Phase
0.131	−106.74	697.56	133.74 267.07	28.74 93.82	132.98 264.37	504.67 144.94	36.57 47.95	2.81 126.62	17.41 128.68	75.41 Mag 14.99 Phase
0.147	−242.92	500.63	19.73 186.66	21.53 42.39	37.67 257.57	428.20 152.04	27.31 351.15	4.64 114.27	5.78 111.19	50.02 Mag 16.53 Phase
0.147	−223.66	464.81	21.92 173.47	20.58 33.11	41.13 247.71	391.83 140.80	26.89 330.42	3.95 99.59	5.86 94.36	40.30 Mag 353.19 Phase
0.172	−171.53	418.07	26.78 175.64	19.92 53.53	32.26 243.93	341.21 158.79	44.92 351.24	2.09 115.35	3.74 92.27	28.24 Mag 55.89 Phase
0.173	−176.26	448.29	26.55 172.29	29.98 27.60	35.31 245.00	370.81 151.04	36.55 345.84	1.87 151.49	2.71 96.09	24.85 Mag 43.85 Phase
0.178	−172.64	488.36	85.64 290.76	45.05 85.83	115.69 239.69	353.66 161.62	39.03 47.97	4.26 298.61	14.51 123.03	34.50 Mag 48.36 Phase
0.178	−167.69	494.29	86.03 293.59	37.06 93.64	120.94 238.97	352.27 158.62	40.86 66.55	2.85 264.55	14.63 115.94	35.15 Mag 44.80 Phase
0.198	−162.51	436.74	25.30 168.47	42.53 33.58	29.22 231.46	371.40 168.48	34.95 352.92	3.93 208.89	4.55 80.73	21.81 Mag 51.00 Phase
0.199	−171.63	430.16	28.10 169.49	39.39 33.09	25.21 236.74	363.84 170.42	35.16 14.96	2.75 208.86	3.67 82.49	21.35 Mag 56.59 Phase
0.224	−125.90	410.88	23.80 175.78	50.91 21.05	28.11 240.87	348.51 184.58	28.93 358.18	2.70 210.05	3.11 42.23	7.35 Mag 86.51 Phase
0.225	−118.79	422.98	18.76 177.99	51.29 22.62	32.18 238.07	360.89 177.63	28.01 2.58	0.53 197.31	2.72 64.26	9.60 Mag 81.29 Phase
0.248	−88.54	448.94	22.31 186.07	49.57 28.77	31.89 240.04	388.30 194.00	40.81 24.98	1.36 239.94	5.36 60.18	20.32 Mag 163.86 Phase
0.248	−123.99	442.27	19.64 154.84	48.57 26.54	34.69 239.93	391.88 199.90	32.01 7.74	1.67 245.41	5.20 94.99	17.19 Mag 180.11 Phase
0.299	−81.73	536.70	36.80 87.65	46.44 30.65	46.08 242.43	475.25 220.09	18.19 338.66	5.74 178.72	5.26 96.86	71.94 Mag 200.00 Phase
0.299	−48.36	532.94	25.01 91.44	49.11 26.41	44.77 221.17	476.53 208.06	35.71 333.70	5.87 159.83	5.55 90.24	72.47 Mag 175.95 Phase
0.348	−121.31	631.41	54.33 67.92	36.18 47.56	61.75 245.67	552.34 231.02	11.16 166.39	3.55 220.95	2.93 154.65	58.24 Mag 224.17 Phase
0.349	−115.92	651.57	59.14 67.65	37.72 28.28	71.46 243.09	563.27 225.66	10.85 165.39	3.47 183.61	3.60 170.27	66.86 Mag 213.09 Phase

*1/2 Peak-to-peak

Table 48. Fixed-System Loads Data for Rolling Moment T30 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.107	12.79	600.00	51.47 192.63	56.85 58.03	9.68 334.28	521.48 136.30	13.68 46.36	4.44 210.77	2.31 58.03	27.05 Mag 65.14 Phase
0.109	18.26	590.91	49.18 194.21	57.50 60.13	8.11 348.11	516.23 144.01	12.23 59.68	5.19 229.59	2.08 101.79	27.49 Mag 71.28 Phase
0.126	−19.62	535.66	55.22 183.35	55.21 58.91	14.75 339.63	460.43 151.40	13.83 76.40	3.43 226.28	2.59 133.76	21.32 Mag 75.02 Phase
0.128	−17.02	544.63	52.79 185.06	60.76 66.39	12.74 334.29	465.18 151.80	12.56 72.73	3.71 227.75	2.06 111.17	16.63 Mag 84.55 Phase
0.151	−50.56	552.52	61.49 184.50	64.93 59.95	13.05 339.08	463.85 178.25	14.91 119.29	7.54 277.55	0.97 163.45	16.36 Mag 203.45 Phase
0.151	−54.13	573.59	59.05 182.48	66.52 62.49	12.52 316.09	483.19 171.72	14.75 110.55	8.01 268.38	1.40 106.84	16.14 Mag 193.09 Phase
0.175	−57.81	594.96	60.99 185.06	66.15 55.97	8.35 359.58	502.15 184.94	15.79 129.34	11.61 278.78	3.03 207.00	19.65 Mag 209.34 Phase
0.176	−20.33	600.86	62.18 186.25	76.64 65.41	13.80 13.10	498.76 197.01	16.27 143.99	11.83 288.84	3.35 227.79	20.08 Mag 229.92 Phase
0.200	−19.69	631.70	65.56 192.33	72.03 56.72	9.24 350.80	533.28 191.72	18.67 135.02	9.64 324.76	3.63 291.29	24.95 Mag 239.64 Phase
0.224	−23.04	614.68	57.86 188.73	67.48 55.72	14.19 341.72	525.49 208.98	26.46 152.17	13.66 313.07	6.25 349.80	9.65 Mag 300.67 Phase
0.224	−22.10	629.84	57.53 195.13	60.60 50.15	9.11 341.81	547.49 206.67	29.02 152.19	15.13 318.62	7.28 345.47	11.53 Mag 309.12 Phase
0.249	−66.62	622.17	51.39 186.25	71.60 60.60	23.88 336.08	534.97 221.68	21.45 205.66	12.83 288.24	7.29 32.62	25.15 Mag 294.06 Phase
0.250	−70.29	606.87	52.30 190.93	69.87 61.20	28.21 314.07	515.74 222.25	27.14 204.46	12.81 295.88	7.47 40.79	27.89 Mag 300.28 Phase
0.298	24.31	622.42	33.59 198.08	81.79 53.84	29.69 299.75	536.52 234.33	31.00 224.98	13.18 258.58	4.83 68.92	50.28 Mag 297.57 Phase
0.299	20.40	619.80	36.59 186.61	81.39 49.12	32.58 302.32	526.59 228.82	37.00 214.49	16.14 249.71	5.76 81.44	52.13 Mag 289.78 Phase
0.347	89.59	583.43	26.67 133.11	88.71 36.70	44.21 205.10	508.75 256.65	31.57 121.41	14.57 300.43	7.81 130.10	85.98 Mag 299.54 Phase
0.347	103.22	587.54	29.29 133.49	90.97 36.07	67.34 188.58	504.02 254.62	35.39 126.61	13.01 309.76	8.44 121.67	87.51 Mag 294.16 Phase

*1/2 Peak-to-peak

Table 48. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−66.97	589.78	28.55 205.11	77.88 103.19	18.68 319.43	480.51 131.56	56.86 30.59	7.76 274.81	10.73 185.86	48.97 Mag 13.10 Phase
0.113	−61.18	574.84	28.18 205.54	51.47 93.44	15.81 313.46	477.65 130.02	58.90 28.12	6.50 237.78	11.53 177.05	45.12 Mag 5.62 Phase
0.125	−81.04	526.99	27.57 190.31	26.31 91.50	13.77 283.41	463.85 138.14	44.64 49.00	1.51 173.32	7.36 194.56	33.90 Mag 18.55 Phase
0.125	−57.24	528.98	26.25 195.50	26.97 93.83	14.80 271.03	460.42 142.22	49.03 53.17	2.97 198.97	7.32 192.03	35.51 Mag 23.19 Phase
0.149	−114.04	489.44	33.50 179.51	36.46 41.50	16.51 279.35	425.10 157.15	33.44 74.97	5.18 247.29	4.12 189.18	16.06 Mag 63.97 Phase
0.150	−114.43	494.43	31.79 183.76	33.05 40.90	12.72 281.30	434.84 158.43	31.79 72.14	4.93 251.25	3.94 201.27	15.53 Mag 50.51 Phase
0.174	−99.60	472.45	37.35 185.72	54.05 40.04	9.29 284.99	395.92 175.94	39.41 96.15	11.35 272.44	5.38 263.63	18.46 Mag 121.48 Phase
0.175	−125.69	498.54	36.96 182.80	52.64 39.75	14.13 288.03	421.16 171.83	40.58 95.34	11.53 261.16	2.93 266.22	18.97 Mag 126.48 Phase
0.198	−99.31	482.94	42.86 189.90	55.90 50.66	6.68 355.60	406.43 184.71	31.56 96.12	10.81 275.69	6.17 267.88	20.81 Mag 143.46 Phase
0.201	−104.95	501.29	42.35 177.47	57.94 47.59	10.49 316.91	415.57 182.17	39.69 100.02	8.73 277.67	4.24 272.94	19.70 Mag 145.16 Phase
0.224	−84.58	503.05	30.35 189.18	64.80 39.50	5.49 353.09	430.56 199.47	30.72 116.68	14.05 309.20	4.70 311.58	9.61 Mag 104.32 Phase
0.224	−77.04	528.22	33.32 187.36	64.70 36.23	14.48 302.12	433.74 193.00	44.50 115.15	13.24 295.80	4.56 309.44	1.89 Mag 229.50 Phase
0.250	−163.93	475.73	33.67 184.12	68.19 49.66	17.63 296.36	397.90 217.10	23.57 132.94	15.46 311.83	2.13 246.83	6.05 Mag 238.29 Phase
0.250	−132.02	513.08	36.77 178.81	67.44 41.47	21.96 306.22	418.57 206.08	36.28 122.73	13.41 292.01	2.32 290.76	15.82 Mag 265.18 Phase
0.297	−74.53	495.40	32.12 134.62	67.14 39.61	36.88 251.56	418.31 233.40	11.17 146.65	12.84 285.00	4.67 106.63	39.46 Mag 262.42 Phase
0.298	−40.22	523.26	28.09 112.44	70.90 36.34	29.32 257.55	433.51 220.24	25.08 101.13	14.58 266.47	1.37 81.42	42.04 Mag 235.62 Phase
0.347	46.67	591.76	53.16 96.55	74.08 22.24	110.40 209.54	457.47 239.09	30.03 108.07	12.80 271.39	11.14 145.63	101.85 Mag 255.89 Phase
0.347	59.16	578.89	42.73 91.74	80.09 22.87	94.58 205.15	449.39 240.37	38.89 142.10	9.26 277.74	10.86 156.01	94.86 Mag 263.49 Phase

*1/2 Peak-to-peak

Table 48. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.112	−142.08	733.52	8.08 81.44	11.63 76.48	7.84 147.93	709.37 126.77	7.30 103.99	2.14 248.30	6.21 51.91	126.55 Mag 355.88 Phase
0.113	−141.78	683.69	8.04 95.05	17.84 57.11	12.71 148.10	641.25 125.78	13.88 36.04	2.18 223.69	7.13 65.10	122.04 Mag 359.08 Phase
0.125	−116.71	629.28	3.06 113.33	12.41 55.68	18.03 206.06	583.62 130.19	28.90 37.66	0.81 127.59	5.75 75.12	109.15 Mag 2.71 Phase
0.126	−139.78	662.74	5.35 117.59	15.26 61.50	17.23 225.42	618.10 135.30	28.48 41.81	1.63 217.33	4.70 85.22	110.23 Mag 8.25 Phase
0.147	−206.30	611.67	12.33 155.74	13.78 69.30	19.12 253.38	547.93 140.95	47.17 28.96	0.61 205.31	3.98 199.98	80.26 Mag 13.25 Phase
0.149	−207.25	628.60	13.71 165.56	11.87 61.49	18.37 259.27	561.48 153.09	51.17 49.86	1.18 124.32	3.78 210.65	83.86 Mag 38.08 Phase
0.172	−232.33	589.35	19.06 169.55	25.19 29.90	20.73 234.84	507.26 148.24	50.10 32.33	10.39 232.02	2.55 212.46	68.73 Mag 40.96 Phase
0.172	−202.90	576.18	20.83 178.99	27.92 28.19	19.01 256.05	491.79 150.44	52.90 43.11	10.62 232.09	4.42 217.90	61.72 Mag 45.66 Phase
0.198	−195.45	561.03	24.91 180.06	42.36 37.91	15.30 269.37	469.68 168.83	55.03 62.18	13.85 250.76	4.97 230.60	49.35 Mag 88.42 Phase
0.199	−183.73	581.94	22.45 167.38	38.64 37.05	11.19 241.08	491.15 168.96	63.10 47.11	12.45 244.97	2.02 262.70	59.51 Mag 86.67 Phase
0.224	−158.14	555.82	13.79 141.80	46.45 22.22	16.15 222.18	482.14 178.92	35.83 56.37	10.50 276.74	1.41 166.52	50.59 Mag 79.11 Phase
0.224	−154.36	585.83	17.90 137.44	44.51 20.99	14.48 243.76	506.75 177.13	37.37 61.39	9.80 269.53	3.87 224.01	48.64 Mag 76.78 Phase
0.250	−255.42	512.03	21.04 123.38	54.20 35.74	27.95 261.56	435.19 190.01	27.05 37.13	10.76 280.01	4.52 209.31	9.27 Mag 55.83 Phase
0.250	−227.27	478.93	23.17 123.21	50.36 37.19	33.21 246.48	413.29 183.97	18.54 0.46	8.93 274.32	2.80 147.78	10.51 Mag 22.88 Phase
0.299	−169.76	594.26	32.61 96.21	46.43 31.21	51.14 227.49	527.48 209.96	25.67 274.55	9.14 233.77	8.43 154.27	58.06 Mag 213.03 Phase
0.299	−131.22	554.55	39.24 98.09	40.84 38.84	45.13 227.18	498.57 212.70	8.40 283.14	6.05 233.17	6.20 114.94	54.14 Mag 219.53 Phase
0.347	−57.04	687.02	57.71 76.06	42.14 30.89	104.28 232.56	569.46 227.01	32.03 193.30	6.57 246.61	9.42 141.62	78.35 Mag 241.02 Phase
0.347	−50.02	690.20	61.28 65.32	44.42 35.32	116.73 228.39	553.60 225.33	31.49 193.53	6.59 223.90	11.66 139.06	82.80 Mag 231.56 Phase

*1/2 Peak-to-peak

Table 49. Fixed-System Loads Data for Rolling Moment T40 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−6.13	469.76	59.13 203.41	37.73 90.43	10.30 265.69	411.45 131.49	16.93 261.48	7.31 101.92	4.88 332.66	8.24 Mag 180.68 Phase
0.104	−34.07	472.66	60.38 201.23	37.12 85.36	11.59 256.12	412.93 125.66	16.65 251.11	5.47 97.89	5.18 323.56	9.53 Mag 173.34 Phase
0.126	14.03	437.13	66.06 199.56	53.44 78.86	15.17 289.49	361.94 151.09	20.21 270.15	8.47 123.29	4.87 24.27	1.10 Mag 320.79 Phase
0.128	12.15	440.26	68.55 197.78	50.89 74.32	18.22 291.13	362.88 149.21	17.87 266.97	8.83 124.57	5.40 15.26	2.66 Mag 241.02 Phase
0.151	−53.87	448.48	73.91 201.12	54.39 73.98	27.52 276.98	362.43 167.53	23.07 281.18	4.15 157.92	4.68 21.33	7.79 Mag 194.23 Phase
0.152	−66.88	458.30	75.56 201.12	56.74 69.54	30.72 281.86	366.24 164.49	23.40 277.97	5.23 148.07	4.92 25.48	7.55 Mag 193.68 Phase
0.201	−21.17	487.73	79.62 210.01	69.45 79.02	23.99 306.29	403.43 210.68	13.76 290.55	6.06 167.16	5.58 45.94	17.71 Mag 300.28 Phase
0.202	−23.65	491.95	79.75 202.85	60.88 66.08	25.64 289.83	405.68 193.19	13.77 280.72	5.66 129.88	6.57 13.48	22.00 Mag 267.70 Phase
0.226	12.39	501.07	81.48 201.10	58.59 55.55	33.01 284.02	412.02 203.23	24.49 259.95	2.52 137.39	11.73 27.64	31.40 Mag 276.32 Phase
0.226	11.79	498.49	73.71 212.50	57.53 54.72	27.88 279.28	419.54 201.97	18.99 265.50	2.85 131.64	9.42 21.83	29.43 Mag 271.59 Phase
0.250	−15.63	563.40	72.63 206.52	61.74 59.66	33.37 296.93	479.55 223.42	31.71 255.64	5.09 244.04	10.88 55.82	39.80 Mag 284.35 Phase
0.250	−15.96	565.53	77.43 218.33	58.94 54.17	31.90 292.54	482.47 216.09	25.34 236.50	5.40 244.75	11.01 36.00	41.72 Mag 265.61 Phase
0.299	104.15	598.78	63.89 209.62	61.98 48.44	30.66 274.69	523.82 229.47	9.81 271.26	14.77 240.80	6.70 53.95	42.62 Mag 283.44 Phase
0.299	100.42	592.83	61.56 221.20	58.55 50.33	35.10 275.33	529.52 233.44	10.54 240.26	13.57 245.14	7.60 65.31	39.23 Mag 294.42 Phase
0.349	−11.55	595.41	39.30 220.69	71.67 25.48	53.59 218.64	537.96 245.04	3.68 219.51	12.92 285.93	3.12 128.58	55.24 Mag 271.10 Phase
0.349	−23.33	596.48	39.20 232.07	71.86 27.39	53.19 231.09	542.65 242.14	6.33 24.63	12.34 281.92	2.36 116.91	53.51 Mag 266.71 Phase

*1/2 Peak-to-peak

Table 49. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−115.25	454.59	39.42 216.71	19.39 102.08	35.10 255.36	366.20 128.59	39.99 2.77	3.96 49.67	3.01 105.21	6.44 Mag 217.13 Phase
0.105	−160.54	456.88	37.12 220.01	27.89 68.19	33.17 277.29	361.44 127.61	38.50 356.81	5.94 66.23	2.19 140.60	6.75 Mag 212.03 Phase
0.128	−53.30	407.75	43.68 204.95	33.57 101.87	42.37 266.49	311.65 135.07	29.37 10.34	8.18 72.35	0.53 97.09	21.62 Mag 181.81 Phase
0.129	−55.83	391.58	44.16 208.31	37.24 107.55	40.95 264.31	295.85 133.54	28.95 5.50	6.26 52.82	0.68 44.42	22.05 Mag 179.04 Phase
0.150	−178.51	418.13	53.56 220.33	43.90 96.66	47.59 269.79	315.03 157.70	15.84 33.74	4.70 114.61	3.37 13.90	19.45 Mag 213.57 Phase
0.150	−133.77	408.26	56.61 212.17	46.61 100.25	52.82 266.30	289.19 149.76	25.75 8.89	2.65 57.92	1.80 18.02	17.64 Mag 198.01 Phase
0.153	−86.91	396.64	56.60 202.99	33.02 70.30	37.73 260.32	314.31 153.83	9.60 35.03	3.20 114.61	2.18 13.11	18.68 Mag 202.41 Phase
0.155	−113.51	379.91	55.11 205.36	32.94 80.59	39.19 262.51	291.07 155.85	13.81 36.89	2.85 122.65	2.03 51.16	19.78 Mag 184.57 Phase
0.201	−70.17	366.59	53.91 207.00	51.84 57.81	30.94 276.21	276.60 182.57	18.33 22.14	4.71 139.57	3.69 61.24	27.93 Mag 248.78 Phase
0.203	−74.94	376.67	57.50 210.72	50.83 53.75	33.35 280.40	279.11 184.13	24.31 30.06	5.71 168.79	3.56 82.24	24.25 Mag 262.72 Phase
0.226	−36.29	367.74	56.33 210.96	57.64 49.85	35.46 271.59	287.91 197.64	6.96 352.22	2.22 112.21	0.88 32.01	35.90 Mag 246.79 Phase
0.226	−36.95	379.97	58.69 215.56	61.56 46.21	34.79 272.33	297.02 197.39	6.31 40.54	3.85 126.25	1.95 7.29	36.38 Mag 247.61 Phase
0.251	−71.99	425.30	57.76 211.79	59.77 50.25	32.62 275.97	345.27 207.20	11.03 163.04	1.95 247.54	2.41 51.25	41.65 Mag 223.94 Phase
0.251	−74.11	421.63	49.53 210.29	62.08 50.29	29.76 280.38	338.98 209.22	12.22 121.17	3.14 228.67	1.37 15.18	41.21 Mag 224.91 Phase
0.299	38.39	469.45	29.25 189.99	57.77 26.63	45.61 250.36	400.53 218.46	18.73 56.70	10.86 267.01	1.73 198.61	52.18 Mag 209.64 Phase
0.299	46.93	455.00	23.67 211.77	53.45 30.17	37.11 247.03	386.84 219.74	30.61 83.56	10.82 253.74	1.25 166.69	46.28 Mag 215.85 Phase
0.347	−45.34	509.99	22.20 116.44	55.73 14.40	89.27 213.36	431.89 236.40	44.39 97.03	8.94 276.39	8.17 160.11	75.57 Mag 229.86 Phase
0.349	−59.50	505.35	13.47 101.24	56.66 13.88	69.18 214.11	437.40 232.07	37.84 83.58	11.07 274.52	5.26 136.80	76.55 Mag 216.44 Phase

*1/2 Peak-to-peak

Table 49. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−168.51	613.87	8.53 231.30	19.55 83.84	34.56 221.96	572.01 111.34	15.35 225.46	0.81 181.07	8.72 44.43	76.66 Mag 302.69 Phase
0.107	−172.12	604.99	10.36 236.85	20.22 93.32	30.55 228.38	558.46 114.25	12.47 262.28	1.48 112.65	7.14 48.13	67.00 Mag 307.92 Phase
0.127	−128.01	500.99	24.62 222.85	30.82 71.97	41.07 238.06	416.69 130.27	25.57 329.81	3.87 42.61	8.16 65.63	47.64 Mag 336.84 Phase
0.127	−127.07	496.90	22.23 220.19	29.82 74.48	33.49 243.69	418.76 127.71	27.55 312.16	3.87 36.04	7.05 68.99	49.68 Mag 334.23 Phase
0.147	−189.90	481.15	34.94 220.29	24.07 81.72	51.52 260.92	379.37 147.09	36.18 347.03	7.87 81.35	3.08 103.96	38.95 Mag 357.45 Phase
0.149	−197.97	485.85	32.14 219.35	25.33 84.47	51.75 255.74	384.58 136.83	34.40 355.60	7.23 70.92	2.69 90.95	31.15 Mag 340.23 Phase
0.201	−137.98	441.54	41.19 222.11	35.41 57.23	46.85 253.33	349.56 168.40	25.99 27.28	4.94 184.42	3.61 75.83	16.40 Mag 10.80 Phase
0.202	−145.73	456.92	41.56 218.16	39.02 49.21	42.40 237.01	374.16 160.33	23.50 353.80	4.89 182.15	4.03 59.23	20.44 Mag 1.98 Phase
0.226	−122.53	423.21	33.29 212.84	49.82 39.67	41.48 250.85	340.92 182.55	38.30 5.60	3.51 157.51	0.71 2.58	8.93 Mag 189.22 Phase
0.226	−113.51	415.10	30.62 218.09	49.10 38.44	38.67 235.46	354.36 181.05	30.64 347.31	1.53 146.09	2.30 78.42	9.29 Mag 127.61 Phase
0.251	−149.19	437.53	28.39 219.85	41.03 39.37	27.54 242.62	375.03 191.70	30.37 28.98	1.87 240.31	4.23 46.91	30.86 Mag 166.04 Phase
0.251	−146.23	421.47	22.29 222.95	45.15 40.39	30.88 244.14	369.03 193.54	22.74 7.78	1.36 246.57	2.17 46.72	32.25 Mag 166.90 Phase
0.299	−48.06	500.81	8.53 118.72	41.14 22.18	61.93 234.44	442.75 207.05	28.36 1.06	5.44 191.73	3.19 200.55	76.35 Mag 180.78 Phase
0.300	−41.98	494.78	11.35 161.68	32.26 24.49	41.30 234.47	442.76 204.28	17.56 22.67	5.19 184.60	0.92 212.77	78.29 Mag 174.21 Phase
0.348	−75.55	646.92	44.50 52.59	26.22 8.10	81.91 245.16	555.54 223.66	21.21 121.93	6.29 249.61	1.05 64.63	70.34 Mag 196.27 Phase
0.348	−110.06	620.43	54.95 64.26	31.27 21.54	79.92 244.08	527.28 217.34	14.70 109.24	9.39 251.59	1.25 23.63	68.69 Mag 188.75 Phase

*1/2 Peak-to-peak

Table 50. Fixed-System Loads Data for Rolling Moment T50 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−52.70	497.77	48.40 195.71	56.23 67.08	20.94 295.43	415.38 145.10	16.86 288.77	3.53 118.73	2.55 349.75	8.58 Mag 185.17 Phase
0.107	−34.14	505.97	48.04 194.96	59.38 68.94	25.58 297.36	414.53 143.78	18.44 290.57	4.23 129.94	3.23 6.24	10.84 Mag 161.29 Phase
0.127	−27.52	454.30	56.76 189.03	68.85 64.12	29.25 307.07	357.68 154.46	15.35 293.02	6.71 125.98	2.18 63.88	5.46 Mag 281.92 Phase
0.130	−40.05	454.79	55.01 187.50	66.95 62.60	27.62 303.14	360.97 150.75	16.33 293.52	6.44 115.56	1.56 35.26	7.56 Mag 307.63 Phase
0.152	−17.47	463.50	62.95 185.61	72.31 66.72	32.12 311.78	367.98 175.75	12.83 294.55	3.95 151.94	3.85 61.82	3.56 Mag 285.02 Phase
0.153	−9.16	451.06	61.41 185.15	67.37 64.15	31.06 304.95	359.63 174.31	11.76 296.28	3.92 147.10	4.00 66.04	2.19 Mag 296.60 Phase
0.175	−56.60	478.27	66.67 184.42	79.92 62.43	26.04 314.82	385.37 188.49	9.16 276.60	4.99 194.52	2.30 82.04	8.45 Mag 313.72 Phase
0.175	−37.03	473.84	64.28 188.28	81.97 61.12	23.32 312.45	382.77 187.00	10.49 278.48	5.14 194.62	1.52 81.26	8.95 Mag 310.14 Phase
0.201	−9.04	547.48	68.84 190.36	91.83 63.76	21.60 318.29	446.57 199.15	10.15 237.24	4.60 143.18	1.64 5.61	17.51 Mag 293.90 Phase
0.201	−16.23	532.61	63.42 185.40	90.94 61.18	21.73 311.15	437.08 197.24	9.32 208.28	5.40 138.68	1.76 6.33	16.21 Mag 285.53 Phase
0.225	−23.24	588.55	61.85 183.04	71.92 40.65	17.94 322.87	488.29 203.45	12.17 191.30	1.81 233.81	3.04 342.05	33.26 Mag 281.43 Phase
0.225	−27.71	586.29	58.94 183.42	71.94 46.21	15.83 322.39	492.41 205.72	12.60 176.76	3.37 229.58	4.83 336.53	30.71 Mag 286.61 Phase
0.250	43.47	601.23	51.82 189.68	71.95 39.16	8.74 339.15	515.91 215.99	25.67 183.71	6.24 269.81	6.09 39.05	34.63 Mag 286.22 Phase
0.251	33.11	578.91	48.05 181.62	73.92 41.64	17.62 316.49	495.60 215.55	25.80 184.45	7.45 266.24	4.07 18.73	33.07 Mag 277.64 Phase
0.298	59.82	640.54	40.78 200.82	78.52 38.62	12.67 76.85	555.67 230.23	38.62 179.13	11.97 237.62	4.63 33.68	48.79 Mag 305.16 Phase
0.298	59.60	629.89	42.20 197.50	80.63 39.44	6.99 72.56	543.49 230.65	45.35 181.24	11.87 244.89	7.10 67.62	48.22 Mag 307.11 Phase
0.347	74.61	643.05	22.03 149.39	88.72 28.96	53.84 207.13	564.46 252.96	26.34 160.97	11.28 290.76	8.48 163.78	82.00 Mag 299.24 Phase
0.347	70.78	631.19	19.89 138.66	83.68 29.96	47.13 195.31	560.72 247.22	13.67 159.39	16.49 286.90	6.58 129.97	80.29 Mag 289.40 Phase

*1/2 Peak-to-peak

Table 50. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−168.79	520.92	20.24 206.88	42.84 67.28	27.65 277.72	430.72 133.85	33.83 7.16	5.57 91.70	7.55 170.96	7.61 Mag 165.62 Phase
0.106	−141.08	485.60	19.43 205.73	41.24 61.47	21.84 252.27	401.62 134.86	34.58 351.18	4.72 95.44	5.59 178.32	2.60 Mag 160.56 Phase
0.125	−79.22	421.46	24.77 192.45	45.08 71.34	24.10 271.38	335.76 148.37	27.95 2.63	6.81 121.93	4.93 182.65	16.45 Mag 244.99 Phase
0.125	−69.70	413.52	23.08 186.85	48.21 74.20	22.56 267.90	324.16 141.56	32.97 358.34	5.09 96.16	5.52 180.36	13.21 Mag 236.25 Phase
0.150	−64.72	404.30	37.44 187.24	51.10 50.68	49.60 270.87	284.33 162.35	40.31 37.90	5.29 125.44	5.06 159.40	15.60 Mag 188.02 Phase
0.151	−73.65	400.93	34.20 186.60	49.96 46.18	42.14 270.44	284.95 157.74	45.42 29.67	5.52 116.40	4.07 155.28	14.68 Mag 189.69 Phase
0.176	−145.81	397.36	39.52 186.95	60.08 52.24	40.16 285.36	275.25 177.26	47.62 62.90	5.62 199.31	4.06 206.61	9.15 Mag 315.72 Phase
0.176	−140.93	389.02	40.76 181.26	61.66 49.44	32.38 291.94	282.13 180.25	37.22 60.85	5.58 203.91	3.96 218.37	9.58 Mag 327.35 Phase
0.200	−67.23	410.90	41.00 183.72	67.70 58.02	27.55 294.52	307.78 190.63	33.81 75.09	5.42 201.55	5.24 249.71	17.28 Mag 262.71 Phase
0.200	−69.72	395.24	43.95 185.25	71.43 52.35	26.74 297.97	293.87 192.90	32.87 83.18	7.15 209.86	6.41 251.91	17.70 Mag 265.93 Phase
0.224	−130.92	434.24	40.11 173.77	78.73 39.03	20.23 311.13	340.23 199.47	34.38 82.57	6.24 266.94	2.99 284.86	27.25 Mag 264.52 Phase
0.224	−115.77	448.04	39.81 170.32	79.09 37.33	16.76 346.48	353.93 201.06	34.45 92.38	8.28 259.54	4.21 285.36	26.52 Mag 282.17 Phase
0.251	−33.94	472.31	27.64 166.98	77.13 33.72	18.09 283.70	375.97 207.71	30.21 98.47	7.86 288.69	1.48 123.74	37.73 Mag 249.72 Phase
0.251	−15.32	463.77	20.42 170.28	75.38 39.99	20.88 295.88	362.17 213.80	37.01 108.19	6.81 269.59	1.47 272.80	40.25 Mag 265.37 Phase
0.298	−7.48	515.41	32.62 146.78	80.12 25.69	18.17 187.71	431.13 221.81	35.29 123.48	12.96 278.68	3.07 94.57	39.65 Mag 242.74 Phase
0.299	−7.14	483.39	35.23 141.03	79.70 30.73	22.23 198.64	397.21 227.23	35.22 129.81	13.53 279.15	2.30 78.19	38.79 Mag 255.74 Phase
0.347	38.43	599.31	42.87 88.04	70.02 17.12	88.41 201.59	483.86 234.86	37.21 129.66	10.29 251.94	12.34 176.78	99.18 Mag 248.11 Phase
0.347	30.78	596.72	38.54 83.67	66.82 19.40	87.63 208.99	478.01 236.45	22.93 188.35	10.81 261.25	10.85 166.87	101.03 Mag 252.82 Phase

*1/2 Peak-to-peak

Table 50. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−194.47	631.48	20.99 54.79	23.47 56.56	22.68 192.87	603.70 120.11	17.81 204.32	5.02 74.86	5.65 32.25	51.28 Mag 322.91 Phase
0.126	−170.25	553.31	14.06 72.28	33.05 61.96	31.40 234.61	518.03 141.27	17.52 244.32	5.74 104.87	6.18 80.97	33.42 Mag 358.02 Phase
0.127	−180.92	533.62	12.85 76.52	31.70 56.31	37.82 220.83	490.59 128.48	16.62 255.83	5.59 83.55	6.81 53.79	33.13 Mag 334.38 Phase
0.152	−157.49	461.85	13.25 118.78	37.62 54.94	42.95 240.68	403.21 151.15	17.15 306.04	5.37 125.33	4.07 73.62	15.19 Mag 27.01 Phase
0.153	−170.82	464.59	14.03 116.36	37.58 51.51	37.43 235.92	407.55 144.28	20.30 298.43	4.81 101.84	5.07 57.11	20.90 Mag 8.53 Phase
0.175	−204.01	437.56	12.87 151.66	44.25 57.64	39.63 248.30	357.33 160.76	25.08 353.50	4.82 237.00	3.88 97.61	19.73 Mag 35.35 Phase
0.175	−224.65	425.03	14.17 161.75	45.87 53.14	29.28 232.72	356.26 157.88	23.64 347.67	4.73 234.91	3.49 73.08	24.06 Mag 28.34 Phase
0.201	−146.38	442.08	22.76 135.47	60.46 44.95	25.15 210.24	378.56 168.81	26.62 354.59	6.80 228.93	3.35 56.36	13.43 Mag 356.70 Phase
0.224	−160.70	437.14	14.25 171.75	66.20 32.50	31.34 225.89	372.00 184.82	15.99 26.13	8.56 275.42	6.59 129.94	15.66 Mag 256.48 Phase
0.225	−190.73	474.67	23.53 154.99	59.96 28.30	19.17 235.77	404.58 177.86	21.15 50.91	7.78 264.59	5.25 132.05	10.79 Mag 215.18 Phase
0.250	−127.70	419.75	30.53 101.84	51.84 22.79	31.16 200.76	372.25 190.35	28.90 358.89	4.09 287.90	5.59 96.07	29.25 Mag 229.40 Phase
0.299	−104.39	514.92	41.42 96.87	46.95 36.41	41.03 211.15	448.57 218.03	7.89 315.70	5.42 245.43	6.62 153.18	53.81 Mag 232.91 Phase
0.300	−129.31	529.70	37.01 81.83	49.30 32.90	50.84 197.27	452.26 218.68	5.53 226.03	5.64 229.75	8.32 146.20	52.82 Mag 232.36 Phase
0.346	−53.42	711.91	59.01 58.97	35.08 22.22	87.54 238.15	597.09 231.70	22.01 168.24	2.65 152.24	6.60 179.65	79.21 Mag 238.35 Phase
0.347	−49.15	705.13	63.62 69.29	40.86 26.63	78.10 234.75	598.39 229.10	19.84 188.61	4.03 249.28	7.67 163.51	84.31 Mag 231.83 Phase

*1/2 Peak-to-peak

Table 51. Fixed-System Loads Data for Rolling Moment T60 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	−107.57	494.33	92.75 265.35	35.71 102.87	20.57 77.11	395.04 143.81	33.11 314.13	6.36 141.46	3.79 100.19	6.35 Mag 215.82 Phase
0.110	−90.38	494.56	93.05 266.50	48.60 105.37	15.35 85.93	386.38 144.90	34.90 309.84	7.06 141.06	2.19 102.38	6.78 Mag 257.05 Phase
0.128	−115.70	462.65	111.21 265.74	29.98 71.47	13.59 131.88	362.95 165.32	25.75 328.76	7.22 141.71	2.88 138.98	18.75 Mag 286.26 Phase
0.131	−87.55	497.99	109.59 265.56	43.77 76.50	7.62 118.72	391.97 167.17	22.12 327.32	6.40 144.51	3.26 134.46	16.98 Mag 304.33 Phase
0.143	−106.80	488.20	55.19 197.35	46.01 45.30	14.33 274.28	419.19 162.66	9.24 270.83	2.24 105.04	2.92 73.65	12.08 Mag 210.73 Phase
0.145	−116.00	487.37	53.93 194.21	50.27 54.65	18.04 288.97	418.13 171.52	7.75 280.38	2.27 119.77	3.08 76.25	10.36 Mag 218.52 Phase
0.169	−65.31	469.55	61.80 193.47	52.35 51.59	23.81 271.58	392.01 184.67	10.97 278.87	2.34 126.97	2.77 69.34	6.47 Mag 246.74 Phase
0.169	−41.37	482.65	60.96 196.47	58.66 54.89	20.18 278.67	404.46 182.98	14.03 290.97	2.03 129.80	3.40 49.95	6.74 Mag 240.52 Phase
0.195	−35.96	522.06	65.86 196.24	70.91 61.67	19.04 278.70	437.64 193.69	12.55 276.47	3.66 104.91	3.59 10.45	9.66 Mag 278.83 Phase
0.195	−45.73	512.35	65.86 197.23	69.83 63.23	19.73 274.69	430.24 197.23	14.67 271.22	2.55 98.91	3.45 16.51	8.56 Mag 291.01 Phase
0.220	5.41	511.47	55.97 200.42	69.41 57.51	15.90 298.42	433.89 206.64	8.37 228.46	0.77 155.91	6.13 33.44	20.75 Mag 311.48 Phase
0.220	−7.88	497.82	54.71 199.00	63.04 52.77	17.79 291.08	421.02 207.65	10.62 264.99	1.52 117.47	5.48 34.50	20.81 Mag 312.62 Phase
0.246	46.61	529.15	38.33 211.09	69.48 57.41	15.85 271.84	471.24 214.35	21.14 237.16	4.49 227.70	6.29 28.59	34.87 Mag 294.25 Phase
0.246	46.95	527.00	44.38 204.39	67.36 58.91	16.88 292.76	462.91 221.68	21.55 245.00	3.62 235.39	6.50 52.75	33.35 Mag 307.40 Phase
0.295	80.97	567.50	28.82 204.36	67.78 44.83	25.02 236.31	516.44 235.93	21.50 284.47	11.66 224.20	2.84 40.68	47.65 Mag 332.22 Phase
0.295	89.37	570.82	27.93 196.73	71.01 44.45	14.20 254.06	515.10 236.87	19.70 275.92	11.36 230.16	4.05 102.48	46.25 Mag 332.95 Phase

*1/2 Peak-to-peak

Table 51. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	−204.58	484.88	76.17 284.81	28.66 99.08	34.35 242.07	385.02 143.29	14.81 41.81	4.14 132.29	5.68 53.30	18.11 Mag 356.05 Phase
0.110	−163.38	472.63	76.67 282.15	22.69 98.36	39.14 242.43	369.18 138.44	18.81 37.95	4.73 101.85	6.23 39.85	18.33 Mag 348.74 Phase
0.132	−173.64	417.56	79.69 281.00	37.73 126.17	49.69 241.97	291.74 141.68	27.10 2.66	4.54 80.13	6.36 32.09	6.05 Mag 252.64 Phase
0.144	−199.00	418.27	23.30 214.90	33.71 60.56	34.38 271.94	340.46 158.60	23.31 63.08	3.67 119.43	2.30 150.39	23.92 Mag 178.12 Phase
0.154	−109.97	382.90	94.82 271.42	24.05 51.87	43.60 235.64	274.43 160.18	23.05 1.58	3.04 131.74	6.65 50.49	2.26 Mag 181.14 Phase
0.154	−91.81	391.96	93.27 272.67	23.80 64.03	44.82 240.07	280.66 163.24	23.52 10.45	3.89 144.94	6.24 56.80	0.93 Mag 312.15 Phase
0.170	−111.59	394.39	34.25 198.47	47.45 24.75	21.04 244.77	332.72 169.17	19.49 31.24	0.97 317.90	2.51 41.29	4.00 Mag 207.09 Phase
0.170	−108.92	391.16	32.44 207.75	43.39 27.78	18.15 254.36	335.71 170.99	13.00 22.73	2.00 5.06	2.69 55.37	3.27 Mag 204.22 Phase
0.180	−45.48	382.17	101.97 272.89	45.49 49.52	30.73 224.84	287.35 178.53	30.57 4.71	5.52 148.88	4.91 60.87	12.48 Mag 328.26 Phase
0.180	−34.28	379.39	104.85 271.45	46.13 45.43	32.74 204.86	275.90 173.05	34.28 333.55	5.97 142.78	5.49 51.46	11.18 Mag 309.30 Phase
0.201	−118.73	451.27	127.60 266.54	74.05 87.72	58.26 272.41	306.02 192.25	18.59 76.32	2.32 127.86	5.67 126.62	12.59 Mag 352.52 Phase
0.202	−77.92	456.83	125.82 265.32	77.18 87.26	53.18 268.87	309.57 185.05	27.60 84.43	2.99 95.80	5.51 117.31	13.27 Mag 319.89 Phase
0.226	−6.39	405.07	129.76 266.26	75.73 66.57	39.18 241.31	290.58 199.19	4.37 343.69	2.63 112.53	4.20 129.45	28.63 Mag 273.28 Phase
0.227	−27.90	408.04	127.35 264.59	76.04 65.54	29.38 256.51	300.07 201.40	3.52 9.74	3.99 116.58	3.50 123.13	27.09 Mag 284.50 Phase
0.249	−0.92	433.59	122.70 266.04	63.76 59.67	32.26 242.84	323.11 204.96	5.10 111.39	1.87 206.66	4.99 121.73	34.62 Mag 253.94 Phase
0.296	28.73	441.69	9.78 229.25	61.87 22.61	41.18 221.36	388.28 222.21	20.41 273.92	7.07 250.76	1.29 229.42	36.46 Mag 225.12 Phase
0.346	35.41	560.49	29.67 68.83	60.63 24.12	79.06 211.61	455.59 243.78	15.56 133.42	6.37 259.96	11.24 170.88	81.72 Mag 253.86 Phase
0.346	39.26	529.13	27.73 77.91	64.67 24.17	67.66 201.94	433.09 249.98	6.48 198.05	7.40 294.43	11.44 154.15	83.39 Mag 261.30 Phase

*1/2 Peak-to-peak

Table 51. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	−224.66	634.91	56.03 328.85	17.10 93.47	54.17 228.55	582.23 130.10	33.69 158.63	1.53 172.81	10.37 72.02	85.24 Mag 339.85 Phase
0.110	−229.59	619.14	54.65 332.37	16.14 107.56	41.34 231.04	571.98 133.22	32.85 166.83	1.80 171.76	8.48 76.21	82.64 Mag 348.11 Phase
0.128	−222.86	559.54	65.87 307.08	34.87 86.42	80.54 236.24	473.29 135.34	15.16 66.73	1.69 329.62	10.81 80.58	57.33 Mag 349.72 Phase
0.131	−187.56	530.32	66.75 307.63	30.61 76.65	86.93 228.46	445.50 132.94	11.57 69.55	0.80 308.96	13.07 75.21	60.89 Mag 344.26 Phase
0.144	−214.90	472.15	6.27 305.72	17.11 50.54	39.95 245.72	422.93 148.15	11.80 352.96	4.22 116.45	5.71 90.89	42.87 Mag 24.65 Phase
0.145	−220.37	449.99	9.49 311.45	18.82 56.36	43.02 238.05	404.59 146.20	7.05 2.87	5.08 105.81	6.10 86.86	34.09 Mag 22.35 Phase
0.170	−192.79	478.48	11.03 253.62	30.98 24.36	40.44 245.64	415.72 154.31	18.56 31.76	3.98 197.68	4.56 97.21	44.31 Mag 56.89 Phase
0.171	−193.67	493.44	8.12 228.74	33.59 19.86	41.42 243.00	429.87 147.34	15.13 354.59	5.22 200.78	5.27 98.67	45.18 Mag 37.76 Phase
0.194	−165.17	462.90	16.69 222.36	36.81 37.16	37.52 251.06	397.91 172.74	22.36 55.81	3.36 221.47	3.85 134.02	41.45 Mag 77.88 Phase
0.197	−184.93	471.25	15.55 230.62	23.58 70.45	35.14 245.05	414.93 162.92	14.96 42.45	2.82 237.12	4.48 106.30	39.63 Mag 55.08 Phase
0.221	−139.98	458.74	5.64 169.14	48.03 16.17	36.95 240.06	399.12 178.33	21.41 343.82	1.52 227.30	4.28 91.12	21.78 Mag 57.87 Phase
0.221	−111.49	429.16	5.99 251.91	48.88 20.31	40.51 253.08	365.80 179.21	16.06 340.26	0.62 238.79	3.26 109.07	24.26 Mag 62.78 Phase
0.245	−95.24	426.84	11.80 25.25	41.00 21.58	46.43 231.50	377.87 191.36	20.31 339.46	1.07 98.79	6.07 97.10	16.06 Mag 116.24 Phase
0.247	−106.71	437.58	9.53 10.50	46.77 18.67	44.64 230.82	388.31 190.85	29.66 324.42	1.46 173.77	8.34 92.18	21.05 Mag 107.47 Phase
0.295	−55.09	547.01	34.75 36.69	38.78 28.13	52.37 221.54	458.13 218.76	29.84 295.62	6.16 183.74	8.03 123.64	63.67 Mag 208.72 Phase
0.297	−75.20	536.64	33.34 43.07	42.29 27.39	55.59 226.22	450.17 214.76	27.40 281.07	7.26 185.97	3.73 109.45	67.95 Mag 199.09 Phase

*1/2 Peak-to-peak

Table 52. Fixed-System Loads Data for Rolling Moment T70 Configuration

[See fig. 17.]

(d) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	−90.90	566.31	48.99 189.55	46.73 41.60	25.60 335.78	480.92 159.49	26.62 57.74	4.39 166.07	0.77 129.35	27.32 Mag 107.85 Phase
0.103	−59.63	569.16	48.33 190.27	49.98 42.12	24.94 336.76	480.69 156.45	27.77 50.54	3.90 160.13	1.16 85.63	29.31 Mag 108.30 Phase
0.128	−59.42	477.77	55.42 188.79	58.71 53.66	18.02 309.91	402.22 167.20	1.19 349.52	4.10 180.71	2.09 139.03	21.23 Mag 68.69 Phase
0.129	−85.88	497.28	55.00 187.03	58.23 53.35	17.74 311.03	419.95 173.35	4.61 320.73	4.39 182.67	1.53 124.84	20.65 Mag 82.13 Phase
0.153	−121.11	524.60	60.39 183.77	52.05 43.80	22.02 308.52	439.28 185.86	5.71 237.18	1.97 251.23	1.86 62.41	14.30 Mag 40.82 Phase
0.153	−132.97	529.64	61.18 185.86	60.17 51.66	19.96 313.38	442.63 186.97	2.89 255.36	2.04 238.07	2.41 78.49	13.31 Mag 48.95 Phase
0.180	−57.03	527.81	65.23 183.66	70.82 49.67	21.79 304.58	430.88 199.66	3.37 190.89	3.44 225.98	1.93 67.64	11.64 Mag 345.15 Phase
0.181	−67.01	521.67	65.24 186.04	60.29 46.59	21.77 313.59	427.52 205.11	8.77 185.05	2.17 247.97	0.86 95.89	12.53 Mag 356.35 Phase
0.203	4.16	570.82	62.55 192.50	69.64 47.69	27.95 325.09	474.01 216.53	16.26 187.56	2.83 120.85	4.84 57.62	31.73 Mag 357.85 Phase
0.203	8.98	577.11	62.29 187.40	73.58 56.87	28.85 319.72	483.38 221.69	13.86 212.85	0.96 148.47	4.52 62.13	31.82 Mag 4.92 Phase
0.224	−28.75	627.79	70.52 194.56	86.76 65.61	17.52 346.81	523.14 237.42	14.46 211.86	8.68 274.24	3.24 91.51	29.77 Mag 23.55 Phase
0.225	−56.98	628.23	69.60 190.29	89.31 59.52	22.73 331.99	523.52 229.15	16.52 218.59	7.69 257.13	3.48 92.84	31.73 Mag 2.52 Phase
0.249	11.35	575.15	49.58 190.59	81.08 50.68	18.53 335.71	492.68 237.32	23.83 207.48	10.48 259.78	5.88 87.17	38.40 Mag 7.82 Phase
0.249	40.01	592.84	51.47 186.73	87.49 50.47	25.76 328.51	506.90 229.78	18.82 200.02	12.50 254.02	6.87 72.96	39.78 Mag 351.55 Phase
0.299	49.71	646.88	38.65 186.61	87.71 41.99	35.62 39.07	533.06 249.93	41.92 195.27	17.24 249.38	9.27 84.35	70.18 Mag 356.33 Phase
0.300	54.42	642.69	42.26 179.34	93.59 42.32	29.77 66.92	538.04 255.94	33.00 210.44	17.40 258.77	7.34 121.36	68.62 Mag 7.70 Phase
0.346	46.03	658.29	15.37 123.71	91.50 30.03	43.95 185.04	581.57 268.11	18.81 246.05	14.84 280.27	10.58 119.23	64.30 Mag 340.47 Phase
0.346	56.53	655.92	18.49 133.90	86.14 27.03	63.89 176.02	576.16 270.90	22.86 179.66	12.35 291.47	11.20 131.27	61.98 Mag 345.14 Phase

*1/2 Peak-to-peak

Table 52. Continued

[See fig. 18.]

(e) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−189.38	562.81	23.70 194.24	33.46 39.58	27.88 290.97	464.24 157.29	51.87 31.74	3.80 151.61	6.03 183.89	48.45 Mag 50.44 Phase
0.103	−173.38	568.95	21.80 188.35	26.95 46.30	27.13 294.23	477.58 157.12	49.40 34.87	2.42 153.38	5.47 188.89	50.21 Mag 49.10 Phase
0.126	−90.22	504.05	27.41 190.61	33.61 50.91	31.61 301.84	397.73 166.93	55.72 52.07	2.15 189.75	4.38 198.04	26.43 Mag 64.98 Phase
0.127	−73.15	516.12	27.52 190.96	34.31 53.86	35.84 302.45	406.88 166.14	57.59 60.75	2.10 201.32	6.02 206.56	27.97 Mag 60.21 Phase
0.150	−176.64	450.62	35.99 181.53	50.23 33.06	28.43 295.57	358.01 174.17	35.12 53.06	5.45 222.17	4.43 205.19	31.22 Mag 33.62 Phase
0.150	−177.18	466.64	39.31 185.45	51.62 35.04	28.62 300.79	371.07 180.25	41.49 73.27	4.51 237.78	3.67 231.01	26.44 Mag 42.93 Phase
0.152	−167.41	474.82	33.78 177.62	46.38 28.65	32.45 292.66	378.89 176.46	44.09 57.87	3.35 223.57	3.15 197.36	19.48 Mag 16.87 Phase
0.153	−164.32	472.75	32.30 186.07	49.28 29.07	35.22 297.09	376.53 180.04	41.53 78.42	4.33 242.75	3.63 212.52	20.31 Mag 37.02 Phase
0.171	−94.41	415.41	41.04 182.01	62.52 34.41	21.81 305.13	322.08 189.79	32.68 97.38	8.52 253.85	6.01 254.67	36.30 Mag 56.68 Phase
0.174	−111.36	423.62	40.00 182.36	62.24 39.26	22.66 296.53	329.02 195.54	36.46 99.84	8.34 260.38	4.66 270.14	33.92 Mag 67.85 Phase
0.177	−116.01	436.55	39.15 184.21	62.45 36.48	22.40 300.03	342.10 195.83	33.84 99.31	7.40 273.80	2.72 256.53	36.38 Mag 63.88 Phase
0.179	−114.16	430.67	43.01 182.31	60.91 36.12	18.92 298.03	335.93 193.30	36.75 92.72	7.20 266.26	2.18 256.25	35.41 Mag 56.67 Phase
0.195	−116.84	429.89	47.06 181.84	79.23 42.70	28.03 296.36	332.78 202.76	6.02 77.14	5.29 217.47	3.50 185.05	19.53 Mag 357.20 Phase
0.199	−87.25	424.44	39.05 181.95	68.43 38.11	11.01 331.08	330.22 205.12	21.29 111.53	5.19 278.85	4.56 288.55	31.32 Mag 51.09 Phase
0.203	−53.73	490.65	37.20 189.34	69.47 38.57	23.41 308.56	400.25 201.14	22.70 107.63	6.51 260.87	2.34 255.33	33.10 Mag 45.74 Phase
0.205	−52.18	474.05	33.70 188.13	70.26 37.26	18.51 318.83	385.29 200.62	24.91 108.25	5.70 259.43	3.04 254.24	31.02 Mag 39.21 Phase
0.224	−104.48	496.56	47.36 191.44	108.84 79.97	21.75 339.80	369.91 211.45	27.05 125.97	8.44 315.97	3.04 292.53	23.29 Mag 48.41 Phase
0.225	−128.55	453.37	39.12 184.38	70.27 41.77	17.90 339.14	359.68 217.39	30.20 108.48	8.14 282.89	2.18 323.19	27.18 Mag 23.19 Phase
0.225	−117.92	472.29	36.48 193.26	83.06 63.36	20.84 344.34	371.58 216.28	28.17 108.05	7.10 289.22	2.79 301.27	26.03 Mag 27.54 Phase
0.247	−127.25	459.64	29.53 191.99	87.68 38.59	24.59 327.84	360.86 227.82	27.20 130.08	8.19 271.04	1.01 55.26	25.36 Mag 347.03 Phase
0.248	−6.08	456.15	29.10 168.99	75.12 37.84	20.62 336.05	366.08 229.86	28.08 119.93	8.57 282.68	0.71 103.78	30.93 Mag 4.25 Phase
0.248	−21.67	451.46	29.53 173.32	73.79 33.56	24.14 325.10	352.98 223.92	33.63 115.39	7.96 273.02	1.93 90.88	30.67 Mag 1.49 Phase
0.297	−110.72	508.20	21.41 132.23	92.38 32.93	9.00 173.89	443.83 246.58	7.08 153.88	12.88 287.13	6.13 89.19	34.05 Mag 300.16 Phase
0.300	−22.58	484.06	29.78 154.03	80.86 32.05	32.02 165.11	417.77 250.26	22.41 108.44	11.37 280.85	7.11 105.14	38.47 Mag 309.96 Phase

*1/2 Peak-to-peak

Table 52. Continued

(b) Concluded

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.301	−0.05	475.60	24.45 144.90	84.66 32.60	18.96 226.15	403.14 251.11	20.15 141.68	12.58 281.80	5.99 125.69	35.78 Mag 315.42 Phase
0.346	−3.62	634.78	53.39 85.54	74.02 19.71	109.81 204.24	512.64 260.57	33.35 121.15	9.85 269.94	18.15 169.90	83.75 Mag 282.21 Phase
0.347	−39.58	647.67	36.89 80.63	81.13 24.80	102.26 207.73	525.89 255.35	26.18 96.49	13.21 270.42	17.65 163.59	86.72 Mag 275.83 Phase
0.347	−68.76	623.92	34.67 93.57	88.15 24.73	90.87 202.17	513.69 261.94	12.92 154.09	10.10 263.38	15.35 166.49	79.71 Mag 285.53 Phase

*1/2 Peak-to-peak

Table 52. Concluded

[See fig. 19.]

(f) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	−201.99	708.96	20.67 61.23	20.86 10.61	16.26 276.28	692.27 147.89	25.35 251.29	3.62 195.73	3.47 121.46	120.85 Mag 35.37 Phase
0.106	−222.23	725.65	19.43 57.90	16.74 12.09	19.07 271.78	708.10 138.82	20.18 240.72	3.47 167.12	4.57 98.44	119.33 Mag 18.90 Phase
0.129	−188.83	607.97	9.13 96.50	26.35 32.93	39.23 257.67	544.23 152.82	22.23 350.63	1.22 197.44	5.31 89.94	86.26 Mag 35.25 Phase
0.129	−189.65	611.80	9.83 100.60	21.10 37.86	42.72 265.48	548.52 158.38	21.12 1.67	0.30 44.61	5.73 112.47	84.43 Mag 43.23 Phase
0.142	0.00	−207.99	528.79 8.02	102.49 31.40	25.44 33.92	280.54 470.73	162.34 15.74	10.05 1.87	167.44 3.13	117.44 Mag 71.48 Phase
0.152	−229.87	546.32	11.71 119.58	32.82 16.43	43.80 265.36	466.01 162.94	21.62 23.56	4.38 218.29	3.31 140.60	57.21 Mag 38.96 Phase
0.177	−200.27	520.44	14.12 142.95	47.01 20.58	36.48 254.79	424.63 165.34	35.63 41.80	8.21 242.74	2.60 119.00	52.58 Mag 41.13 Phase
0.179	−206.18	523.32	11.90 145.24	48.71 20.66	38.80 261.64	440.40 171.53	21.72 25.37	8.69 244.95	4.52 144.57	59.44 Mag 57.23 Phase
0.203	−150.79	528.96	16.02 140.67	52.89 31.95	24.54 277.17	450.84 183.20	16.65 64.65	6.35 256.52	4.76 156.94	52.26 Mag 58.44 Phase
0.203	−148.46	536.99	13.23 162.61	55.76 34.04	27.43 272.67	455.75 187.44	18.13 69.74	6.88 268.03	4.77 167.27	52.76 Mag 68.43 Phase
0.224	−190.66	479.46	19.77 174.79	47.73 31.29	25.17 252.44	406.24 197.51	30.83 31.22	3.70 299.91	5.72 145.77	35.42 Mag 66.73 Phase
0.224	−214.05	485.11	25.94 156.89	58.20 26.29	18.07 261.28	396.14 195.07	33.20 19.72	5.08 282.55	4.98 148.28	34.20 Mag 58.48 Phase
0.224	−186.10	445.53	17.84 144.81	42.42 38.33	22.50 252.37	382.74 195.46	32.24 15.99	2.34 254.72	3.56 139.23	29.70 Mag 38.91 Phase
0.225	−160.54	459.78	15.90 155.32	59.99 25.78	27.91 266.49	372.92 193.68	39.08 8.73	2.72 269.86	2.96 158.01	32.96 Mag 39.77 Phase
0.247	−123.38	479.05	15.05 108.47	55.57 22.08	35.03 245.62	404.40 206.64	44.44 22.97	4.01 301.22	5.90 110.75	31.49 Mag 31.04 Phase
0.248	−129.19	476.59	23.90 118.31	56.31 24.18	29.45 236.24	405.87 204.54	32.81 20.46	3.08 295.84	5.24 116.51	30.94 Mag 37.39 Phase
0.301	−126.50	537.42	30.50 105.98	51.75 29.74	47.26 210.48	476.18 236.34	18.97 2.91	9.19 209.84	10.40 129.76	37.87 Mag 272.83 Phase
0.301	−112.44	552.37	33.19 93.57	50.87 28.99	48.20 223.82	483.45 237.95	11.88 353.03	9.29 213.23	9.58 139.12	40.24 Mag 277.25 Phase
0.347	−113.37	688.75	72.10 78.61	34.13 43.58	65.66 255.44	594.68 247.90	18.70 239.72	7.80 245.87	8.55 145.84	74.37 Mag 266.24 Phase
0.347	−109.62	769.99	71.65 63.77	38.16 32.12	79.93 242.72	642.92 252.51	18.55 331.63	6.94 224.57	10.38 160.59	82.53 Mag 280.68 Phase

*1/2 Peak-to-peak

Table 53. Fixed-System Loads Data for Rolling Moment T75 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	18.07	610.37	46.36 187.84	55.57 37.35	18.69 358.77	533.89 164.58	18.87 87.80	1.87 205.06	1.62 169.81	21.57 Mag 112.65 Phase
0.103	11.72	592.21	46.59 186.89	51.97 37.55	20.43 0.53	515.78 165.74	20.27 84.72	1.71 214.29	1.01 198.65	22.11 Mag 116.38 Phase
0.119	22.56	553.07	53.77 186.80	60.42 43.90	18.37 345.32	470.32 174.34	15.17 108.24	1.52 220.36	1.93 102.13	19.20 Mag 75.98 Phase
0.122	11.72	551.88	53.43 185.66	61.27 45.04	16.53 341.05	468.41 172.95	14.51 103.89	0.94 256.77	2.13 133.02	20.46 Mag 67.70 Phase
0.149	−104.47	551.20	61.30 185.08	66.21 46.11	14.10 335.03	454.54 192.62	7.54 156.48	3.10 322.70	0.29 194.38	14.60 Mag 34.15 Phase
0.150	−118.67	540.34	62.18 186.63	64.03 50.31	14.10 349.44	442.29 210.93	9.68 186.58	3.77 351.13	0.53 241.24	15.56 Mag 74.35 Phase
0.153	−116.70	552.40	61.29 179.41	65.30 41.16	18.85 344.70	452.20 192.10	9.61 150.34	2.90 322.77	0.30 208.39	16.26 Mag 33.76 Phase
0.153	−90.41	545.42	63.16 180.06	69.77 49.42	16.58 350.76	444.40 197.23	10.87 138.89	2.89 313.57	0.24 242.68	14.16 Mag 63.65 Phase
0.176	−120.45	575.89	68.52 183.79	70.57 47.91	16.64 352.27	467.67 215.59	15.32 181.44	3.40 341.71	0.05 41.76	21.33 Mag 16.49 Phase
0.176	−130.07	563.25	66.14 185.32	77.80 51.44	16.59 350.22	456.54 212.89	16.52 170.38	3.06 315.75	1.90 121.28	18.48 Mag 15.77 Phase
0.202	−17.11	584.57	66.32 185.54	84.40 48.97	13.71 335.15	472.84 219.10	20.41 194.33	3.68 14.94	0.06 222.75	31.38 Mag 350.96 Phase
0.203	−53.21	572.55	71.22 183.20	79.52 41.89	13.17 333.12	458.31 213.55	23.06 184.86	4.22 16.44	1.22 336.22	34.40 Mag 339.71 Phase
0.224	−27.28	599.56	63.91 184.90	80.30 41.64	20.06 0.79	486.73 236.00	26.43 200.96	4.53 313.99	2.63 277.12	45.77 Mag 22.00 Phase
0.225	−33.84	580.09	52.17 184.97	83.09 42.10	18.20 347.89	482.62 229.53	27.18 206.37	4.24 299.51	0.66 356.37	46.98 Mag 5.69 Phase
0.249	10.18	644.87	50.63 183.10	79.49 38.07	13.43 340.35	548.88 248.47	32.85 214.45	5.63 316.42	5.74 35.61	42.16 Mag 29.35 Phase
0.249	22.43	648.00	54.63 188.98	88.23 46.24	11.91 349.66	548.89 240.97	31.21 214.91	7.86 306.70	5.61 30.94	37.01 Mag 7.11 Phase
0.301	82.05	685.44	39.92 180.50	87.32 46.17	11.63 17.11	568.13 255.52	48.04 210.61	3.92 290.52	10.17 70.72	63.81 Mag 36.12 Phase
0.301	100.03	689.63	37.20 190.61	86.45 50.25	24.36 21.40	567.39 257.97	51.60 220.80	4.35 272.79	7.71 75.78	65.62 Mag 39.45 Phase
0.345	64.36	614.52	17.72 179.24	86.03 36.25	35.98 180.90	556.01 275.53	21.67 235.39	11.84 315.46	12.15 117.27	47.39 Mag 20.58 Phase
0.345	52.38	643.30	13.67 140.53	85.56 31.08	40.42 197.60	574.29 280.17	24.13 254.99	9.65 322.76	11.92 131.34	43.86 Mag 33.13 Phase

*1/2 Peak-to-peak

Table 53. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	−139.87	630.31	21.08 204.77	20.91 45.17	14.02 320.42	579.65 164.34	31.12 78.77	2.37 194.00	4.99 187.62	31.15 Mag 63.16 Phase
0.109	−107.52	590.21	21.46 201.01	29.77 15.37	19.57 322.97	527.19 159.53	46.06 71.40	5.06 192.42	5.87 193.75	31.09 Mag 39.40 Phase
0.120	−16.86	566.84	24.69 185.64	49.70 355.05	32.21 314.68	467.07 162.62	53.65 71.53	4.90 200.21	10.78 208.65	20.53 Mag 31.45 Phase
0.123	−38.81	571.35	25.68 190.95	49.56 6.30	36.10 322.93	464.98 175.39	59.84 83.78	5.68 208.25	11.51 229.36	11.95 Mag 52.42 Phase
0.149	−163.43	525.48	32.74 180.10	59.71 16.09	24.68 322.06	431.70 182.75	41.26 94.53	4.80 235.67	3.57 228.74	16.48 Mag 26.84 Phase
0.150	−160.51	518.46	35.25 176.96	59.52 17.71	25.30 322.58	423.13 182.50	41.75 97.01	4.22 237.28	4.71 235.85	15.26 Mag 22.55 Phase
0.152	−176.66	467.97	35.87 181.30	57.56 18.22	22.50 325.70	378.83 180.05	40.93 91.92	4.48 250.68	6.08 222.73	14.88 Mag 33.75 Phase
0.153	−175.62	459.65	31.45 179.95	57.84 17.58	25.13 336.24	375.63 179.0	38.00 86.99	5.53 241.03	6.00 225.09	20.49 Mag 38.31 Phase
0.176	−151.18	458.49	42.29 173.00	67.75 33.53	19.13 354.27	362.67 206.55	36.67 131.22	8.13 279.75	5.25 301.22	34.52 Mag 60.24 Phase
0.177	−174.40	467.77	39.78 179.83	67.29 29.18	17.40 348.05	373.58 199.52	38.07 119.47	8.59 268.47	6.63 290.80	35.30 Mag 50.52 Phase
0.201	−95.44	458.24	46.68 173.61	79.73 37.87	19.16 9.53	359.85 209.10	37.82 146.89	5.37 285.58	5.69 290.02	23.84 Mag 7.19 Phase
0.202	−127.71	451.61	38.70 187.39	81.00 30.16	13.50 348.80	357.18 201.34	31.96 135.29	7.06 283.35	6.12 276.24	24.68 Mag 352.55 Phase
0.225	−115.87	453.74	38.62 169.76	88.59 27.23	20.91 356.12	333.79 214.50	48.50 148.00	9.67 301.86	6.68 291.49	30.47 Mag 351.67 Phase
0.225	−81.23	462.73	40.34 184.48	89.94 29.02	22.55 347.35	345.06 215.92	45.67 147.67	8.21 300.02	5.54 282.04	34.47 Mag 352.03 Phase
0.250	−59.82	511.16	30.84 187.66	79.87 30.92	10.68 35.93	412.98 232.99	46.06 170.01	13.58 327.72	4.62 15.92	24.69 Mag 341.29 Phase
0.251	−53.23	516.60	42.87 174.96	85.81 31.11	17.53 17.14	405.72 229.57	48.94 169.29	13.58 315.84	3.90 11.50	25.52 Mag 333.84 Phase
0.300	21.62	544.72	13.98 160.01	79.29 31.80	11.37 159.92	458.28 245.43	44.44 196.52	4.40 308.98	2.30 33.68	23.92 Mag 321.78 Phase
0.301	11.23	540.57	31.75 141.87	79.68 32.13	21.89 148.63	450.63 247.78	47.55 171.57	6.38 313.94	6.18 66.59	23.95 Mag 316.79 Phase
0.345	40.87	558.81	26.27 103.82	66.31 18.17	74.79 204.19	470.74 260.90	14.24 275.55	6.99 270.63	15.15 173.76	64.89 Mag 295.75 Phase
0.346	20.93	583.68	45.89 86.56	78.20 24.65	79.42 206.32	471.22 265.92	20.12 182.37	9.01 307.70	20.76 185.48	74.18 Mag 303.76 Phase

*1/2 Peak-to-peak

Table 53. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	−169.62	807.54	18.89 50.42	26.54 2.75	12.80 305.00	784.71 147.20	5.89 240.35	2.49 191.51	4.81 125.25	93.09 Mag 22.15 Phase
0.107	−183.23	880.42	17.30 44.91	31.72 6.69	16.22 322.63	853.55 152.52	3.93 259.64	4.75 212.85	4.55 148.64	92.36 Mag 33.04 Phase
0.120	−116.80	664.62	4.94 59.38	39.61 11.68	17.28 309.31	608.93 156.51	21.02 78.97	4.11 225.82	2.69 127.55	72.94 Mag 28.42 Phase
0.122	−136.43	687.73	6.00 84.32	49.47 11.83	11.65 297.34	626.20 160.33	20.27 81.11	6.02 230.84	4.92 143.34	83.44 Mag 42.96 Phase
0.148	−237.73	620.72	8.75 144.29	45.96 9.26	25.25 302.40	543.30 173.03	27.58 72.88	6.43 241.17	3.37 174.12	41.80 Mag 48.55 Phase
0.149	−234.14	616.78	11.39 153.44	42.10 8.82	28.32 309.87	532.29 169.40	37.70 68.75	7.00 238.46	3.87 212.16	51.72 Mag 42.97 Phase
0.150	−189.20	637.51	10.27 155.73	40.17 1.29	22.92 293.38	561.93 163.23	31.58 63.56	7.93 217.97	3.78 180.12	56.91 Mag 34.77 Phase
0.150	−150.61	628.31	8.48 150.83	39.77 8.02	25.31 304.02	554.53 171.69	27.48 68.60	6.75 245.92	3.16 189.42	57.65 Mag 48.58 Phase
0.150	−276.08	596.48	11.37 121.76	34.57 4.17	14.84 306.62	541.84 168.10	20.02 54.80	6.05 236.47	1.58 151.22	56.82 Mag 49.50 Phase
0.151	−240.73	579.03	10.21 135.79	39.63 5.85	24.44 302.98	509.93 170.02	22.28 69.74	6.51 234.05	3.12 171.57	49.60 Mag 46.06 Phase
0.174	−256.78	568.01	15.62 156.89	50.29 17.79	18.71 277.93	486.85 172.75	27.47 66.89	12.42 261.26	3.32 183.59	61.47 Mag 48.20 Phase
0.175	−268.27	582.64	18.92 139.39	49.51 18.95	19.00 257.07	503.47 175.65	25.06 63.04	12.31 262.37	2.66 161.77	62.13 Mag 55.69 Phase
0.200	−216.94	524.65	20.88 150.63	59.97 30.73	7.39 250.29	451.80 189.35	25.18 76.41	10.79 262.86	4.45 150.84	35.29 Mag 31.93 Phase
0.200	−201.01	559.95	22.98 167.13	64.31 25.01	13.09 269.32	480.49 184.75	20.22 99.78	11.71 264.04	4.20 173.89	40.15 Mag 42.69 Phase
0.224	−156.35	491.93	16.41 129.90	70.11 21.99	18.34 248.89	407.28 192.17	13.27 74.16	10.33 278.68	4.47 181.36	30.14 Mag 9.18 Phase
0.225	−179.31	500.04	28.25 142.23	69.31 23.18	7.55 263.13	422.21 201.77	15.11 82.66	12.39 293.05	4.14 162.78	24.19 Mag 41.19 Phase
0.250	−163.27	495.88	22.79 145.70	57.57 23.07	4.88 201.70	434.62 217.43	21.98 104.78	10.78 308.09	1.70 120.74	21.06 Mag 340.24 Phase
0.251	−149.65	518.06	25.44 143.83	61.34 18.60	8.73 228.85	445.30 209.32	23.87 129.13	10.31 292.92	4.36 187.22	18.91 Mag 333.66 Phase
0.300	−95.39	610.97	39.34 80.11	46.66 31.55	31.80 196.22	544.90 234.28	11.63 190.29	5.16 209.71	6.47 154.17	46.25 Mag 265.86 Phase
0.300	−67.34	593.77	32.36 76.43	51.51 30.64	36.15 191.60	522.77 230.57	10.07 222.33	6.27 201.98	9.15 145.10	44.21 Mag 248.83 Phase
0.346	−59.42	680.73	49.29 59.79	43.71 29.25	85.44 229.46	562.78 245.31	14.16 242.56	4.97 244.57	13.51 174.49	75.82 Mag 265.07 Phase
0.347	−29.66	671.60	55.36 70.01	42.65 38.09	63.13 224.50	571.66 246.60	14.71 237.49	7.06 271.14	9.56 180.63	77.16 Mag 270.48 Phase

*1/2 Peak-to-peak

Table 54. Fixed-System Loads Data for Rolling Moment T80 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.096	−17.74	575.39	104.42 219.89	26.80 6.12	31.15 275.22	480.31 167.90	22.76 234.76	5.16 116.29	0.05 76.61	12.36 Mag 183.22 Phase
0.099	4.85	569.01	102.34 216.78	24.28 1.41	33.27 268.54	478.16 155.24	19.54 220.60	4.19 79.63	1.59 5.77	14.55 Mag 163.99 Phase
0.132	12.34	489.97	102.30 205.38	25.40 3.64	33.02 295.31	385.31 177.91	25.96 250.42	4.70 128.15	5.01 97.27	12.21 Mag 322.76 Phase
0.132	20.24	486.22	100.78 207.63	25.11 5.09	35.69 295.03	387.98 182.43	25.77 245.85	4.13 126.81	5.39 73.02	10.61 Mag 326.60 Phase
0.155	−101.56	464.64	74.51 199.52	53.81 54.58	24.11 284.92	373.69 197.99	19.19 307.78	5.15 162.46	3.45 95.78	11.94 Mag 279.65 Phase
0.155	−86.16	468.25	74.55 200.58	55.49 54.69	24.65 277.70	377.72 194.42	20.66 311.37	4.97 162.88	3.59 87.63	10.62 Mag 271.20 Phase
0.181	−36.81	484.80	78.13 196.20	73.70 63.78	26.31 277.37	387.41 210.49	24.94 307.42	4.54 185.17	3.30 51.03	10.51 Mag 287.79 Phase
0.181	−32.95	495.15	80.71 198.92	75.70 70.41	26.23 285.22	395.18 217.30	23.78 324.56	5.14 203.92	2.73 78.62	13.14 Mag 288.41 Phase
0.203	−19.19	528.33	70.82 199.72	80.60 68.41	28.58 284.90	437.76 222.75	18.40 300.44	4.37 203.42	5.82 44.59	16.63 Mag 295.90 Phase
0.203	−9.42	527.43	74.70 196.56	80.85 70.82	28.40 286.28	432.73 228.58	21.25 304.27	3.88 209.38	5.30 58.39	17.69 Mag 313.71 Phase
0.229	31.45	555.18	68.84 192.87	73.61 47.73	25.73 294.31	459.36 235.00	24.97 298.74	3.89 235.03	7.32 63.78	17.68 Mag 326.78 Phase
0.229	32.54	550.60	70.61 199.79	79.07 51.07	24.17 294.55	453.50 232.35	23.53 280.34	4.60 222.26	8.98 55.92	19.23 Mag 329.62 Phase
0.252	36.68	589.17	74.96 200.73	85.45 59.79	23.42 314.36	484.81 249.94	26.31 271.90	7.27 262.10	9.06 89.06	27.81 Mag 339.98 Phase
0.253	40.95	596.53	67.25 191.70	77.40 50.10	25.00 302.09	502.54 245.13	28.84 281.16	6.63 241.24	8.50 70.25	23.46 Mag 331.31 Phase
0.300	97.93	611.01	46.60 204.75	85.44 49.38	17.08 258.77	525.33 252.02	22.06 256.13	9.83 235.79	5.06 81.64	50.62 Mag 351.47 Phase
0.302	92.51	625.19	44.36 199.78	86.60 51.33	11.98 241.66	539.91 253.60	19.50 262.20	11.37 237.61	6.47 83.04	51.29 Mag 354.81 Phase
0.350	74.03	602.68	21.98 196.87	80.92 53.34	27.25 186.27	544.06 272.75	15.29 230.31	11.41 317.96	6.35 156.66	49.31 Mag 341.06 Phase
0.350	53.01	633.06	28.92 211.49	77.78 50.69	41.71 195.66	564.56 270.85	16.88 239.91	9.51 298.60	8.43 148.53	54.14 Mag 337.91 Phase

*1/2 Peak-to-peak

Table 54. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	−87.41	656.26	124.43 232.95	13.99 297.70	130.60 274.34	446.85 156.53	76.37 57.26	2.80 133.59	24.18 139.23	41.62 Mag 40.36 Phase
0.105	−104.89	634.81	122.36 236.77	29.31 318.55	126.82 286.32	450.52 168.00	61.68 81.59	6.00 141.73	22.57 156.60	35.61 Mag 78.32 Phase
0.130	−34.03	494.29	108.24 222.97	22.91 333.98	96.05 301.59	327.89 170.73	48.53 67.13	2.20 331.13	14.59 170.51	13.54 Mag 143.77 Phase
0.132	−28.67	516.87	106.95 222.61	19.54 5.84	95.13 303.28	343.87 167.35	49.27 69.71	2.54 314.24	15.68 168.36	10.85 Mag 136.60 Phase
0.153	−30.74	443.73	101.75 213.26	45.78 342.92	76.20 300.36	323.03 186.05	22.48 165.33	2.05 196.14	5.61 125.49	15.51 Mag 235.14 Phase
0.153	−38.96	448.48	101.79 215.16	42.63 342.27	70.94 306.48	326.60 188.67	14.37 188.74	1.26 103.99	6.38 150.37	12.39 Mag 253.78 Phase
0.153	−175.58	407.23	46.57 205.87	50.08 48.31	41.32 275.48	314.66 182.77	17.23 42.75	4.57 147.35	1.42 171.31	25.80 Mag 220.46 Phase
0.180	−92.29	372.67	56.86 195.30	80.61 81.94	38.19 260.13	266.70 192.21	7.77 354.46	5.32 231.00	2.38 335.36	22.22 Mag 230.23 Phase
0.181	−104.99	343.30	57.23 200.30	55.99 64.31	35.72 262.80	255.54 200.03	15.23 31.45	4.39 215.20	2.93 329.89	27.84 Mag 241.89 Phase
0.201	−58.99	377.62	56.08 199.07	84.98 81.84	31.63 277.74	272.45 212.12	6.81 9.75	3.54 275.21	2.13 291.10	24.01 Mag 232.73 Phase
0.202	−32.53	434.79	112.95 203.87	45.56 0.07	81.46 323.55	280.01 210.18	38.36 157.88	0.83 126.86	4.62 231.34	19.88 Mag 258.90 Phase
0.203	−21.43	433.96	109.62 201.42	45.33 0.31	77.37 321.74	285.54 211.25	41.88 164.87	0.26 142.46	3.24 228.53	21.20 Mag 267.43 Phase
0.228	−24.80	390.54	42.57 196.86	76.23 36.33	19.18 279.16	300.72 219.50	4.52 308.80	0.79 133.73	3.89 320.64	29.44 Mag 228.66 Phase
0.229	−31.23	399.69	45.41 198.25	75.98 37.07	20.82 289.18	307.87 220.04	10.66 295.51	0.94 8.11	2.19 325.10	29.55 Mag 232.79 Phase
0.251	9.99	494.83	105.63 209.40	50.35 357.34	60.10 353.41	345.99 235.83	55.17 174.43	4.51 292.95	9.18 357.78	42.37 Mag 261.59 Phase
0.251	18.41	493.09	109.43 206.34	60.31 356.29	66.95 355.53	331.25 238.17	62.45 168.16	2.64 279.60	7.76 5.31	41.42 Mag 262.04 Phase
0.252	−11.83	405.93	29.89 197.46	67.82 44.94	23.15 281.63	334.61 227.03	10.43 128.18	3.48 281.21	2.93 0.70	28.42 Mag 225.64 Phase
0.300	28.92	555.07	117.30 219.21	60.83 358.23	56.46 5.41	398.62 246.91	62.18 170.95	4.81 229.46	13.34 18.48	59.29 Mag 250.28 Phase
0.301	39.85	497.91	16.66 164.26	71.53 34.76	33.44 209.52	438.70 248.99	4.71 357.78	6.06 281.98	3.37 129.73	38.16 Mag 260.12 Phase
0.348	−131.73	613.83	98.73 235.84	89.51 348.09	39.40 325.64	482.74 267.75	40.88 219.57	6.40 265.08	5.27 39.48	74.42 Mag 283.76 Phase
0.349	−120.52	576.74	98.66 237.32	100.62 344.64	51.62 328.19	452.31 253.97	57.16 179.71	5.67 247.26	8.49 8.34	75.10 Mag 253.32 Phase
0.349	6.42	549.46	14.42 108.79	80.41 30.56	78.81 206.47	460.24 263.24	10.75 267.58	9.07 303.69	12.99 191.47	65.79 Mag 284.14 Phase

*1/2 Peak-to-peak

Table 54. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.100	−143.77	771.08	129.78 242.61	43.21 285.93	85.11 291.36	634.43 145.96	35.47 14.52	6.82 124.37	13.36 120.91	82.24 Mag 25.52 Phase
0.100	−137.43	790.85	133.11 243.48	41.99 291.07	85.21 286.46	652.62 141.68	36.15 14.99	5.90 126.77	12.32 111.71	84.47 Mag 16.38 Phase
0.131	−107.95	682.71	122.92 236.37	38.98 303.85	127.27 309.02	487.74 161.52	64.75 57.18	8.10 160.73	21.22 181.62	56.00 Mag 52.51 Phase
0.133	−96.69	679.61	120.49 235.30	42.90 315.46	126.42 305.23	480.72 162.68	61.05 45.31	6.45 158.87	21.35 177.56	49.97 Mag 53.20 Phase
0.152	−219.11	518.38	16.45 205.64	26.63 39.50	50.32 270.78	431.49 171.05	33.27 355.94	3.09 178.56	5.57 130.23	38.75 Mag 92.60 Phase
0.153	−209.79	508.37	19.85 212.02	25.74 29.61	47.36 281.07	420.51 180.98	37.73 17.09	2.54 192.11	3.99 141.21	35.88 Mag 112.74 Phase
0.179	−172.89	405.76	26.79 197.29	30.85 43.46	43.33 243.03	324.02 174.25	43.83 357.41	2.29 214.30	5.62 109.77	26.33 Mag 117.59 Phase
0.181	−176.58	426.31	28.25 205.48	31.95 39.37	45.89 254.33	338.76 177.78	40.59 4.06	4.05 227.91	5.62 128.87	27.12 Mag 117.61 Phase
0.201	−130.50	431.94	35.59 209.85	46.75 40.98	29.04 278.48	356.57 194.18	28.11 8.73	3.41 237.50	2.69 166.43	36.14 Mag 144.79 Phase
0.202	−132.47	468.27	35.81 197.23	41.83 56.83	25.40 275.96	385.39 191.46	33.94 22.90	2.20 228.71	1.46 106.95	33.00 Mag 142.71 Phase
0.228	−117.58	433.83	22.64 200.06	55.44 15.16	39.41 245.13	375.65 195.26	24.47 349.51	3.40 246.78	4.11 120.65	35.58 Mag 141.29 Phase
0.228	−117.34	433.08	27.12 200.56	55.43 21.92	29.18 249.48	371.36 199.39	25.92 341.21	3.29 257.72	2.90 110.30	34.97 Mag 148.00 Phase
0.251	−94.06	460.47	20.68 198.59	47.39 32.04	35.12 247.59	417.29 219.53	32.29 347.83	2.52 299.53	6.36 114.00	50.18 Mag 178.38 Phase
0.251	−84.51	445.74	20.82 183.12	53.79 27.96	25.09 253.36	389.92 216.23	30.11 11.99	3.34 282.81	3.92 76.90	47.84 Mag 173.79 Phase
0.301	−50.25	591.73	10.44 62.68	48.48 43.11	49.42 229.80	527.26 232.18	18.64 313.33	4.69 173.43	3.78 151.55	65.54 Mag 215.68 Phase
0.303	−50.97	585.11	18.33 67.36	47.09 48.22	43.29 231.75	522.01 231.90	18.10 297.13	7.47 188.56	4.09 165.68	73.67 Mag 217.05 Phase
0.350	−80.32	659.43	48.48 67.52	58.07 40.51	64.29 235.30	555.10 244.75	29.97 248.33	4.67 311.16	6.98 190.67	66.01 Mag 250.54 Phase

*1/2 Peak-to-peak

Table 55. Fixed-System Loads Data for Rolling Moment T85 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.088	−60.10	506.60	56.22 193.34	48.87 55.28	17.21 297.02	433.45 158.14	9.47 319.40	5.74 136.14	2.69 64.81	8.32 Mag 187.49 Phase
0.089	−58.15	509.71	55.17 193.94	51.60 54.42	15.55 291.67	435.33 152.56	9.65 304.58	6.01 140.39	2.39 58.09	11.06 Mag 162.88 Phase
0.120	−39.74	440.82	60.80 193.07	64.13 53.34	20.64 278.90	361.22 164.29	12.94 280.79	6.06 129.73	3.27 82.38	10.46 Mag 341.49 Phase
0.121	−13.05	439.21	59.94 195.04	63.82 56.28	17.94 283.55	364.32 166.99	12.43 278.97	6.96 135.38	4.28 73.43	8.77 Mag 348.21 Phase
0.146	−25.23	452.12	64.33 189.39	63.91 53.44	26.60 284.71	366.71 185.02	17.18 281.61	5.32 140.42	5.16 65.21	12.77 Mag 335.17 Phase
0.149	−78.95	452.86	67.54 191.89	61.41 57.59	25.69 289.17	365.22 193.88	16.51 290.41	4.60 148.64	4.64 85.83	13.51 Mag 349.91 Phase
0.177	32.11	446.50	79.42 189.52	75.81 53.04	31.62 296.29	338.94 209.55	19.68 293.05	6.12 183.51	5.21 82.92	11.65 Mag 1.16 Phase
0.178	32.86	439.49	75.04 189.44	75.80 49.98	30.83 288.19	338.13 203.42	21.58 284.86	7.18 167.65	5.64 66.87	13.44 Mag 338.98 Phase
0.197	−16.94	499.62	70.21 192.57	81.65 59.10	25.21 295.01	399.27 223.36	19.10 299.77	5.92 193.20	3.90 83.85	18.06 Mag 354.68 Phase
0.200	−15.39	506.91	69.15 192.07	80.36 58.10	28.96 291.57	407.89 222.61	17.62 301.70	5.53 196.25	3.63 69.00	18.19 Mag 350.11 Phase
0.226	−47.43	525.03	69.77 193.99	90.29 59.31	28.78 314.06	421.21 235.12	17.00 269.90	7.57 224.90	7.60 76.26	26.07 Mag 339.06 Phase
0.227	−46.45	511.48	70.68 189.94	86.49 57.39	30.51 310.90	409.32 238.89	22.16 284.98	7.16 234.75	6.77 93.54	25.30 Mag 346.62 Phase
0.251	−5.94	545.69	58.15 191.75	81.28 48.70	30.56 301.59	457.77 246.40	24.84 263.29	8.78 247.93	10.91 64.31	30.06 Mag 326.42 Phase
0.252	−4.30	572.19	68.03 188.25	79.87 47.02	27.87 312.66	475.56 242.64	23.39 252.77	8.30 246.16	11.40 70.92	27.52 Mag 320.22 Phase
0.299	41.45	639.18	37.70 200.89	90.83 50.77	25.74 52.85	542.85 260.61	38.33 225.40	14.51 255.81	7.97 76.91	37.18 Mag 337.87 Phase
0.300	46.66	665.44	49.63 201.23	91.57 51.77	24.91 44.73	558.97 258.56	39.93 210.31	12.57 260.54	9.46 82.18	39.57 Mag 329.66 Phase
0.350	94.69	660.90	23.70 187.69	82.15 39.77	65.27 172.85	581.20 278.86	31.07 184.67	9.13 315.86	12.23 129.90	55.11 Mag 331.42 Phase
0.350	100.29	640.05	25.59 178.93	90.60 30.08	58.11 166.01	563.05 283.52	35.72 194.23	6.71 312.56	9.90 135.58	49.24 Mag 342.86 Phase

*1/2 Peak-to-peak

Table 55. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.092	−145.76	554.92	31.49 212.86	34.70 62.83	37.53 272.45	450.24 154.13	40.93 23.20	4.73 132.60	8.12 159.25	27.96 Mag 33.75 Phase
0.120	−86.93	477.16	33.64 193.88	44.97 73.42	40.62 282.10	367.72 156.64	34.36 40.08	4.27 145.51	4.91 171.28	9.17 Mag 193.96 Phase
0.120	−75.62	455.09	35.44 195.33	49.22 79.61	35.14 275.01	345.52 161.45	36.06 24.40	3.60 135.06	5.66 172.53	3.20 Mag 131.79 Phase
0.147	−81.88	366.65	41.17 192.95	49.51 38.10	39.00 270.33	281.16 179.86	25.85 60.00	3.46 132.76	2.58 153.90	20.68 Mag 238.04 Phase
0.149	−83.35	365.45	39.80 194.56	46.76 36.86	36.43 266.91	287.17 173.27	19.95 56.96	2.95 152.77	1.66 131.26	16.23 Mag 233.75 Phase
0.177	−16.81	372.15	49.50 185.47	63.80 29.79	37.77 263.58	285.46 188.99	15.07 9.41	5.60 158.33	4.49 38.91	13.05 Mag 320.82 Phase
0.177	−14.24	360.92	50.96 189.70	66.13 30.86	36.59 271.81	271.18 196.38	16.40 46.93	5.86 159.43	4.23 50.66	15.59 Mag 312.34 Phase
0.199	−66.42	361.36	45.26 201.22	70.97 45.83	26.87 279.70	278.08 208.65	14.37 58.83	5.52 215.19	2.59 100.31	10.01 Mag 319.96 Phase
0.200	−73.56	361.83	46.45 192.99	69.84 45.16	29.71 279.06	281.54 206.36	11.60 60.35	6.13 199.79	3.46 93.50	17.06 Mag 265.95 Phase
0.227	−105.06	378.87	45.10 190.97	77.59 40.59	23.43 284.30	288.42 219.64	15.14 77.13	3.18 266.82	3.46 91.31	16.04 Mag 245.56 Phase
0.227	−102.15	369.55	45.69 197.64	77.92 42.73	27.23 295.89	278.83 221.90	19.92 94.76	3.24 236.18	4.96 77.69	22.31 Mag 269.49 Phase
0.250	−82.55	429.38	37.45 178.26	74.49 40.93	18.68 294.04	350.05 229.64	10.36 113.95	5.38 251.36	2.54 49.27	31.51 Mag 241.41 Phase
0.252	−68.92	417.82	44.80 194.60	79.32 42.70	22.06 301.04	324.97 233.58	21.91 119.85	5.85 273.64	4.40 41.28	33.47 Mag 253.60 Phase
0.300	−37.09	516.29	27.39 163.17	84.37 35.22	20.86 168.24	440.28 250.34	35.29 160.74	8.36 291.91	6.60 87.90	60.10 Mag 250.42 Phase
0.301	−18.26	485.27	20.19 181.50	76.53 38.86	13.96 216.86	404.68 252.82	37.50 151.27	7.24 283.79	2.93 52.90	57.13 Mag 253.85 Phase
0.350	59.32	562.96	36.32 108.10	76.85 28.03	100.55 202.42	465.24 263.52	19.02 155.81	5.01 299.16	13.45 198.74	77.55 Mag 284.91 Phase
0.352	27.13	585.44	28.49 99.84	81.00 16.61	92.32 201.35	482.48 254.76	13.77 95.79	4.43 251.14	14.69 181.02	78.44 Mag 270.58 Phase

*1/2 Peak-to-peak

Table 55. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.120	−163.22	618.23	9.16 188.73	24.81 57.01	52.00 275.45	529.05 163.64	32.01 349.28	4.36 147.41	8.87 142.51	67.50 Mag 55.42 Phase
0.122	−158.06	609.42	11.21 193.70	27.07 55.50	54.49 273.55	518.27 155.04	28.60 331.82	3.16 134.33	8.44 131.20	73.94 Mag 35.80 Phase
0.144	−152.32	532.62	13.87 198.99	36.75 24.13	56.24 258.46	443.15 146.10	30.64 308.19	2.67 125.18	7.34 101.12	52.02 Mag 18.84 Phase
0.145	−138.90	562.84	15.56 203.36	36.03 29.03	55.74 275.49	469.02 163.65	29.87 350.95	3.96 141.38	7.00 133.53	50.52 Mag 52.75 Phase
0.175	−85.38	396.12	19.51 169.70	55.65 21.25	63.95 256.30	300.99 172.11	42.65 335.12	4.78 187.18	7.25 116.92	26.51 Mag 72.38 Phase
0.176	−97.23	397.88	18.60 174.65	55.79 23.64	66.56 255.05	308.42 173.54	40.79 323.29	5.18 197.15	7.85 118.79	28.63 Mag 78.56 Phase
0.197	−155.63	428.15	24.61 191.10	55.79 34.52	42.89 259.85	338.60 180.49	36.02 11.71	3.82 205.49	6.68 121.88	13.55 Mag 99.62 Phase
0.197	−145.61	419.63	22.49 166.13	53.99 36.43	35.19 261.96	329.14 185.03	45.51 26.83	5.10 222.92	5.11 126.52	18.48 Mag 100.61 Phase
0.225	−172.01	392.76	24.05 187.52	56.19 35.41	37.36 278.07	323.11 200.76	33.27 355.42	4.45 257.96	4.48 164.20	15.17 Mag 172.38 Phase
0.226	−177.89	388.94	27.75 182.15	58.32 32.59	38.95 275.07	317.90 205.86	25.27 17.41	5.88 259.21	4.73 162.38	16.25 Mag 182.86 Phase
0.251	−136.20	403.62	14.48 169.45	57.23 27.94	29.25 252.87	352.95 216.94	18.38 17.61	3.90 261.41	3.88 106.38	31.43 Mag 207.79 Phase
0.252	−129.23	391.73	18.97 140.03	56.78 27.12	29.22 250.03	339.28 211.46	14.66 3.38	4.65 242.99	3.66 129.22	30.55 Mag 189.74 Phase
0.300	−114.35	536.95	29.59 79.80	54.69 25.87	58.28 210.72	453.19 226.91	20.86 252.04	4.52 188.09	4.30 167.37	92.69 Mag 208.32 Phase
0.301	−126.81	527.07	38.16 83.83	54.87 30.66	48.59 214.83	448.32 236.07	13.86 273.84	4.14 188.17	0.89 63.15	82.95 Mag 226.37 Phase

*1/2 Peak-to-peak

Table 56. Fixed-System Loads Data for Rolling Moment S80 Configuration

[See fig. 17.]

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−129.10	541.41	52.02 172.96	43.04 45.97	12.31 311.40	470.81 154.02	16.80 38.77	1.33 179.19	1.69 73.82	12.72 Mag 151.71 Phase
0.101	−122.32	531.21	52.19 174.66	44.83 53.47	12.38 318.77	460.17 152.83	17.20 32.61	2.41 200.31	1.94 57.70	6.52 Mag 134.01 Phase
0.131	−75.04	477.77	61.08 171.82	47.62 47.59	15.47 314.96	396.02 166.17	10.09 75.12	0.79 195.32	3.29 91.27	10.05 Mag 354.89 Phase
0.133	−72.93	454.28	61.11 174.34	49.85 55.53	20.24 317.22	369.05 169.75	10.20 21.04	3.16 214.61	2.82 151.44	11.08 Mag 354.95 Phase
0.150	−81.68	470.26	70.63 169.62	65.46 43.90	20.36 321.06	371.10 179.46	9.98 179.25	1.11 116.54	2.82 95.72	13.03 Mag 349.33 Phase
0.150	−72.25	486.81	71.07 169.79	69.13 45.37	18.31 318.14	385.60 180.72	8.67 179.10	1.66 103.89	3.06 98.09	12.31 Mag 2.25 Phase
0.175	−54.37	500.70	73.99 171.90	71.97 48.07	21.22 321.77	393.85 196.20	8.72 199.48	0.67 219.99	3.27 121.89	16.96 Mag 327.50 Phase
0.175	−51.20	490.66	72.40 172.72	74.08 52.68	23.98 329.17	384.99 201.28	12.00 180.52	1.06 177.21	3.08 133.95	10.75 Mag 349.57 Phase
0.200	−30.44	516.32	75.86 173.47	70.94 41.08	19.85 323.38	402.96 210.40	11.19 203.54	2.98 85.23	1.68 41.27	25.58 Mag 319.63 Phase
0.200	−42.51	519.33	71.59 175.15	77.67 48.48	21.51 323.26	410.41 207.65	12.66 213.06	2.08 107.27	1.45 77.86	24.65 Mag 314.45 Phase
0.223	−33.17	544.75	66.91 177.27	83.46 52.75	24.84 346.65	439.09 225.62	22.50 189.68	6.62 239.31	2.66 45.22	38.29 Mag 355.99 Phase
0.224	−48.75	534.59	66.14 176.35	80.30 50.98	27.45 344.13	431.89 227.05	24.96 197.84	6.16 250.22	2.56 54.94	38.71 Mag 359.92 Phase
0.248	3.32	574.33	65.02 174.87	76.02 43.10	19.22 340.36	477.75 234.02	32.37 212.67	7.95 264.78	5.44 45.41	36.91 Mag 339.44 Phase
0.249	−0.35	569.82	63.87 173.28	75.89 41.63	24.78 345.42	468.51 238.81	35.58 215.81	5.75 268.98	6.29 83.01	38.51 Mag 355.59 Phase
0.299	56.86	619.22	45.16 154.79	78.53 47.14	12.71 347.08	506.01 246.49	52.84 219.80	9.69 243.10	4.95 79.30	60.71 Mag 9.89 Phase
0.299	55.47	602.34	45.46 156.13	78.77 48.68	17.44 316.70	484.14 240.08	47.13 201.48	6.66 220.83	5.38 73.78	54.74 Mag 0.76 Phase

*1/2 Peak-to-peak

Table 56. Continued

[See fig. 18.]

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	−258.08	600.08	20.96 163.22	38.00 359.77	9.55 227.63	535.88 144.83	35.45 39.69	7.50 162.95	4.32 148.53	29.99 Mag 14.42 Phase
0.104	−224.50	620.79	19.89 168.54	43.66 352.62	13.12 241.64	547.61 146.92	39.17 37.01	10.02 155.90	4.45 163.40	22.68 Mag 3.56 Phase
0.123	−128.18	495.84	32.44 154.29	38.66 17.97	22.50 281.73	420.92 157.50	35.07 44.76	4.69 163.24	4.87 174.89	5.40 Mag 264.80 Phase
0.127	−134.67	495.16	32.56 153.00	39.99 0.28	15.03 276.44	430.20 152.72	26.95 33.23	6.29 165.23	4.37 169.81	11.46 Mag 326.05 Phase
0.150	−159.52	403.95	44.76 154.37	54.60 14.72	19.36 278.10	319.23 165.63	31.26 47.52	3.48 179.03	3.82 172.15	6.34 Mag 289.67 Phase
0.150	−132.03	427.11	45.88 153.79	58.20 10.32	19.74 275.81	338.83 162.88	29.70 47.28	2.99 174.39	3.14 163.82	9.45 Mag 283.61 Phase
0.175	−125.44	384.11	46.66 155.07	61.51 22.98	14.72 263.42	293.17 173.82	32.89 58.60	5.91 230.82	2.48 203.48	16.06 Mag 343.32 Phase
0.175	−102.83	390.60	48.12 157.72	66.90 24.72	16.92 262.02	293.72 181.06	34.39 73.17	4.52 233.07	1.09 198.76	14.88 Mag 347.92 Phase
0.200	−90.63	410.81	46.03 158.74	73.02 32.02	15.02 317.55	315.72 197.40	35.18 92.12	6.70 241.17	1.30 262.44	11.32 Mag 347.13 Phase
0.200	−97.51	416.19	44.95 167.87	71.23 32.28	7.70 297.97	321.36 195.95	28.87 80.14	6.08 237.28	1.20 285.35	12.38 Mag 5.37 Phase
0.224	−124.08	444.09	40.51 162.85	82.54 28.41	10.23 292.66	351.09 207.19	26.07 110.29	6.71 271.49	2.83 55.82	30.17 Mag 322.82 Phase
0.225	−102.19	439.94	48.47 165.41	83.37 29.58	12.98 321.03	341.68 209.66	29.07 117.71	6.98 269.45	2.00 52.62	21.46 Mag 326.47 Phase
0.225	−140.69	448.09	37.51 161.89	76.78 31.60	11.32 316.19	361.73 206.85	25.43 106.00	7.97 264.50	2.49 85.44	24.21 Mag 334.09 Phase
0.249	−70.98	475.33	48.74 140.49	75.75 32.20	16.76 343.66	364.56 226.02	38.44 148.15	10.05 305.40	2.29 104.05	22.18 Mag 300.84 Phase
0.249	−41.10	439.86	38.06 145.64	70.72 27.59	19.38 297.67	340.55 218.18	27.58 139.03	9.51 288.94	2.98 38.98	20.46 Mag 273.56 Phase
0.301	−15.40	495.89	40.16 135.05	66.53 27.75	19.14 218.78	414.36 233.99	27.25 157.32	5.61 264.68	2.43 84.54	27.23 Mag 298.05 Phase
0.301	6.28	494.66	51.22 131.74	70.57 29.42	38.06 214.80	423.43 235.13	18.42 188.04	8.35 256.04	4.49 120.13	21.64 Mag 288.78 Phase

*1/2 Peak-to-peak

Table 56. Concluded

[See fig. 19.]

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	−290.64	829.91	39.28 73.85	22.04 350.98	7.00 251.05	799.46 138.75	16.69 245.10	5.62 161.20	6.15 105.77	104.88 Mag 356.41 Phase
0.104	−281.53	810.80	36.10 71.37	23.87 353.93	10.87 237.54	780.59 135.74	15.43 243.82	5.16 164.31	6.51 98.27	103.07 Mag 353.48 Phase
0.127	−206.42	653.26	27.52 93.55	19.22 23.90	18.06 254.74	610.57 151.61	13.30 3.50	5.12 157.80	6.20 89.29	62.03 Mag 16.30 Phase
0.150	−211.75	526.62	29.41 118.55	32.49 353.78	31.52 244.61	459.64 146.66	27.20 337.38	7.42 175.73	5.62 86.64	38.16 Mag 3.29 Phase
0.150	−186.43	515.49	28.10 119.73	32.40 359.57	31.05 260.95	450.25 153.04	25.64 347.33	8.21 177.29	5.87 96.85	35.24 Mag 11.32 Phase
0.175	−217.95	491.91	34.66 122.30	33.50 11.15	30.35 236.35	402.07 157.95	44.52 20.02	9.38 215.33	3.71 98.64	33.28 Mag 14.12 Phase
0.175	−194.52	480.78	31.23 134.89	33.72 18.73	31.59 250.78	390.44 170.77	42.64 43.28	8.04 235.04	2.96 121.03	36.66 Mag 40.62 Phase
0.200	−176.29	488.21	34.67 139.72	45.09 29.54	18.94 242.77	408.52 182.34	39.57 49.60	8.78 244.91	5.45 114.09	30.24 Mag 35.61 Phase
0.200	−172.31	493.63	34.84 135.56	53.24 26.81	19.94 249.23	410.37 177.74	32.55 46.19	10.83 238.91	5.38 120.93	32.95 Mag 41.12 Phase
0.223	−196.57	481.72	32.85 138.45	49.86 21.30	27.44 247.62	405.42 187.61	24.61 27.36	8.75 246.29	7.25 123.49	29.51 Mag 340.10 Phase
0.224	−211.77	498.17	41.56 145.39	51.45 19.80	28.86 252.52	415.68 192.03	26.33 36.08	8.73 253.80	8.08 140.12	25.19 Mag 353.80 Phase
0.225	−162.17	482.74	23.08 146.78	58.95 16.37	35.89 251.40	400.82 190.57	20.48 18.21	8.88 245.81	6.08 143.99	23.19 Mag 2.42 Phase
0.225	−151.58	494.45	29.50 141.03	60.57 22.88	32.72 248.83	414.02 195.07	29.96 18.55	9.52 259.01	8.07 133.28	24.96 Mag 5.47 Phase
0.248	−174.71	468.17	39.31 117.25	43.36 22.64	20.34 247.39	405.42 201.61	18.60 56.54	7.72 267.67	7.77 116.84	18.00 Mag 288.68 Phase
0.248	−138.09	442.48	37.70 116.19	54.19 15.41	29.80 227.73	382.59 201.50	18.72 12.16	6.08 259.56	9.23 111.40	12.25 Mag 283.55 Phase
0.300	−103.31	578.77	59.81 80.23	29.46 37.23	63.47 226.35	510.12 220.59	2.34 205.46	9.56 181.58	7.51 141.98	34.21 Mag 230.49 Phase
0.301	−108.29	587.97	40.63 74.47	36.55 46.56	66.03 224.19	517.30 222.26	19.35 335.05	7.37 178.27	11.38 149.84	42.79 Mag 215.89 Phase

*1/2 Peak-to-peak

Table 57. Fixed-System Loads Data for Yawing Moment Baseline Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	693.89	373.51	45.32 121.67	1.59 241.34	19.77 325.24	338.25 36.17	20.26 25.61	4.99 240.94	2.18 189.13	7.26 Mag 320.15 Phase
0.102	687.74	369.16	42.63 120.92	1.95 264.46	16.47 319.10	337.40 34.98	22.82 24.15	4.77 264.28	2.17 211.99	6.79 Mag 325.17 Phase
0.130	577.40	396.56	43.66 111.96	4.84 203.14	10.68 321.27	360.88 37.93	15.03 48.98	9.79 299.71	1.17 325.90	5.61 Mag 28.38 Phase
0.131	583.78	405.05	42.21 109.72	4.94 211.16	6.88 334.65	369.10 45.73	17.87 51.86	9.02 315.58	1.31 344.07	3.52 Mag 30.98 Phase
0.147	540.73	392.81	4.52 349.85	9.26 213.72	9.47 97.27	365.77 42.53	9.52 12.32	9.09 250.74	1.09 269.16	8.33 Mag 310.83 Phase
0.148	544.72	388.33	3.82 41.40	8.75 216.19	8.38 91.38	365.58 40.79	8.30 4.03	9.33 273.86	1.04 311.54	9.05 Mag 312.51 Phase
0.153	596.64	402.02	33.34 97.33	4.42 203.37	5.76 327.74	371.17 46.82	17.29 51.55	5.58 294.70	1.09 223.70	3.64 Mag 2.09 Phase
0.154	608.15	410.22	39.02 116.92	6.00 213.06	7.98 327.97	378.69 45.41	15.62 55.94	13.00 307.99	1.85 292.26	3.09 Mag 11.40 Phase
0.174	557.41	404.87	6.31 108.09	10.39 225.69	12.86 89.03	378.20 51.16	10.87 31.17	10.14 307.44	0.15 258.64	6.53 Mag 3.56 Phase
0.176	552.04	401.97	3.21 100.06	9.84 224.38	12.31 93.21	378.08 52.10	8.29 28.88	9.89 302.01	0.25 203.92	7.06 Mag 5.13 Phase
0.179	517.39	409.26	45.50 131.79	8.55 225.64	11.98 0.64	373.52 40.73	14.50 64.21	9.77 339.82	0.40 304.39	6.72 Mag 357.42 Phase
0.181	516.07	410.74	40.22 128.49	7.32 225.58	12.44 7.10	375.38 42.05	16.21 43.31	10.06 354.50	0.14 356.97	6.14 Mag 11.34 Phase
0.200	598.39	424.15	5.71 358.33	11.59 212.32	14.68 100.98	400.32 58.58	7.67 79.68	7.72 299.82	0.86 327.57	4.94 Mag 6.05 Phase
0.201	595.05	422.26	11.11 333.52	12.44 207.47	12.81 108.06	395.68 48.76	11.85 66.49	7.23 263.87	0.26 318.30	4.82 Mag 353.90 Phase
0.223	629.55	440.45	12.94 333.08	11.31 227.61	11.16 131.32	412.51 58.16	15.95 65.54	9.46 312.07	1.31 326.02	2.25 Mag 242.32 Phase
0.224	627.43	439.71	10.36 322.61	8.95 216.22	12.92 119.18	416.37 61.62	13.58 81.16	6.51 311.55	0.46 319.69	3.55 Mag 246.20 Phase
0.248	657.90	461.91	5.01 17.75	6.53 192.62	14.79 96.95	439.93 68.46	14.38 94.68	7.22 283.10	1.05 258.26	14.00 Mag 253.88 Phase
0.249	659.33	464.77	1.02 314.96	7.58 210.18	11.92 93.01	444.46 64.06	13.22 98.18	8.40 314.19	1.34 337.78	14.61 Mag 243.43 Phase
0.298	788.10	497.05	3.28 84.60	10.89 226.90	15.95 82.01	474.55 86.23	5.70 115.13	8.65 14.04	3.08 34.16	17.36 Mag 235.95 Phase
0.298	786.19	499.09	12.24 322.95	13.33 216.55	15.53 74.48	480.87 80.74	14.20 137.62	10.87 12.42	2.70 355.04	17.01 Mag 212.93 Phase
0.347	936.70	632.33	10.27 344.23	8.72 18.16	33.16 29.20	583.89 106.47	15.27 141.83	3.05 304.97	5.46 124.43	31.25 Mag 218.54 Phase
0.347	935.86	630.26	11.97 289.13	9.71 50.63	33.81 34.85	574.98 103.58	20.79 146.61	2.81 227.05	4.30 132.38	32.31 Mag 212.44 Phase

*1/2 Peak-to-peak

Table 57. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	865.04	429.83	21.12 150.98	6.31 65.17	21.95 31.31	383.40 65.97	30.90 67.24	0.90 307.02	5.97 126.92	14.44 Mag 356.59 Phase
0.100	856.38	448.35	22.66 162.59	6.32 72.84	17.52 38.40	402.89 73.42	32.12 70.27	1.26 13.59	5.07 153.69	16.24 Mag 10.64 Phase
0.102	897.85	424.49	20.77 150.30	4.02 92.98	21.49 40.73	376.19 70.30	36.74 52.74	5.66 216.44	7.10 140.77	10.73 Mag 4.55 Phase
0.130	773.24	354.74	19.58 106.09	2.03 122.11	21.78 50.95	318.17 56.32	21.77 82.62	5.83 315.61	6.13 189.27	5.46 Mag 316.07 Phase
0.130	775.33	352.67	13.20 116.01	1.42 4.88	17.83 61.25	324.93 58.58	19.43 94.34	8.17 294.21	4.82 190.83	5.78 Mag 318.80 Phase
0.147	736.56	367.16	8.15 296.87	5.43 202.20	19.67 74.84	343.79 55.70	13.99 98.57	2.17 296.06	3.71 232.11	18.40 Mag 285.02 Phase
0.152	761.33	371.19	31.03 92.46	2.87 156.29	29.48 53.82	326.03 57.57	17.77 47.45	1.17 23.56	5.49 178.23	1.35 Mag 48.26 Phase
0.152	765.20	372.42	30.98 94.24	3.11 168.81	29.60 46.67	329.18 58.72	18.58 55.10	2.62 286.24	5.55 204.78	0.44 Mag 298.11 Phase
0.174	727.27	373.64	7.82 291.55	7.51 203.47	11.60 78.76	350.17 71.07	10.19 87.22	8.94 263.59	4.65 274.14	17.63 Mag 303.44 Phase
0.174	720.89	368.35	6.39 323.70	7.19 195.48	13.69 78.12	345.53 69.40	11.77 67.02	10.49 243.69	4.20 280.25	17.23 Mag 301.46 Phase
0.178	689.30	343.49	26.96 142.76	2.69 172.97	25.19 14.85	303.53 49.28	23.78 38.50	5.31 248.28	4.04 167.22	14.55 Mag 289.91 Phase
0.180	685.89	338.95	25.19 141.80	2.53 219.49	27.11 8.47	302.79 46.77	18.04 35.38	4.82 259.03	3.32 160.88	14.53 Mag 281.56 Phase
0.199	776.70	377.31	16.86 296.63	9.66 199.87	7.64 69.39	356.68 79.93	12.04 143.71	7.08 299.65	4.76 301.90	12.82 Mag 312.11 Phase
0.224	807.15	400.19	14.77 294.23	13.45 202.58	10.73 75.07	374.16 76.36	11.05 108.22	8.69 295.88	4.33 304.93	16.01 Mag 247.30 Phase
0.225	808.09	395.91	13.90 324.78	13.64 200.16	11.00 89.14	378.54 88.35	8.83 148.15	7.29 312.09	4.67 325.02	16.17 Mag 272.84 Phase
0.249	845.50	400.06	15.58 290.26	12.12 213.98	9.00 66.48	377.06 93.44	7.46 132.93	5.02 344.17	4.56 335.82	28.90 Mag 257.08 Phase
0.298	1008.64	435.17	12.71 317.14	10.81 215.18	15.65 80.29	417.09 108.45	10.73 181.49	9.16 51.64	0.35 160.54	30.39 Mag 243.25 Phase
0.349	1227.06	663.09	19.06 297.07	10.34 96.50	30.09 42.50	621.02 111.97	17.28 194.80	6.21 88.79	3.09 157.41	32.86 Mag 227.62 Phase

*1/2 Peak-to-peak

Table 57. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	1143.18	439.78	35.44 83.54	1.07 212.30	17.86 57.05	407.74 48.75	9.96 196.76	2.52 223.17	1.15 74.68	18.69 Mag 38.79 Phase
0.105	1162.23	448.80	36.56 81.93	2.43 129.42	21.51 68.94	415.33 49.30	17.70 223.95	3.03 266.80	1.18 167.63	22.57 Mag 60.36 Phase
0.129	1062.87	431.78	35.61 84.54	3.25 267.99	47.56 71.86	385.56 60.22	18.04 302.83	3.23 237.89	7.47 159.57	14.73 Mag 62.76 Phase
0.131	1056.20	430.15	32.73 93.30	1.11 330.13	44.35 70.47	380.91 58.81	9.03 354.12	2.92 140.38	8.56 160.52	14.83 Mag 56.54 Phase
0.147	1010.28	452.05	3.12 321.94	3.89 206.41	34.04 68.66	417.43 55.32	11.94 107.26	3.30 211.37	2.66 178.61	16.19 Mag 330.59 Phase
0.147	1004.67	453.05	4.23 298.65	4.37 218.76	31.19 74.39	419.29 64.58	12.64 108.69	2.60 220.29	2.80 188.15	17.72 Mag 2.72 Phase
0.172	966.41	430.00	12.58 306.25	4.51 203.12	25.84 59.44	400.73 78.64	10.69 136.38	2.53 276.76	3.27 240.20	5.74 Mag 50.51 Phase
0.173	971.05	428.45	11.55 338.93	7.03 198.92	27.81 64.45	402.32 65.50	9.01 119.40	5.21 291.32	2.65 240.71	5.73 Mag 45.65 Phase
0.178	925.70	430.74	20.63 134.64	2.95 245.06	43.92 52.29	381.22 64.55	15.07 35.44	2.02 65.76	7.95 163.76	11.11 Mag 56.85 Phase
0.178	924.92	429.95	20.49 143.63	2.06 306.27	45.41 51.36	377.27 63.82	17.20 58.00	4.63 201.54	6.84 165.58	10.55 Mag 55.90 Phase
0.198	1013.11	429.05	13.28 332.43	9.54 190.44	24.92 62.42	403.99 79.09	12.40 142.64	4.36 315.26	1.04 299.10	3.76 Mag 24.95 Phase
0.199	1008.55	424.59	12.60 351.21	8.36 188.38	25.01 70.09	403.56 81.14	6.31 165.19	4.94 325.47	2.00 294.65	3.49 Mag 32.98 Phase
0.224	1049.45	461.00	12.51 335.77	15.18 201.99	23.72 75.31	443.31 86.33	6.76 175.53	7.31 348.72	1.21 247.31	7.16 Mag 148.86 Phase
0.225	1048.52	475.63	15.55 334.94	15.57 198.70	26.83 74.75	452.75 83.14	7.73 146.42	8.19 350.43	1.72 226.73	8.61 Mag 143.75 Phase
0.248	1112.43	493.90	16.26 326.38	11.48 190.83	24.39 74.88	468.62 91.73	6.63 111.53	8.12 352.15	2.74 257.47	24.00 Mag 199.51 Phase
0.248	1111.77	479.69	13.23 5.99	11.45 217.48	23.03 76.46	460.54 94.91	5.08 166.76	7.29 8.92	2.24 224.67	24.99 Mag 207.87 Phase
0.299	1341.21	574.34	10.98 23.09	1.63 226.72	23.84 84.60	541.92 109.50	11.18 204.26	7.07 33.55	1.62 232.43	48.51 Mag 217.30 Phase
0.299	1337.65	595.06	16.14 293.89	5.49 167.91	26.08 60.97	554.46 99.16	16.50 173.68	7.57 17.21	2.51 198.61	50.33 Mag 192.51 Phase
0.348	1636.39	862.87	20.11 309.54	26.44 157.07	25.64 81.51	814.37 112.12	18.54 130.92	8.89 74.61	2.09 251.98	28.26 Mag 202.54 Phase
0.349	1639.55	875.30	22.43 311.80	3.73 238.71	30.22 88.88	825.97 102.46	17.96 123.38	8.56 100.58	3.63 240.85	28.65 Mag 197.32 Phase

*1/2 Peak-to-peak

Table 58. Fixed-System Loads Data for Yawing Moment T30 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.107	661.86	267.88	5.21 97.73	9.13 224.82	7.18 240.97	252.32 10.68	21.33 4.55	4.72 225.87	2.47 339.57	16.66 Mag 341.81 Phase
0.109	663.39	270.37	6.32 56.55	9.65 229.79	6.67 246.48	254.83 22.29	21.16 20.93	4.36 232.19	2.57 351.75	18.10 Mag 359.68 Phase
0.126	670.97	245.00	1.70 218.09	10.33 223.38	8.79 221.90	229.82 30.94	18.07 28.17	8.22 238.93	2.65 9.10	16.07 Mag 6.39 Phase
0.128	667.75	252.97	1.87 84.02	10.67 217.02	7.64 225.53	236.85 29.41	17.70 27.89	8.76 236.95	2.36 4.06	12.93 Mag 358.99 Phase
0.151	627.63	317.36	1.81 22.96	11.74 219.28	4.88 238.43	296.81 48.90	17.01 65.79	12.11 265.68	2.11 49.10	5.44 Mag 36.08 Phase
0.151	625.65	313.60	4.27 30.12	11.89 213.40	5.09 225.38	292.10 37.68	19.08 53.59	12.69 259.02	2.55 36.46	4.21 Mag 35.46 Phase
0.175	626.00	350.73	3.96 12.22	9.03 218.62	2.86 297.34	325.96 50.38	20.61 82.49	11.86 263.95	2.45 73.02	6.70 Mag 55.92 Phase
0.176	625.28	351.69	2.30 142.44	12.53 224.67	6.44 320.04	321.02 60.68	20.68 95.54	11.83 291.08	2.49 76.10	8.04 Mag 81.01 Phase
0.200	488.01	396.54	2.72 236.90	13.12 210.12	2.49 26.39	366.07 55.08	31.12 82.46	13.94 260.80	2.70 96.26	4.41 Mag 56.04 Phase
0.224	517.93	420.23	5.28 318.12	8.54 225.75	1.08 112.79	392.44 70.00	35.21 104.19	14.58 294.19	1.62 144.29	10.27 Mag 78.99 Phase
0.224	519.58	429.61	5.94 291.70	8.11 218.83	4.91 65.39	394.86 66.74	39.97 102.62	13.48 289.35	3.26 115.24	10.31 Mag 75.69 Phase
0.249	532.41	420.62	17.42 326.58	6.07 214.57	7.14 148.21	396.89 75.36	30.85 93.91	9.57 335.54	0.39 310.71	1.81 Mag 232.43 Phase
0.250	537.15	417.73	21.23 319.23	5.79 196.79	8.63 127.75	387.77 77.10	34.39 96.81	8.52 340.81	0.26 47.17	4.32 Mag 50.58 Phase
0.298	662.59	449.91	21.72 328.47	14.04 188.27	16.69 84.32	419.05 83.94	20.25 96.39	8.37 345.26	3.56 349.04	13.54 Mag 149.07 Phase
0.299	661.71	445.32	18.25 330.50	11.27 206.22	15.24 92.75	416.95 79.91	24.07 96.97	6.01 331.97	2.41 346.38	15.29 Mag 119.41 Phase
0.347	842.19	558.11	14.88 316.33	15.99 157.41	24.65 40.29	522.01 108.54	26.94 68.59	6.79 43.88	4.82 163.70	30.59 Mag 204.81 Phase
0.347	841.78	527.08	12.62 310.14	10.84 177.01	26.04 26.88	503.06 114.16	25.91 73.42	6.50 42.91	6.46 162.97	32.45 Mag 199.49 Phase

*1/2 Peak-to-peak

Table 58. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	854.83	349.89	36.09 210.79	5.71 289.10	14.04 240.37	294.31 49.76	41.50 21.29	6.13 297.04	4.92 241.14	32.51 Mag 330.24 Phase
0.113	844.82	361.75	33.32 188.51	5.12 258.84	9.56 257.57	307.46 45.87	44.10 8.29	1.04 0.97	5.56 247.68	31.89 Mag 324.73 Phase
0.125	878.15	281.18	14.49 268.54	2.95 268.40	2.95 123.00	252.62 59.77	31.94 61.38	2.70 123.70	3.67 257.78	22.56 Mag 330.45 Phase
0.125	880.69	292.71	12.35 249.10	1.94 265.79	4.32 58.70	259.43 65.19	33.08 61.08	6.27 190.12	3.86 256.40	23.08 Mag 340.38 Phase
0.149	810.03	301.60	9.74 286.76	6.05 181.00	2.68 102.88	276.18 67.45	26.51 82.36	7.51 197.83	1.91 308.33	12.11 Mag 336.72 Phase
0.150	810.90	301.36	9.75 268.05	5.17 180.05	1.44 82.45	274.94 70.38	29.42 78.81	7.62 194.82	2.05 322.06	11.01 Mag 335.12 Phase
0.174	799.23	308.65	11.29 295.16	5.94 178.21	3.86 331.51	273.71 85.08	29.50 98.77	15.98 215.09	1.32 318.47	10.68 Mag 8.16 Phase
0.175	798.48	294.93	10.70 304.36	6.86 187.13	0.74 89.33	264.70 77.45	31.37 85.68	14.28 207.72	0.83 332.14	10.23 Mag 353.50 Phase
0.198	655.59	300.98	13.25 297.01	9.73 185.41	7.28 326.20	273.67 84.60	26.04 106.18	8.19 268.84	4.90 313.14	6.35 Mag 16.27 Phase
0.201	657.97	301.15	11.11 313.82	10.96 187.26	2.50 337.55	275.72 79.48	28.07 97.73	10.74 253.28	3.87 310.96	6.25 Mag 348.62 Phase
0.224	692.41	334.80	18.12 296.88	10.79 205.75	6.18 341.54	301.40 93.77	32.77 122.13	5.67 295.67	3.84 319.72	3.86 Mag 32.05 Phase
0.224	691.84	342.48	13.35 295.63	11.69 203.51	1.92 36.71	310.47 84.86	36.12 103.24	6.42 260.33	3.60 315.98	6.94 Mag 358.93 Phase
0.250	704.78	332.06	19.57 312.55	8.79 205.56	8.02 101.41	305.20 101.03	29.84 128.05	6.78 28.12	5.77 336.90	11.06 Mag 264.51 Phase
0.250	709.19	343.66	15.97 316.26	10.48 215.60	11.52 107.90	308.23 87.49	31.72 98.43	6.66 353.36	7.22 316.19	9.00 Mag 274.82 Phase
0.297	881.97	389.18	10.91 334.13	12.43 200.19	20.83 81.85	355.75 108.37	18.35 131.94	9.51 47.70	2.85 354.68	13.88 Mag 219.72 Phase
0.298	877.60	383.97	24.42 341.05	14.39 174.17	19.52 83.53	351.96 93.93	19.95 145.72	8.45 31.80	3.22 341.12	15.47 Mag 201.81 Phase
0.347	1126.81	571.49	13.45 330.47	19.71 170.74	43.80 45.21	527.07 111.37	14.65 125.72	8.98 59.37	3.88 198.33	27.41 Mag 235.46 Phase
0.347	1125.69	587.64	22.10 313.23	21.34 142.93	44.29 42.51	534.55 118.50	20.22 141.48	10.70 73.68	4.02 212.91	24.37 Mag 233.39 Phase

*1/2 Peak-to-peak

Table 58. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.112	1167.03	436.22	9.63 318.16	6.03 292.10	15.18 21.34	406.09 36.89	22.18 140.37	1.57 183.14	1.54 345.70	50.30 Mag 352.74 Phase
0.113	1160.10	450.67	8.84 293.93	5.75 277.44	19.95 22.73	410.30 43.81	20.32 115.36	2.78 123.12	1.38 11.74	48.83 Mag 350.54 Phase
0.125	1144.94	410.73	11.16 288.36	1.77 340.12	25.41 49.50	364.12 57.87	23.18 97.53	0.96 147.37	0.95 0.83	44.91 Mag 357.29 Phase
0.126	1145.10	399.36	8.51 313.22	2.26 321.67	24.89 58.67	359.88 56.96	16.75 109.87	4.90 155.76	1.31 296.28	43.68 Mag 4.69 Phase
0.147	1055.55	395.68	14.65 318.95	1.30 314.60	19.40 57.16	352.38 58.83	23.48 92.01	2.99 80.29	3.69 242.64	32.34 Mag 3.39 Phase
0.149	1052.61	397.51	15.70 330.42	1.43 345.28	19.59 66.93	354.42 69.51	22.95 109.31	4.91 168.24	3.61 285.41	33.55 Mag 30.94 Phase
0.172	1023.69	363.33	15.74 318.13	3.62 192.76	17.50 49.67	322.74 71.97	27.40 85.96	1.49 184.21	4.41 258.80	23.04 Mag 35.21 Phase
0.172	1022.82	362.62	14.37 319.93	5.30 181.21	17.32 61.32	322.02 76.54	28.18 86.92	2.13 204.90	4.79 260.83	20.25 Mag 39.22 Phase
0.198	874.15	374.32	15.30 328.25	7.33 199.14	16.38 73.91	340.08 84.78	26.26 88.24	4.91 1.14	6.22 295.98	15.15 Mag 55.81 Phase
0.199	869.32	370.22	17.64 337.95	5.82 172.73	15.43 65.17	343.14 84.81	18.15 91.21	6.06 306.54	5.08 298.31	18.39 Mag 71.16 Phase
0.224	927.11	435.67	18.27 328.46	10.37 189.59	19.10 56.80	400.68 96.22	28.68 125.67	7.24 310.29	3.22 324.03	15.20 Mag 89.08 Phase
0.224	928.00	430.00	18.31 333.19	9.10 182.40	17.83 61.60	392.33 93.20	28.26 128.22	3.89 287.22	4.27 322.05	15.83 Mag 82.72 Phase
0.250	939.51	457.71	21.83 340.72	5.39 225.26	23.87 92.27	415.90 99.89	23.93 118.10	2.61 342.65	4.03 306.03	7.88 Mag 161.07 Phase
0.250	937.22	454.59	21.98 339.28	8.32 211.84	27.23 82.02	411.91 96.05	22.76 120.09	7.65 13.09	2.71 249.03	4.53 Mag 165.46 Phase
0.299	1166.79	503.87	16.83 291.04	6.01 139.95	24.34 78.87	460.75 106.36	23.29 151.07	7.51 35.96	1.91 167.17	26.47 Mag 219.30 Phase
0.299	1166.18	499.46	12.17 335.00	6.55 190.82	23.84 90.47	461.45 111.83	23.27 169.06	8.04 35.67	0.59 257.16	24.62 Mag 229.05 Phase
0.347	1502.49	836.85	10.40 306.31	16.70 68.98	46.28 62.46	754.70 114.18	30.17 152.52	6.23 102.62	5.66 243.05	9.91 Mag 242.50 Phase
0.347	1502.34	848.75	17.22 308.91	19.80 136.08	51.67 63.98	759.45 113.60	43.97 141.21	8.54 61.72	4.36 230.35	14.64 Mag 231.82 Phase

*1/2 Peak-to-peak

Table 59. Fixed-System Loads Data for Yawing Moment T40 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	613.15	321.57	12.17 90.21	5.94 230.29	4.32 58.56	296.66 9.58	18.60 300.25	4.88 280.12	0.78 320.72	14.75 Mag 234.80 Phase
0.104	604.28	320.47	8.12 107.00	6.19 224.18	4.60 37.50	291.79 3.15	19.38 290.55	9.15 290.11	1.12 289.96	16.55 Mag 220.47 Phase
0.126	607.55	336.41	11.24 78.26	7.37 221.36	5.88 97.89	311.91 20.59	16.67 313.76	9.76 271.75	1.16 296.28	8.12 Mag 280.07 Phase
0.128	607.18	334.11	3.88 78.68	8.35 216.46	7.18 115.60	304.77 17.44	18.92 316.58	9.02 265.68	1.31 304.59	8.69 Mag 270.69 Phase
0.151	546.06	411.27	11.96 61.48	9.16 213.60	12.40 88.30	379.35 23.91	20.52 334.11	7.15 295.09	0.35 303.76	5.94 Mag 106.26 Phase
0.152	541.62	417.40	10.51 56.52	9.70 213.41	13.52 100.35	382.78 20.91	21.75 330.58	5.07 267.39	0.76 304.81	5.91 Mag 88.87 Phase
0.201	612.14	439.28	1.97 37.37	14.20 225.59	10.41 91.77	417.29 58.33	15.38 67.26	6.02 358.51	0.82 45.54	3.32 Mag 134.50 Phase
0.202	611.18	434.30	5.07 27.12	12.07 217.97	13.52 87.76	409.43 40.81	16.54 34.05	5.25 289.47	0.53 36.77	2.35 Mag 60.17 Phase
0.226	657.83	450.74	8.42 38.92	8.61 216.08	16.52 95.80	425.03 50.78	15.01 69.34	6.23 316.81	1.91 248.85	7.75 Mag 181.35 Phase
0.226	656.47	459.11	8.22 316.90	7.92 207.36	15.17 90.13	431.69 50.72	17.59 58.60	6.55 315.78	1.61 249.99	8.79 Mag 179.32 Phase
0.250	568.65	462.03	13.56 28.29	5.16 214.09	14.10 96.84	439.78 64.15	22.96 130.78	11.28 314.44	2.45 287.34	11.91 Mag 224.70 Phase
0.250	569.19	472.31	12.91 310.98	4.51 197.99	17.07 90.85	446.47 55.80	27.54 98.42	11.06 314.13	1.77 242.77	13.44 Mag 209.33 Phase
0.299	709.97	504.01	6.78 69.40	7.48 207.60	21.56 68.58	466.68 73.03	19.85 97.47	8.96 9.86	3.85 346.45	16.59 Mag 161.39 Phase
0.299	710.21	543.96	9.04 321.97	7.94 188.80	25.47 68.36	499.80 75.84	28.93 116.30	10.54 21.79	3.86 356.87	16.61 Mag 167.47 Phase
0.349	865.39	568.77	9.39 292.36	3.97 251.08	31.26 40.23	510.35 87.55	24.44 120.31	5.09 53.89	6.28 176.33	47.32 Mag 162.35 Phase
0.349	865.43	596.86	15.65 304.14	14.04 96.38	35.92 47.62	541.64 91.11	10.55 105.61	1.68 42.98	3.17 170.48	48.01 Mag 159.44 Phase

*1/2 Peak-to-peak

Table 59. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	843.20	370.81	3.71 214.64	2.60 219.11	20.53 39.80	340.85 44.20	13.88 19.88	2.50 267.78	4.79 171.70	28.82 Mag 235.02 Phase
0.105	823.02	363.94	6.10 230.73	5.97 234.80	13.30 35.04	342.19 46.62	8.11 28.02	2.10 234.94	5.16 177.49	32.33 Mag 238.79 Phase
0.128	820.89	309.70	8.04 327.19	5.16 231.99	18.41 70.82	286.43 44.07	9.30 49.55	2.15 209.64	4.16 197.67	25.54 Mag 222.70 Phase
0.129	823.98	315.00	10.28 278.23	4.70 248.66	15.91 65.92	292.62 43.68	14.30 42.82	2.04 279.73	4.47 192.16	24.67 Mag 219.38 Phase
0.150	705.75	369.19	11.06 291.41	4.02 201.10	19.46 71.95	335.97 42.21	16.20 44.22	6.76 328.92	2.52 238.32	16.01 Mag 234.79 Phase
0.150	720.56	356.12	8.41 291.03	4.14 224.30	21.13 83.46	322.93 39.18	14.25 12.29	6.13 293.73	3.14 204.07	13.84 Mag 226.40 Phase
0.153	680.75	344.49	5.30 357.72	5.22 226.99	19.31 69.96	323.05 51.93	9.94 34.57	3.97 202.41	2.27 236.16	17.18 Mag 233.50 Phase
0.155	674.33	343.17	9.61 329.37	5.07 226.40	19.27 73.70	323.09 49.85	9.90 69.29	5.41 264.50	2.78 231.74	18.86 Mag 228.45 Phase
0.201	793.08	340.89	9.49 340.51	9.23 197.46	16.52 65.67	320.89 64.90	11.05 79.84	8.30 267.74	4.31 275.28	14.14 Mag 290.88 Phase
0.203	792.92	352.37	10.73 336.32	10.40 197.14	15.36 74.02	328.27 66.85	10.45 73.00	8.05 270.99	5.28 273.42	12.66 Mag 303.27 Phase
0.226	833.93	376.26	11.72 348.39	11.57 199.10	18.44 72.85	357.75 75.19	11.77 130.23	9.58 308.26	4.56 282.60	13.74 Mag 231.24 Phase
0.226	833.45	385.56	6.79 317.15	9.79 211.68	18.42 69.18	360.36 74.28	16.25 99.73	7.55 323.49	4.26 290.07	13.28 Mag 228.68 Phase
0.251	734.76	396.96	10.49 351.53	9.85 207.38	18.08 81.30	374.25 73.55	14.11 116.05	11.78 321.71	4.29 295.28	26.80 Mag 218.51 Phase
0.251	735.41	399.50	12.86 7.40	11.04 198.84	16.81 75.96	374.19 74.88	15.65 108.45	11.95 331.16	4.44 294.29	27.51 Mag 223.87 Phase
0.299	916.87	452.61	11.55 30.71	5.01 164.21	26.51 70.69	418.86 83.90	10.07 123.58	14.10 0.37	1.65 305.93	24.61 Mag 188.31 Phase
0.299	920.82	452.16	19.30 340.55	8.88 172.57	22.51 75.18	419.42 89.40	18.14 124.77	12.75 5.50	2.47 341.61	21.82 Mag 190.82 Phase
0.347	1159.42	654.94	11.81 310.18	17.94 158.22	42.29 45.68	598.24 107.20	22.51 123.15	6.50 58.15	5.75 169.59	41.40 Mag 186.08 Phase
0.349	1158.78	621.53	18.24 309.24	28.07 166.23	34.04 45.69	584.07 103.88	14.16 124.85	8.03 53.81	2.89 148.00	42.64 Mag 170.26 Phase

*1/2 Peak-to-peak

Table 59. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	1157.69	470.73	2.31 87.44	6.87 197.74	26.55 35.12	456.17 19.58	8.75 143.30	1.36 151.98	1.28 134.34	18.00 Mag 277.99 Phase
0.107	1168.36	465.96	7.43 52.53	3.40 238.25	22.80 39.84	451.40 24.08	9.50 160.84	1.99 155.99	1.49 149.28	17.03 Mag 270.04 Phase
0.127	1093.04	439.06	5.58 45.80	5.49 251.15	32.10 55.26	407.99 43.87	4.90 69.07	2.66 185.43	2.55 132.84	12.52 Mag 325.10 Phase
0.127	1099.49	426.82	9.21 16.21	5.34 258.79	25.87 57.15	403.92 41.49	4.25 143.18	1.91 189.50	2.57 151.69	11.86 Mag 330.42 Phase
0.147	975.91	439.78	6.93 12.79	3.20 250.22	34.11 67.46	404.38 49.92	7.25 35.97	1.42 83.47	4.12 173.42	15.45 Mag 15.19 Phase
0.149	967.93	436.30	5.55 342.79	3.80 241.85	32.82 57.85	397.22 45.13	11.96 39.86	2.05 84.96	3.88 165.08	11.49 Mag 359.65 Phase
0.201	1017.22	407.35	9.32 331.16	6.52 200.53	33.61 63.79	369.15 71.44	16.68 88.65	6.89 290.91	3.53 229.84	5.47 Mag 33.61 Phase
0.202	1018.49	411.23	10.40 329.69	6.59 192.00	33.88 53.59	368.03 61.42	19.72 89.78	4.54 273.16	2.80 215.04	6.46 Mag 36.21 Phase
0.226	1060.88	464.94	11.86 5.73	10.68 194.93	28.43 73.80	438.19 79.51	9.02 117.59	6.70 308.90	3.04 240.02	16.97 Mag 139.01 Phase
0.226	1059.19	456.14	11.32 346.92	9.82 186.93	29.48 63.86	425.60 78.96	13.72 121.60	9.82 313.42	2.03 220.68	18.72 Mag 129.59 Phase
0.251	955.54	492.58	16.42 345.48	10.37 199.21	22.55 72.20	460.08 82.36	18.14 123.00	8.76 340.52	2.35 246.68	30.81 Mag 174.29 Phase
0.251	958.06	496.69	17.56 354.80	7.84 206.30	27.10 62.32	458.43 85.33	14.97 123.17	7.20 351.09	3.52 237.90	32.03 Mag 178.26 Phase
0.299	1210.17	582.17	11.88 303.25	5.50 163.84	28.01 65.87	537.89 97.66	19.09 116.08	8.25 16.72	2.79 158.15	39.03 Mag 184.77 Phase
0.300	1208.20	568.82	9.99 308.13	4.58 187.14	22.82 68.19	531.58 94.14	16.79 121.71	7.93 9.11	2.37 166.07	39.95 Mag 178.33 Phase
0.348	1552.06	872.28	14.25 314.37	8.37 250.77	36.78 72.42	809.75 99.23	31.02 95.62	9.21 107.88	1.99 256.78	36.04 Mag 159.67 Phase
0.348	1551.55	889.34	12.72 341.41	36.93 138.82	37.16 77.34	816.98 93.14	22.38 88.70	4.96 60.05	3.13 244.26	34.60 Mag 146.27 Phase

*1/2 Peak-to-peak

Table 60. Fixed-System Loads Data for Yawing Moment T50 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	614.92	314.17	6.98 165.10	9.52 224.07	5.57 124.36	280.59 20.34	23.34 307.35	6.24 261.17	0.80 295.24	3.31 Mag 336.89 Phase
0.107	623.27	320.54	7.52 157.27	9.99 220.75	7.57 122.21	283.11 17.75	26.40 300.57	7.10 270.89	0.96 305.85	3.46 Mag 7.61 Phase
0.127	626.54	336.58	2.59 176.63	10.61 217.13	9.14 138.88	297.38 28.46	23.73 330.06	8.48 259.49	1.80 312.73	4.15 Mag 2.75 Phase
0.130	625.81	342.46	1.92 119.48	10.01 210.98	10.17 132.12	302.48 25.98	23.91 326.83	8.77 249.64	1.76 302.12	6.24 Mag 346.63 Phase
0.152	607.09	382.74	3.18 41.76	13.42 217.82	10.73 135.91	345.98 43.05	17.79 3.27	11.27 290.36	1.38 329.23	2.67 Mag 57.06 Phase
0.153	607.64	393.81	4.89 30.40	12.17 214.28	13.12 130.29	356.11 41.41	18.73 3.76	10.28 288.62	0.83 1.35	4.32 Mag 42.49 Phase
0.175	526.88	397.17	2.35 332.67	12.12 223.28	8.64 128.05	367.36 49.30	11.71 13.15	10.83 300.85	0.81 31.13	6.57 Mag 12.49 Phase
0.175	528.92	388.89	2.04 11.59	11.88 219.73	6.99 121.41	363.53 48.07	10.41 21.11	11.31 301.28	1.30 13.95	5.64 Mag 12.49 Phase
0.201	556.61	410.94	5.89 230.09	15.35 219.38	7.02 78.82	388.29 56.86	9.21 91.53	7.27 314.43	1.56 61.02	1.76 Mag 79.75 Phase
0.201	557.12	399.66	2.48 211.51	15.51 220.67	7.69 88.26	376.93 54.16	12.42 83.41	7.59 301.78	1.48 33.65	6.46 Mag 60.19 Phase
0.225	571.19	440.12	9.31 29.01	9.67 234.70	9.61 119.45	424.10 57.74	20.88 85.55	9.15 283.73	1.77 118.92	1.31 Mag 117.91 Phase
0.225	577.89	433.11	5.92 37.41	9.95 232.04	8.99 106.61	415.92 60.40	24.57 97.68	9.36 310.34	1.84 114.55	2.51 Mag 148.86 Phase
0.250	684.53	422.55	2.31 296.04	5.85 197.83	9.22 72.33	395.36 66.47	29.00 114.57	7.89 299.64	1.16 207.17	0.37 Mag 180.48 Phase
0.251	686.24	421.38	6.57 322.68	5.58 214.17	8.62 75.67	394.59 66.93	27.96 113.31	5.33 306.23	1.22 222.79	0.74 Mag 164.81 Phase
0.298	685.61	440.64	10.03 285.30	5.85 228.27	8.28 8.17	417.05 80.59	17.77 134.72	10.22 328.21	2.58 25.46	3.97 Mag 171.93 Phase
0.298	685.75	445.63	7.42 298.68	8.19 217.78	10.00 35.68	414.97 83.29	28.39 125.70	9.69 330.64	2.54 18.50	3.32 Mag 191.06 Phase
0.347	877.59	501.46	13.63 290.87	13.51 170.85	28.81 50.78	466.43 110.12	14.49 128.76	3.75 307.38	5.45 172.09	29.44 Mag 223.16 Phase
0.347	877.07	507.79	10.26 303.81	12.34 183.94	27.80 33.54	467.47 106.32	8.92 231.42	10.09 16.63	3.47 125.78	30.73 Mag 202.30 Phase

*1/2 Peak-to-peak

Table 60. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	840.17	337.98	15.73 231.72	5.86 224.46	11.87 30.84	305.32 42.33	20.65 25.92	2.82 198.32	5.30 205.40	11.70 Mag 299.65 Phase
0.106	847.64	337.15	15.79 219.39	5.72 231.81	15.51 17.56	305.53 44.74	23.12 16.24	3.47 141.14	4.29 203.32	11.62 Mag 317.40 Phase
0.125	839.65	317.16	24.49 241.29	5.91 221.26	7.93 35.03	281.35 54.23	30.35 44.27	2.06 176.97	1.82 225.19	3.84 Mag 295.21 Phase
0.125	841.62	324.48	29.39 231.81	5.20 239.41	5.50 17.88	286.00 46.54	32.67 34.00	3.58 58.21	1.98 209.78	4.33 Mag 292.82 Phase
0.150	794.23	332.14	12.25 265.00	7.03 210.82	16.87 81.78	304.36 52.34	20.34 52.72	4.59 207.93	3.79 223.70	12.04 Mag 294.64 Phase
0.151	791.26	330.55	12.36 251.32	6.84 209.74	13.73 75.88	301.99 50.40	21.30 46.60	4.72 196.67	3.42 218.61	10.46 Mag 288.30 Phase
0.176	680.14	334.70	8.92 292.01	7.71 214.92	14.14 103.91	304.65 66.09	20.81 64.87	5.03 234.42	5.23 254.20	13.01 Mag 315.60 Phase
0.176	684.09	336.21	8.35 279.61	6.47 216.47	9.12 103.96	313.73 69.44	16.11 84.45	6.90 240.16	4.42 266.60	12.98 Mag 321.95 Phase
0.200	729.10	367.95	18.13 255.84	8.53 201.92	5.82 89.76	330.97 74.73	27.79 94.63	3.81 302.95	5.51 275.86	10.25 Mag 348.64 Phase
0.200	728.88	365.38	18.22 255.06	9.84 208.01	5.69 84.92	325.93 77.19	27.47 100.21	5.69 292.39	5.93 276.48	10.35 Mag 355.23 Phase
0.224	716.87	380.49	5.82 312.01	13.90 200.01	6.01 121.78	352.26 79.50	26.68 94.27	6.73 304.80	4.32 304.69	4.07 Mag 269.37 Phase
0.224	722.75	378.21	5.66 343.29	13.93 207.24	3.88 168.03	354.38 82.37	22.82 103.11	7.31 320.49	4.98 306.72	2.91 Mag 283.99 Phase
0.251	869.68	358.61	14.21 274.61	10.96 195.38	7.44 57.44	326.36 85.29	28.93 100.87	8.19 358.09	3.96 323.47	15.05 Mag 249.44 Phase
0.251	871.62	355.96	20.41 298.75	15.66 191.96	7.59 90.15	328.25 90.01	27.96 126.23	5.39 358.56	4.44 329.76	14.75 Mag 254.92 Phase
0.298	899.69	379.38	11.74 275.41	5.47 182.08	9.63 18.20	353.38 100.56	19.10 142.95	17.83 30.78	4.18 28.49	19.80 Mag 233.97 Phase
0.299	895.80	382.87	11.17 289.79	10.26 197.52	9.58 29.91	356.16 104.39	20.34 149.51	12.73 16.80	2.89 13.79	16.69 Mag 229.88 Phase
0.347	1195.46	601.17	17.39 296.63	16.37 131.31	40.53 45.83	549.95 114.73	20.82 161.25	9.97 53.55	4.35 202.57	32.38 Mag 238.20 Phase
0.347	1194.87	618.03	19.52 293.55	19.88 162.48	40.00 45.65	564.80 117.40	31.85 189.70	12.99 60.52	5.13 206.53	33.20 Mag 240.00 Phase

*1/2 Peak-to-peak

Table 60. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	1167.47	459.11	8.83 243.22	5.77 235.83	22.74 22.14	425.46 30.44	12.87 125.24	5.16 153.83	1.36 99.85	30.74 Mag 342.37 Phase
0.126	1118.24	409.49	8.18 267.96	4.96 258.59	26.14 52.53	376.36 52.95	13.92 134.96	4.40 213.59	0.55 224.11	21.62 Mag 30.61 Phase
0.127	1115.77	425.56	10.66 250.79	3.80 244.47	31.45 42.31	386.56 42.95	12.56 92.14	6.83 166.80	1.14 153.70	20.65 Mag 359.33 Phase
0.152	1049.05	398.40	5.54 288.79	6.53 231.30	34.81 59.85	358.06 61.89	14.00 116.44	4.03 123.16	2.46 165.14	18.97 Mag 36.24 Phase
0.153	1044.95	397.72	7.69 283.64	6.54 235.26	33.41 53.76	358.66 57.68	15.22 104.82	1.23 140.82	2.95 171.29	19.65 Mag 21.54 Phase
0.175	901.04	378.50	7.88 310.11	7.48 227.20	30.82 68.82	345.02 81.61	13.92 116.29	4.69 303.53	3.36 223.71	13.27 Mag 63.65 Phase
0.175	899.99	385.02	10.39 312.16	8.31 220.28	26.40 58.72	348.10 74.73	18.14 103.91	1.86 49.25	2.15 218.44	17.51 Mag 55.85 Phase
0.201	947.72	392.42	11.53 307.22	8.38 197.10	24.96 46.00	361.96 75.27	15.98 125.76	6.59 351.49	2.92 290.46	17.65 Mag 47.06 Phase
0.224	963.88	455.91	14.30 286.88	9.72 197.48	26.35 53.46	418.03 91.83	28.09 114.74	12.81 11.62	1.93 200.12	10.51 Mag 86.21 Phase
0.225	956.99	450.23	5.29 302.20	12.87 194.29	22.81 60.81	417.75 84.33	17.65 108.69	9.91 359.25	1.97 213.83	15.85 Mag 76.46 Phase
0.250	1103.60	469.04	16.22 336.10	11.36 195.25	22.28 48.57	439.15 95.42	21.48 153.77	10.92 0.65	2.05 147.28	11.73 Mag 189.38 Phase
0.299	1173.04	525.72	12.38 297.16	15.56 192.39	19.70 60.86	484.16 120.02	26.33 198.97	12.12 42.24	1.13 198.66	31.82 Mag 252.55 Phase
0.300	1173.80	529.92	18.74 323.06	3.39 164.84	15.59 51.19	490.62 118.11	28.13 180.75	8.15 28.60	2.13 183.69	32.96 Mag 251.76 Phase
0.346	1577.30	874.81	11.69 292.99	18.47 346.49	35.49 80.79	816.87 118.02	20.84 165.14	8.79 116.65	4.09 279.96	19.67 Mag 243.45 Phase
0.347	1577.32	869.62	9.27 285.20	17.87 99.67	35.86 84.35	802.54 115.74	30.08 166.86	7.67 76.17	2.70 276.43	23.71 Mag 239.99 Phase

*1/2 Peak-to-peak

Table 61. Fixed-System Loads Data for Yawing Moment T60 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.109	684.73	368.76	43.41 131.01	4.22 243.70	14.53 297.21	331.09 22.56	14.53 353.90	7.26 324.17	0.48 221.18	17.71 Mag 272.74 Phase
0.110	685.30	373.60	46.32 128.60	4.61 267.48	14.61 310.28	335.10 25.06	17.26 338.86	6.44 317.89	0.13 279.80	17.27 Mag 283.34 Phase
0.128	542.62	376.73	38.05 116.90	4.45 229.92	10.41 325.15	345.92 38.05	14.02 40.21	1.61 4.80	0.95 249.66	14.79 Mag 310.76 Phase
0.131	539.57	380.09	40.93 122.59	6.34 225.76	8.87 313.78	348.12 42.80	14.06 40.11	4.83 331.66	0.71 306.25	12.90 Mag 319.87 Phase
0.143	539.60	321.76	4.87 41.72	8.24 207.22	6.58 101.99	302.57 38.51	11.31 4.09	3.73 286.65	2.20 355.83	8.95 Mag 256.66 Phase
0.145	527.00	342.30	3.70 41.80	8.78 212.64	7.53 124.56	317.46 51.51	12.13 12.91	6.01 274.13	1.63 13.76	6.42 Mag 275.20 Phase
0.169	584.16	348.34	9.80 20.46	8.62 211.86	12.72 87.74	322.30 50.85	11.03 0.73	4.56 278.34	1.65 12.25	9.53 Mag 339.21 Phase
0.169	587.63	344.53	9.80 30.70	9.46 216.35	9.71 95.50	319.88 46.78	13.38 6.43	4.65 288.20	1.36 351.79	9.46 Mag 341.60 Phase
0.195	576.83	353.43	11.78 64.94	13.99 211.01	11.75 81.16	333.39 49.50	7.69 26.72	4.53 315.28	1.55 23.89	4.67 Mag 34.19 Phase
0.195	580.36	347.40	12.33 46.11	12.99 211.28	11.81 95.90	327.94 51.10	5.61 54.35	5.58 283.64	1.33 24.58	5.24 Mag 32.33 Phase
0.220	665.11	375.29	9.96 206.43	10.36 227.78	10.64 73.62	349.33 63.14	9.83 74.82	5.07 320.40	1.42 4.51	5.00 Mag 296.59 Phase
0.220	661.90	377.25	7.23 151.71	10.13 222.24	14.24 77.30	352.38 69.24	7.23 85.49	7.69 319.52	1.38 311.15	4.46 Mag 295.90 Phase
0.246	700.16	387.08	11.80 213.27	8.97 205.67	15.83 57.79	359.65 67.50	8.95 110.55	6.28 354.53	0.79 26.86	14.67 Mag 255.97 Phase
0.246	702.58	387.48	8.90 174.76	11.08 209.89	13.37 75.08	362.89 71.50	13.41 123.10	6.05 13.80	0.83 75.61	13.69 Mag 271.40 Phase
0.295	795.14	440.58	6.40 289.13	6.81 215.62	15.56 51.21	426.10 85.59	7.60 208.46	9.37 27.76	0.49 280.13	13.48 Mag 225.99 Phase
0.295	791.52	459.22	0.96 84.84	7.24 190.53	12.91 53.95	440.67 88.87	8.43 178.98	12.54 17.01	0.52 324.21	12.86 Mag 227.67 Phase

*1/2 Peak-to-peak

Table 61. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	867.43	352.33	28.23 149.34	2.75 259.19	18.32 26.16	317.54 60.35	18.77 32.51	0.56 258.01	2.82 162.26	20.99 Mag 283.20 Phase
0.110	883.60	371.80	31.22 154.65	1.58 255.00	19.47 27.36	327.43 56.78	26.57 29.46	2.06 113.01	4.61 141.11	23.84 Mag 277.07 Phase
0.132	846.25	381.83	38.65 127.42	1.78 336.04	23.78 49.22	324.64 51.88	26.00 5.87	4.50 314.04	4.59 128.94	19.38 Mag 273.78 Phase
0.144	732.33	383.10	11.97 217.35	5.50 196.16	17.25 80.57	347.72 65.57	20.68 94.16	7.81 216.94	3.62 247.89	25.96 Mag 264.03 Phase
0.154	688.21	371.98	31.28 129.83	3.52 204.26	20.90 40.25	328.24 51.92	21.87 40.68	0.95 279.94	4.86 174.51	15.97 Mag 282.16 Phase
0.154	695.79	375.28	36.60 126.70	3.65 197.01	21.14 49.87	328.87 56.91	22.18 39.95	1.00 170.13	5.06 177.30	14.52 Mag 293.66 Phase
0.170	753.64	348.68	8.97 202.66	8.33 202.43	12.00 44.58	321.70 75.09	12.76 73.77	5.25 223.13	2.03 263.97	16.74 Mag 278.71 Phase
0.170	761.69	355.09	10.50 208.26	7.45 201.16	9.17 55.20	327.14 78.34	12.75 95.55	6.46 251.82	1.68 267.75	17.10 Mag 281.16 Phase
0.180	694.55	336.71	27.59 128.36	5.66 209.53	18.31 20.35	304.58 64.09	20.59 54.63	3.84 225.06	4.37 193.62	20.08 Mag 314.98 Phase
0.180	696.52	351.60	29.94 133.60	6.68 199.74	23.28 10.09	315.88 58.51	18.24 57.99	1.49 264.61	4.57 178.64	20.35 Mag 303.13 Phase
0.201	708.10	357.37	20.75 119.29	7.85 210.14	18.87 72.51	312.50 70.50	24.49 88.70	8.88 1.70	5.74 232.22	13.54 Mag 354.56 Phase
0.202	722.39	373.86	22.62 118.69	7.62 207.51	15.61 63.92	328.40 60.78	26.10 79.71	12.39 346.79	5.92 213.98	14.19 Mag 329.85 Phase
0.226	795.37	363.81	23.19 110.89	10.53 199.20	19.92 35.49	335.77 74.88	19.18 102.89	4.29 342.54	5.90 229.82	9.90 Mag 274.49 Phase
0.227	793.86	356.92	27.81 109.19	9.50 207.79	14.17 35.30	331.86 76.39	12.41 92.80	3.18 350.37	5.53 241.75	10.70 Mag 260.97 Phase
0.249	872.25	366.81	23.83 114.80	8.78 236.42	20.10 30.84	338.54 74.74	16.86 75.07	8.01 318.31	4.14 252.66	16.42 Mag 229.49 Phase
0.296	1019.56	443.17	20.08 278.45	11.47 206.99	21.44 49.47	402.81 100.80	20.91 183.26	8.95 21.43	1.24 209.15	28.33 Mag 210.10 Phase
0.346	1206.54	656.39	13.88 293.59	17.24 155.56	45.47 47.11	605.78 116.17	19.98 174.44	9.86 69.22	4.34 190.07	37.43 Mag 227.22 Phase
0.346	1205.66	652.56	12.03 303.88	17.83 141.87	39.93 39.48	608.49 121.38	19.43 200.96	7.35 92.01	3.99 163.42	39.43 Mag 236.57 Phase

*1/2 Peak-to-peak

Table 61. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.110	1204.52	462.69	27.65 156.45	2.22 215.22	29.79 56.75	432.34 41.88	7.75 143.88	3.68 104.44	1.35 139.95	14.32 Mag 333.39 Phase
0.110	1208.31	461.11	24.58 155.82	2.83 256.43	23.69 56.40	434.52 50.43	14.21 149.27	3.35 110.90	0.99 204.28	12.66 Mag 338.50 Phase
0.128	1033.80	436.22	20.78 161.23	3.87 263.31	40.55 54.34	398.34 51.28	5.27 53.31	4.51 153.65	3.77 146.03	14.02 Mag 359.01 Phase
0.131	1039.73	449.22	22.81 153.83	3.29 259.25	43.26 52.00	405.74 51.23	7.11 45.00	3.10 150.78	3.53 127.06	14.64 Mag 351.62 Phase
0.144	995.13	465.12	11.97 235.57	3.40 196.09	32.42 66.53	425.90 67.88	18.50 103.28	2.67 212.15	3.39 193.43	12.45 Mag 352.80 Phase
0.145	984.14	477.40	15.60 237.25	4.40 211.82	35.04 57.93	431.09 70.67	22.06 106.45	2.14 209.51	2.91 181.72	10.50 Mag 337.73 Phase
0.170	977.17	444.23	6.91 216.18	4.83 194.83	34.06 66.86	402.38 82.86	21.64 102.88	6.10 286.44	2.67 228.39	10.82 Mag 57.51 Phase
0.171	986.59	439.08	7.64 230.41	7.09 194.88	33.61 59.53	399.25 73.44	21.26 101.65	5.00 268.81	3.25 222.91	10.88 Mag 42.94 Phase
0.194	999.44	449.75	5.91 254.94	7.40 190.18	30.90 73.79	414.84 92.15	16.24 118.16	5.80 331.52	2.93 254.19	13.81 Mag 59.80 Phase
0.197	998.29	437.85	17.62 258.15	3.70 202.80	24.93 57.19	400.79 82.81	21.11 106.23	4.35 335.85	3.00 229.43	12.92 Mag 34.62 Phase
0.221	1076.04	502.84	4.20 269.22	11.86 182.26	30.69 69.90	474.41 90.42	11.07 155.13	7.65 315.99	1.28 253.68	11.97 Mag 121.73 Phase
0.221	1077.36	500.38	6.11 278.99	12.31 183.68	29.67 74.51	471.37 94.41	13.96 157.80	8.67 336.24	1.91 243.38	11.55 Mag 116.23 Phase
0.245	1167.51	525.94	10.44 311.46	11.42 173.40	32.65 72.09	491.35 95.97	11.90 130.99	8.00 349.44	1.29 202.61	25.10 Mag 183.66 Phase
0.247	1166.72	525.42	9.45 316.43	10.83 200.92	31.35 68.51	498.81 92.28	9.20 155.82	8.64 350.01	1.36 147.07	24.86 Mag 172.83 Phase
0.295	1351.00	630.80	9.94 282.96	10.11 212.46	26.98 60.41	587.59 111.61	18.92 196.69	10.06 24.39	4.24 179.54	45.88 Mag 214.54 Phase
0.297	1350.57	619.47	6.06 284.44	7.28 173.96	26.17 63.77	585.45 107.56	14.72 188.82	9.16 33.39	3.46 174.81	49.52 Mag 203.74 Phase

*1/2 Peak-to-peak

Table 62. Fixed-System Loads Data for Yawing Moment T70 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.103	612.05	338.48	4.93 206.35	8.35 223.73	8.16 206.82	309.84 48.40	25.21 351.78	4.21 182.35	4.11 325.84	14.27 Mag 3.21 Phase
0.103	611.56	334.40	7.60 195.29	7.80 217.21	8.52 218.19	303.19 45.70	27.14 341.90	4.69 218.84	3.97 311.75	14.96 Mag 1.68 Phase
0.128	577.16	352.83	6.70 14.87	9.54 214.46	5.15 150.50	319.90 55.76	21.34 355.74	5.02 272.68	2.73 317.20	13.18 Mag 15.27 Phase
0.129	577.26	349.36	7.08 36.30	10.06 215.64	4.04 146.89	314.87 62.18	23.29 355.55	5.89 270.31	3.01 333.77	13.37 Mag 30.03 Phase
0.153	549.75	362.61	7.87 6.89	8.64 214.21	10.08 126.43	329.61 68.48	19.01 26.74	5.75 250.67	2.33 12.46	8.94 Mag 60.26 Phase
0.153	547.38	354.26	1.93 89.78	9.37 217.97	6.43 123.08	321.67 69.69	22.20 30.79	6.70 275.19	3.12 9.15	8.86 Mag 71.44 Phase
0.180	552.31	395.75	3.10 67.15	9.91 218.63	11.30 108.10	362.12 72.56	26.33 54.50	8.45 269.41	2.17 56.26	12.35 Mag 59.23 Phase
0.181	552.22	400.95	4.50 0.69	8.02 211.86	11.82 124.91	370.69 76.91	24.55 66.31	5.46 265.48	2.22 70.62	12.46 Mag 66.15 Phase
0.203	545.82	402.92	4.47 318.38	10.25 212.36	14.40 124.88	369.78 83.56	31.26 94.83	6.83 269.11	1.12 98.36	14.04 Mag 72.27 Phase
0.203	543.99	402.22	2.55 322.51	10.69 225.98	13.21 110.04	369.91 86.35	29.29 93.99	4.98 281.63	1.82 111.02	13.52 Mag 82.62 Phase
0.224	591.62	391.46	7.02 186.07	13.57 244.68	7.08 109.86	351.82 95.07	36.35 98.78	10.31 351.09	1.26 126.09	10.19 Mag 136.93 Phase
0.225	592.59	391.66	5.37 134.08	15.10 237.54	11.45 109.14	351.13 84.02	35.90 88.81	10.52 323.53	1.74 121.92	10.42 Mag 113.87 Phase
0.249	713.27	386.20	2.16 193.18	9.25 233.00	11.63 93.87	347.19 91.81	40.12 112.05	3.20 325.10	1.88 346.68	7.91 Mag 83.65 Phase
0.249	712.83	402.03	7.02 230.86	10.46 221.01	10.01 93.49	362.52 85.71	37.45 96.78	3.20 317.19	1.92 325.27	8.61 Mag 78.99 Phase
0.299	758.64	416.89	13.33 323.22	12.00 205.50	4.55 283.72	396.08 98.20	25.79 109.29	7.23 338.56	5.54 26.82	1.91 Mag 146.64 Phase
0.300	763.04	441.73	8.26 23.33	6.76 170.90	3.33 346.50	416.47 103.82	24.03 105.11	10.36 2.14	4.88 22.41	2.46 Mag 117.14 Phase
0.346	910.34	552.48	13.40 289.69	7.00 34.27	24.06 40.22	514.81 112.53	14.61 179.23	5.27 55.15	3.06 190.41	11.80 Mag 289.19 Phase
0.346	914.16	519.19	6.28 263.83	2.10 329.23	24.46 58.62	489.90 117.26	5.07 134.67	4.83 295.44	5.27 151.35	11.27 Mag 290.69 Phase

*1/2 Peak-to-peak

Table 62. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	842.57	381.39	11.82 261.76	6.44 220.38	9.74 82.05	353.50 73.51	24.74 62.44	2.85 234.14	5.27 236.80	22.73 Mag 15.49 Phase
0.103	854.89	379.81	13.94 252.52	5.58 225.10	6.98 85.30	351.51 73.03	27.05 66.43	1.10 180.46	4.83 238.05	22.93 Mag 15.40 Phase
0.126	791.95	347.64	15.54 235.63	5.51 214.28	9.02 119.57	302.80 86.77	39.90 72.47	2.93 196.24	4.41 261.60	13.32 Mag 41.87 Phase
0.127	793.87	359.41	15.85 231.23	5.32 218.07	9.86 126.84	309.20 83.41	42.98 69.04	2.54 137.22	4.24 259.49	15.12 Mag 35.09 Phase
0.150	676.19	351.34	12.29 266.31	8.14 196.74	9.56 126.66	316.94 79.02	36.06 87.93	5.28 210.53	5.16 295.71	5.77 Mag 59.29 Phase
0.150	671.84	336.97	11.96 280.51	7.79 196.28	9.23 122.54	308.71 73.61	32.85 88.66	4.08 210.57	5.05 276.51	6.32 Mag 53.72 Phase
0.152	732.91	342.65	7.93 267.79	7.30 200.23	10.92 113.71	310.38 79.88	26.99 72.29	3.97 176.54	4.30 277.27	5.69 Mag 46.57 Phase
0.153	725.04	352.18	11.00 266.08	8.26 201.00	11.45 127.26	315.40 85.42	33.50 89.36	3.49 188.17	4.76 283.81	8.24 Mag 43.16 Phase
0.171	680.66	357.98	11.12 269.40	7.27 203.85	6.25 128.28	325.43 86.96	34.67 109.52	8.78 243.79	4.79 304.75	9.98 Mag 51.50 Phase
0.174	682.09	350.44	11.23 284.76	7.51 204.83	5.68 118.62	318.32 93.62	34.78 116.25	7.51 239.03	3.40 320.61	9.13 Mag 56.33 Phase
0.177	715.49	340.99	9.87 284.61	8.68 197.33	7.44 116.36	313.33 98.24	30.83 112.78	7.50 254.40	3.85 310.26	10.42 Mag 70.37 Phase
0.179	713.22	343.78	11.63 278.73	7.87 197.00	6.32 108.37	313.33 93.92	33.17 107.11	7.32 262.85	4.16 306.54	10.29 Mag 61.56 Phase
0.195	667.20	360.43	11.90 307.86	10.50 202.09	9.52 95.72	340.66 70.79	12.85 107.62	6.20 306.15	2.54 299.81	19.16 Mag 355.03 Phase
0.199	705.87	342.26	9.63 268.69	10.41 201.91	1.74 129.10	307.55 97.36	33.25 130.16	7.00 292.20	5.42 322.20	8.48 Mag 73.67 Phase
0.203	731.02	333.19	10.57 286.57	11.58 210.72	6.88 109.80	301.00 98.23	30.71 128.38	5.73 279.05	5.90 310.68	9.37 Mag 79.01 Phase
0.205	729.31	335.93	13.70 308.92	12.79 200.43	4.71 118.60	308.85 94.27	27.58 134.46	5.58 295.70	6.86 310.34	9.19 Mag 65.05 Phase
0.224	778.23	396.76	36.02 234.88	14.68 253.31	4.07 58.39	325.98 107.22	53.76 109.76	5.12 17.78	5.84 347.87	5.75 Mag 128.11 Phase
0.225	797.86	405.95	29.59 248.55	12.55 227.73	4.65 112.87	345.87 105.86	50.66 112.25	3.00 336.15	5.16 356.65	6.79 Mag 81.64 Phase
0.225	793.28	379.05	17.42 261.06	9.49 207.90	3.77 143.35	335.17 106.77	40.58 115.54	7.60 324.08	5.50 347.93	5.75 Mag 73.45 Phase
0.247	721.06	375.92	24.46 305.83	8.45 210.01	6.47 112.25	352.54 90.31	26.51 138.13	7.60 12.19	4.53 345.51	15.22 Mag 300.66 Phase
0.248	900.57	350.07	9.20 306.36	9.53 200.68	4.45 125.92	320.63 111.57	27.62 119.31	4.49 7.01	3.06 346.40	2.64 Mag 255.82 Phase
0.248	902.03	359.77	13.88 286.81	8.43 188.04	5.77 117.64	323.83 106.94	32.50 110.30	3.78 352.34	4.14 350.74	3.29 Mag 225.65 Phase
0.297	851.52	384.53	18.89 321.75	7.99 206.71	10.42 37.88	355.99 107.31	20.55 201.08	12.13 48.56	2.09 68.08	22.32 Mag 272.81 Phase
0.300	960.56	373.34	14.91 299.61	7.12 190.12	11.93 12.35	353.22 122.76	18.32 150.16	12.95 38.72	1.68 17.80	16.37 Mag 272.06 Phase

*1/2 Peak-to-peak

Table 62. Continued

(b) Concluded

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.301	970.81	372.64	14.20 328.16	8.93 165.05	13.70 40.28	353.20 127.04	19.26 162.35	14.97 47.81	1.32 1.64	15.34 Mag 269.33 Phase
0.346	1196.70	592.34	21.87 313.98	8.01 154.15	41.39 37.18	552.07 119.64	12.54 164.05	13.29 93.90	4.93 217.26	33.27 Mag 293.96 Phase
0.347	1188.97	631.15	27.70 294.06	34.46 140.15	42.93 44.33	582.01 117.08	19.66 155.80	17.99 70.47	4.90 207.91	33.06 Mag 285.21 Phase
0.347	1095.16	591.72	17.85 306.31	15.55 162.85	33.54 39.97	559.59 124.09	16.90 179.62	13.17 84.26	3.33 217.91	30.98 Mag 298.39 Phase

*1/2 Peak-to-peak

Table 62. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	1145.80	447.82	12.99 248.78	5.10 230.92	15.27 69.78	423.38 66.10	13.56 169.21	3.01 230.60	2.45 248.65	31.01 Mag 40.50 Phase
0.106	1146.57	444.86	13.77 243.69	4.89 211.16	16.47 67.23	419.65 58.10	13.34 141.01	2.04 151.82	2.91 229.48	32.28 Mag 20.44 Phase
0.129	1075.42	436.67	12.69 244.21	2.21 235.83	30.54 76.38	393.89 76.96	23.39 85.00	3.78 215.65	4.77 213.35	28.15 Mag 45.25 Phase
0.129	1078.28	435.36	8.50 257.78	2.14 250.66	31.13 88.73	397.21 80.54	19.35 77.04	4.07 223.62	4.95 225.99	25.39 Mag 58.10 Phase
0.142	1005.87	429.37	11.94 268.18	4.23 217.52	21.22 87.04	394.70 86.44	23.50 105.45	0.26 232.61	5.51 232.66	24.12 Mag 59.44 Phase
0.152	991.52	425.21	12.17 267.61	6.45 213.37	28.41 81.40	386.13 85.63	26.86 97.69	6.47 284.03	5.05 231.71	21.36 Mag 58.71 Phase
0.177	957.06	405.63	10.25 303.60	8.64 193.74	26.28 76.49	365.12 92.41	26.39 99.56	4.06 320.20	5.09 246.71	20.45 Mag 74.76 Phase
0.179	952.40	403.53	14.35 279.73	8.09 203.07	27.25 77.06	361.30 95.71	30.74 113.30	6.28 309.21	4.79 247.37	23.81 Mag 85.12 Phase
0.203	972.60	392.74	12.12 305.73	9.24 199.71	16.96 81.66	364.70 102.38	23.45 134.73	7.03 338.02	4.82 280.40	21.47 Mag 94.16 Phase
0.203	977.36	397.44	14.95 298.12	9.06 207.06	21.87 81.61	358.33 104.86	29.44 141.86	8.68 337.80	5.16 282.69	21.37 Mag 101.85 Phase
0.224	1012.82	452.64	21.43 282.12	8.48 202.69	19.20 66.48	420.98 115.09	28.31 121.96	8.43 7.01	3.82 255.41	17.09 Mag 115.89 Phase
0.224	1022.91	433.07	13.83 279.87	7.77 197.62	17.96 63.37	403.06 113.10	25.41 112.28	10.83 339.37	3.22 279.69	17.24 Mag 112.03 Phase
0.224	1016.69	434.60	16.68 288.14	9.16 189.58	17.33 74.37	400.00 116.31	26.70 109.73	6.32 8.79	3.35 277.98	11.67 Mag 107.09 Phase
0.225	1031.96	433.58	14.70 301.76	13.54 198.11	18.30 83.86	401.85 115.46	17.54 97.39	8.97 347.81	4.69 264.74	15.38 Mag 103.57 Phase
0.247	1153.86	429.65	16.79 306.53	9.69 197.53	22.42 73.12	404.65 116.32	17.12 121.71	8.33 4.45	3.83 259.53	10.82 Mag 147.90 Phase
0.248	1150.21	435.92	7.51 306.02	8.29 201.08	22.23 71.02	410.36 114.76	17.15 112.61	7.04 354.08	4.58 272.71	11.36 Mag 145.83 Phase
0.301	1240.10	493.72	12.05 286.75	4.75 143.25	18.38 57.52	466.66 129.16	14.46 175.56	9.42 45.69	2.32 248.30	20.95 Mag 262.95 Phase
0.301	1246.42	518.45	14.19 292.59	4.13 114.61	18.79 62.01	481.86 130.20	22.69 178.17	7.66 39.45	2.31 255.57	21.38 Mag 264.12 Phase
0.347	1595.74	762.53	8.01 264.36	23.15 161.34	28.85 84.49	698.61 118.98	22.60 114.44	14.83 88.20	1.67 358.11	23.53 Mag 280.21 Phase
0.347	1605.19	852.96	17.74 293.87	2.73 31.18	31.25 75.65	815.20 122.30	8.02 211.55	10.85 132.47	2.78 292.83	25.43 Mag 291.12 Phase

*1/2 Peak-to-peak

Table 63. Fixed-System Loads Data for Yawing Moment T75 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	650.26	330.41	1.44 257.13	9.46 220.25	11.25 249.85	317.17 35.22	13.62 342.37	5.83 204.70	2.83 358.75	18.31 Mag 358.58 Phase
0.103	642.83	330.52	1.80 222.98	9.65 219.24	12.60 245.43	318.81 37.18	10.88 353.65	4.93 203.73	3.02 1.71	20.01 Mag 3.39 Phase
0.119	646.75	317.94	2.93 331.45	11.10 213.32	7.93 216.11	297.90 46.26	11.81 3.43	5.31 249.85	3.57 21.17	17.73 Mag 17.01 Phase
0.122	647.71	311.93	3.24 24.58	10.65 210.82	7.04 221.62	294.71 44.15	11.41 5.13	5.21 253.01	2.73 11.42	19.14 Mag 10.43 Phase
0.149	477.34	365.22	3.31 30.85	10.93 217.30	4.16 204.53	349.38 59.58	9.60 46.77	6.50 261.10	3.35 43.07	11.44 Mag 44.78 Phase
0.150	477.10	374.08	7.17 19.89	10.75 218.09	3.96 191.73	355.04 78.08	10.43 61.82	5.85 287.52	3.32 88.77	11.96 Mag 77.56 Phase
0.153	487.97	389.74	5.30 353.00	11.32 213.28	5.98 186.95	366.25 58.67	12.82 34.42	7.72 256.34	3.62 51.97	11.51 Mag 42.47 Phase
0.153	487.06	390.74	1.18 53.11	11.80 221.16	5.67 208.55	366.80 64.90	16.13 41.17	8.05 283.60	3.71 62.01	10.84 Mag 75.89 Phase
0.176	472.85	416.98	8.32 18.73	8.78 220.24	4.70 182.13	397.96 70.52	13.89 94.40	7.92 279.85	3.23 95.84	14.02 Mag 70.69 Phase
0.176	472.18	402.98	4.42 18.77	9.79 218.16	2.02 166.27	386.58 68.41	11.42 74.10	9.13 299.69	3.00 75.87	14.25 Mag 73.44 Phase
0.202	489.30	523.96	2.58 305.53	14.71 213.72	4.47 98.86	503.77 62.53	13.48 117.02	8.09 291.64	2.76 73.53	10.05 Mag 68.20 Phase
0.203	490.53	511.67	4.31 338.37	11.48 206.33	5.62 100.35	492.39 58.88	14.22 121.43	8.68 277.55	2.61 62.74	11.77 Mag 33.85 Phase
0.224	528.33	562.12	7.61 338.06	10.35 220.65	7.06 160.34	541.91 75.05	20.73 143.95	9.98 321.19	1.28 127.96	13.27 Mag 68.42 Phase
0.225	524.22	562.52	10.35 345.05	9.86 210.31	5.99 113.10	540.11 69.99	21.21 138.86	11.09 307.30	1.82 93.03	11.60 Mag 42.84 Phase
0.249	559.83	614.65	8.58 8.42	5.07 189.26	9.83 95.21	594.09 77.72	22.45 165.33	6.94 308.57	2.25 137.17	7.95 Mag 55.13 Phase
0.249	559.26	606.33	5.08 270.23	5.87 207.73	12.26 72.61	583.06 70.27	23.72 158.50	7.57 318.76	1.68 119.20	7.96 Mag 6.21 Phase
0.301	696.91	680.69	9.13 324.92	9.15 215.06	4.42 22.87	650.05 84.05	24.84 178.74	5.14 20.93	6.24 71.40	5.29 Mag 133.05 Phase
0.301	698.02	677.41	11.34 292.73	12.84 227.29	4.28 81.23	643.99 87.07	27.00 190.56	9.61 20.54	5.73 49.26	6.39 Mag 112.58 Phase
0.345	855.59	764.73	22.56 275.76	13.85 179.91	31.82 30.47	725.84 101.03	13.03 235.31	7.93 11.47	7.11 107.53	19.73 Mag 186.28 Phase
0.345	856.70	790.12	14.80 304.22	3.28 194.67	31.80 62.94	752.49 107.13	28.74 243.04	5.43 15.32	5.79 136.08	19.06 Mag 212.19 Phase

*1/2 Peak-to-peak

Table 63. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.102	849.73	385.15	14.05 253.64	3.77 230.34	2.93 227.12	356.31 58.23	26.06 97.63	2.22 112.30	2.94 288.97	22.49 Mag 8.03 Phase
0.109	852.65	386.76	11.19 247.14	5.41 218.66	5.78 198.03	356.56 57.29	26.43 83.41	6.62 229.64	4.34 267.30	26.24 Mag 353.13 Phase
0.120	862.43	361.27	13.51 203.22	6.42 199.87	9.60 174.35	324.64 62.10	32.38 62.71	8.66 176.48	4.28 285.84	17.14 Mag 343.48 Phase
0.123	861.90	367.99	14.12 229.26	6.38 202.95	11.86 183.98	331.70 72.49	31.79 80.49	10.80 193.33	4.55 301.34	18.89 Mag 354.20 Phase
0.149	664.28	375.69	9.74 279.04	9.19 190.48	11.61 191.85	352.33 74.29	26.18 98.70	6.83 207.27	4.36 321.79	10.97 Mag 334.92 Phase
0.150	663.99	380.73	7.43 271.05	9.21 188.24	11.73 190.09	355.84 72.90	26.86 97.39	4.86 222.94	4.71 321.67	11.31 Mag 331.82 Phase
0.152	667.67	369.85	13.32 268.87	8.80 195.20	11.13 201.79	344.57 73.49	28.85 102.74	4.60 192.41	4.54 311.41	6.93 Mag 332.66 Phase
0.153	667.93	366.64	13.63 280.26	9.59 190.56	11.90 202.12	343.91 71.94	27.32 108.70	4.05 210.41	5.38 303.43	4.96 Mag 350.62 Phase
0.176	642.71	367.75	10.08 294.42	8.13 202.84	8.88 226.67	345.07 95.12	23.40 148.42	7.84 286.69	4.31 3.95	18.30 Mag 31.90 Phase
0.177	641.81	369.78	12.92 288.13	9.67 202.01	9.27 228.14	343.90 88.98	25.42 134.88	7.61 273.91	4.49 350.42	15.72 Mag 19.28 Phase
0.201	663.10	416.89	12.25 288.41	12.10 200.77	14.05 254.04	390.48 82.85	19.83 161.31	3.82 327.87	4.55 344.66	25.14 Mag 2.47 Phase
0.202	665.49	416.90	17.60 284.66	14.63 196.74	9.52 259.62	388.34 74.47	22.14 147.77	4.75 290.50	3.90 331.15	24.19 Mag 345.92 Phase
0.225	707.74	439.68	14.46 296.36	11.13 215.81	10.37 249.69	417.89 88.17	21.76 152.42	4.63 335.11	5.72 334.65	20.24 Mag 336.33 Phase
0.225	705.73	453.22	19.91 273.73	12.77 204.90	8.21 248.77	422.02 87.84	25.53 148.70	3.93 357.85	5.37 335.06	21.35 Mag 341.46 Phase
0.250	737.50	494.73	21.18 298.76	11.80 209.31	9.80 304.10	464.54 85.52	26.74 167.55	1.74 111.31	3.04 15.87	28.68 Mag 303.17 Phase
0.251	736.96	490.00	16.16 288.47	9.69 187.36	8.89 291.69	467.13 82.90	19.43 163.34	3.57 40.25	5.01 8.90	27.76 Mag 300.52 Phase
0.300	920.55	603.27	26.22 297.65	5.73 208.94	12.32 12.74	564.70 95.20	32.82 203.12	2.20 115.19	4.10 60.27	22.95 Mag 270.54 Phase
0.301	919.48	582.16	17.46 291.51	9.43 197.19	19.38 352.09	544.57 96.55	22.97 211.12	6.19 92.42	6.03 80.03	23.05 Mag 279.98 Phase
0.345	1143.21	803.72	25.80 281.39	8.83 217.64	48.80 51.57	728.71 109.77	36.62 211.46	10.84 127.26	4.78 153.26	21.51 Mag 257.13 Phase
0.346	1141.39	796.89	21.44 308.78	29.17 145.58	52.57 49.64	749.17 117.81	27.58 233.74	6.62 123.16	5.93 186.39	29.35 Mag 285.05 Phase

*1/2 Peak-to-peak

Table 63. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.105	1178.56	483.91	15.59 251.21	5.13 221.14	8.93 102.00	458.92 46.15	21.30 105.93	2.52 193.18	1.76 253.48	25.72 Mag 15.30 Phase
0.107	1168.09	459.41	11.94 255.60	5.85 218.26	9.29 127.43	442.89 48.00	18.04 110.41	2.59 241.71	1.88 279.07	25.40 Mag 24.45 Phase
0.120	1152.08	469.44	15.55 248.47	5.32 193.59	11.30 73.21	431.12 63.07	31.98 100.31	3.13 222.62	2.84 241.88	26.76 Mag 24.70 Phase
0.122	1151.00	472.08	19.61 230.39	6.75 205.54	14.46 58.05	428.60 68.15	36.15 89.24	3.53 223.09	1.97 238.86	29.25 Mag 37.41 Phase
0.148	898.45	423.49	11.30 283.47	6.14 191.42	14.38 104.39	395.85 76.24	29.04 111.82	1.70 304.96	4.40 284.80	11.05 Mag 34.34 Phase
0.149	891.09	428.34	11.00 288.90	6.07 186.97	14.80 113.37	402.48 73.18	27.31 114.16	0.47 31.78	4.82 272.82	19.35 Mag 41.69 Phase
0.150	1048.57	409.72	13.53 287.71	6.44 180.59	12.96 98.26	382.83 67.82	28.58 99.79	3.12 255.42	3.64 257.56	17.46 Mag 47.96 Phase
0.150	1048.57	421.63	14.68 287.08	6.29 195.46	13.08 109.45	395.33 76.70	30.26 110.75	3.96 325.59	4.00 280.40	18.47 Mag 58.74 Phase
0.150	919.17	435.08	17.20 283.62	4.55 190.59	10.14 97.73	401.80 70.72	31.35 121.56	0.84 181.27	3.13 282.96	17.92 Mag 57.86 Phase
0.151	920.56	421.73	11.05 295.71	6.45 187.20	14.41 112.11	398.69 76.19	24.94 119.10	2.84 259.24	4.66 289.77	13.62 Mag 41.29 Phase
0.174	891.45	411.29	16.79 301.61	6.88 203.61	14.73 79.58	376.23 82.94	30.91 123.56	6.26 322.79	4.18 275.04	17.75 Mag 57.96 Phase
0.175	893.23	418.44	15.48 307.75	7.47 206.48	15.75 71.35	379.11 84.51	32.17 132.61	6.25 313.56	2.76 274.15	17.02 Mag 68.41 Phase
0.200	887.80	445.01	18.95 307.39	9.94 199.34	8.15 52.56	410.77 82.07	29.41 148.21	5.43 52.79	3.80 331.29	26.27 Mag 11.98 Phase
0.200	890.46	435.07	13.77 308.19	9.71 205.75	12.07 68.71	406.23 76.34	26.28 140.05	7.31 10.09	3.16 309.74	22.73 Mag 17.44 Phase
0.224	929.36	475.07	21.21 315.51	13.74 189.77	12.53 64.13	445.14 86.34	30.52 157.94	9.51 24.88	3.54 317.47	14.70 Mag 4.64 Phase
0.225	931.19	475.79	16.48 314.62	11.00 200.54	10.71 78.22	450.17 93.32	29.54 171.92	10.44 45.45	3.32 337.79	9.36 Mag 20.56 Phase
0.250	972.01	529.94	19.21 321.38	7.14 206.23	5.01 63.34	500.02 91.28	29.52 173.81	4.03 3.84	2.88 331.72	25.49 Mag 291.37 Phase
0.251	970.71	542.07	15.02 326.33	8.28 166.79	10.93 68.32	514.14 85.62	30.04 159.62	4.71 18.17	1.62 310.59	25.56 Mag 281.78 Phase
0.300	1238.70	683.54	19.32 292.71	5.21 247.16	18.86 36.42	632.44 102.13	33.03 187.44	4.63 55.71	0.95 332.38	40.50 Mag 274.04 Phase
0.300	1241.13	663.51	20.17 300.34	0.39 234.22	18.78 31.67	614.26 99.43	36.02 190.94	7.15 47.34	1.61 359.91	40.75 Mag 262.32 Phase
0.346	1549.84	984.11	30.39 280.56	10.37 131.78	42.10 67.40	908.10 111.62	44.50 186.24	8.85 138.33	2.82 214.81	28.76 Mag 254.75 Phase
0.347	1549.84	993.10	19.50 276.15	18.63 143.68	31.96 63.22	932.61 111.97	42.41 188.05	9.59 157.99	2.03 248.62	29.62 Mag 260.04 Phase

*1/2 Peak-to-peak

Table 64. Fixed-System Loads Data for Yawing Moment T80 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.096	625.92	406.02	17.14 50.46	3.35 180.62	10.60 61.65	376.74 31.54	23.38 347.51	3.77 103.99	2.86 337.93	14.25 Mag 330.71 Phase
0.099	632.86	412.17	18.55 49.04	0.98 140.37	11.51 66.49	377.46 19.54	25.10 332.55	1.08 48.96	2.54 300.15	14.40 Mag 302.63 Phase
0.132	601.72	387.97	22.08 10.78	4.13 179.57	11.97 108.89	365.15 39.95	15.27 344.10	4.32 110.18	3.08 346.17	11.26 Mag 332.84 Phase
0.132	602.86	383.58	21.88 11.25	3.28 168.92	13.42 109.29	358.85 45.33	15.47 7.77	4.27 162.19	2.52 359.03	11.02 Mag 348.04 Phase
0.155	520.30	396.55	13.22 35.88	9.71 215.54	15.93 114.02	363.69 60.46	13.49 12.20	5.42 293.10	1.46 15.40	5.90 Mag 327.17 Phase
0.155	524.34	392.72	14.61 40.02	9.61 214.85	15.34 110.92	362.52 55.86	14.26 4.78	4.22 320.55	1.66 13.93	5.78 Mag 310.12 Phase
0.181	558.65	416.84	13.81 62.87	11.78 219.84	16.72 94.84	384.75 47.63	15.37 358.34	6.70 303.63	1.21 10.03	5.87 Mag 21.68 Phase
0.181	560.44	433.31	12.96 57.67	11.64 222.75	15.68 107.50	399.55 57.47	17.52 18.05	8.75 348.28	1.38 47.78	4.26 Mag 7.25 Phase
0.203	573.57	450.18	14.93 68.33	15.19 222.11	20.11 102.67	419.33 59.33	11.87 58.47	6.63 340.30	1.14 31.84	3.94 Mag 197.95 Phase
0.203	576.43	463.22	17.00 82.10	15.46 220.56	19.95 106.98	431.42 67.07	10.26 72.76	7.35 348.33	0.89 40.21	2.76 Mag 208.47 Phase
0.229	633.18	462.51	13.66 34.29	10.35 218.67	20.18 113.80	436.32 68.43	5.74 61.21	5.90 340.94	0.68 359.64	12.10 Mag 221.39 Phase
0.229	633.77	454.36	3.09 318.72	12.37 228.39	18.34 94.79	431.54 65.44	6.28 89.34	7.99 353.83	1.60 9.88	10.66 Mag 218.82 Phase
0.252	655.79	464.84	8.25 202.41	9.20 201.63	20.57 93.44	434.14 79.27	8.27 110.59	5.13 23.60	0.60 329.73	14.93 Mag 243.87 Phase
0.253	657.24	463.36	9.17 65.65	11.16 211.94	21.72 107.17	440.08 72.35	5.37 112.11	3.47 302.13	0.64 342.72	14.80 Mag 229.25 Phase
0.300	777.61	514.11	6.31 323.33	8.48 208.41	15.81 78.87	500.08 87.87	7.53 222.32	8.77 344.16	2.92 73.11	14.29 Mag 230.32 Phase
0.302	779.64	511.15	5.83 4.25	9.18 221.81	13.93 76.19	490.34 91.12	9.21 205.16	13.79 11.41	3.83 65.41	13.12 Mag 225.57 Phase
0.350	932.45	622.16	13.72 254.66	24.15 154.75	38.32 50.22	591.03 113.88	9.74 202.79	4.81 113.73	3.02 124.21	26.63 Mag 224.77 Phase
0.350	924.33	631.31	25.67 235.22	9.22 152.16	42.50 51.86	580.33 110.53	16.11 187.82	8.37 61.85	3.64 144.63	21.19 Mag 215.27 Phase

*1/2 Peak-to-peak

Table 64. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.099	847.82	472.23	10.92 50.36	3.59 106.35	40.72 86.47	405.50 45.80	36.82 18.77	4.34 147.75	10.54 166.16	22.11 Mag 334.53 Phase
0.105	833.96	460.73	18.62 44.49	6.92 117.85	39.80 100.75	404.31 56.28	24.55 33.03	4.25 212.44	9.70 197.35	17.75 Mag 356.03 Phase
0.130	816.34	419.92	16.57 22.69	5.43 142.24	36.35 126.87	367.50 59.80	20.96 24.34	1.88 257.31	5.82 224.88	13.05 Mag 314.17 Phase
0.132	818.38	419.90	13.94 359.45	5.79 145.09	32.91 131.69	369.77 54.49	20.72 26.80	6.95 341.08	6.05 226.50	13.97 Mag 303.66 Phase
0.153	771.29	416.38	26.36 8.37	7.81 165.87	33.39 123.77	376.60 65.45	7.77 67.65	3.51 243.80	3.92 262.70	9.31 Mag 298.79 Phase
0.153	770.27	407.53	25.86 6.07	6.90 166.61	30.41 128.99	373.26 69.19	5.57 96.65	3.68 225.76	4.13 268.87	7.39 Mag 309.52 Phase
0.153	708.73	400.79	5.68 252.37	8.93 202.39	19.79 86.54	375.81 73.17	10.82 98.58	4.56 229.06	3.57 298.97	16.90 Mag 274.89 Phase
0.180	733.79	418.57	16.47 223.04	10.73 231.44	19.39 73.35	380.42 72.22	6.79 72.02	9.05 327.15	2.72 323.52	21.70 Mag 280.83 Phase
0.181	728.82	405.33	9.62 261.67	8.94 212.57	18.09 87.48	381.72 79.24	6.23 71.57	3.03 282.45	2.61 328.80	22.79 Mag 290.20 Phase
0.201	749.51	453.96	22.79 196.39	14.59 225.91	17.70 87.30	403.70 86.31	12.22 102.88	9.55 356.19	4.32 339.56	9.18 Mag 301.34 Phase
0.202	610.22	432.13	28.26 348.74	8.92 175.34	34.21 153.31	391.18 76.25	8.40 112.76	3.08 31.97	7.17 284.75	7.71 Mag 330.96 Phase
0.203	610.96	435.73	27.14 358.10	9.08 172.70	34.60 151.92	394.12 77.59	7.36 112.61	3.07 326.05	6.27 289.41	7.92 Mag 334.36 Phase
0.228	832.60	426.56	8.58 320.02	13.55 210.07	8.39 83.31	409.79 90.33	9.80 209.99	3.42 332.69	3.97 322.19	23.07 Mag 224.64 Phase
0.229	828.86	423.74	9.96 296.70	10.49 210.03	9.49 97.97	406.50 89.21	9.49 210.69	4.45 321.83	3.95 330.10	22.72 Mag 227.48 Phase
0.251	753.52	433.23	27.32 3.52	6.21 122.95	27.49 186.38	397.68 94.24	16.79 89.45	5.97 46.15	7.57 353.42	27.76 Mag 248.23 Phase
0.251	751.33	426.39	36.43 353.17	9.60 154.19	27.19 190.28	394.42 86.87	9.82 113.74	8.25 43.11	6.49 354.34	29.07 Mag 237.37 Phase
0.252	849.08	425.05	16.23 305.09	11.09 208.61	9.37 88.36	410.81 88.34	9.15 181.11	5.67 30.69	2.82 325.01	29.42 Mag 222.14 Phase
0.300	938.43	454.75	21.57 22.24	14.18 177.21	17.03 176.68	424.63 107.74	6.22 136.69	9.96 51.42	5.96 18.21	40.70 Mag 238.70 Phase
0.301	1020.39	476.67	12.29 316.71	3.18 195.24	19.19 50.31	448.13 108.83	15.47 224.10	8.60 46.79	1.45 142.64	28.94 Mag 240.83 Phase
0.348	1174.86	709.51	25.69 53.90	18.43 32.23	15.65 113.67	660.70 123.16	13.06 105.85	8.15 161.49	1.00 333.39	31.19 Mag 262.77 Phase
0.349	1194.69	685.93	31.54 38.96	27.38 18.26	16.94 122.89	633.54 110.83	20.60 73.85	7.96 131.95	3.37 9.92	31.18 Mag 235.20 Phase
0.349	1232.29	674.36	11.21 279.49	20.15 144.75	42.97 45.85	631.94 124.43	18.62 208.63	9.57 101.62	5.83 195.29	25.33 Mag 248.66 Phase

*1/2 Peak-to-peak

Table 64. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.100	1172.83	534.32	39.20 58.66	4.20 98.83	31.24 100.51	496.57 45.74	11.81 346.66	6.53 205.78	3.54 132.98	21.77 Mag 44.52 Phase
0.100	1165.24	513.21	32.23 59.14	4.36 110.60	30.86 90.09	472.54 42.86	14.59 16.99	7.27 196.65	4.39 116.18	20.14 Mag 31.19 Phase
0.131	1081.82	511.14	32.59 46.93	4.37 123.62	48.34 128.64	444.59 59.93	24.69 15.93	8.44 219.15	8.71 213.13	22.39 Mag 68.58 Phase
0.133	1086.15	505.52	33.74 50.44	4.62 132.41	48.75 123.13	438.19 62.80	22.73 357.79	7.61 241.82	8.36 209.13	18.26 Mag 78.27 Phase
0.152	975.28	473.83	9.58 269.65	6.12 205.94	29.79 88.79	438.79 72.65	14.08 92.85	2.78 288.06	3.59 241.54	15.06 Mag 95.21 Phase
0.153	982.07	484.69	6.15 273.39	5.68 208.74	30.26 100.04	449.90 81.46	13.62 108.52	2.99 289.07	3.27 255.48	16.08 Mag 115.55 Phase
0.179	962.42	456.20	8.05 283.41	6.71 195.75	28.31 67.08	427.07 79.21	10.75 111.15	2.76 314.76	3.73 243.39	11.67 Mag 158.48 Phase
0.181	967.34	459.10	7.35 300.39	5.78 218.08	30.85 76.30	428.57 82.55	10.13 123.61	2.42 285.81	4.66 246.41	12.81 Mag 166.39 Phase
0.201	976.15	456.77	6.44 288.47	10.42 204.21	19.21 92.49	431.18 93.38	8.86 153.97	6.95 339.75	4.53 295.25	17.91 Mag 163.05 Phase
0.202	975.11	448.75	8.39 277.14	8.98 200.10	18.79 89.05	425.41 89.71	6.88 138.00	4.50 340.72	4.87 287.17	15.91 Mag 158.60 Phase
0.228	1065.86	509.92	7.92 296.19	11.63 201.84	28.48 73.33	480.60 87.60	11.32 148.23	6.38 343.28	3.61 249.79	28.35 Mag 167.37 Phase
0.228	1067.34	505.22	11.18 287.06	9.55 197.31	24.21 80.55	477.80 92.26	8.78 177.71	6.67 347.31	3.75 267.56	29.09 Mag 173.72 Phase
0.251	1101.95	537.90	15.06 294.69	8.25 213.17	24.22 78.59	508.42 99.09	10.01 211.24	8.07 358.99	3.28 257.22	43.69 Mag 209.98 Phase
0.251	1106.18	524.27	9.95 312.38	9.02 202.10	21.11 82.72	500.54 97.31	7.36 225.84	6.56 4.49	2.90 280.84	41.96 Mag 205.01 Phase
0.301	1353.85	616.37	20.82 266.95	5.70 221.10	21.51 67.96	577.22 108.02	15.82 201.72	7.20 44.42	3.85 223.98	42.71 Mag 213.80 Phase
0.303	1349.55	640.25	15.96 276.16	7.71 137.42	19.98 74.37	608.82 108.96	19.25 213.49	8.55 43.43	3.22 225.53	44.55 Mag 218.06 Phase
0.350	1654.82	913.52	10.42 274.34	18.43 84.50	23.29 67.95	864.23 113.80	25.54 204.11	6.60 160.37	4.46 232.30	27.74 Mag 218.23 Phase

*1/2 Peak-to-peak

Table 65. Fixed-System Loads Data for Yawing Moment T85 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.088	657.63	369.48	2.88 38.80	10.06 227.64	3.58 101.02	335.81 32.72	23.24 318.12	7.49 259.89	2.03 296.23	20.01 Mag 322.10 Phase
0.089	661.79	365.89	4.88 50.12	10.48 222.71	3.38 106.77	332.72 28.35	25.47 310.14	5.68 274.16	2.34 284.86	20.04 Mag 316.33 Phase
0.120	640.49	331.93	11.40 15.82	12.14 208.37	10.47 106.75	297.34 36.03	16.79 343.05	8.51 282.98	1.78 298.70	15.33 Mag 333.99 Phase
0.121	641.90	327.33	11.60 24.47	11.46 210.83	10.13 109.35	296.54 37.40	15.01 339.27	6.53 293.21	1.94 299.45	15.23 Mag 343.11 Phase
0.146	644.76	361.15	13.50 30.38	11.96 212.84	15.45 108.89	329.46 42.82	10.41 3.51	9.04 292.52	1.65 316.99	8.98 Mag 339.88 Phase
0.149	645.51	363.80	10.49 30.63	12.00 216.18	14.92 115.43	331.94 50.62	10.79 12.88	7.84 300.50	1.44 344.70	9.17 Mag 351.93 Phase
0.177	539.43	427.99	8.70 357.16	11.87 213.52	19.91 108.85	390.12 54.55	13.71 18.27	5.20 310.89	1.25 13.00	13.28 Mag 31.44 Phase
0.178	538.96	426.35	8.89 8.32	12.58 212.90	18.73 101.64	389.84 48.81	12.95 3.73	5.74 305.92	1.08 352.60	13.03 Mag 17.94 Phase
0.197	643.37	423.24	6.18 38.14	14.33 215.33	18.55 107.15	392.34 68.12	8.59 46.38	4.17 306.57	1.33 315.11	9.56 Mag 41.29 Phase
0.200	644.87	422.49	10.04 43.23	14.67 214.05	19.89 108.63	390.88 65.41	9.24 49.87	4.63 306.01	0.54 296.53	8.64 Mag 37.21 Phase
0.226	526.95	457.15	2.32 291.60	13.87 228.06	16.38 120.92	428.89 72.99	9.38 93.27	10.61 346.69	0.03 352.25	1.55 Mag 6.97 Phase
0.227	527.55	452.75	7.70 7.22	12.13 226.33	18.50 126.75	423.96 78.93	8.45 116.15	10.28 328.06	0.65 174.82	1.78 Mag 359.96 Phase
0.251	557.18	451.70	8.90 18.55	10.66 188.19	21.60 118.84	420.75 79.75	15.12 102.64	4.11 315.74	1.13 313.41	10.76 Mag 257.47 Phase
0.252	556.51	456.86	7.19 32.05	8.08 176.78	18.88 121.95	428.66 74.92	9.27 101.64	7.89 348.10	0.48 226.95	11.06 Mag 244.04 Phase
0.299	659.76	499.73	15.68 348.34	11.94 200.82	6.04 163.27	475.80 93.79	17.07 153.16	12.78 349.08	4.25 58.38	19.39 Mag 232.30 Phase
0.300	659.28	506.07	1.42 293.54	11.54 195.05	4.20 70.60	479.02 93.41	26.12 134.60	13.57 12.32	4.24 28.82	18.14 Mag 238.82 Phase
0.350	866.97	588.19	20.71 284.69	21.77 186.16	25.11 15.72	554.02 122.27	9.99 151.76	7.81 40.46	5.59 151.54	34.52 Mag 254.45 Phase
0.350	870.74	630.06	9.35 294.25	12.04 341.59	25.07 35.40	586.63 126.99	15.57 149.02	5.32 37.07	5.74 139.71	31.49 Mag 255.76 Phase

*1/2 Peak-to-peak

Table 65. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.092	861.18	415.67	8.94 231.32	6.64 216.89	14.91 79.64	378.83 59.37	19.86 39.76	3.97 267.15	3.17 233.04	33.99 Mag 316.97 Phase
0.120	853.24	387.49	7.42 225.07	7.89 221.70	20.60 110.74	350.46 56.84	19.38 37.29	2.05 188.72	3.59 254.58	18.31 Mag 292.62 Phase
0.120	853.08	381.32	10.25 221.53	7.84 223.18	16.52 99.96	345.91 64.55	19.11 42.40	5.81 263.83	3.02 266.78	17.95 Mag 310.88 Phase
0.147	818.31	384.55	4.72 295.72	9.72 197.11	19.64 103.76	355.98 71.54	9.64 69.97	4.83 230.60	3.14 280.82	16.10 Mag 292.95 Phase
0.149	817.61	387.76	4.66 274.72	9.66 201.57	18.13 102.46	360.74 66.98	9.51 70.16	4.92 225.04	2.84 266.67	15.73 Mag 286.86 Phase
0.177	705.91	412.22	5.59 304.23	11.53 206.18	18.12 106.79	380.70 71.45	11.67 74.17	7.88 236.15	2.37 303.84	17.50 Mag 327.40 Phase
0.177	704.33	415.25	5.94 316.04	11.85 207.21	18.23 95.90	384.06 63.65	8.59 61.60	8.38 242.60	1.80 288.54	14.97 Mag 315.31 Phase
0.199	828.55	397.01	10.53 294.10	13.63 209.52	11.81 105.33	373.78 85.62	10.77 122.81	6.44 328.83	2.64 301.16	11.23 Mag 342.83 Phase
0.200	827.66	396.19	8.50 290.02	12.90 199.28	13.11 110.18	374.43 80.82	10.51 111.74	2.06 296.94	3.01 318.59	12.38 Mag 323.83 Phase
0.227	700.62	417.43	10.78 312.34	11.83 214.91	9.95 103.05	396.65 87.67	6.76 122.68	7.74 350.32	3.97 317.53	10.55 Mag 262.65 Phase
0.227	700.80	427.50	15.14 290.99	12.36 222.54	10.70 123.22	401.49 89.89	12.32 106.45	2.73 328.09	4.07 338.48	10.19 Mag 283.17 Phase
0.250	740.46	397.55	10.40 311.19	13.47 195.15	7.73 107.57	378.08 86.99	7.90 100.26	2.72 3.49	1.77 331.40	22.90 Mag 241.82 Phase
0.252	742.22	400.79	12.68 298.80	11.84 205.57	8.38 106.08	377.72 94.01	12.46 103.61	7.41 49.57	3.29 341.80	22.05 Mag 248.51 Phase
0.300	879.64	440.59	11.20 295.73	12.65 218.99	13.66 16.88	403.16 109.31	18.36 183.09	8.38 49.63	2.51 80.61	35.87 Mag 238.30 Phase
0.301	880.90	420.47	17.37 292.18	13.95 211.96	15.56 43.27	385.40 115.44	22.82 166.58	11.08 34.43	1.48 21.40	35.11 Mag 241.09 Phase
0.350	1152.29	640.89	19.56 278.87	18.73 130.45	48.51 36.47	587.11 127.71	17.92 204.78	7.57 89.36	5.07 211.89	35.75 Mag 253.72 Phase
0.352	1142.06	648.35	24.86 288.28	10.57 107.56	39.72 40.29	591.98 120.21	19.17 194.67	7.02 76.46	5.42 196.97	36.38 Mag 237.24 Phase

*1/2 Peak-to-peak

Table 65. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.120	1145.58	476.85	8.76 259.99	5.95 243.54	32.33 98.72	438.08 67.93	15.84 66.91	3.49 269.14	3.51 241.45	17.85 Mag 35.08 Phase
0.122	1144.39	479.34	9.33 237.69	5.90 253.00	34.07 96.02	440.60 61.63	14.95 60.18	3.91 249.60	3.89 223.73	22.44 Mag 21.24 Phase
0.144	1098.31	445.17	13.17 267.22	7.74 200.46	32.55 76.45	406.08 50.80	16.72 63.88	4.15 285.50	3.79 187.75	14.92 Mag 7.85 Phase
0.145	1097.43	449.67	10.91 269.56	7.32 205.71	34.06 93.55	409.02 65.39	15.80 78.99	5.24 286.98	3.82 224.67	14.90 Mag 48.48 Phase
0.175	939.22	449.00	6.94 286.98	12.51 203.69	36.82 75.68	411.90 75.87	9.55 75.08	6.87 286.97	4.96 224.60	9.72 Mag 75.10 Phase
0.176	935.88	445.49	11.55 277.75	12.52 199.11	37.86 74.22	407.35 77.68	12.51 92.85	6.58 294.52	4.83 222.28	10.05 Mag 91.26 Phase
0.197	1065.54	437.37	7.28 269.08	9.81 193.55	27.22 83.19	397.98 80.21	13.78 69.84	7.45 333.75	4.29 241.05	5.03 Mag 70.65 Phase
0.197	1066.58	420.14	5.99 328.06	11.77 202.44	21.48 85.28	391.72 87.53	11.05 94.09	5.35 339.76	3.89 262.90	7.99 Mag 80.24 Phase
0.225	925.34	472.61	12.76 301.84	14.24 198.57	24.06 96.58	438.06 93.39	13.15 122.03	10.49 8.08	3.35 271.30	11.47 Mag 167.71 Phase
0.226	920.99	474.11	11.14 299.77	13.78 206.44	24.46 97.90	439.87 97.32	14.31 124.35	9.12 6.52	3.69 275.21	12.48 Mag 163.70 Phase
0.251	983.44	501.35	15.78 294.45	12.31 198.87	22.55 81.82	470.56 103.53	18.16 155.46	9.33 7.23	2.39 279.96	28.36 Mag 216.90 Phase
0.252	980.03	493.29	13.90 307.66	12.68 185.86	23.99 78.32	465.54 99.46	18.32 162.87	10.15 0.85	2.08 234.37	28.53 Mag 207.21 Phase
0.300	1164.82	557.98	16.43 282.55	10.83 200.90	26.71 49.25	501.74 109.29	28.53 180.10	8.52 21.15	3.50 200.43	50.57 Mag 213.44 Phase
0.301	1160.78	540.65	10.57 282.81	5.88 55.66	23.76 55.59	487.49 119.38	23.15 207.86	5.10 13.03	1.09 297.53	46.80 Mag 230.25 Phase

*1/2 Peak-to-peak

Table 66. Fixed-System Loads Data for Yawing Moment S80 Configuration

(a) $T = 0.75T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	623.90	357.57	5.80 229.85	8.16 212.84	7.60 247.58	334.26 12.94	21.91 318.79	5.68 244.86	3.06 10.03	38.89 Mag 324.95 Phase
0.101	631.83	352.34	3.32 205.46	8.31 215.64	6.35 249.21	331.01 13.38	21.13 320.94	6.42 264.49	2.83 346.20	41.51 Mag 330.64 Phase
0.131	625.50	351.03	10.35 345.80	9.44 201.99	8.13 174.42	328.47 24.22	14.31 349.32	5.13 257.31	2.45 10.69	34.61 Mag 340.32 Phase
0.133	628.94	307.37	9.24 341.23	5.85 227.54	8.17 151.53	285.58 28.34	12.59 335.51	4.95 303.68	2.53 46.36	32.47 Mag 339.14 Phase
0.150	495.82	422.16	10.55 308.59	12.24 209.46	8.40 162.62	394.77 37.17	9.50 1.51	7.55 269.76	3.22 18.94	24.82 Mag 355.02 Phase
0.150	500.94	398.69	7.25 314.96	12.88 211.41	7.88 171.65	374.44 37.66	7.92 6.46	8.08 273.65	2.86 18.44	21.84 Mag 357.12 Phase
0.175	505.83	481.09	9.39 335.79	10.36 206.61	9.85 139.89	456.76 43.22	9.15 29.51	7.40 292.39	2.10 47.72	27.16 Mag 11.54 Phase
0.175	503.99	481.06	7.47 303.99	11.55 214.02	8.79 144.14	453.57 50.89	10.87 36.49	9.74 300.58	2.45 52.65	20.52 Mag 39.07 Phase
0.200	513.80	530.98	10.02 315.11	10.41 204.96	10.78 133.00	505.90 54.66	8.28 49.02	5.58 295.15	2.82 53.59	12.34 Mag 6.51 Phase
0.200	514.79	526.93	7.28 290.98	13.10 214.31	8.52 108.13	502.82 50.89	6.73 43.94	6.61 298.44	2.88 43.57	12.40 Mag 9.44 Phase
0.223	553.07	572.11	17.22 282.65	11.23 225.88	8.11 133.76	555.24 63.15	18.14 126.80	9.07 327.58	2.01 65.09	16.94 Mag 358.46 Phase
0.224	551.24	575.58	18.41 296.10	9.74 231.67	7.87 158.96	559.03 65.10	15.04 117.23	8.23 329.50	1.48 78.86	15.95 Mag 7.26 Phase
0.248	594.07	586.04	14.13 305.74	7.55 190.07	10.19 130.92	570.45 65.09	21.41 157.99	10.61 312.33	1.06 341.31	14.24 Mag 312.34 Phase
0.249	593.11	596.46	12.43 306.26	7.48 176.15	10.72 137.66	583.72 70.69	21.35 153.19	8.66 307.37	0.33 25.59	11.71 Mag 337.52 Phase
0.299	728.45	755.59	10.50 321.81	5.98 251.54	6.29 83.78	720.91 74.83	38.74 181.62	8.57 27.67	5.24 39.26	9.75 Mag 199.34 Phase
0.299	728.23	816.47	14.42 316.70	11.58 182.12	11.21 100.41	782.44 67.91	45.04 142.58	2.50 18.68	3.54 19.88	10.12 Mag 188.53 Phase

*1/2 Peak-to-peak

Table 66. Continued

(b) $T = 1.0T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.104	853.07	414.57	18.01 229.91	7.47 196.49	12.99 7.05	379.43 30.16	19.96 51.01	3.80 242.34	3.19 332.31	54.70 Mag 315.60 Phase
0.104	861.09	439.55	20.51 223.43	7.41 196.06	11.85 0.03	400.91 24.76	22.88 36.03	6.57 186.85	4.23 319.75	59.56 Mag 309.59 Phase
0.123	841.15	367.75	20.34 258.42	5.16 193.48	6.19 126.96	339.93 39.96	16.74 55.59	3.94 158.62	4.22 321.25	41.86 Mag 306.43 Phase
0.127	845.09	365.38	18.40 243.61	6.38 185.65	1.72 23.90	337.06 34.74	14.37 50.57	6.57 162.18	4.84 315.55	38.96 Mag 305.35 Phase
0.150	685.32	386.45	19.81 278.21	8.29 186.20	3.93 144.01	363.01 48.51	10.04 70.30	7.60 210.60	4.21 316.76	30.54 Mag 299.06 Phase
0.150	686.25	395.42	14.80 257.72	9.14 188.75	4.39 129.66	369.13 44.38	11.44 44.98	4.88 201.02	4.01 319.00	32.65 Mag 296.04 Phase
0.175	684.73	389.29	17.84 285.80	9.27 187.90	4.53 60.68	363.17 53.97	14.93 76.93	7.20 249.27	4.12 321.73	32.39 Mag 309.77 Phase
0.175	691.24	392.61	15.16 286.73	9.29 190.69	6.32 61.92	367.85 61.43	11.45 78.79	6.79 252.79	3.29 336.09	34.47 Mag 324.31 Phase
0.200	700.42	424.11	18.32 292.75	13.75 196.07	1.36 126.25	398.58 69.43	16.16 106.41	3.30 302.64	5.08 330.37	27.48 Mag 337.03 Phase
0.200	700.47	418.85	18.01 286.28	11.39 196.82	2.78 24.21	394.27 69.49	12.51 102.89	5.81 322.54	4.45 328.24	24.65 Mag 339.23 Phase
0.224	744.29	466.49	22.63 293.88	10.10 195.20	6.86 68.74	436.49 71.55	21.50 139.19	3.19 344.88	4.87 322.65	33.12 Mag 314.26 Phase
0.225	726.48	464.68	19.67 283.88	11.00 197.75	5.63 88.05	436.87 74.33	17.83 134.18	4.72 329.32	5.12 335.16	29.37 Mag 309.93 Phase
0.225	734.92	455.57	26.40 293.90	10.23 195.18	4.07 82.69	427.56 71.20	23.89 142.77	7.31 333.81	5.62 330.39	30.36 Mag 310.77 Phase
0.249	792.62	491.08	18.51 306.31	8.90 201.72	5.15 120.74	465.26 78.61	29.45 165.69	3.90 40.31	4.97 1.67	37.89 Mag 287.21 Phase
0.249	788.95	485.99	25.94 304.49	10.46 191.15	9.88 109.16	462.43 74.65	26.64 163.54	4.82 0.20	5.72 344.75	40.87 Mag 270.17 Phase
0.301	957.20	657.58	18.77 289.47	9.08 217.59	10.73 51.76	615.46 82.31	45.63 196.50	6.85 73.54	4.31 90.55	26.95 Mag 237.99 Phase
0.301	955.66	674.84	13.78 283.83	10.48 164.15	18.78 61.60	633.13 84.39	41.00 192.88	7.26 14.42	5.05 104.30	31.05 Mag 236.60 Phase

*1/2 Peak-to-peak

Table 66. Concluded

(c) $T = 1.25T_{1g}$

μ	Mean load	1/2 P-P* load	1P	2P	3P	4P	5P	6P	7P	8P
0.101	1214.28	602.82	15.86 269.16	4.83 247.39	12.74 68.42	587.94 19.90	8.73 144.49	2.33 109.90	1.27 342.94	71.12 Mag 323.18 Phase
0.104	1209.24	555.87	15.80 264.94	5.84 226.82	17.34 64.24	540.45 20.44	12.29 108.43	0.72 99.60	0.86 325.40	68.42 Mag 319.64 Phase
0.127	1153.85	485.84	15.93 276.03	2.94 209.61	20.84 78.71	463.07 40.54	17.14 102.25	2.53 103.76	1.85 3.79	51.73 Mag 343.85 Phase
0.150	954.05	457.37	18.41 275.51	4.11 197.00	27.28 63.20	421.72 40.75	21.05 71.97	1.51 245.22	2.16 283.63	37.47 Mag 320.26 Phase
0.150	956.69	453.47	18.41 281.26	4.38 205.33	27.33 78.51	419.62 48.35	20.34 84.91	1.15 232.37	2.23 301.42	39.03 Mag 329.83 Phase
0.175	935.62	457.16	18.14 306.51	5.50 175.64	28.79 66.08	412.32 54.47	25.82 86.93	4.02 216.07	3.14 291.17	27.52 Mag 341.64 Phase
0.175	934.42	459.43	17.83 309.82	4.39 186.01	28.91 79.81	413.77 68.10	25.94 111.13	2.08 200.88	2.85 295.42	27.63 Mag 10.61 Phase
0.200	944.53	460.79	19.35 308.93	8.28 211.08	19.89 76.86	426.72 72.62	23.72 123.67	3.38 81.22	3.61 319.24	30.50 Mag 22.71 Phase
0.200	941.49	466.08	17.76 308.85	9.97 195.98	22.40 73.49	428.54 70.06	29.97 122.80	4.57 13.26	2.43 316.68	29.83 Mag 21.40 Phase
0.223	968.91	521.55	20.21 311.05	8.20 166.36	26.44 81.78	486.14 69.38	23.57 132.78	5.38 351.81	3.45 284.35	21.59 Mag 346.79 Phase
0.224	967.00	514.18	15.38 304.21	9.96 183.40	25.38 89.67	486.61 74.36	21.80 142.38	8.32 354.37	3.91 299.57	17.45 Mag 359.65 Phase
0.225	959.71	529.10	23.50 298.39	8.74 174.54	31.90 80.13	486.43 76.95	27.74 139.91	4.77 25.36	2.76 282.55	16.36 Mag 9.77 Phase
0.225	966.07	512.01	20.61 313.59	10.42 187.83	27.88 81.86	478.17 80.45	25.30 150.25	5.81 348.63	2.73 333.68	17.27 Mag 8.34 Phase
0.248	1033.59	537.81	24.76 332.20	8.82 145.33	18.16 82.13	507.86 75.20	32.41 159.66	5.48 346.83	2.86 311.80	30.43 Mag 264.28 Phase
0.248	1035.55	565.90	20.27 323.67	5.83 177.67	24.56 70.87	525.61 80.32	32.53 161.05	4.90 336.03	2.03 301.19	31.33 Mag 266.82 Phase
0.300	1304.35	766.36	12.25 305.46	10.28 23.17	27.08 66.97	712.72 90.02	36.39 167.09	5.54 55.90	2.54 282.23	41.29 Mag 239.07 Phase
0.301	1313.32	774.84	25.37 290.78	8.19 77.09	30.50 65.18	719.27 89.56	36.11 168.91	7.20 46.14	1.95 230.62	50.76 Mag 232.01 Phase

*1/2 Peak-to-peak

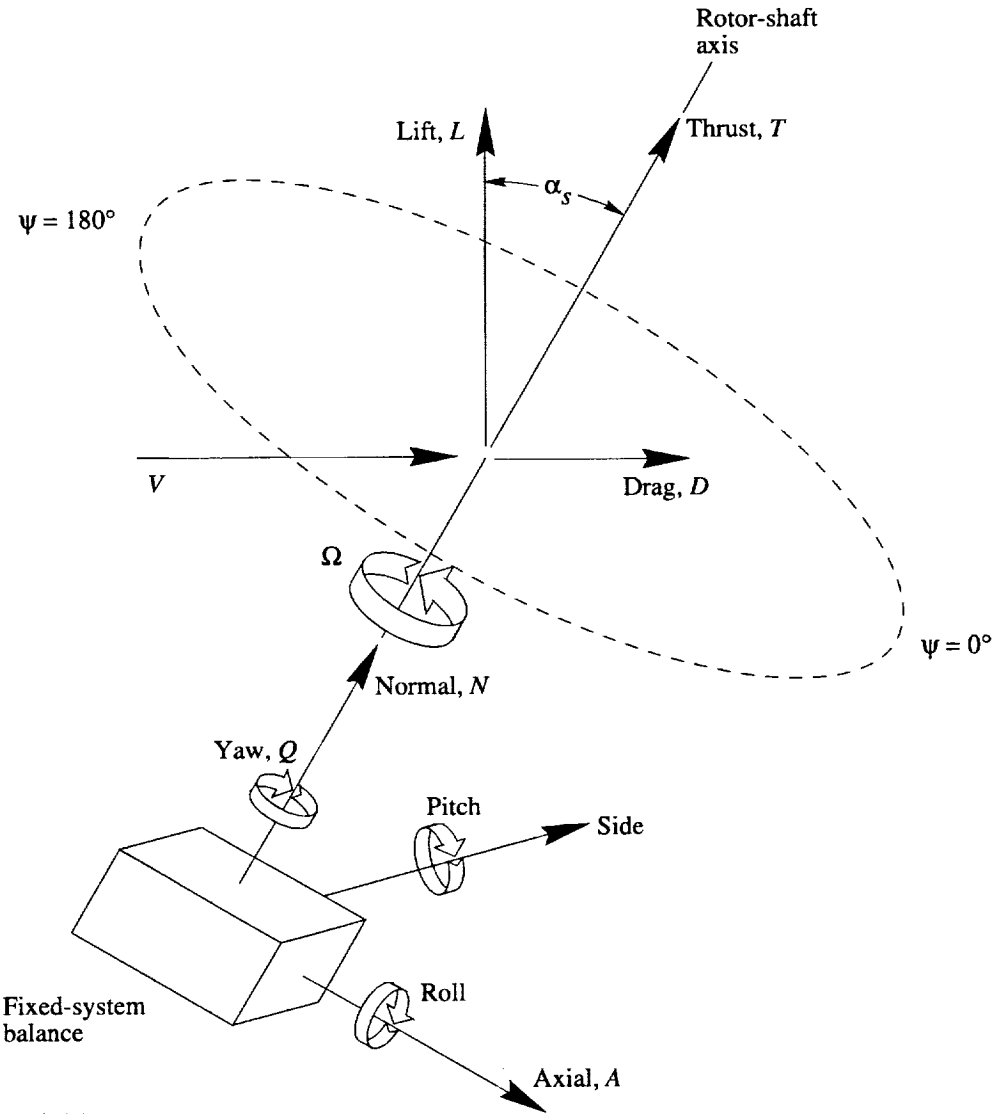
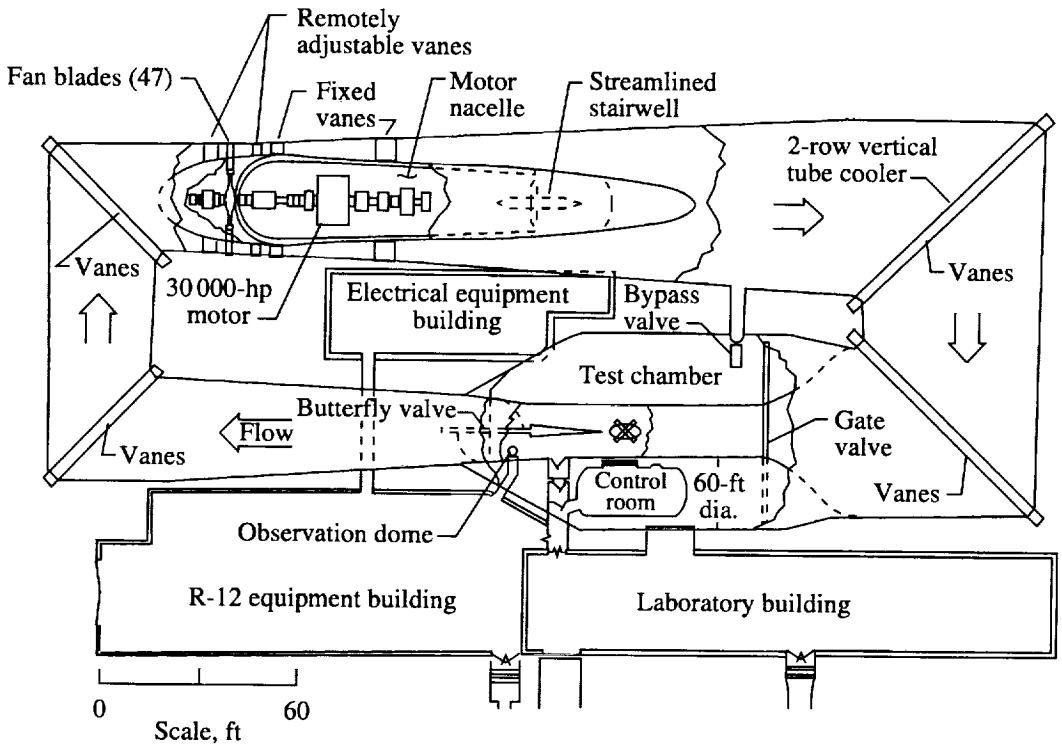
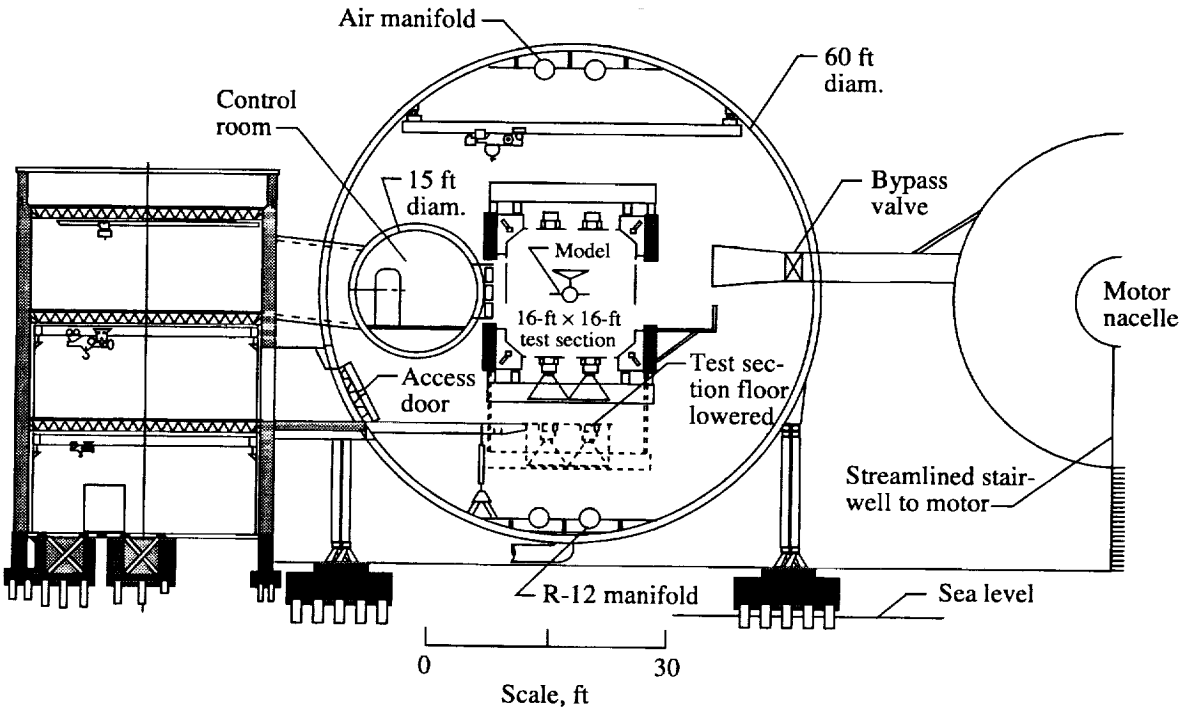


Figure 1. Notation showing positive directions of forces, moments, angles, and velocities.



(a) Tunnel planform.



(b) Tunnel cross section.

Figure 2. Langley Transonic Dynamics Tunnel.

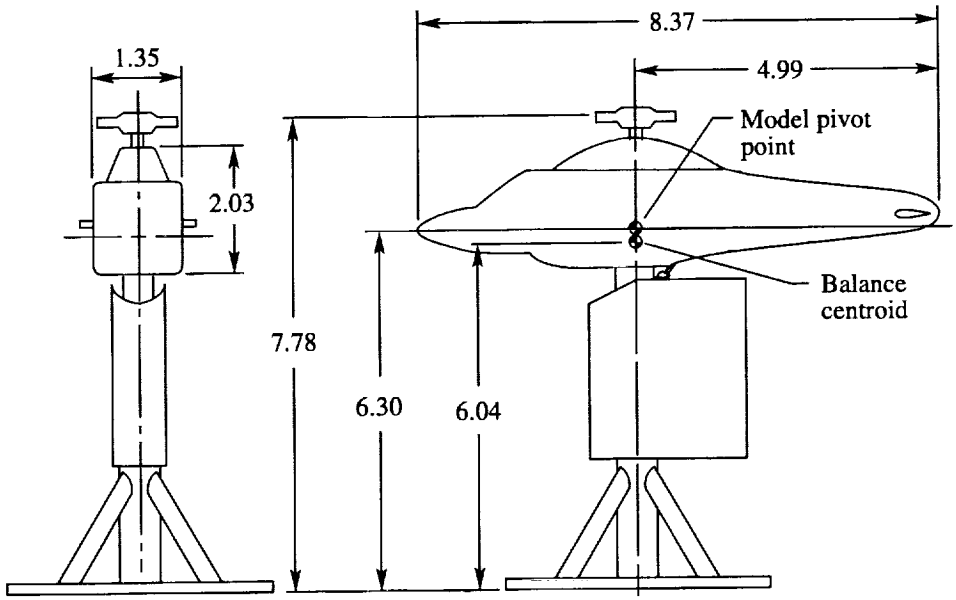


Figure 3. Schematic of aeroelastic rotor experimental system model. All dimensions are in feet.

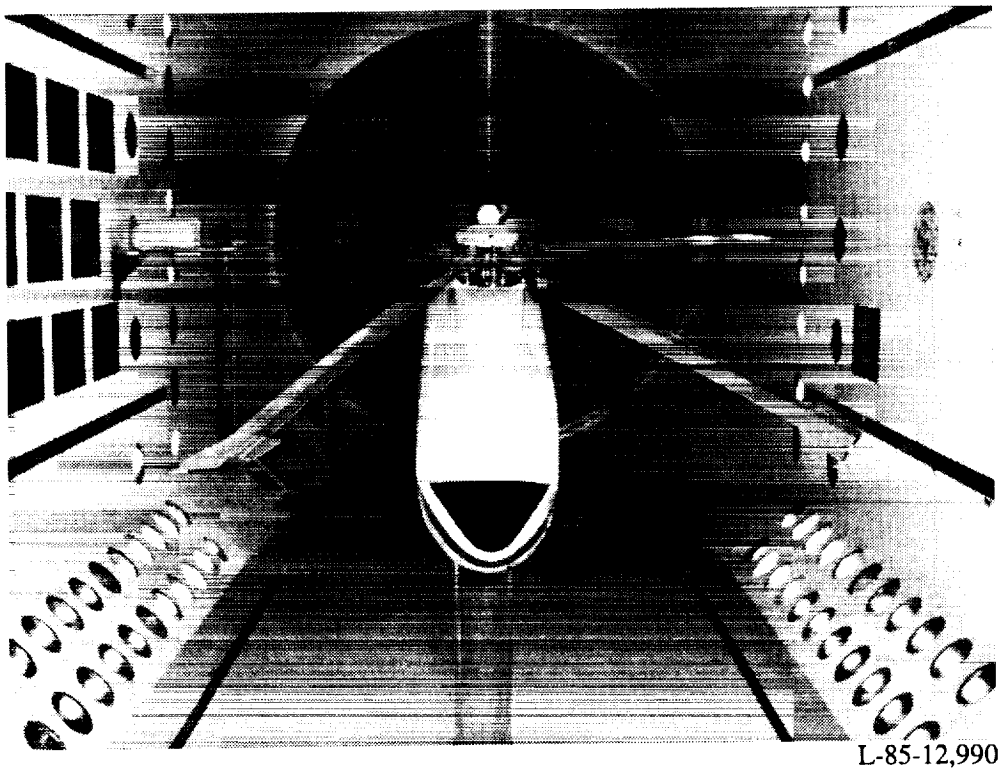


Figure 4. Aeroelastic rotor experimental system model in Langley TDT.

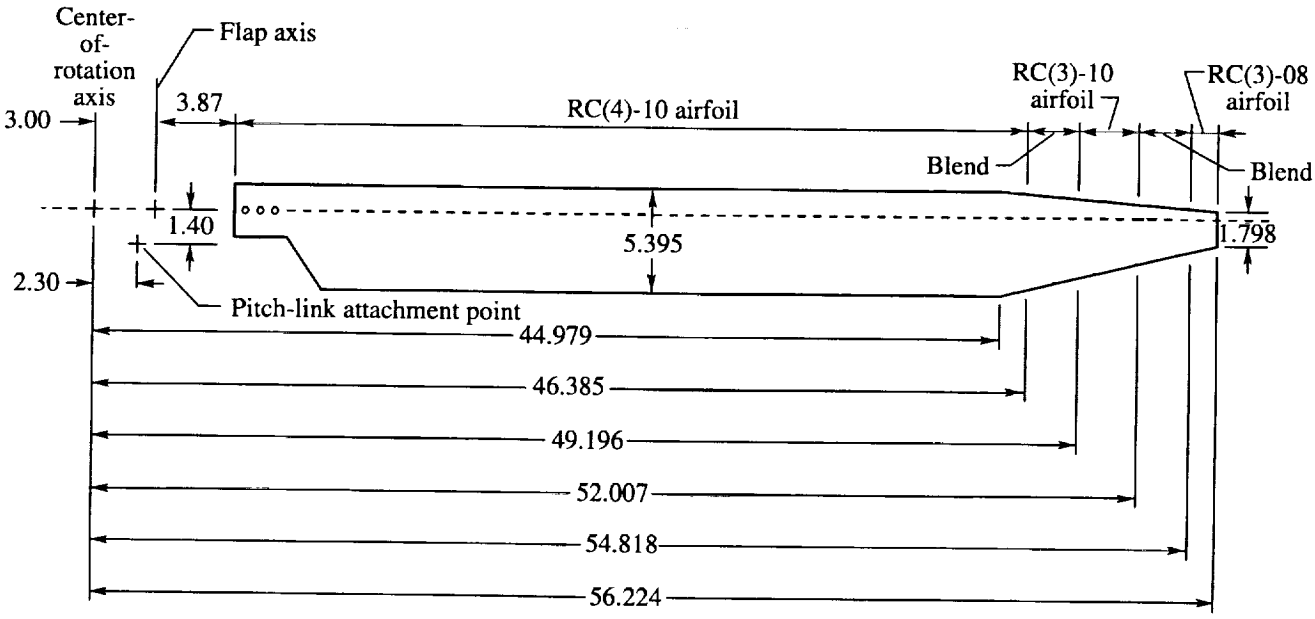


Figure 5. Rotor-blade geometry and airfoil distribution. Linear dimensions are in inches.

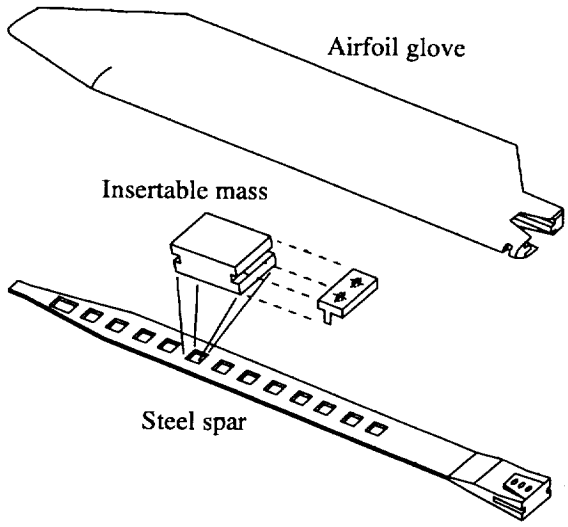


Figure 6. Major blade components.

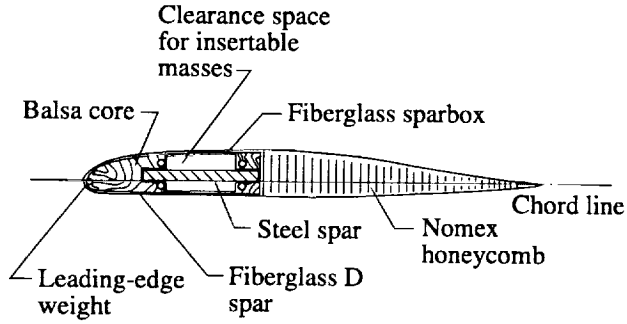
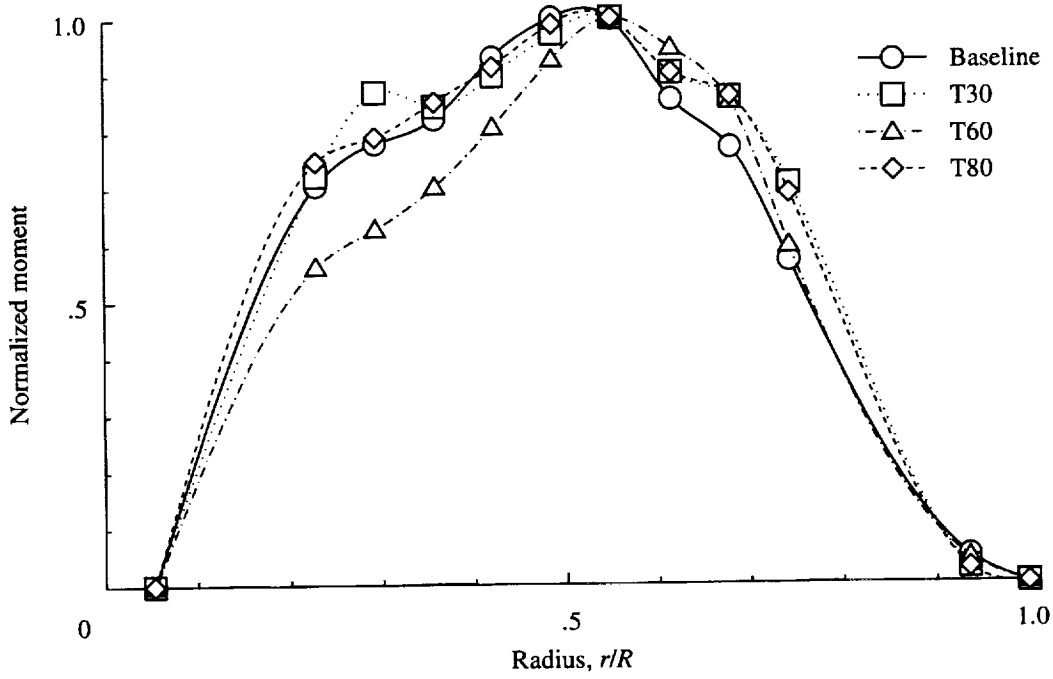
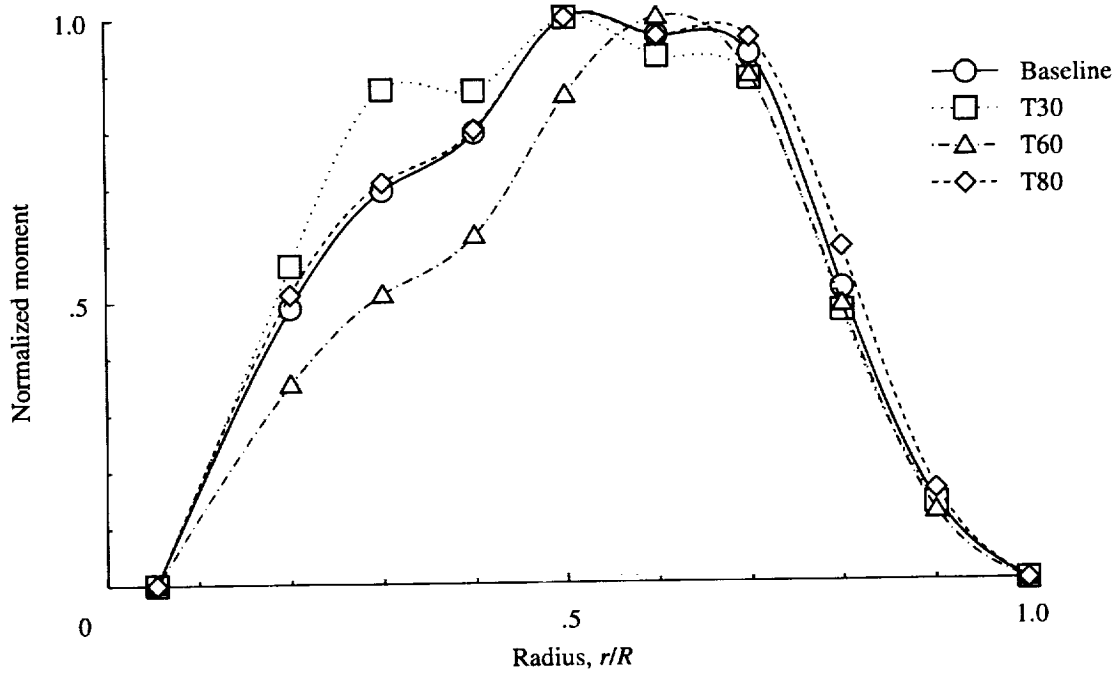


Figure 7. Typical blade cross section with steel spar inserted.

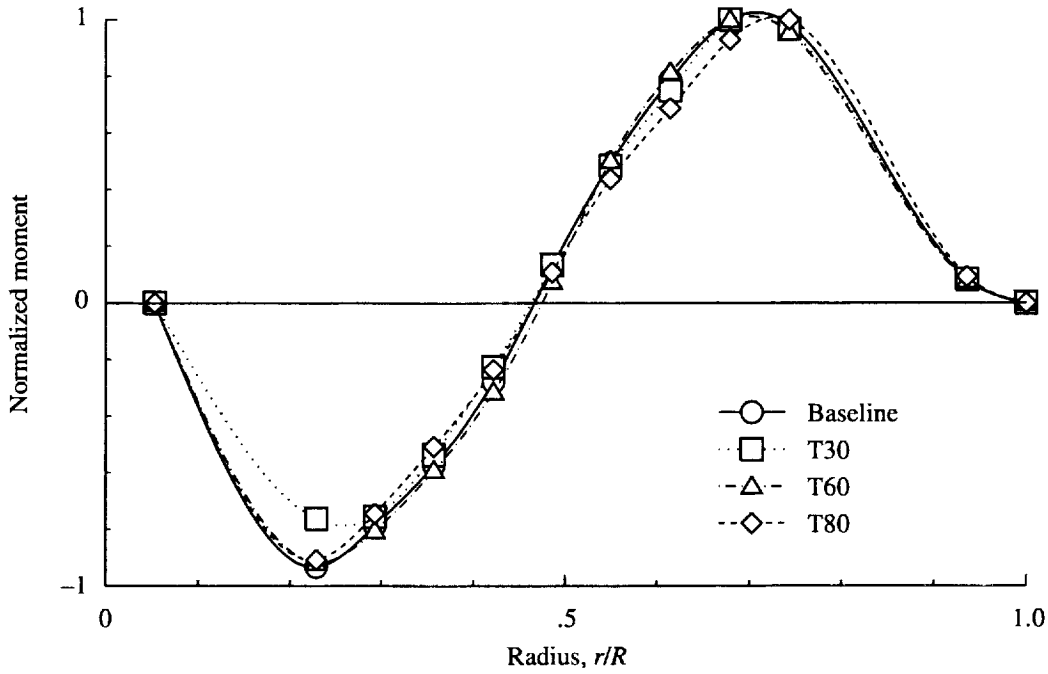


(a) Experiment.

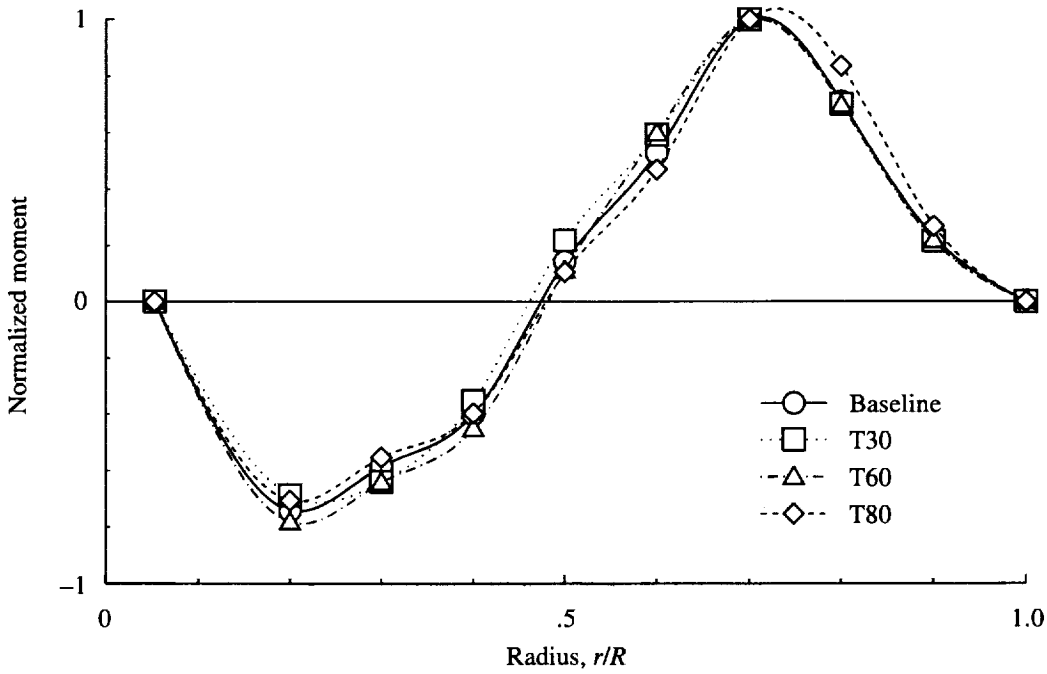


(b) Analysis.

Figure 8. Modal moments for the first elastic flap mode for 662 rpm.



(a) Experiment.



(b) Analysis.

Figure 9. Modal moments for the second elastic flap mode for 662 rpm.

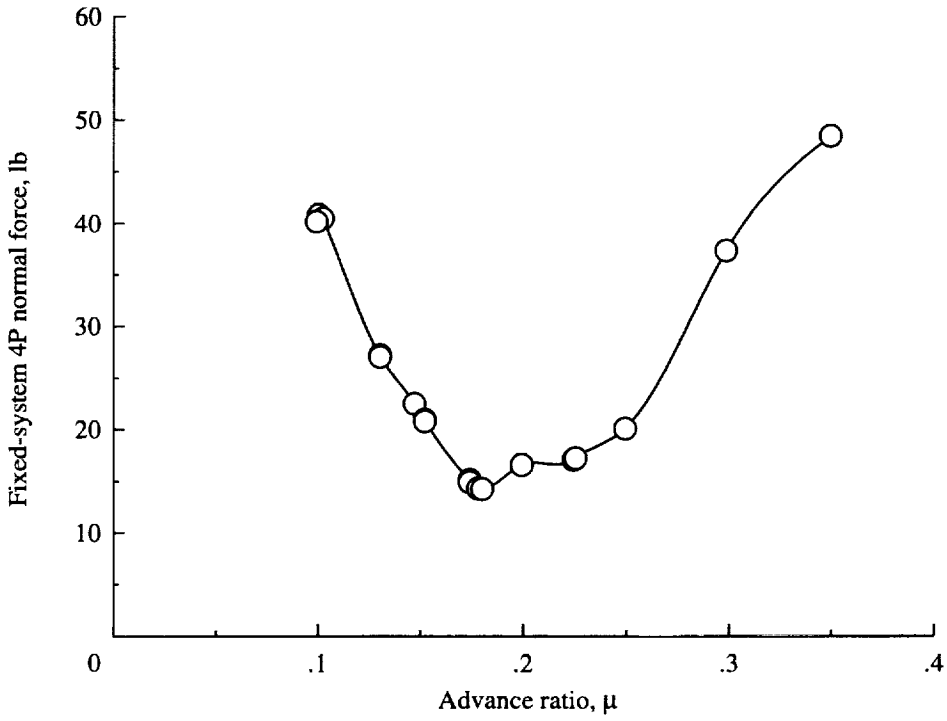
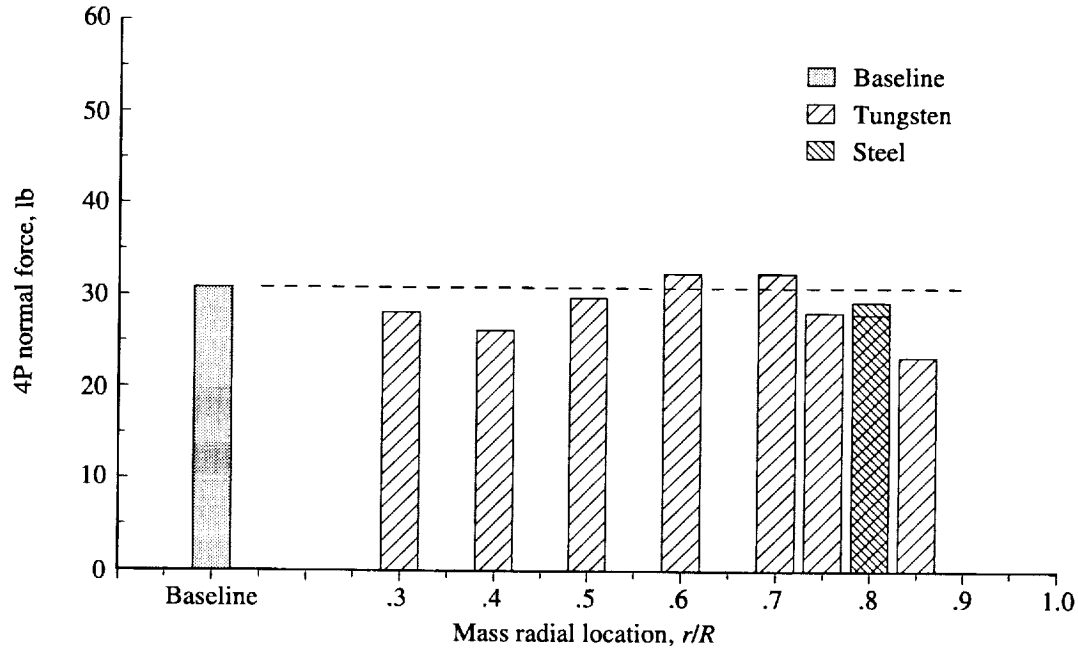
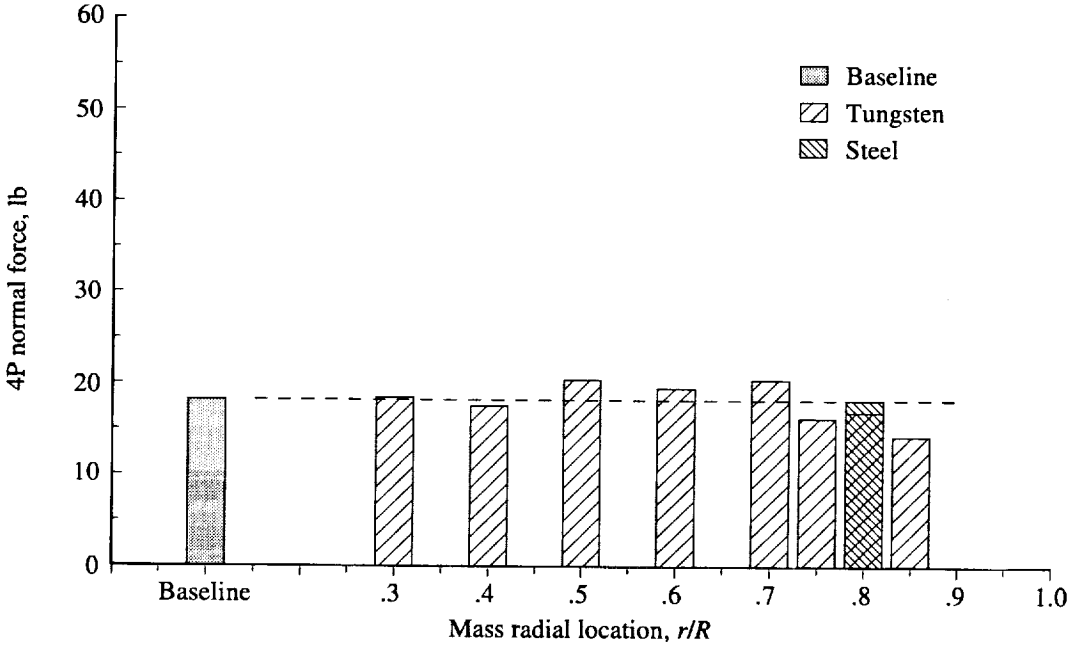


Figure 10. Normal force response vs. advance ratio for $T = 1.0T_{1g}$.

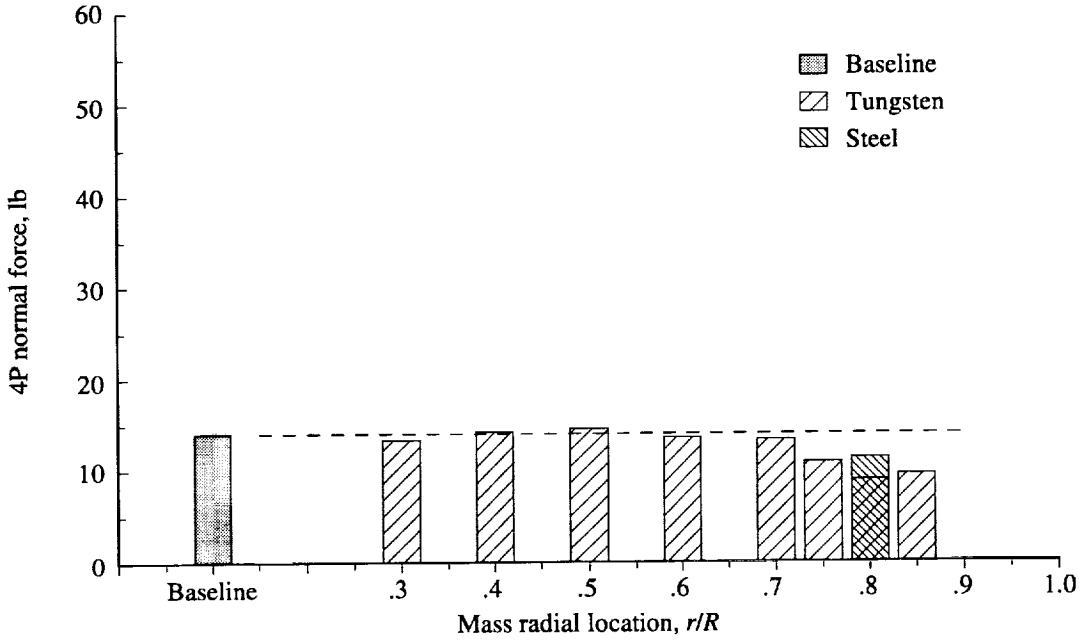


(a) $\mu = 0.100$.

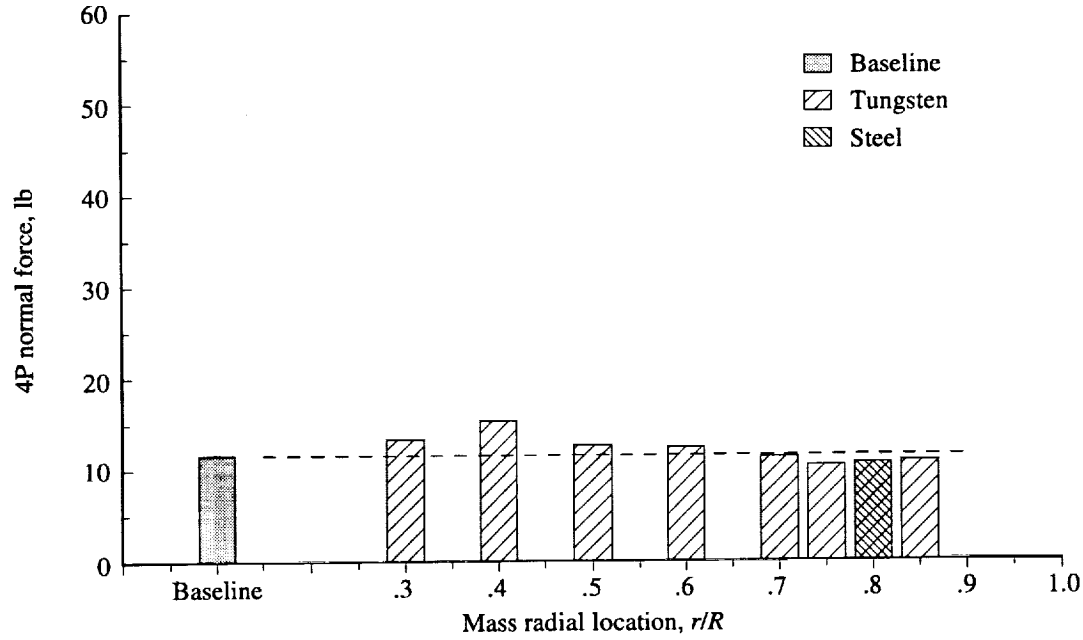


(b) $\mu = 0.125$.

Figure 11. Normal force response to mass configuration for $T = 0.75T_{1g}$.

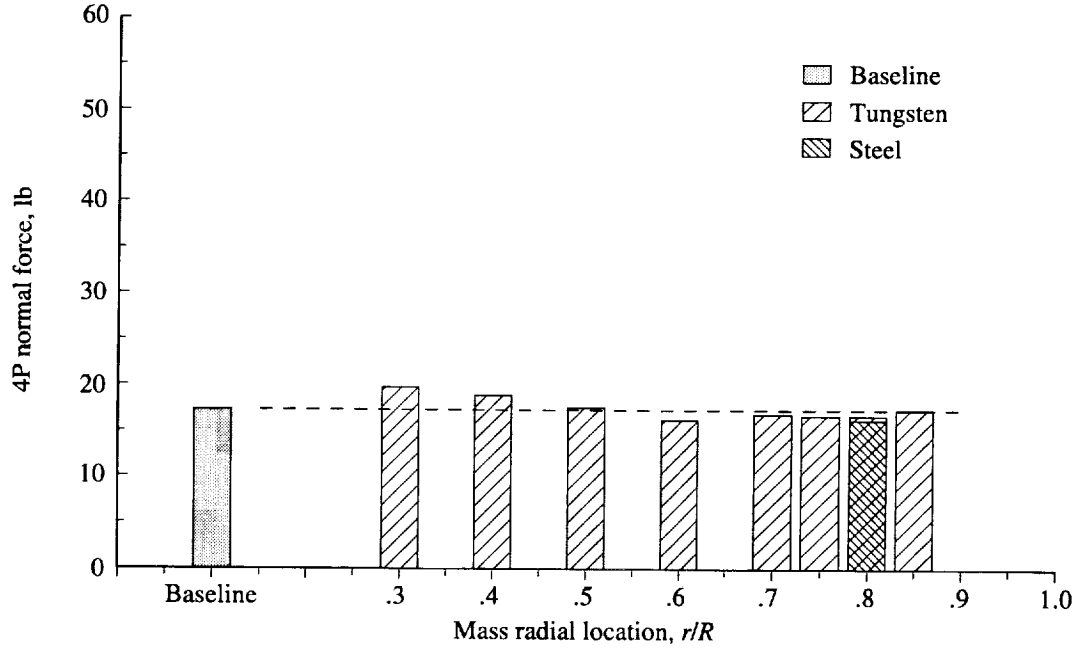


(c) $\mu = 0.150$.

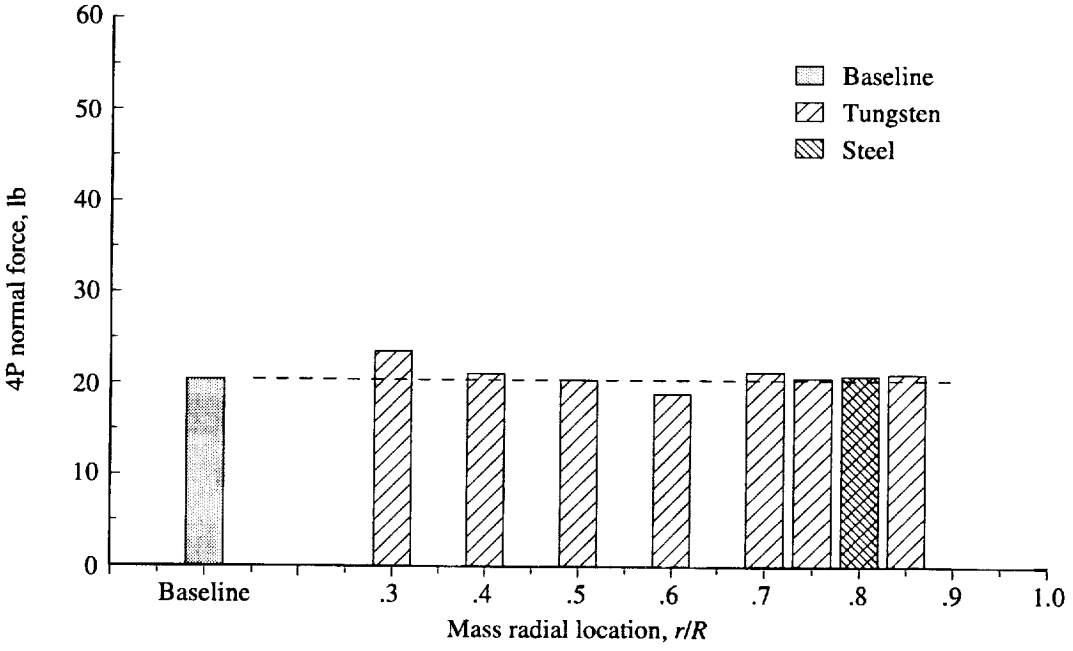


(d) $\mu = 0.175$.

Figure 11. Continued.

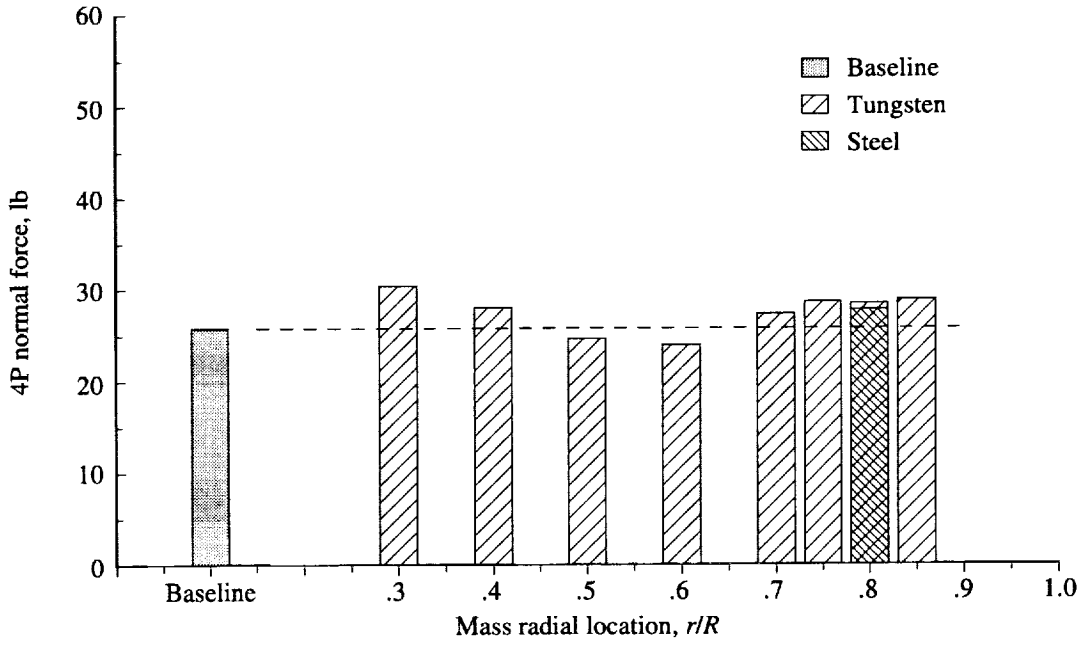


(e) $\mu = 0.200$.

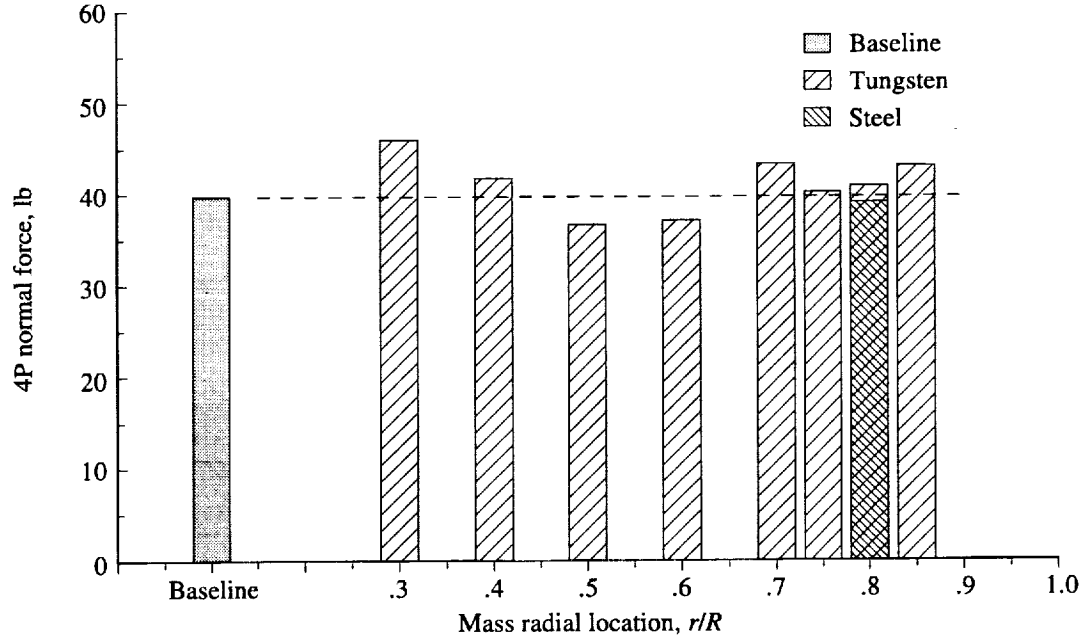


(f) $\mu = 0.225$.

Figure 11. Continued.

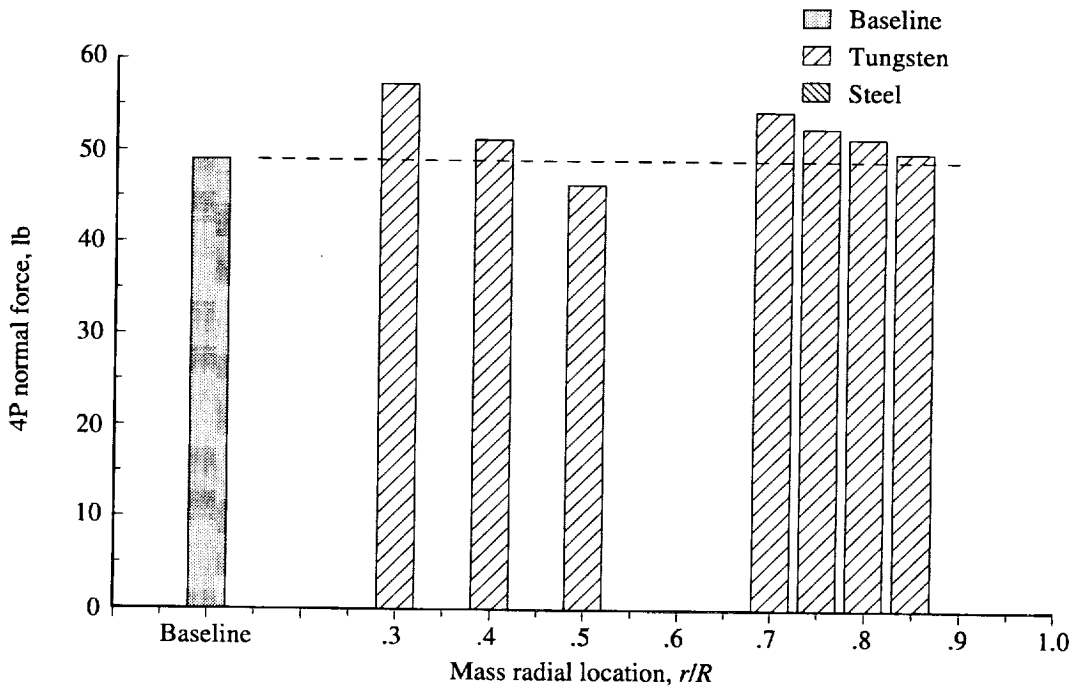


(g) $\mu = 0.250$.



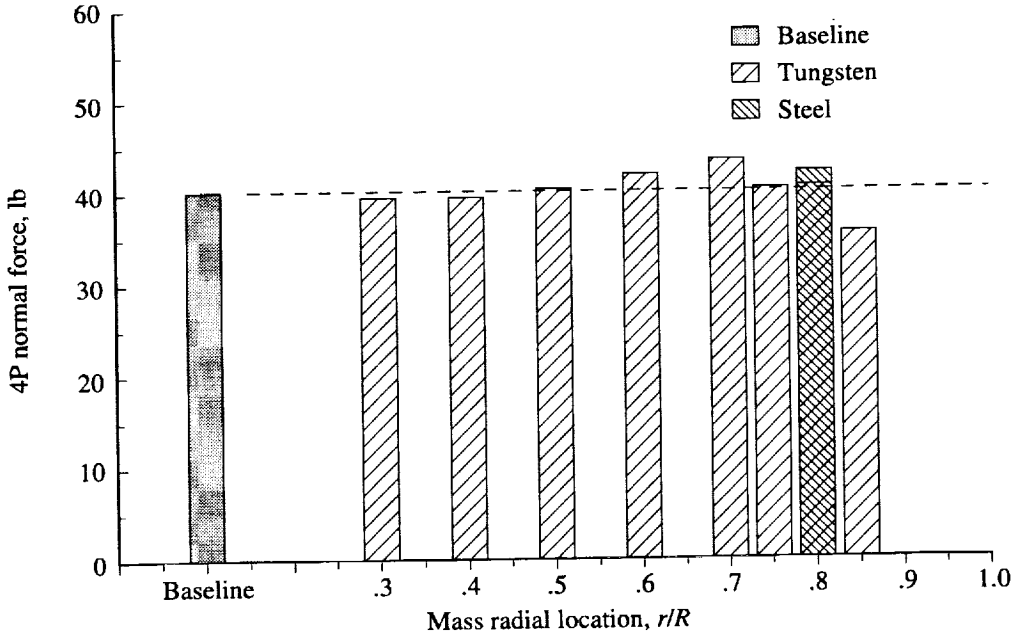
(h) $\mu = 0.300$.

Figure 11. Continued.

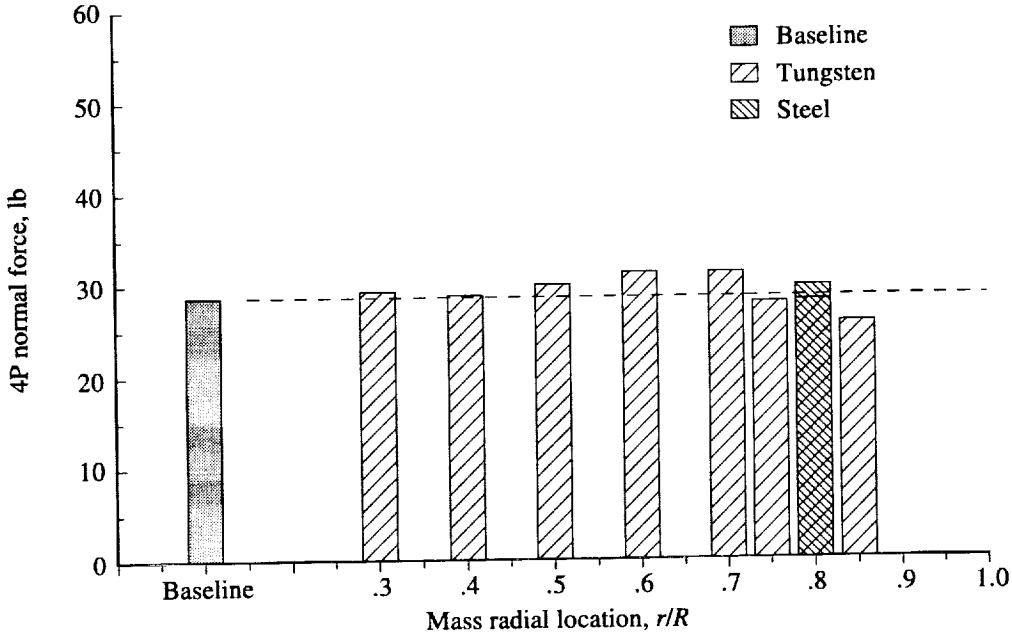


(i) $\mu = 0.350$.

Figure 11. Concluded.

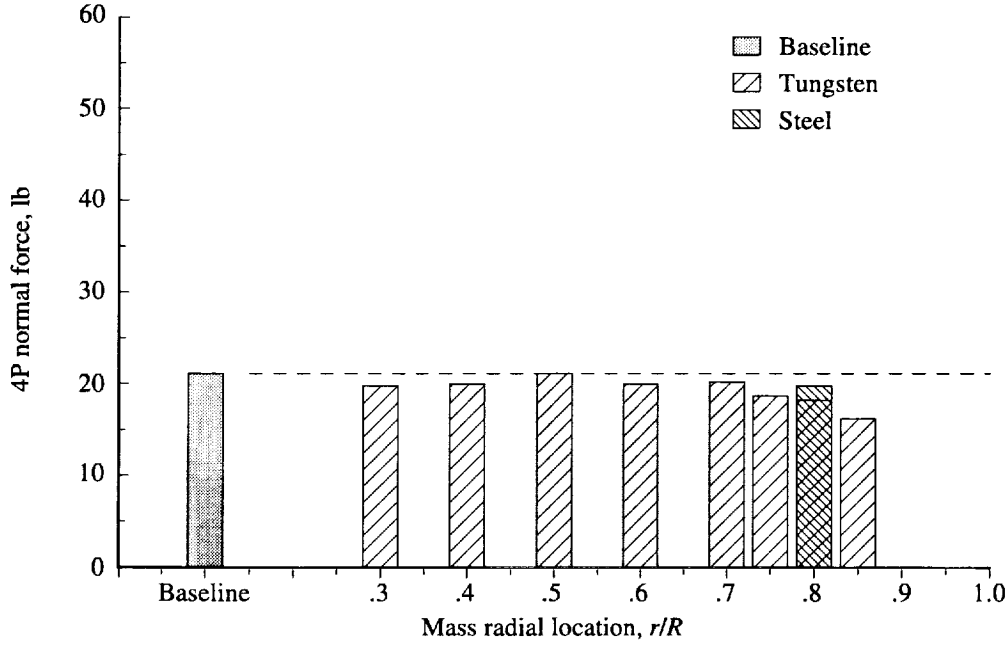


(a) $\mu = 0.100$.

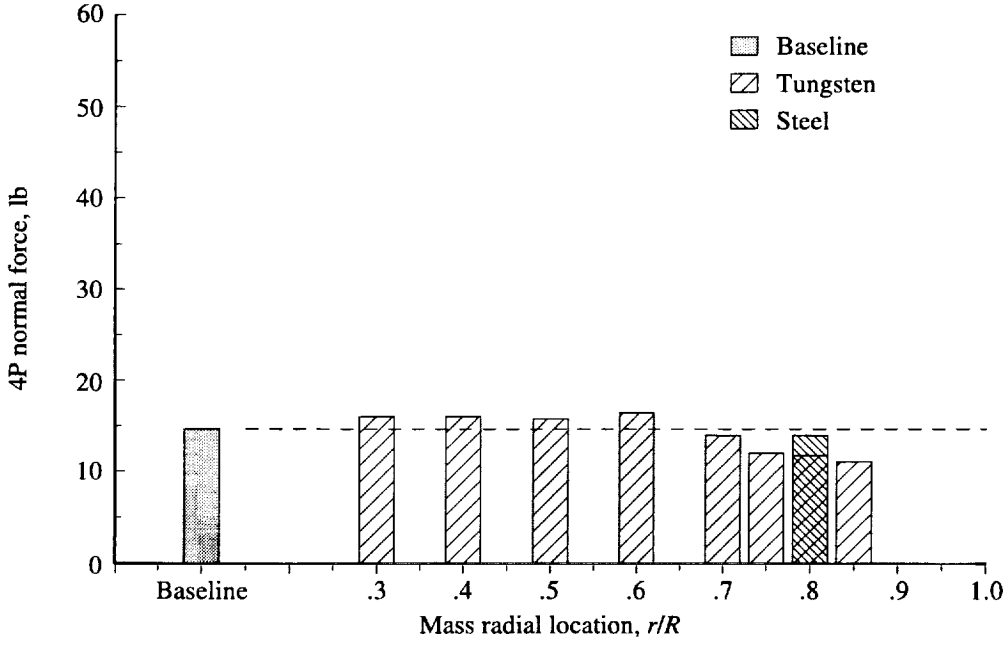


(b) $\mu = 0.125$.

Figure 12. Normal force response to mass configuration for $T = 0.1T_{1g}$.

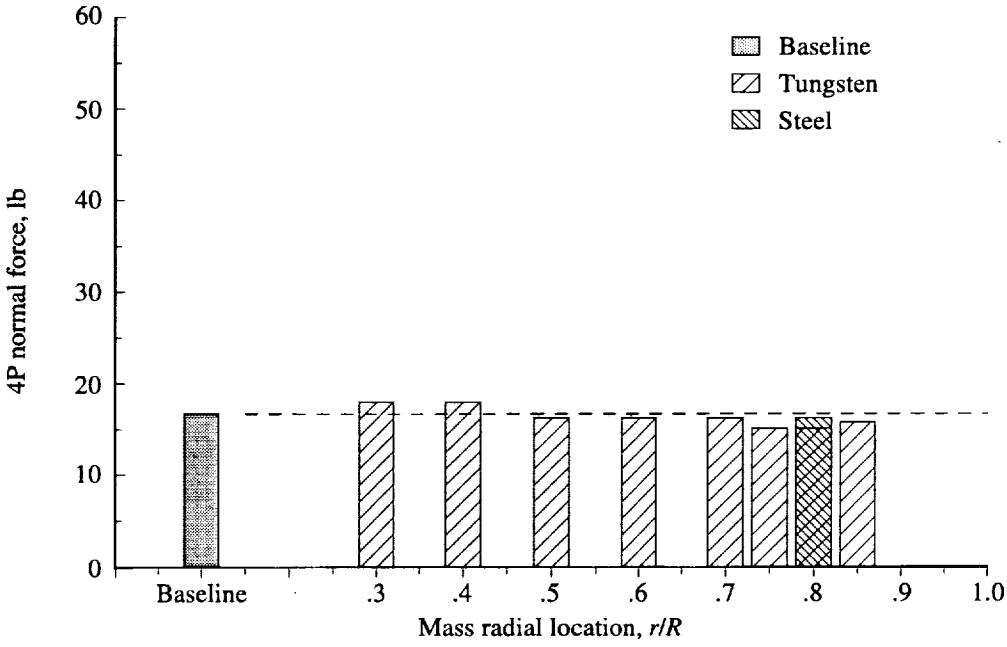


(c) $\mu = 0.150$.

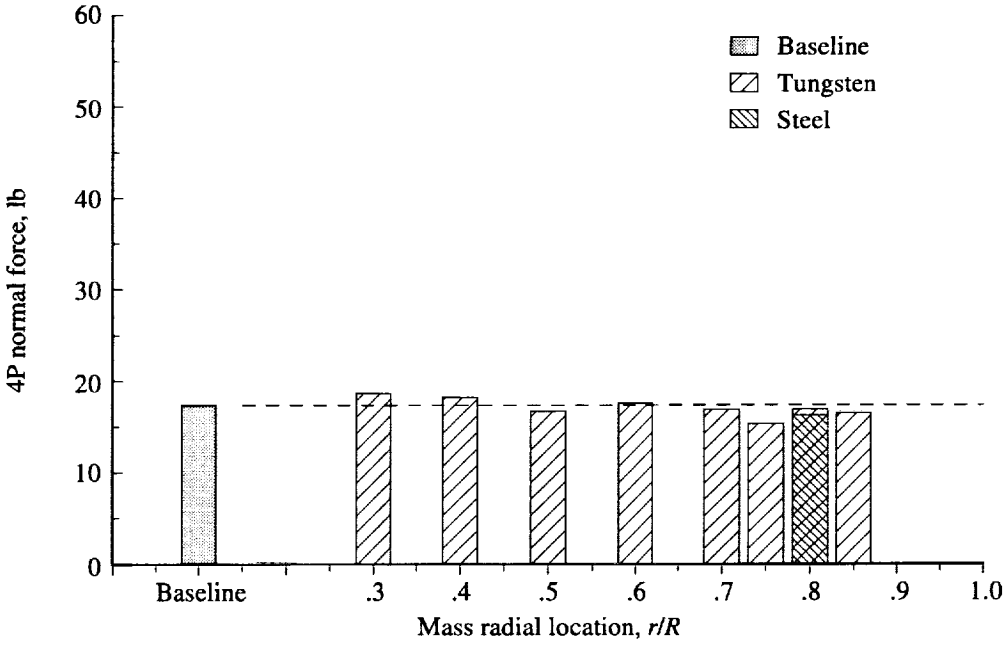


(d) $\mu = 0.175$.

Figure 12. Continued.

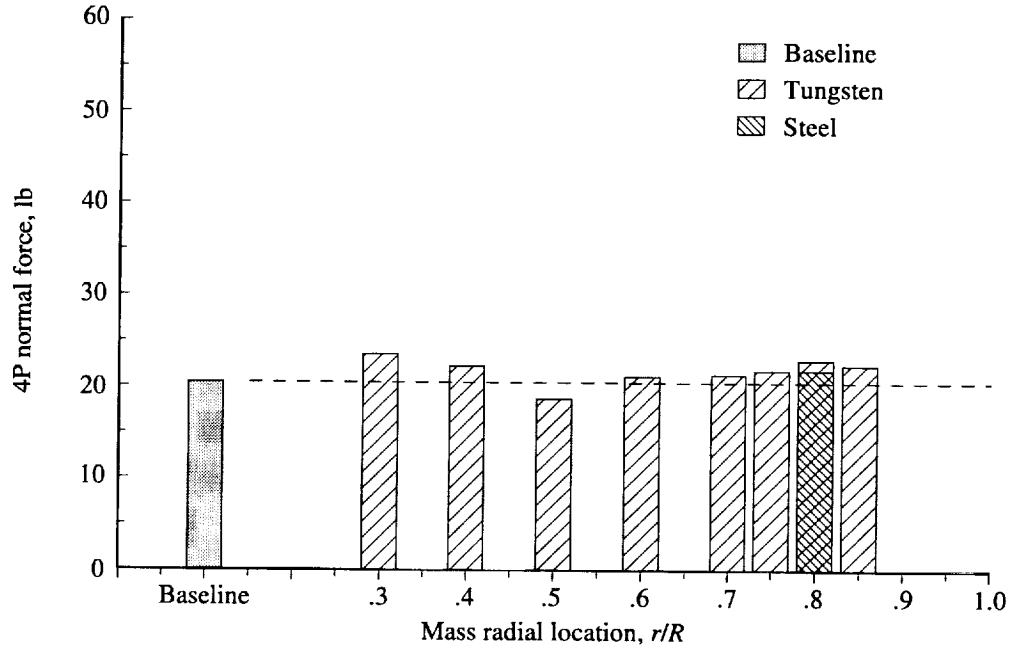


(e) $\mu = 0.200$.

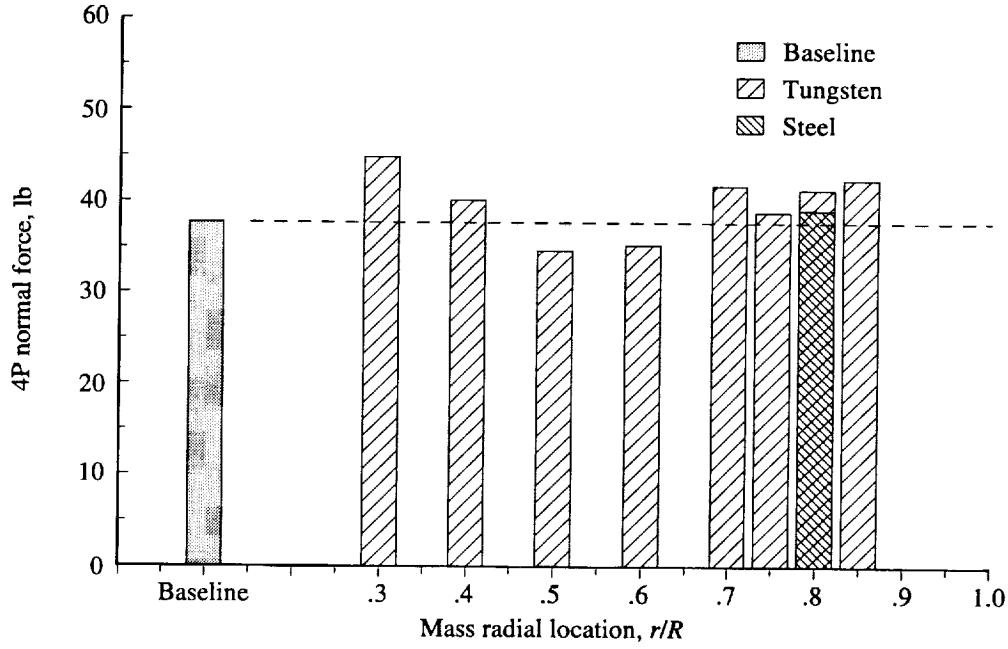


(f) $\mu = 0.225$.

Figure 12. Continued.

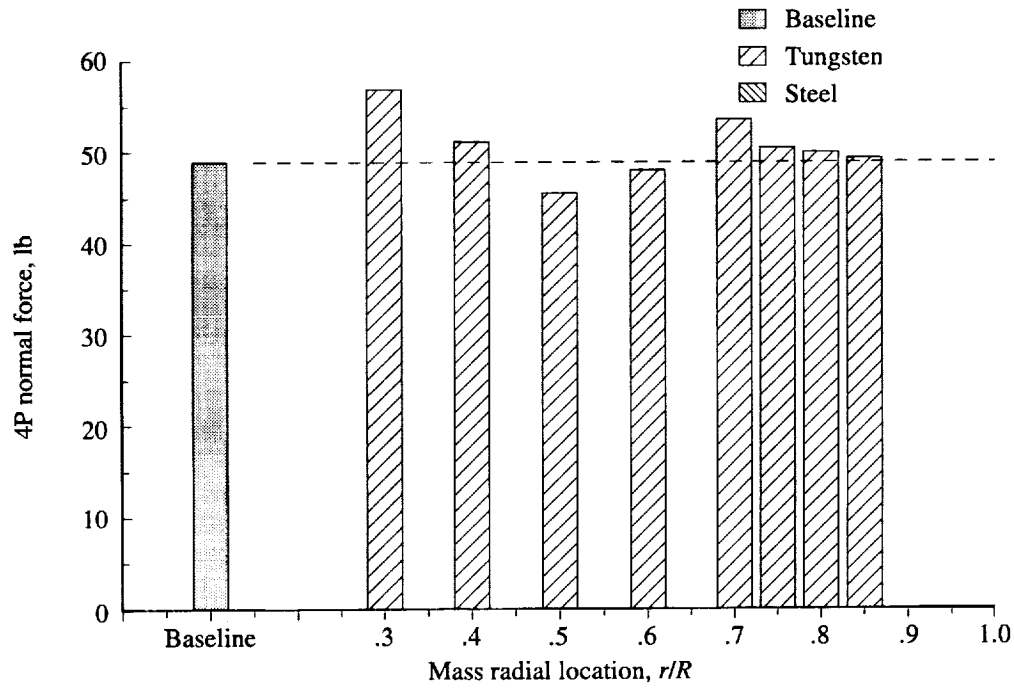


(g) $\mu = 0.250$.



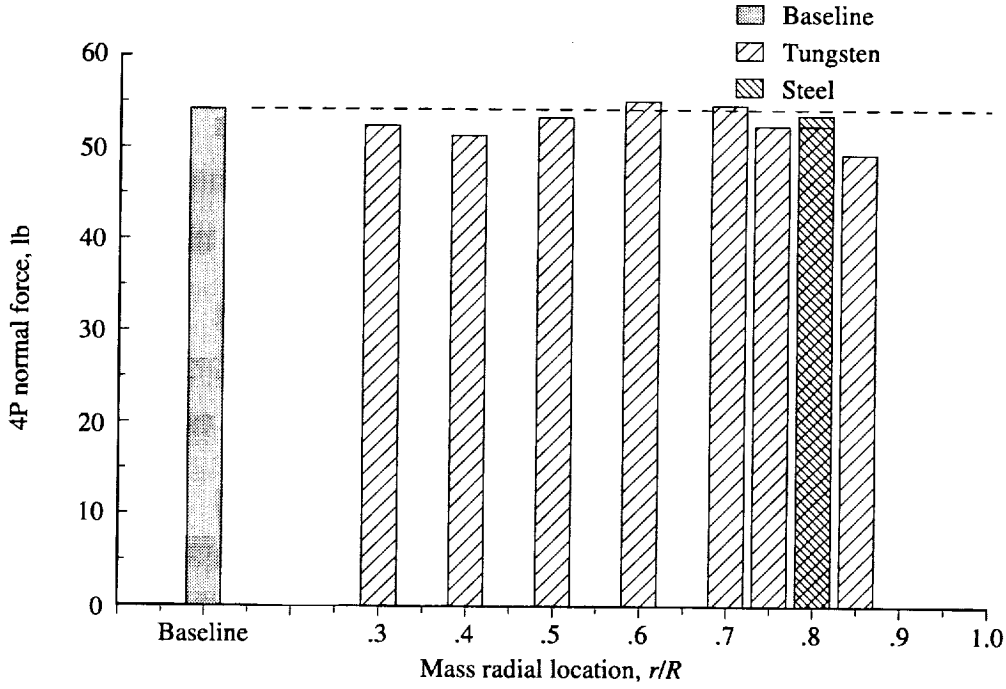
(h) $\mu = 0.300$.

Figure 12. Continued.

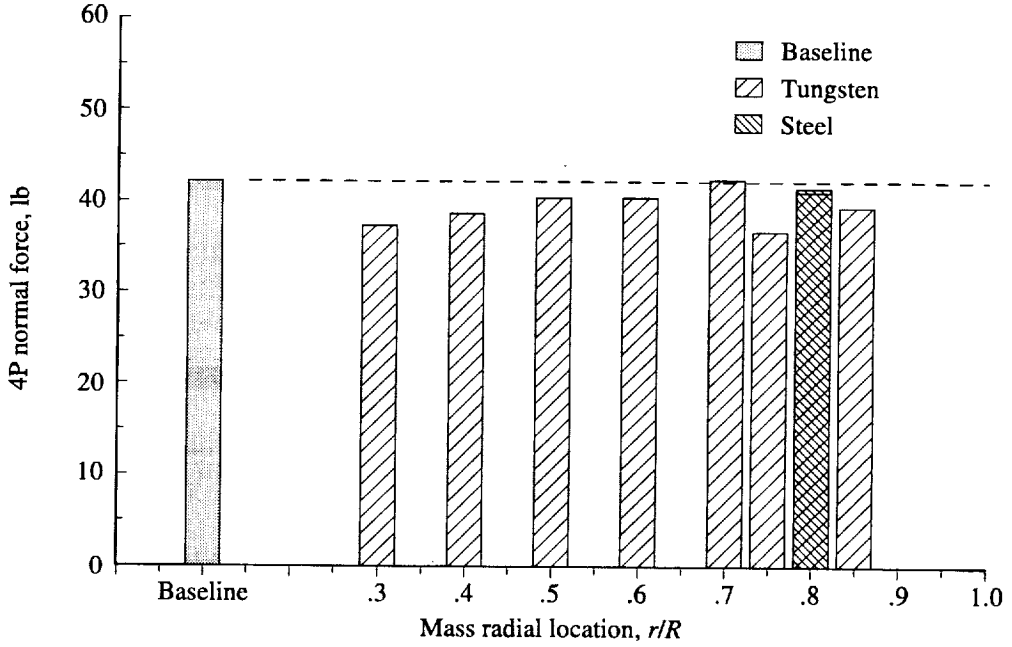


(i) $\mu = 0.350$.

Figure 12. Concluded.

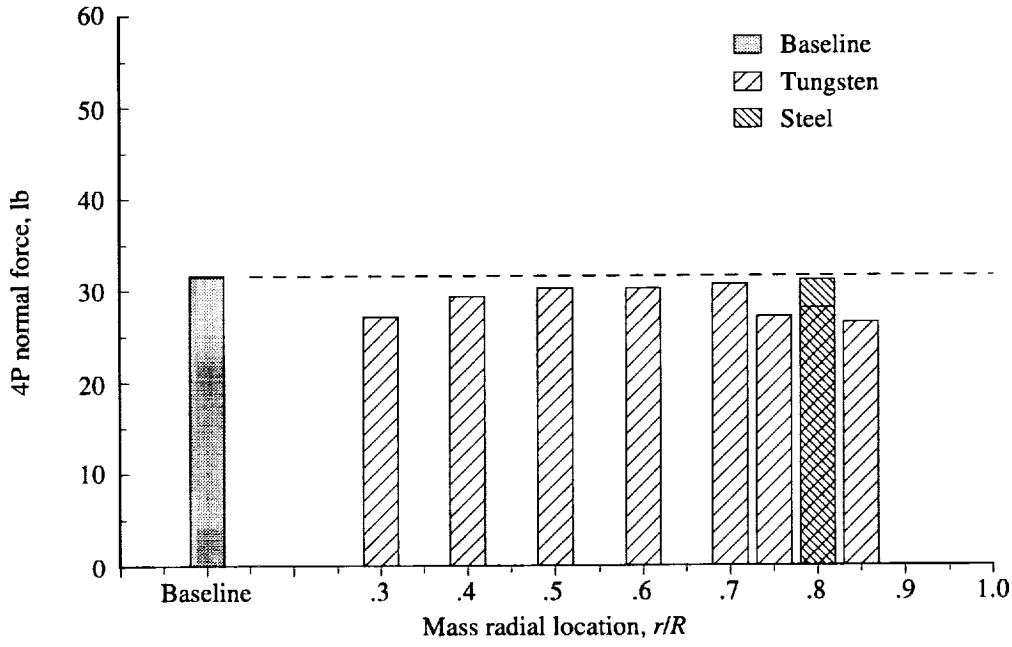


(a) $\mu = 0.100$.

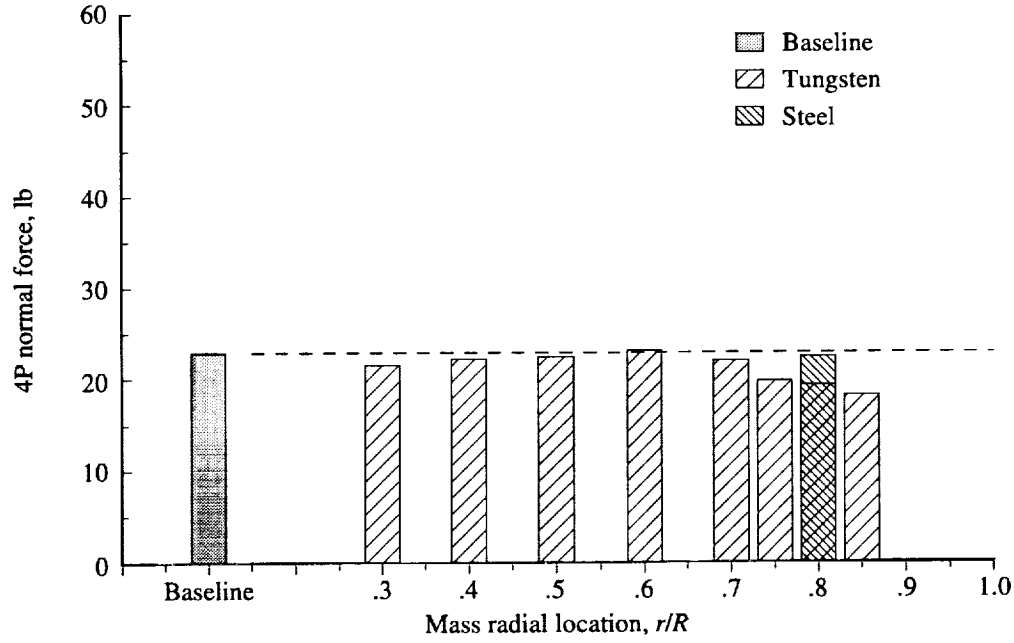


(b) $\mu = 0.125$.

Figure 13. Normal force response to mass configuration for $T = 1.25T_{1g}$.

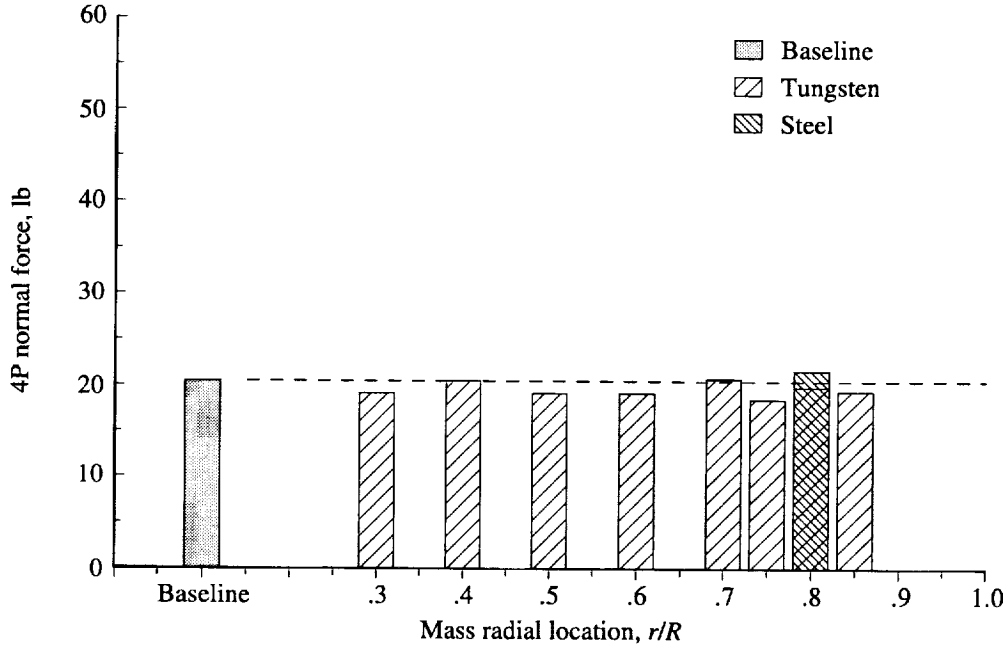


(c) $\mu = 0.150$.

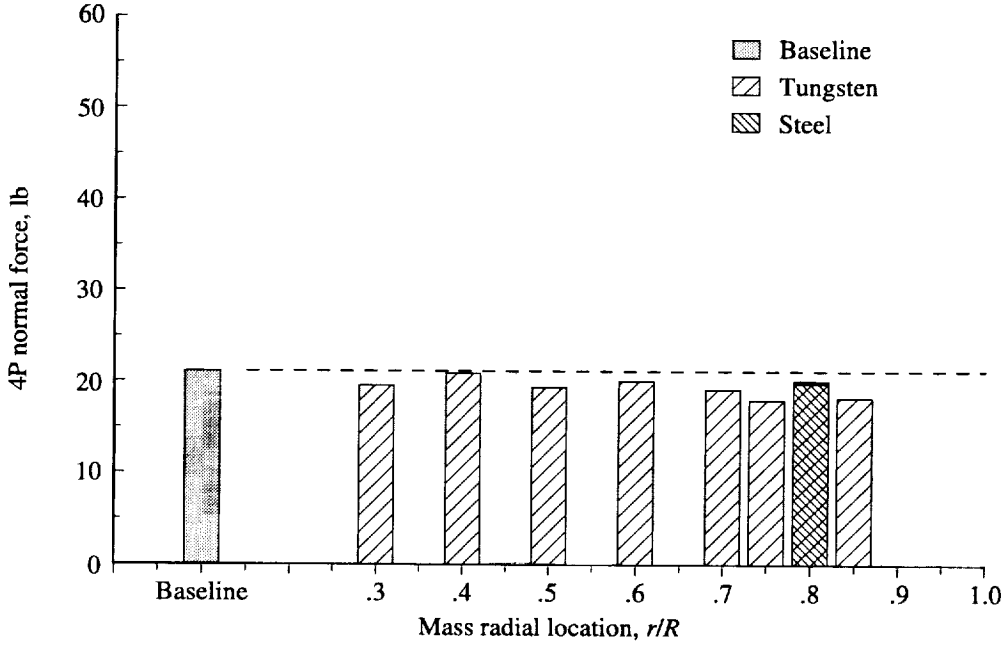


(d) $\mu = 0.175$.

Figure 13. Continued.

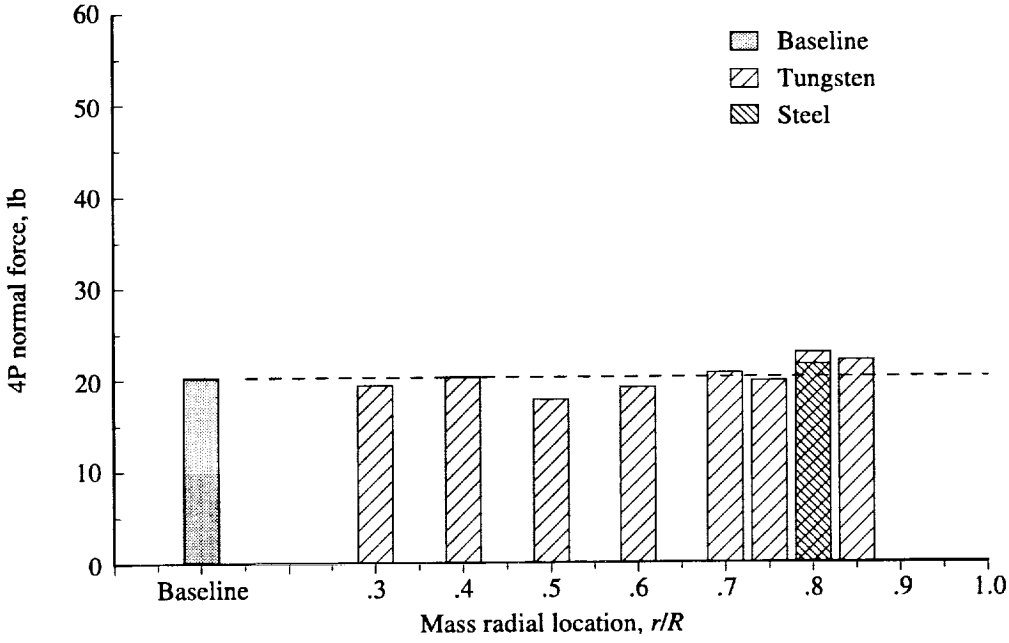


(e) $\mu = 0.200$.

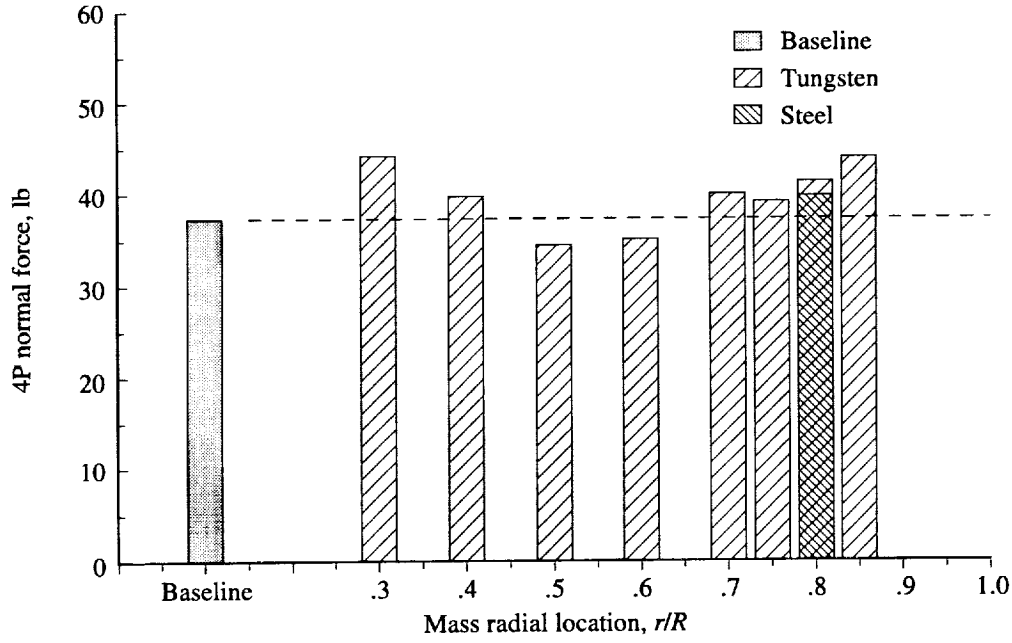


(f) $\mu = 0.225$.

Figure 13. Continued.

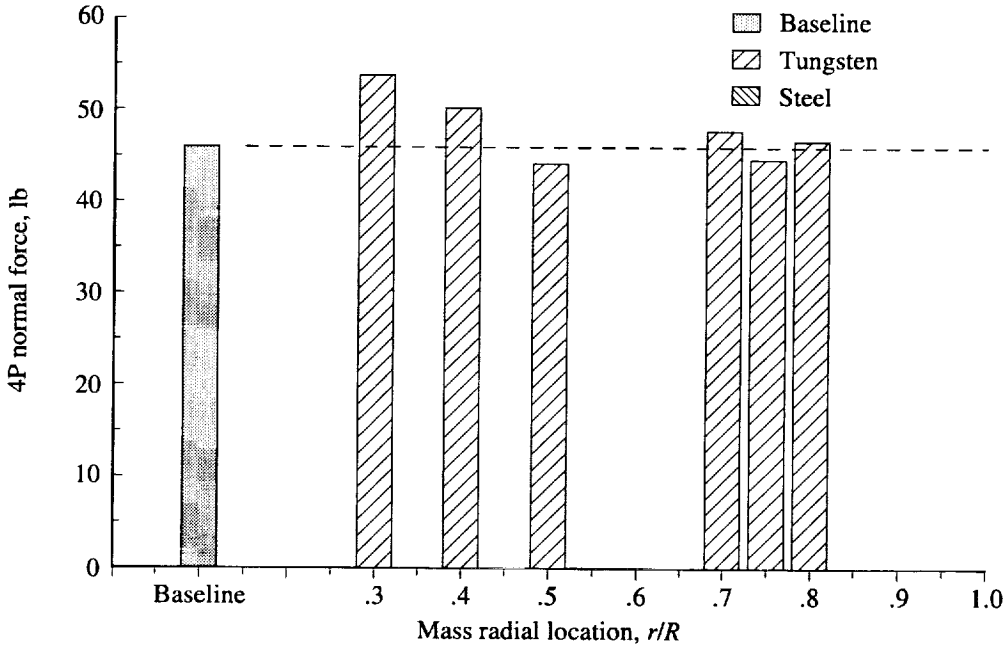


(g) $\mu = 0.250$.



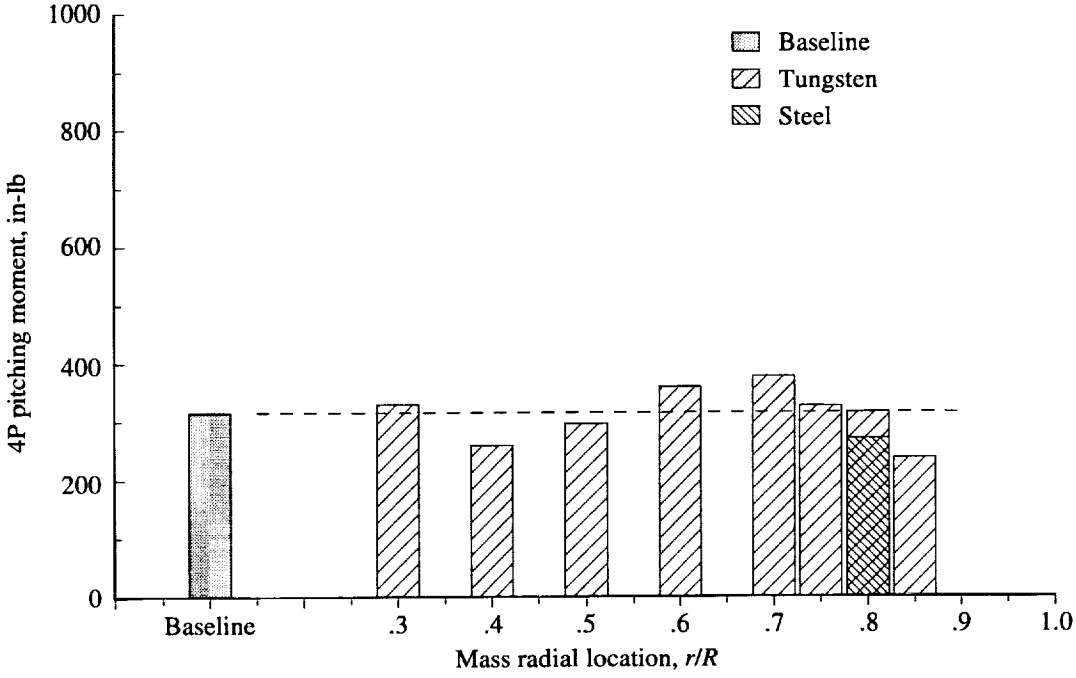
(h) $\mu = 0.300$.

Figure 13. Continued.

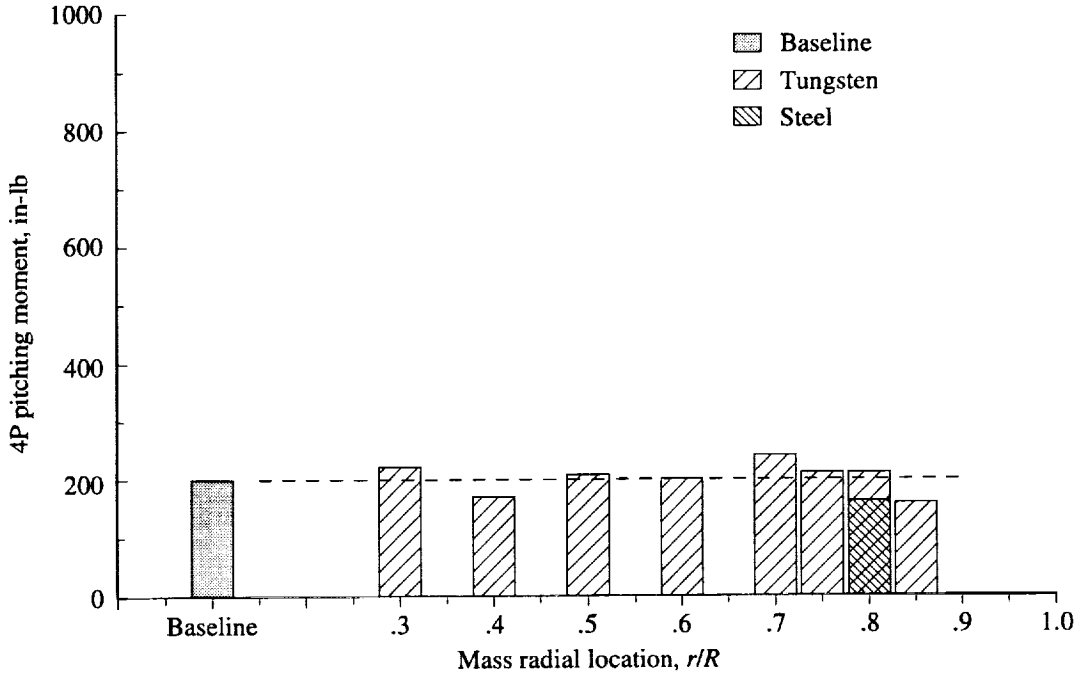


(i) $\mu = 0.350$.

Figure 13. Concluded.

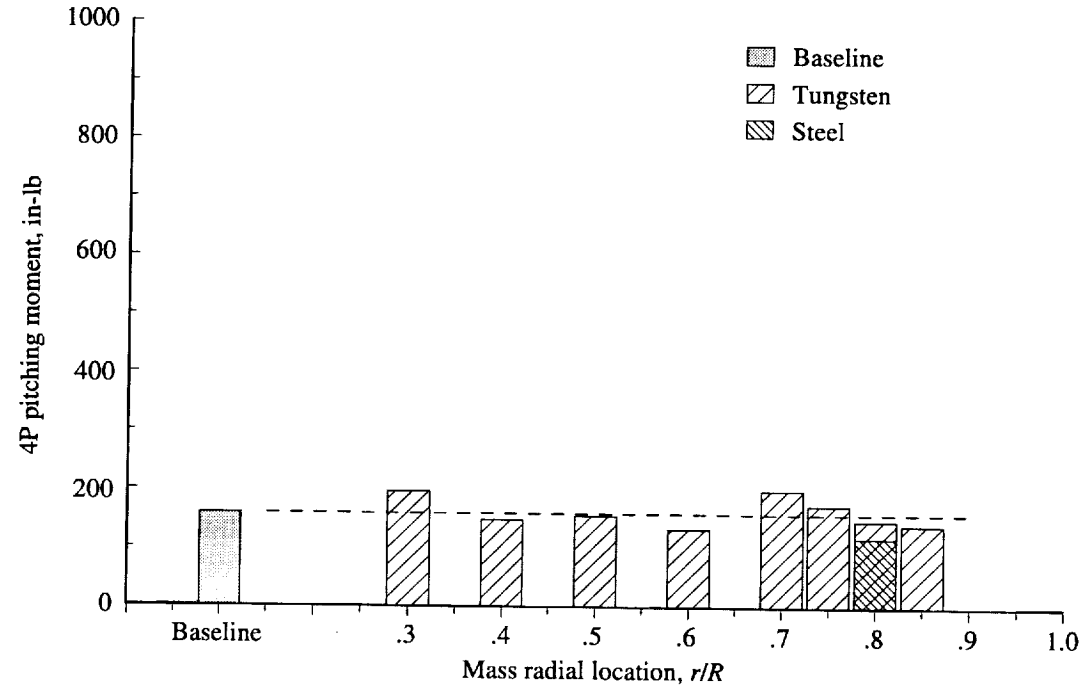


(a) $\mu = 0.100$.

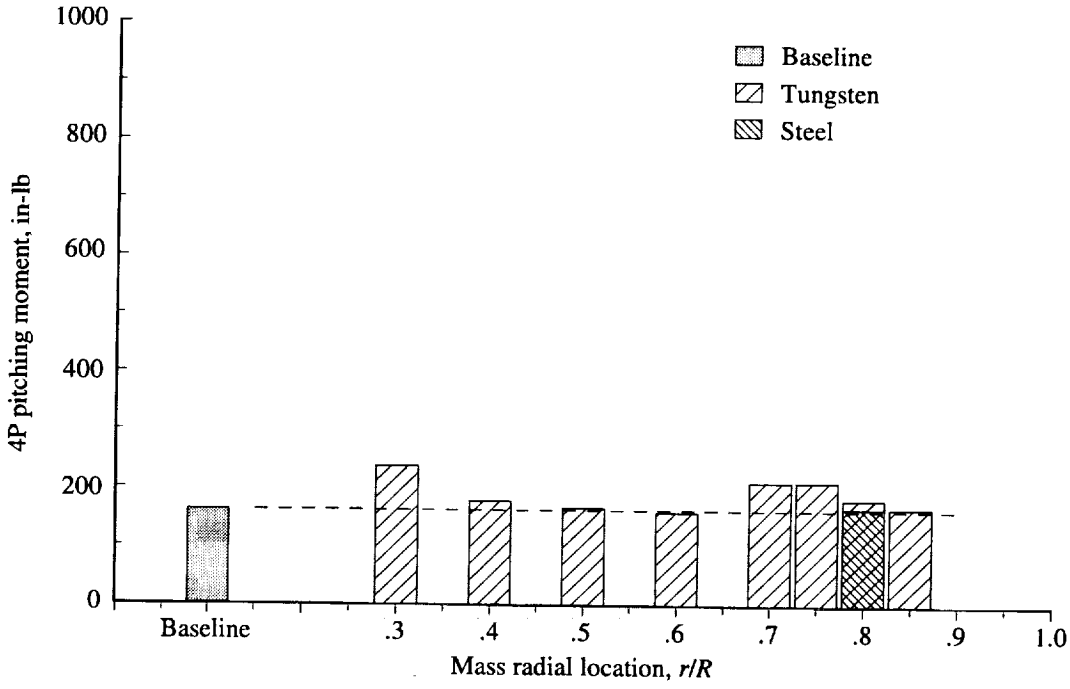


(b) $\mu = 0.125$.

Figure 14. Pitching moment response to mass configuration for $T = 0.75T_{1g}$.

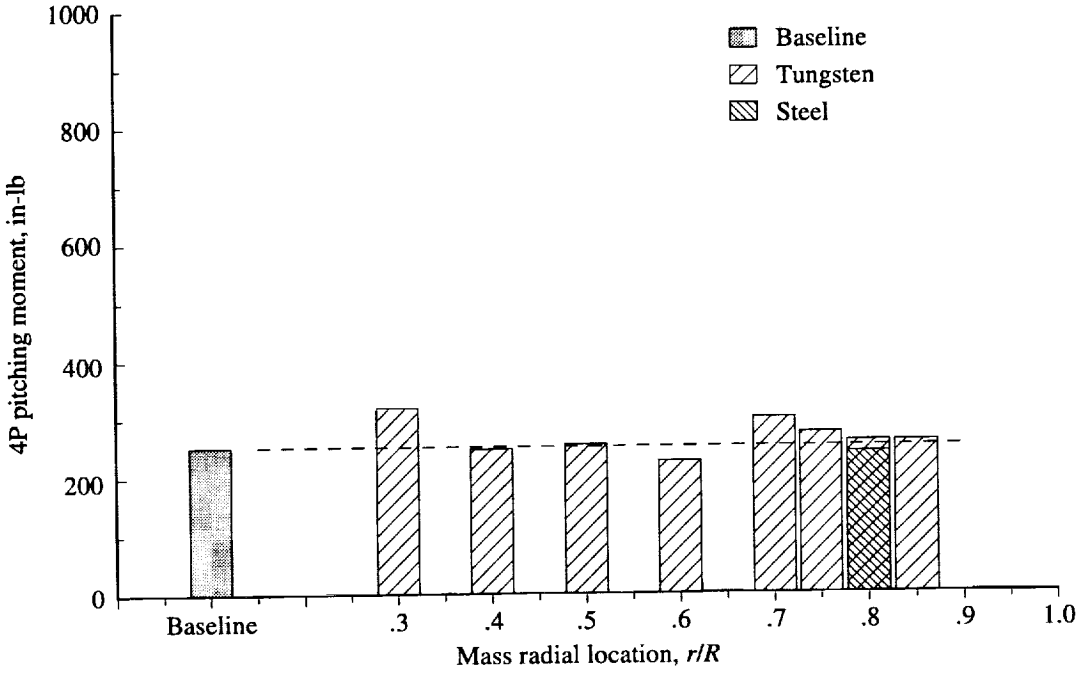


(c) $\mu = 0.150$.

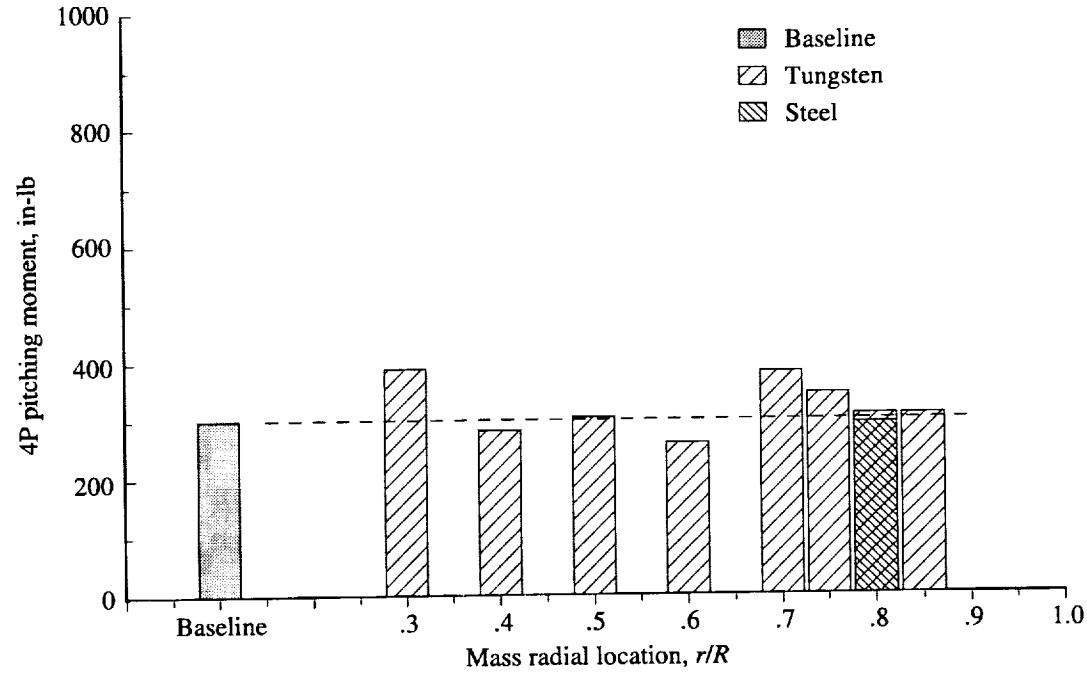


(d) $\mu = 0.175$.

Figure 14. Continued.

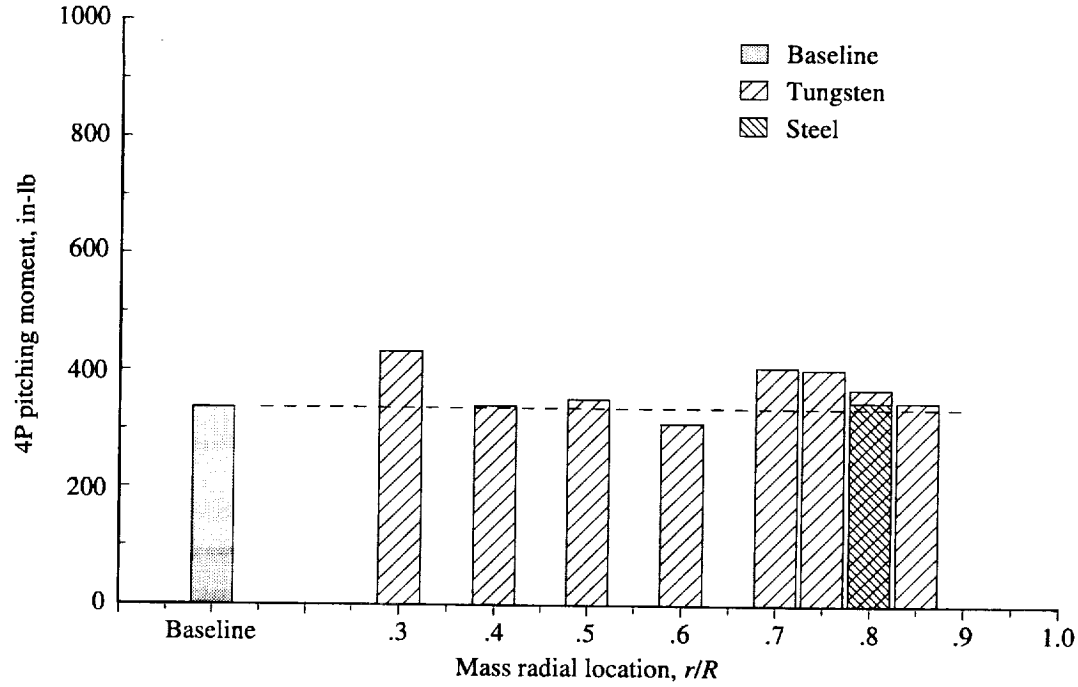


(e) $\mu = 0.200$.

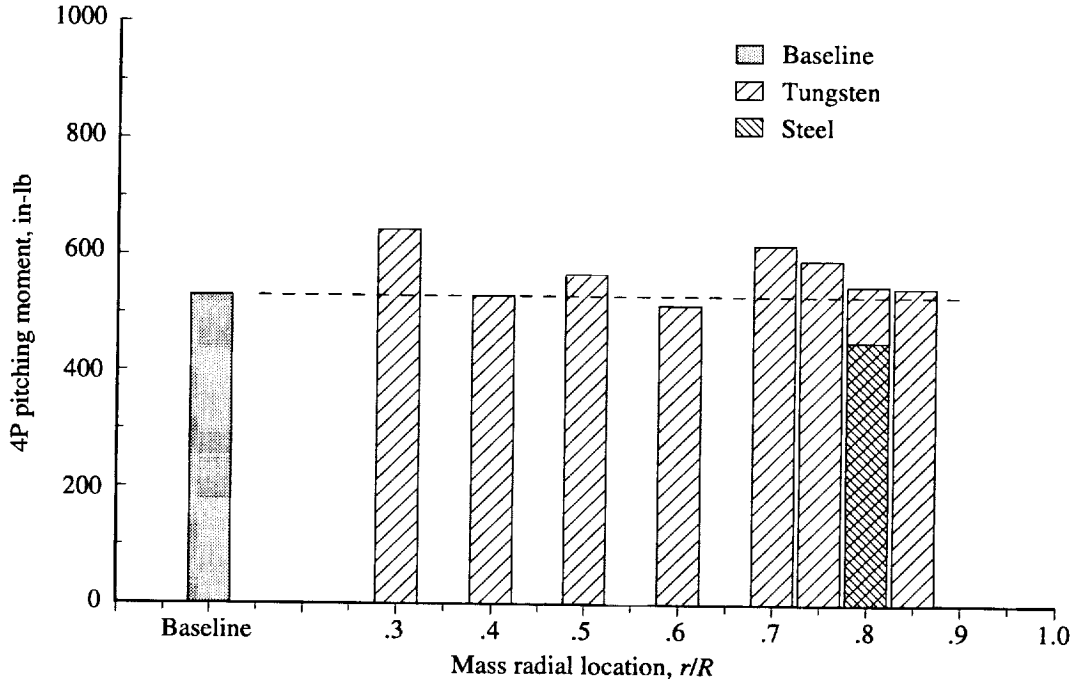


(f) $\mu = 0.225$.

Figure 14. Continued.

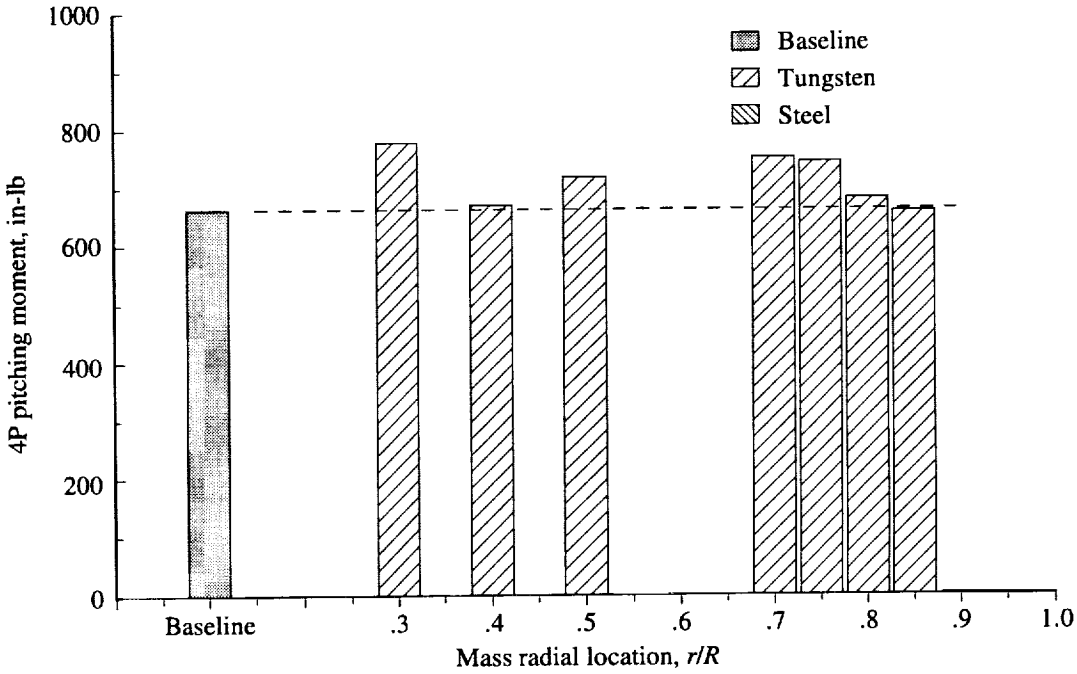


(g) $\mu = 0.250$.



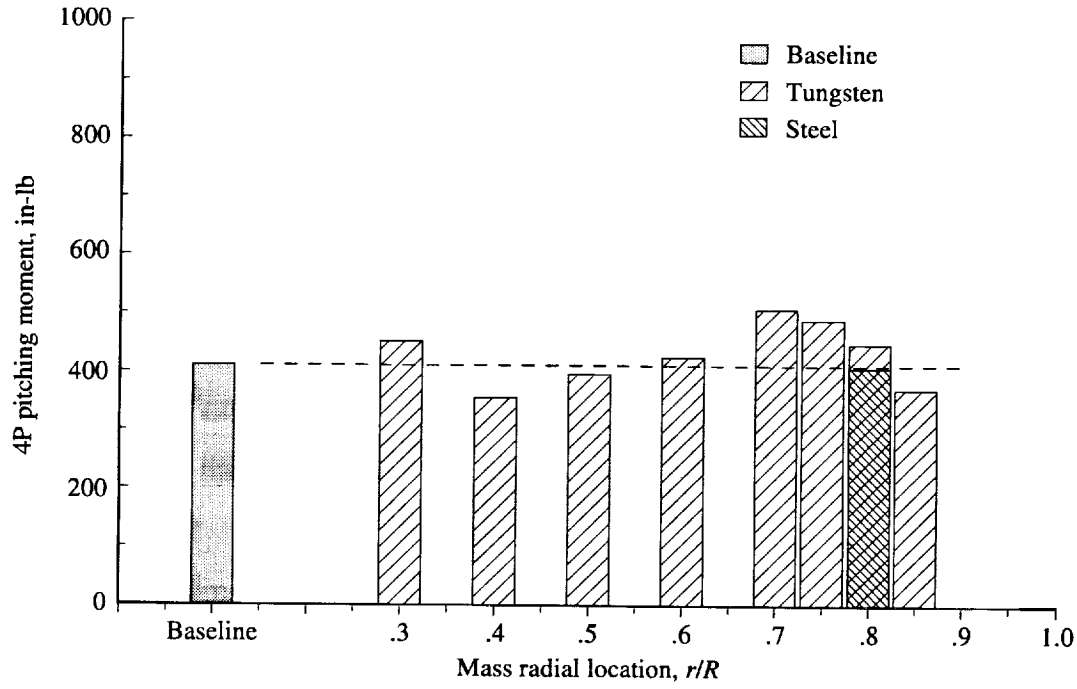
(h) $\mu = 0.300$.

Figure 14. Continued.

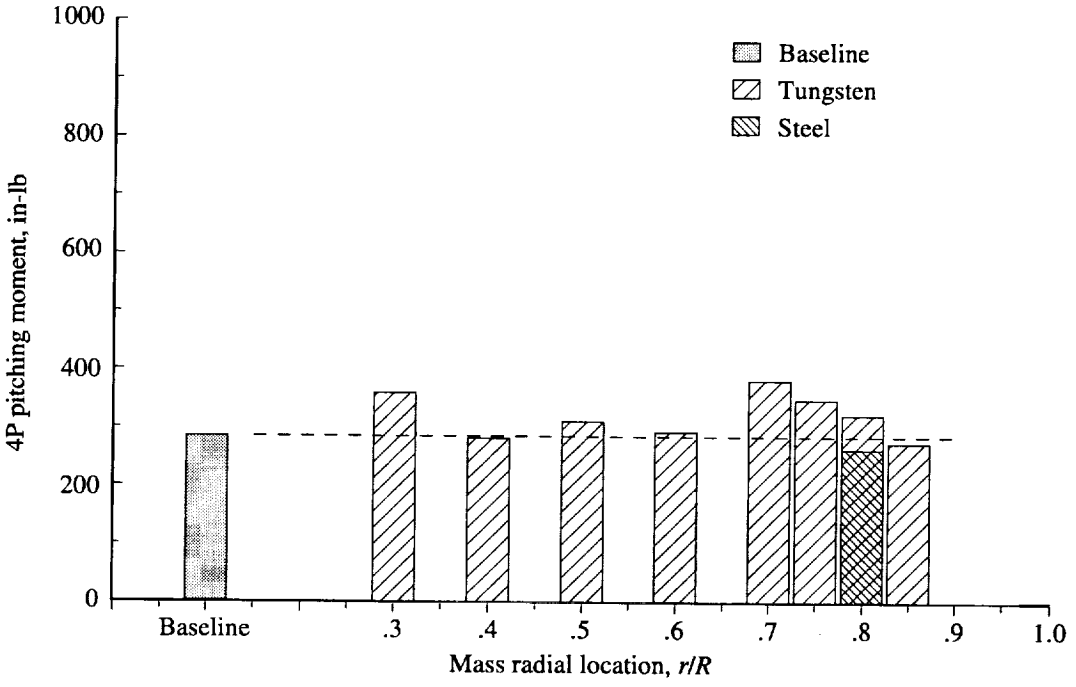


(i) $\mu = 0.350$.

Figure 14. Concluded.

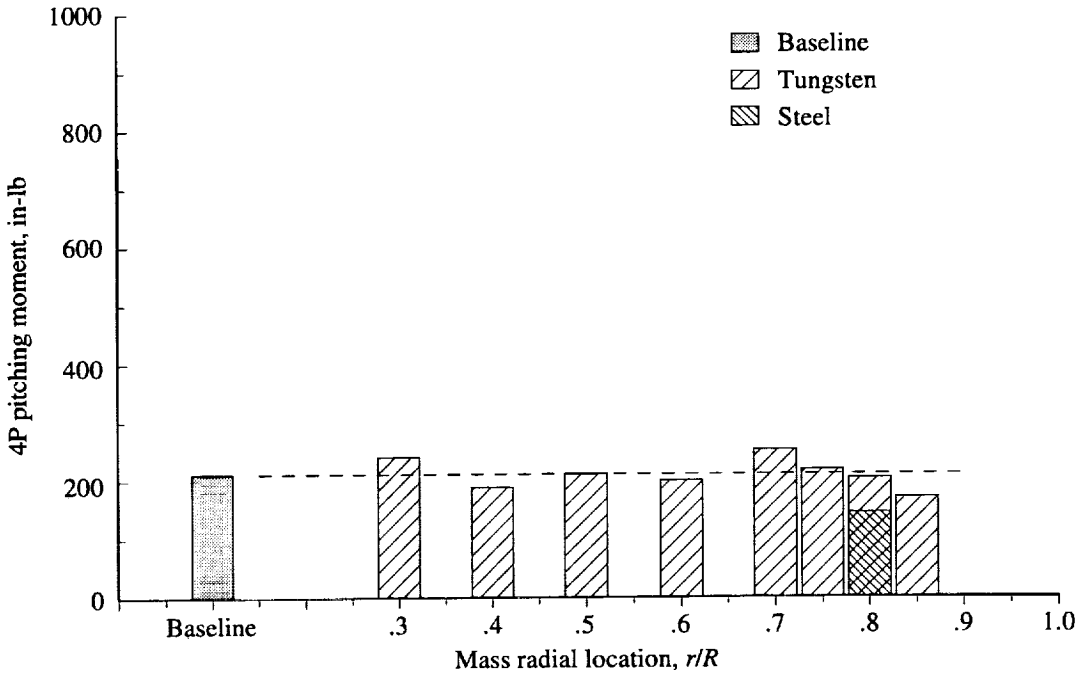


(a) $\mu = 0.100$.

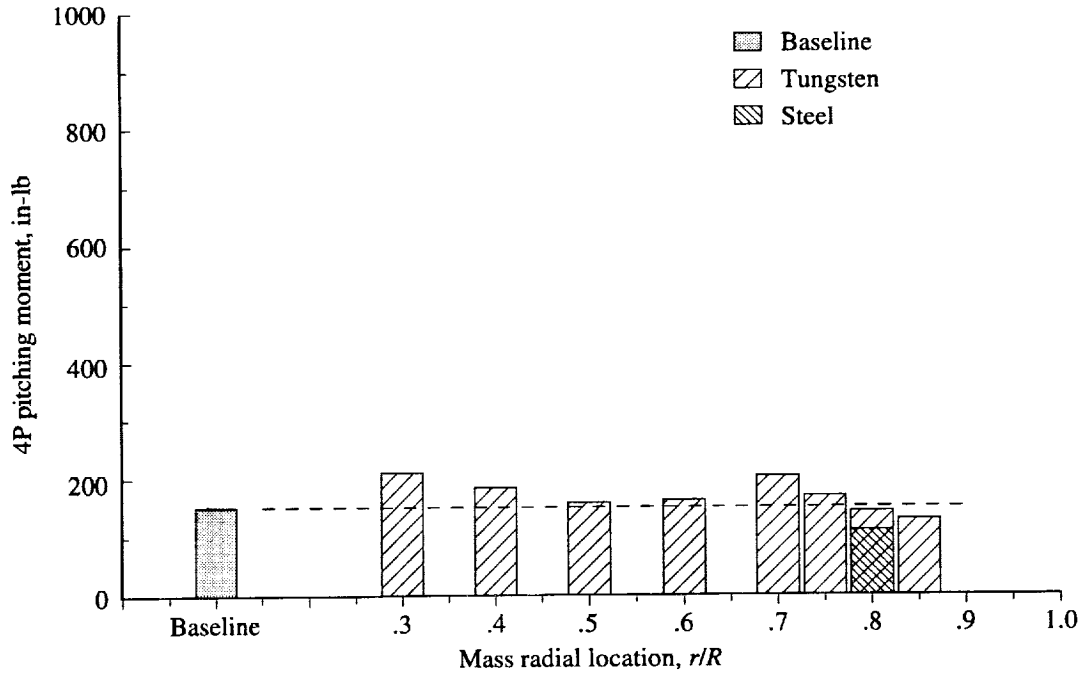


(b) $\mu = 0.125$.

Figure 15. Pitching moment response to mass configuration for $T = 1.0T_{1g}$.

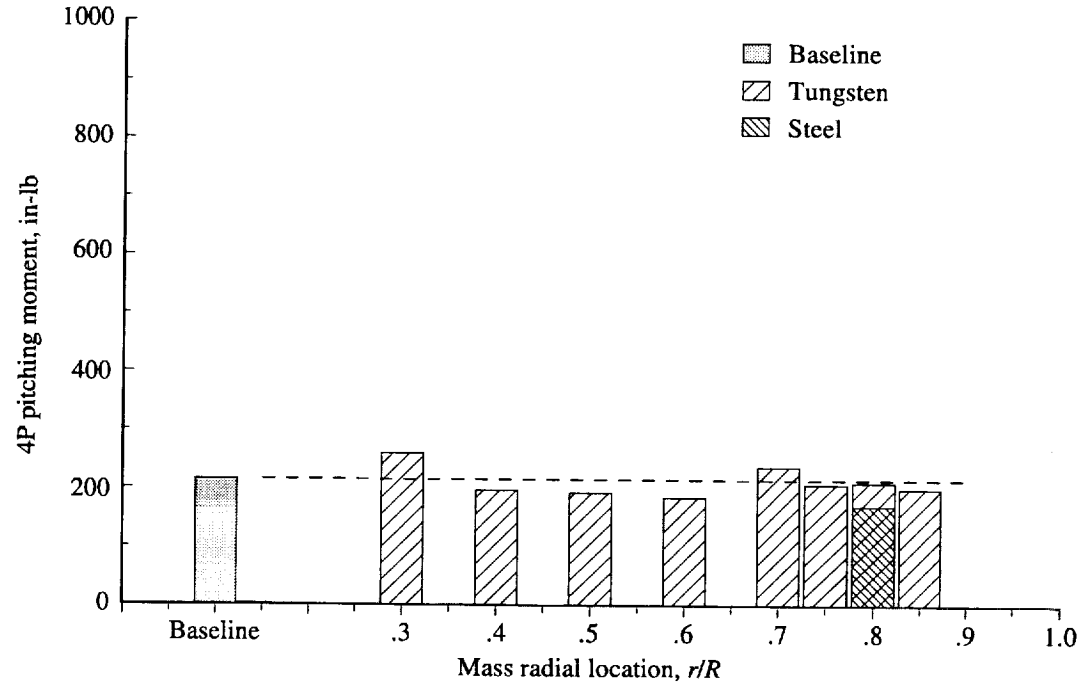


(c) $\mu = 0.150$.

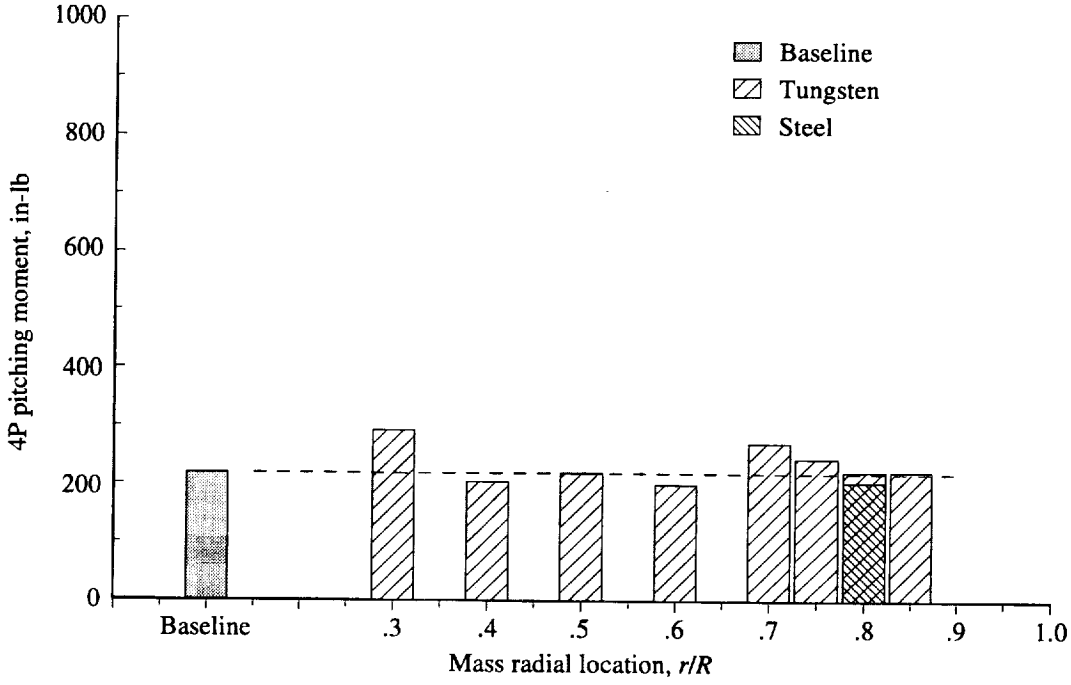


(d) $\mu = 0.175$.

Figure 15. Continued.

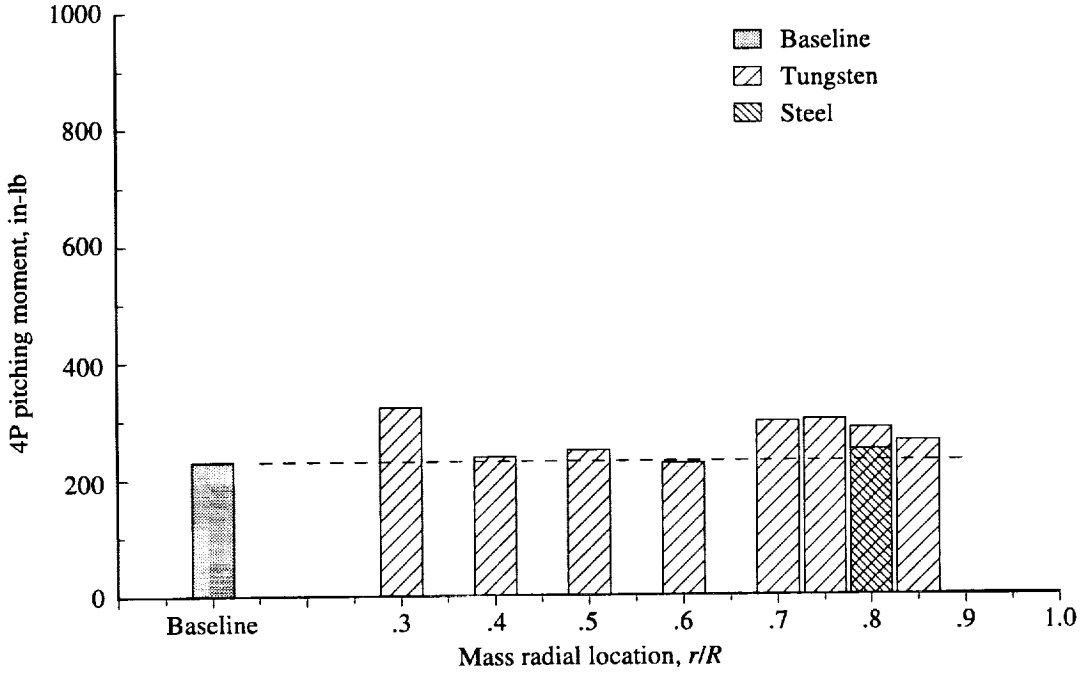


(e) $\mu = 0.200$.

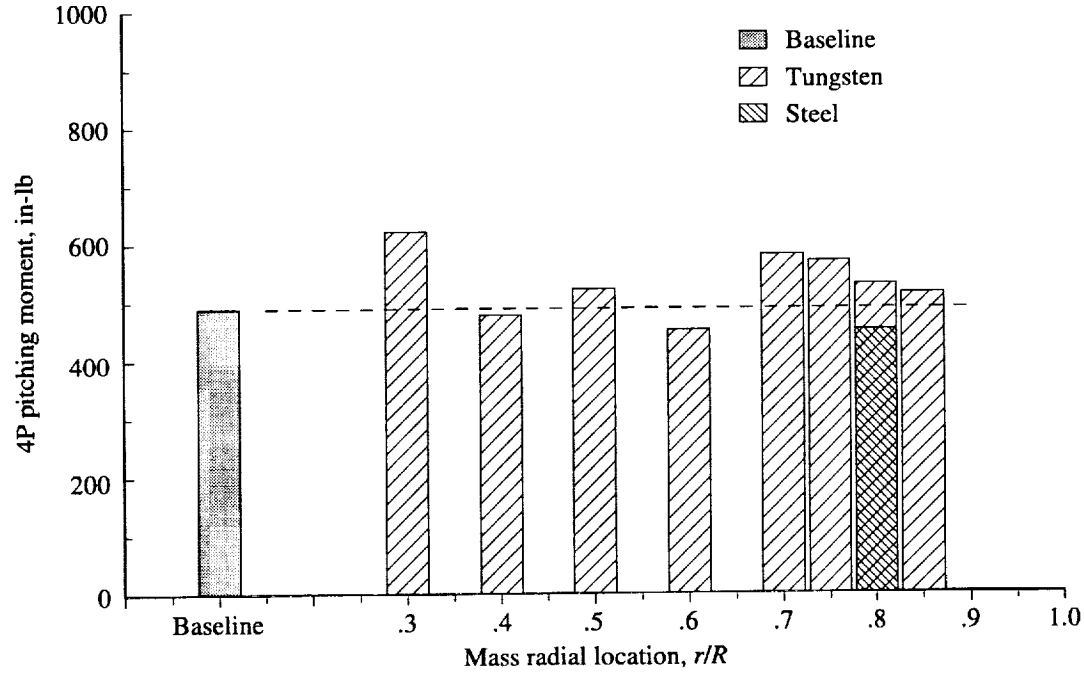


(f) $\mu = 0.225$.

Figure 15. Continued.

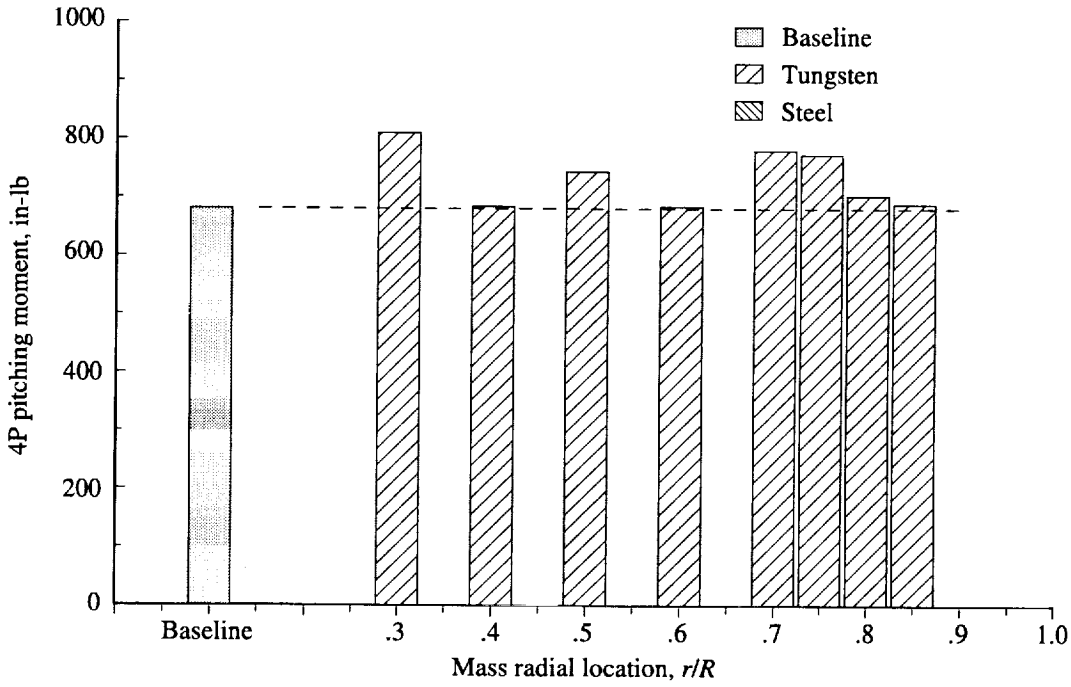


(g) $\mu = 0.250$.



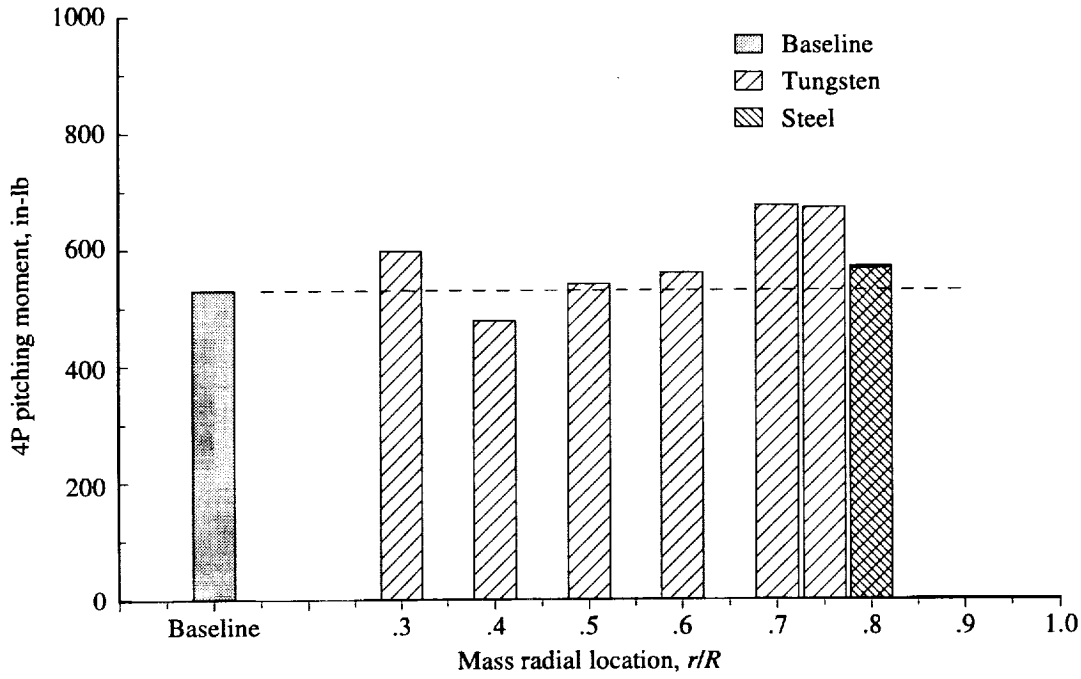
(h) $\mu = 0.300$.

Figure 15. Continued.

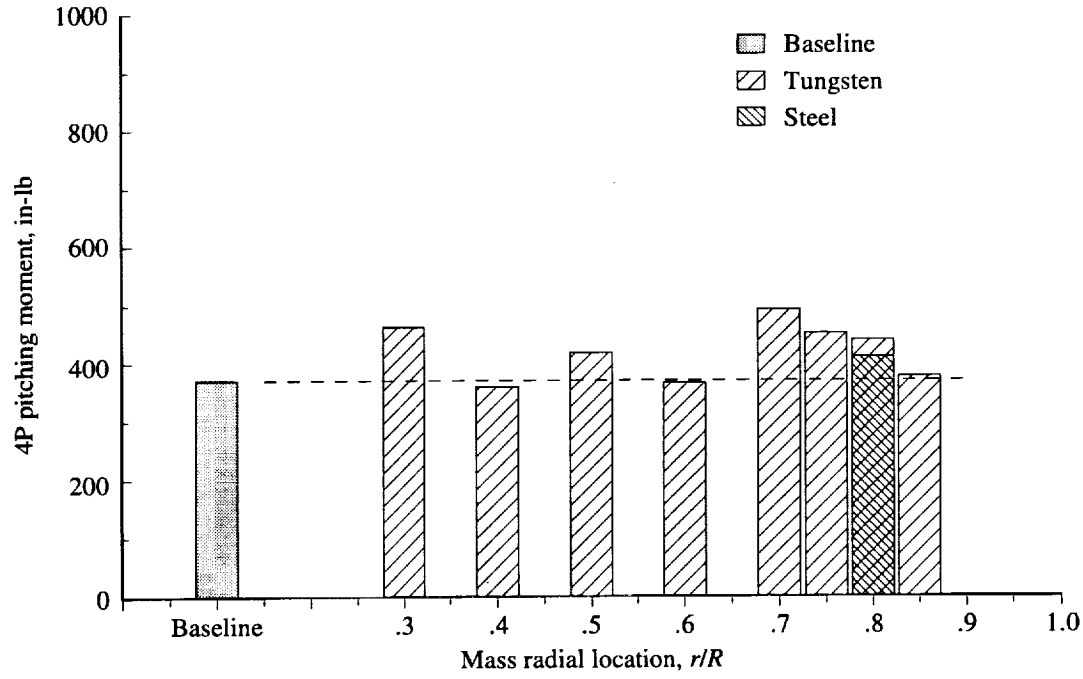


(i) $\mu = 0.350$.

Figure 15. Concluded.

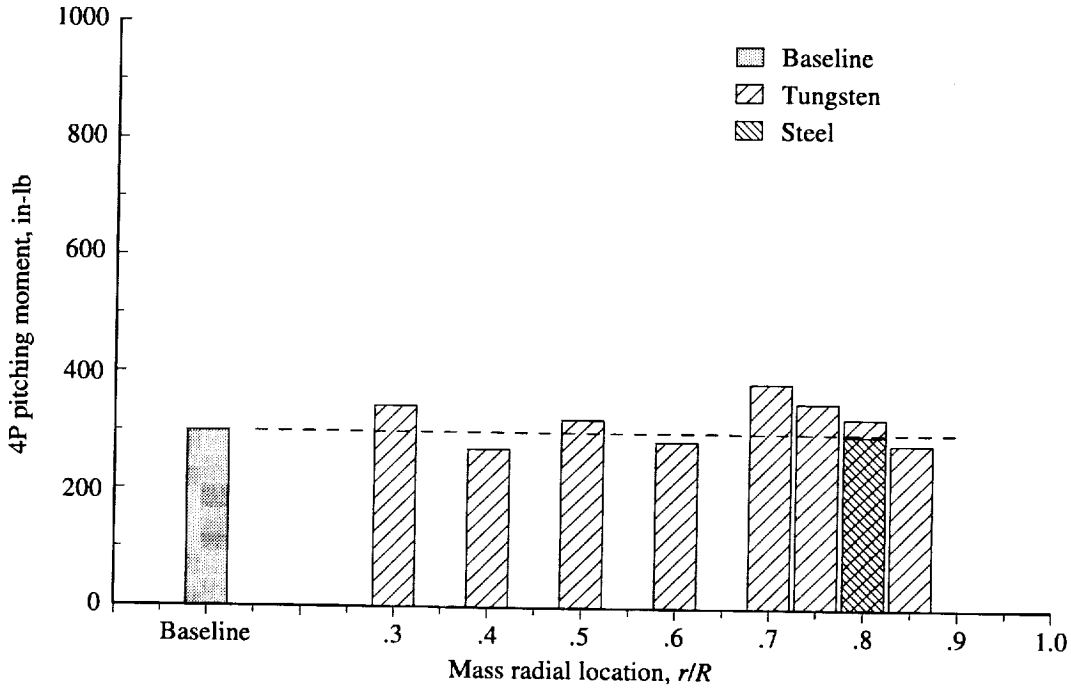


(a) $\mu = 0.100$.

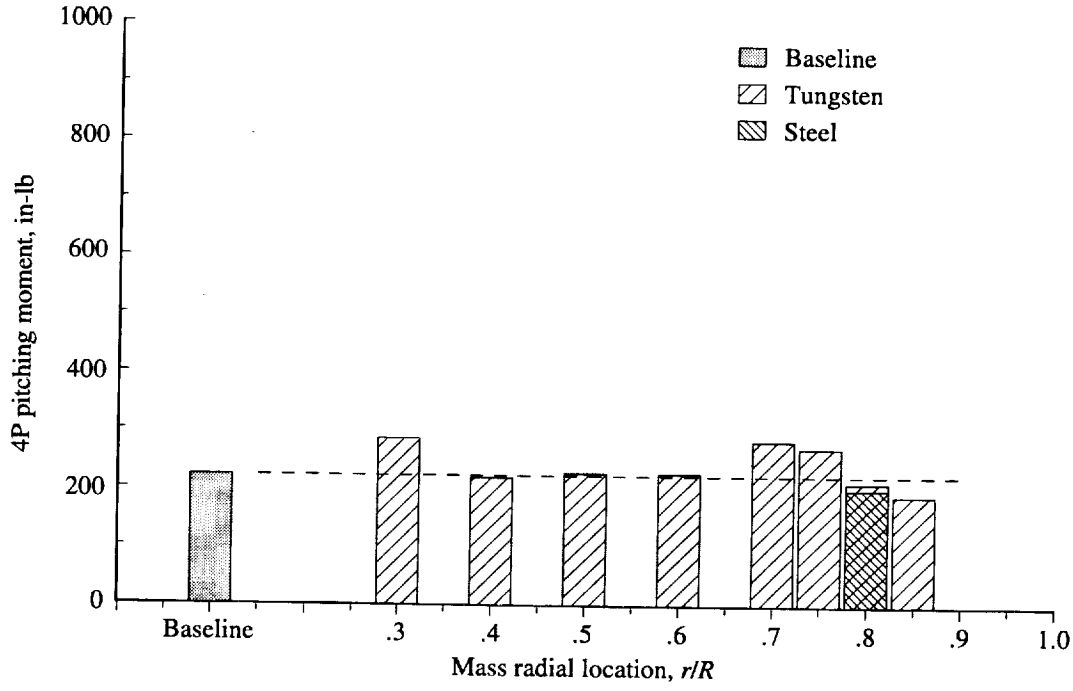


(b) $\mu = 0.125$.

Figure 16. Pitching moment response to mass configuration for $T = 1.25T_{1g}$.

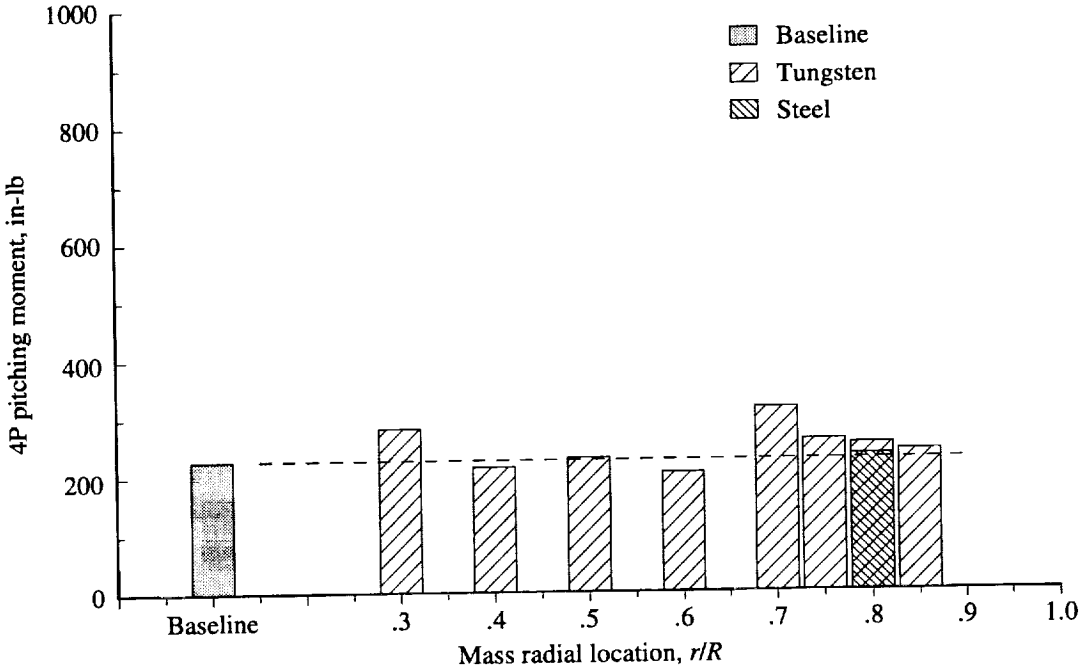


(c) $\mu = 0.150$.

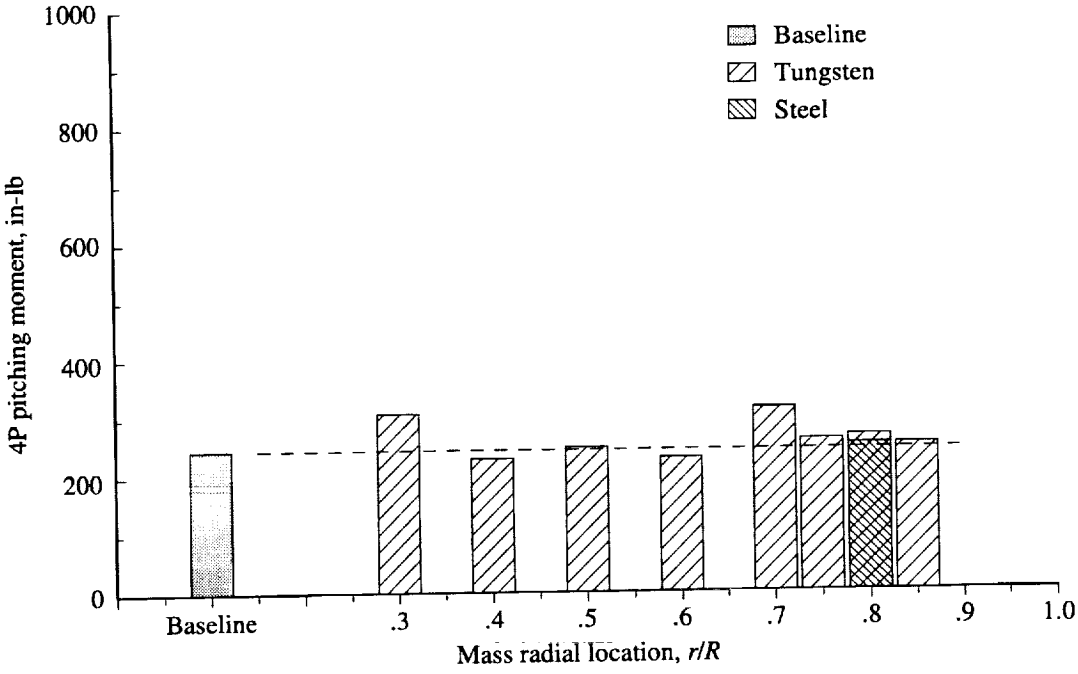


(d) $\mu = 0.175$.

Figure 16. Continued.

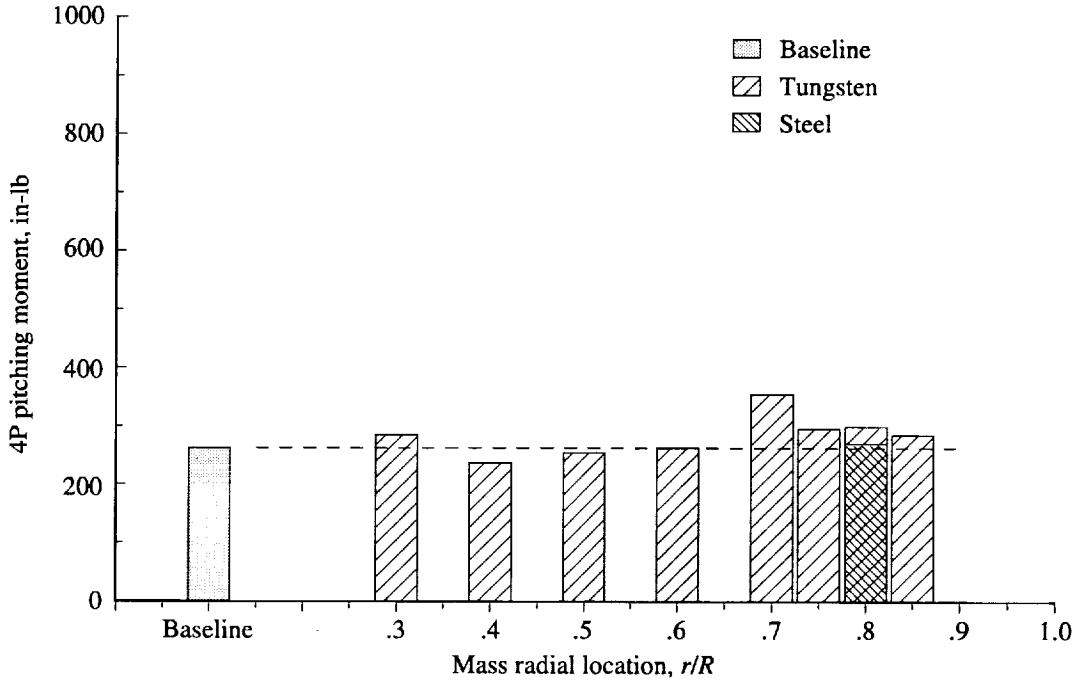


(e) $\mu = 0.200$.

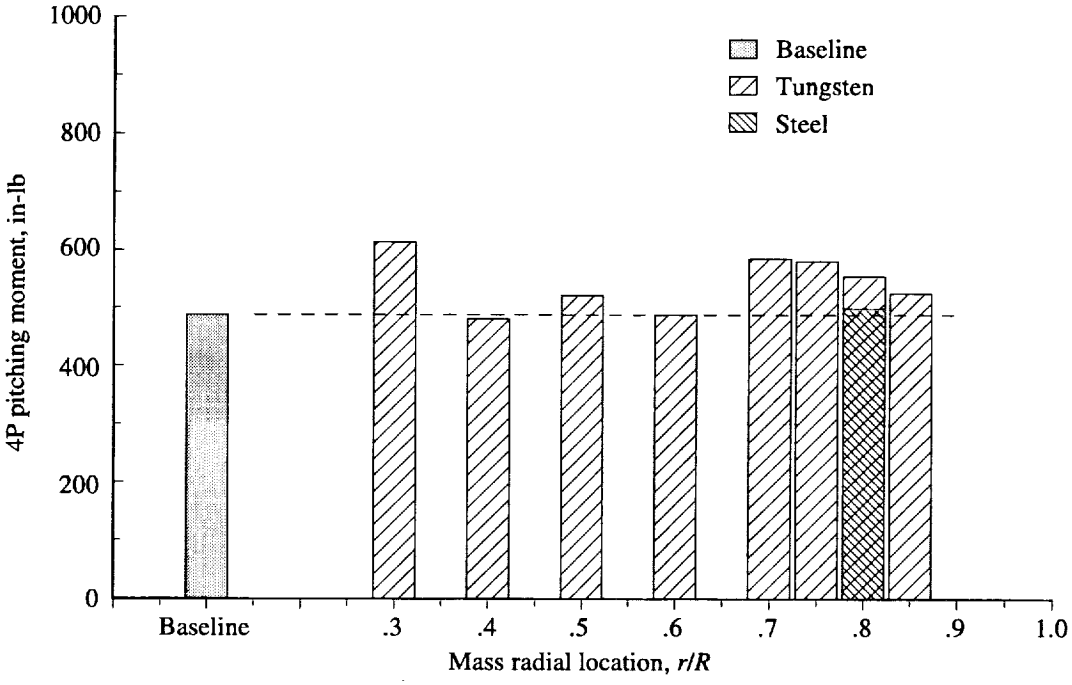


(f) $\mu = 0.225$.

Figure 16. Continued.

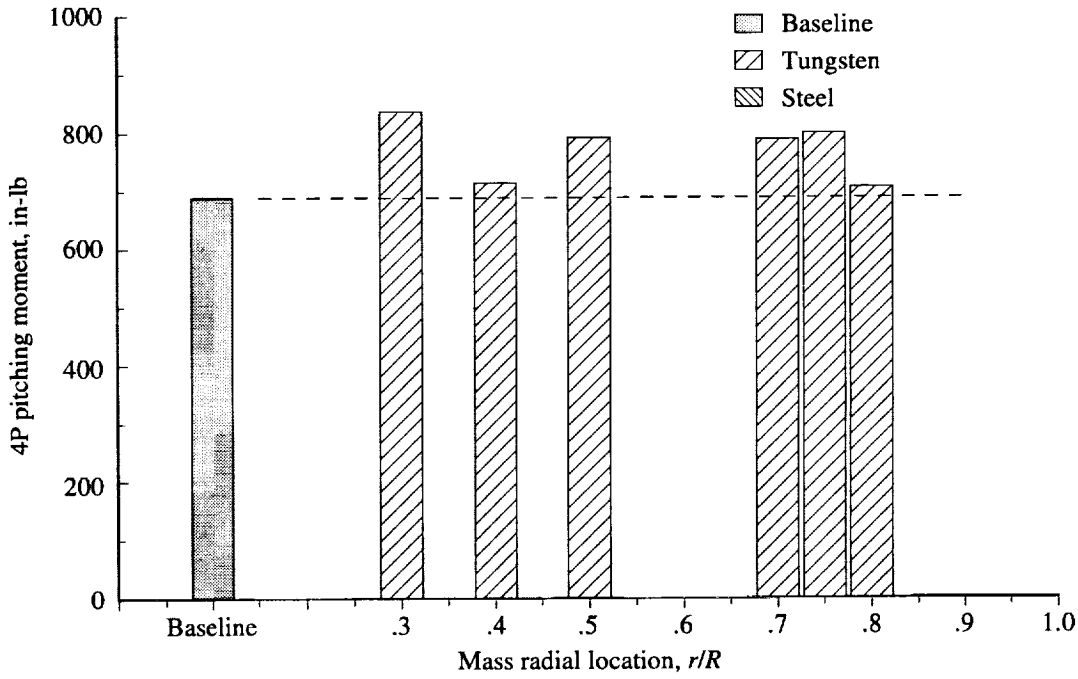


(g) $\mu = 0.250$.



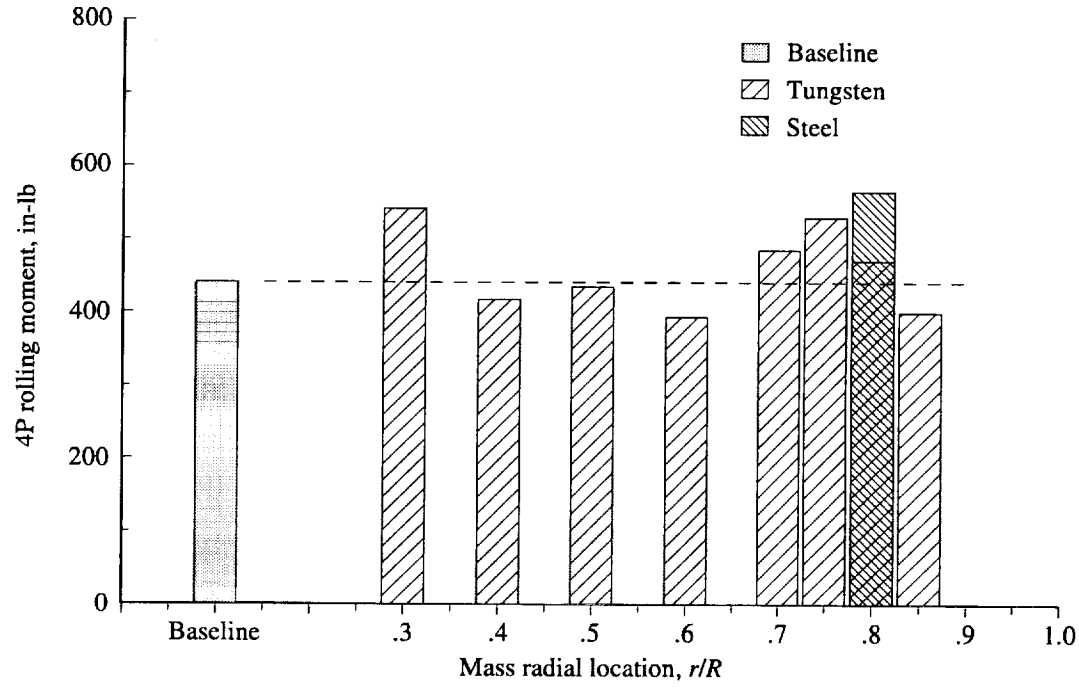
(h) $\mu = 0.300$.

Figure 16. Continued.

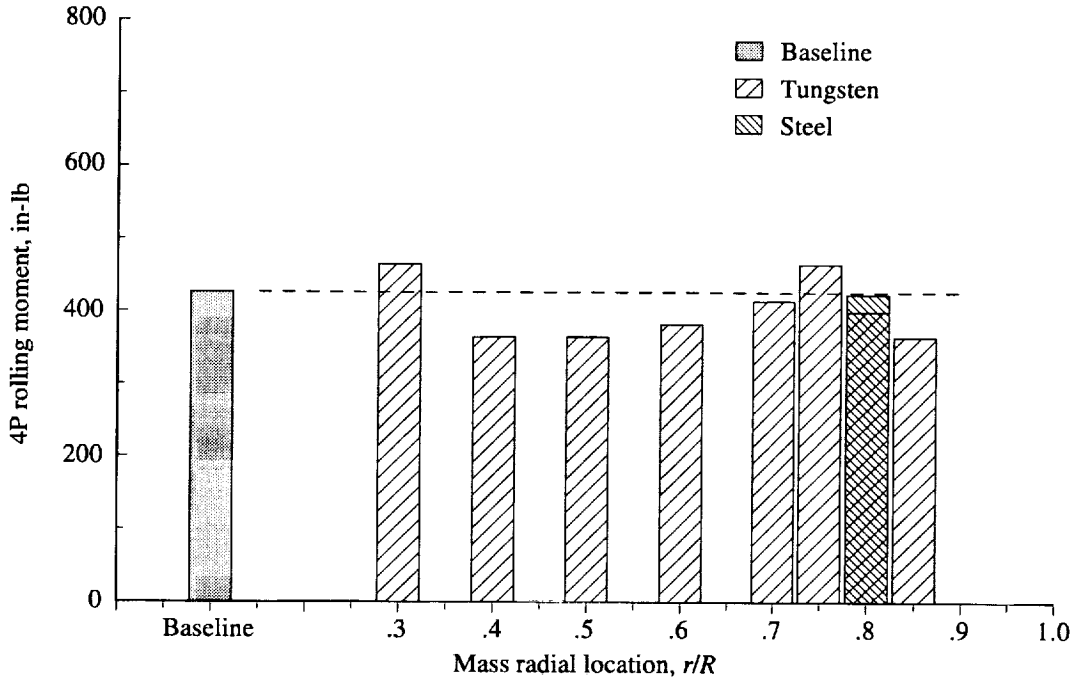


(i) $\mu = 0.350$.

Figure 16. Concluded.

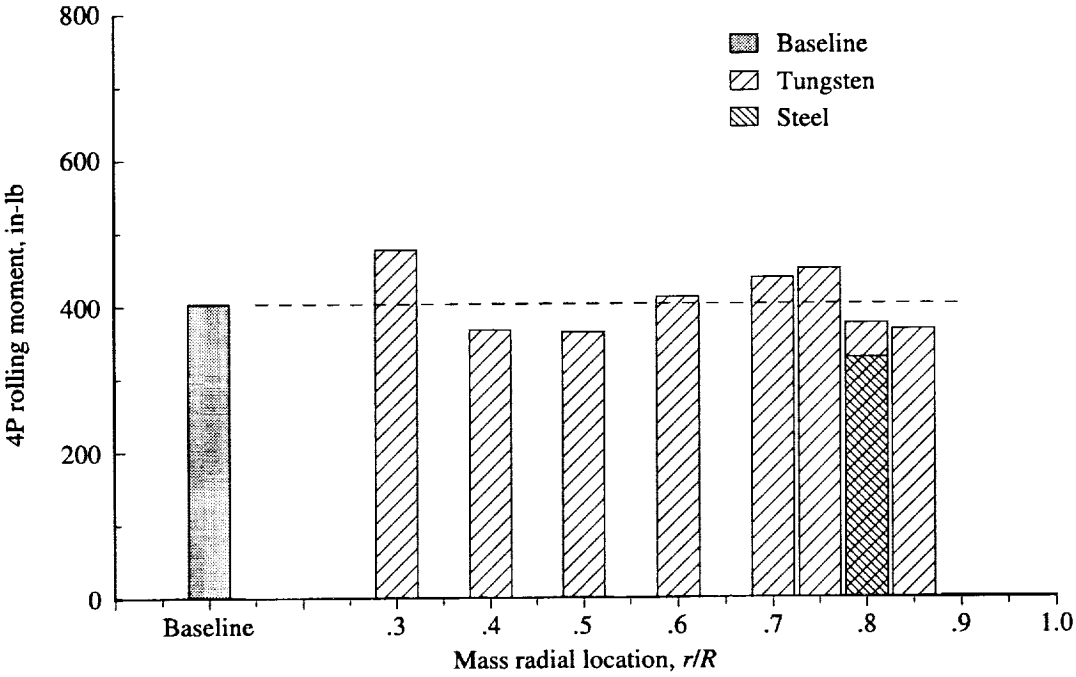


(a) $\mu = 0.100$.

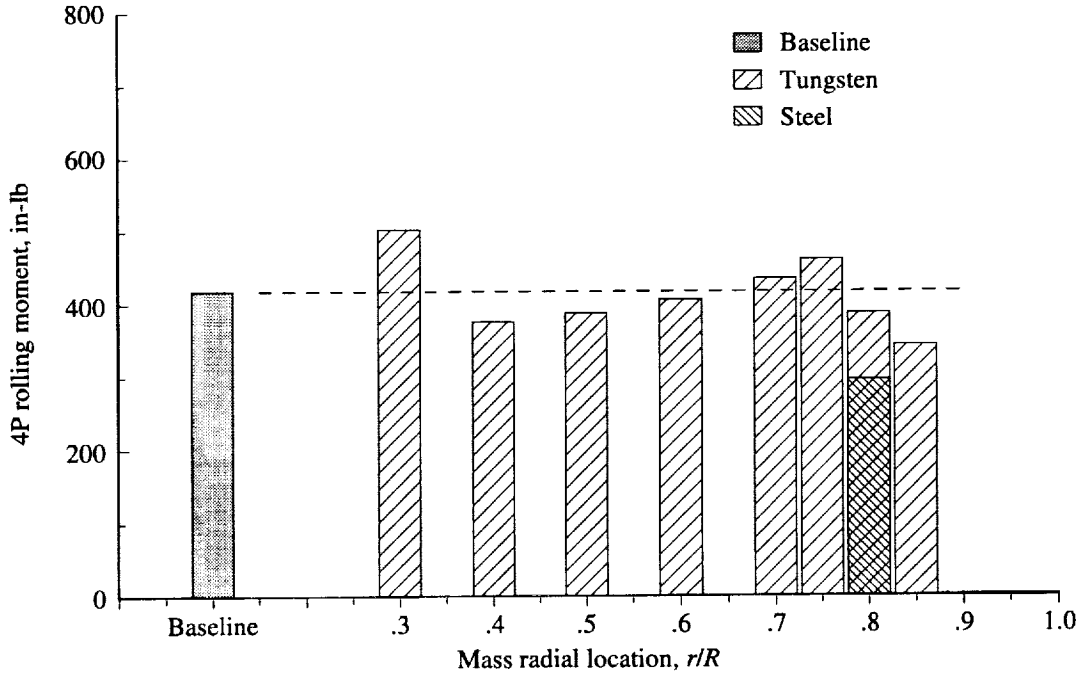


(b) $\mu = 0.125$.

Figure 17. Rolling moment response to mass configuration for $T = 0.75T_{1g}$.

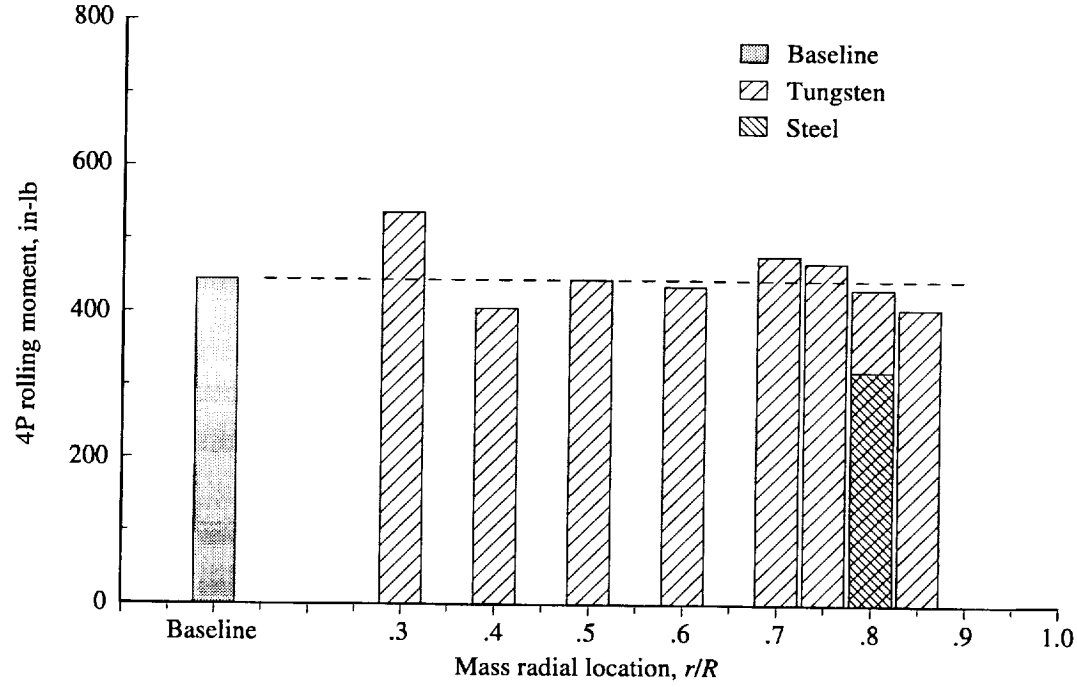


(c) $\mu = 0.150$.

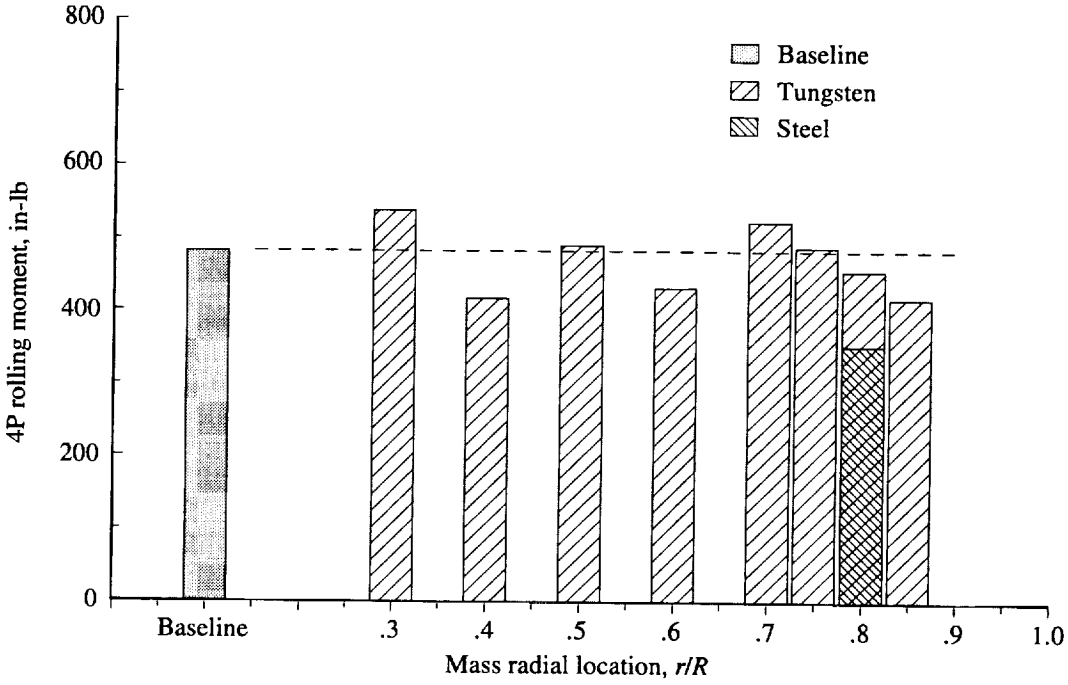


(d) $\mu = 0.175$.

Figure 17. Continued.

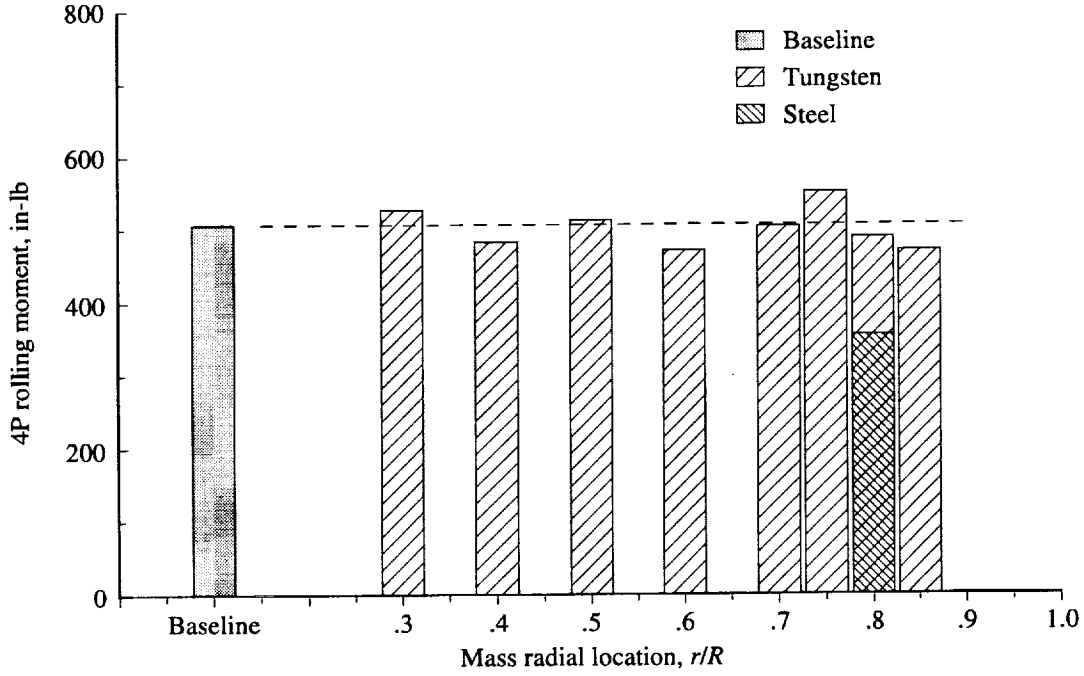


(e) $\mu = 0.200$.

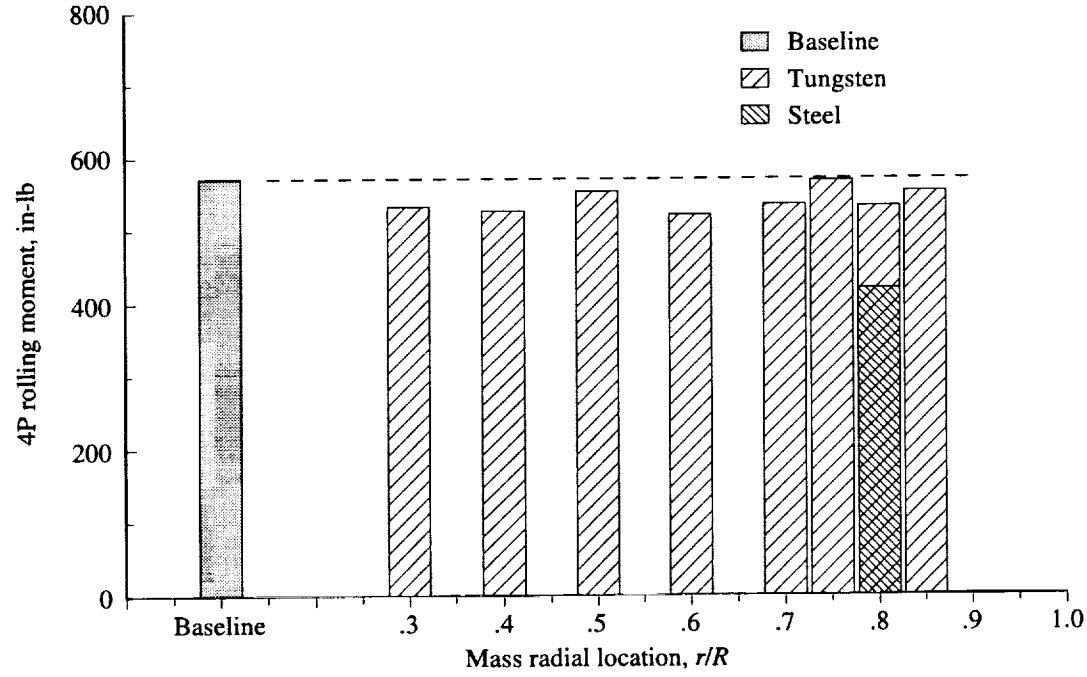


(f) $\mu = 0.225$.

Figure 17. Continued.

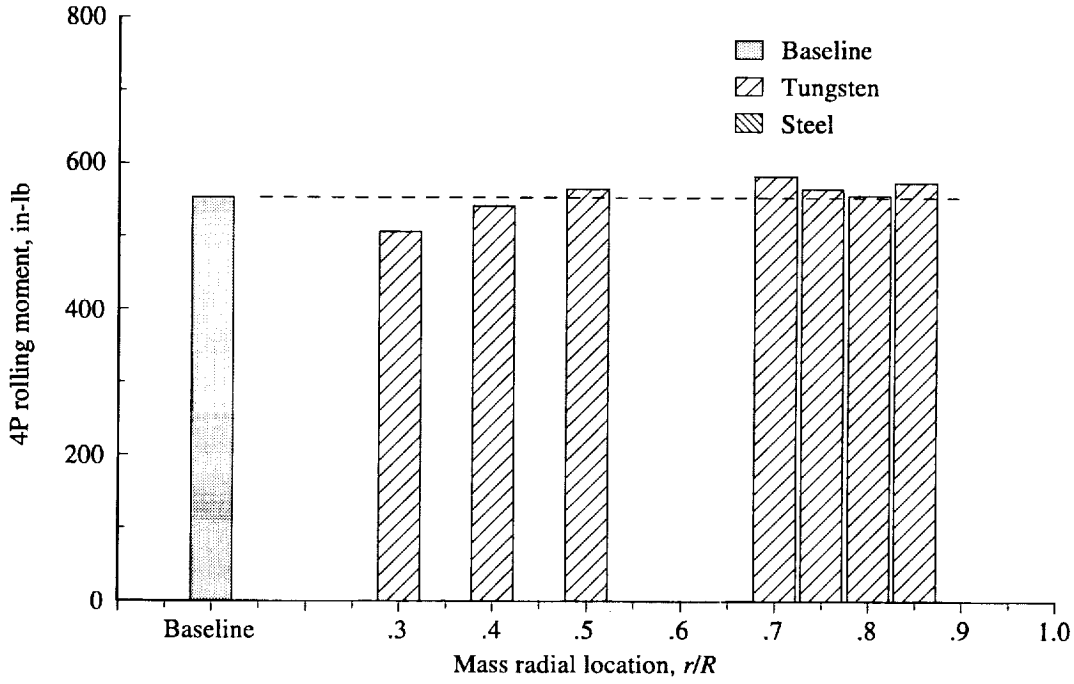


(g) $\mu = 0.250$.



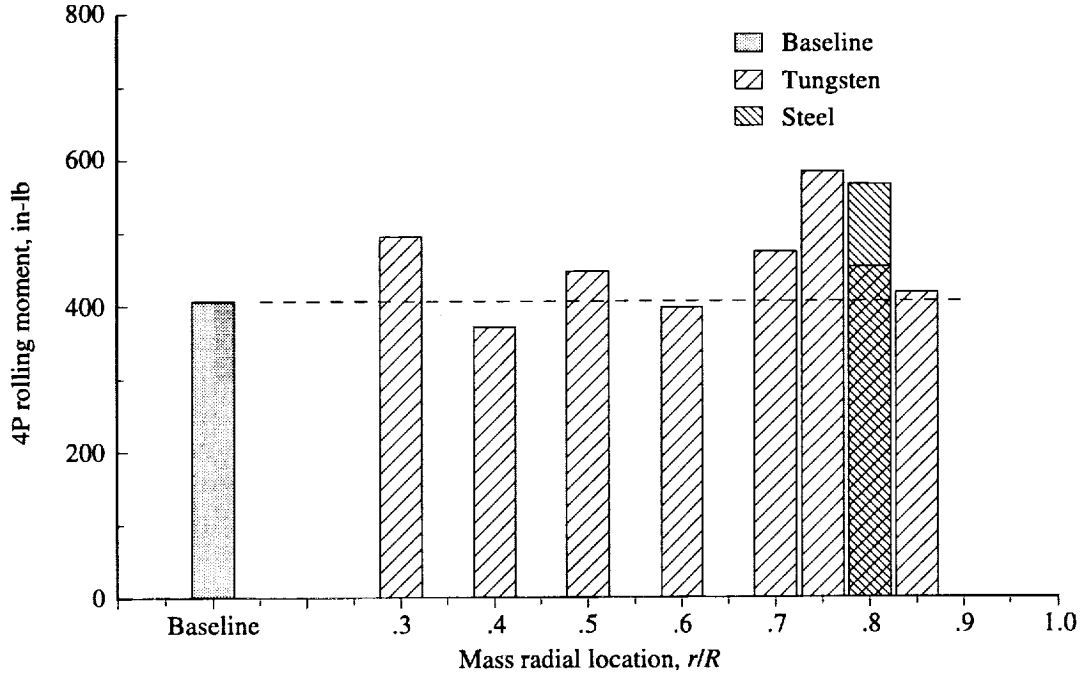
(h) $\mu = 0.300$.

Figure 17. Continued.

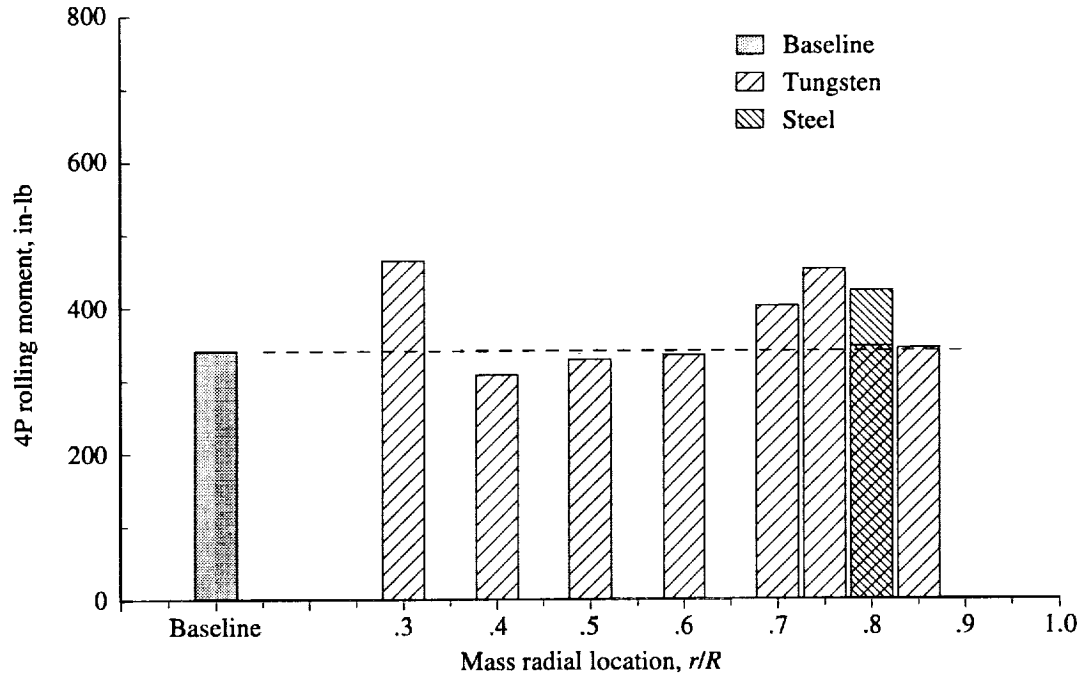


(i) $\mu = 0.350$.

Figure 17. Concluded.

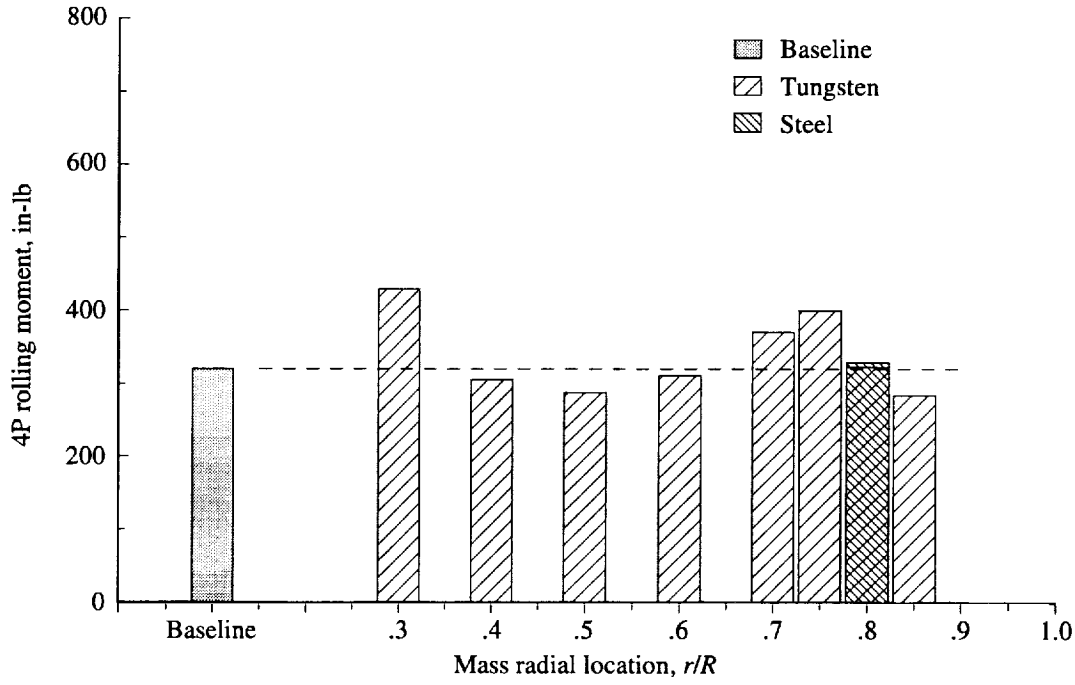


(a) $\mu = 0.100$.

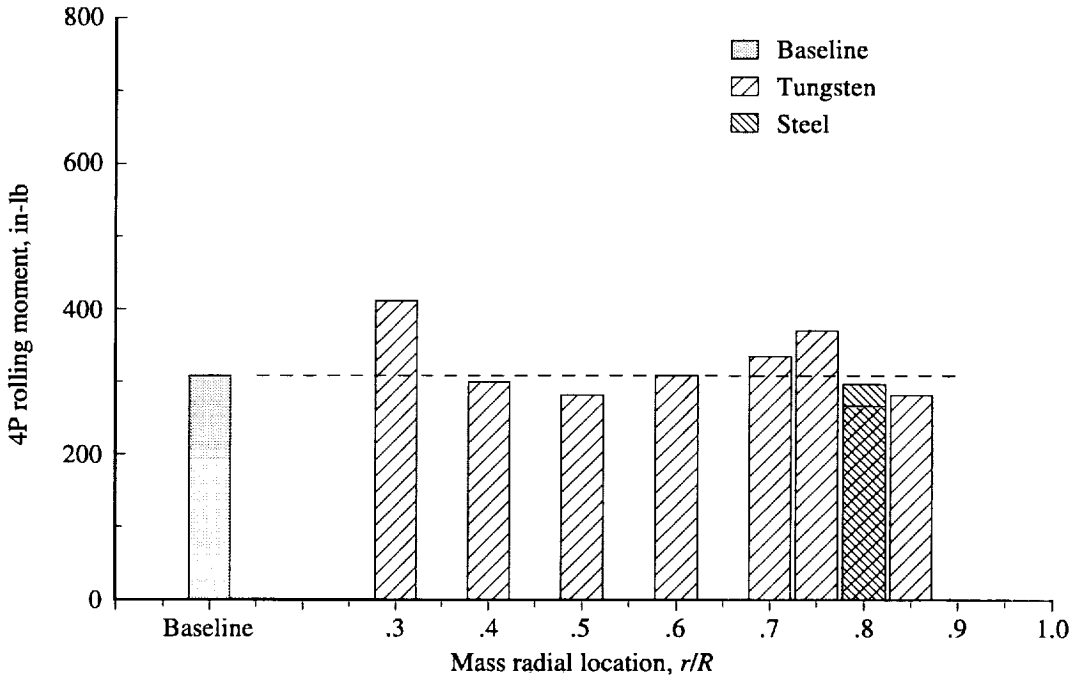


(b) $\mu = 0.125$.

Figure 18. Rolling moment response to mass configuration for $T = 1.0T_{1g}$.

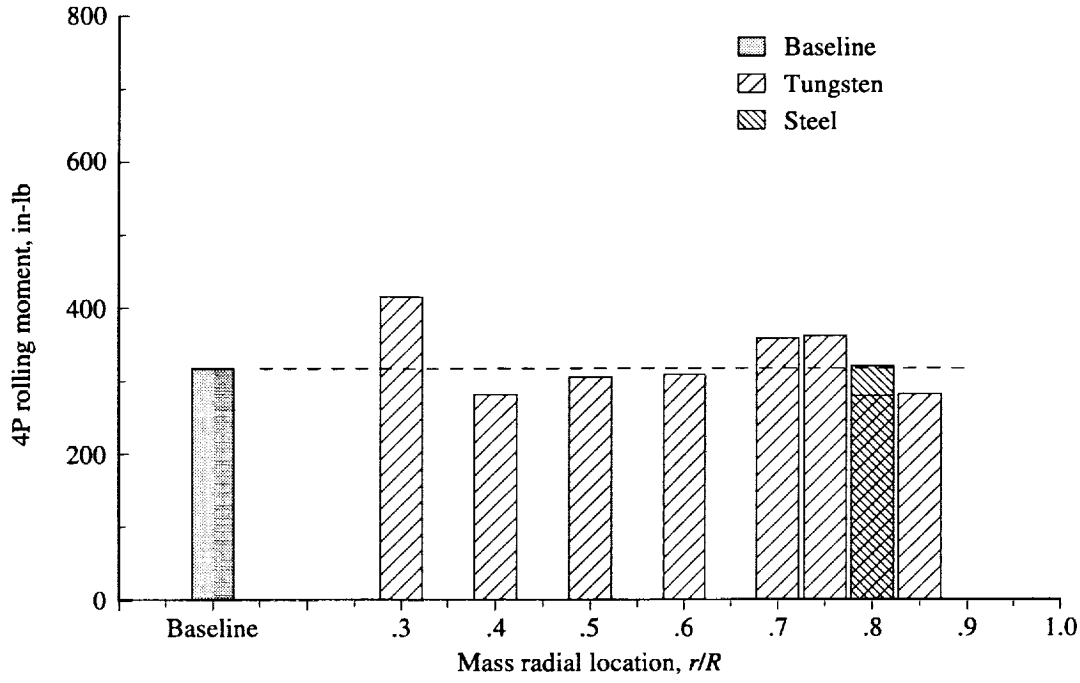


(c) $\mu = 0.150$.

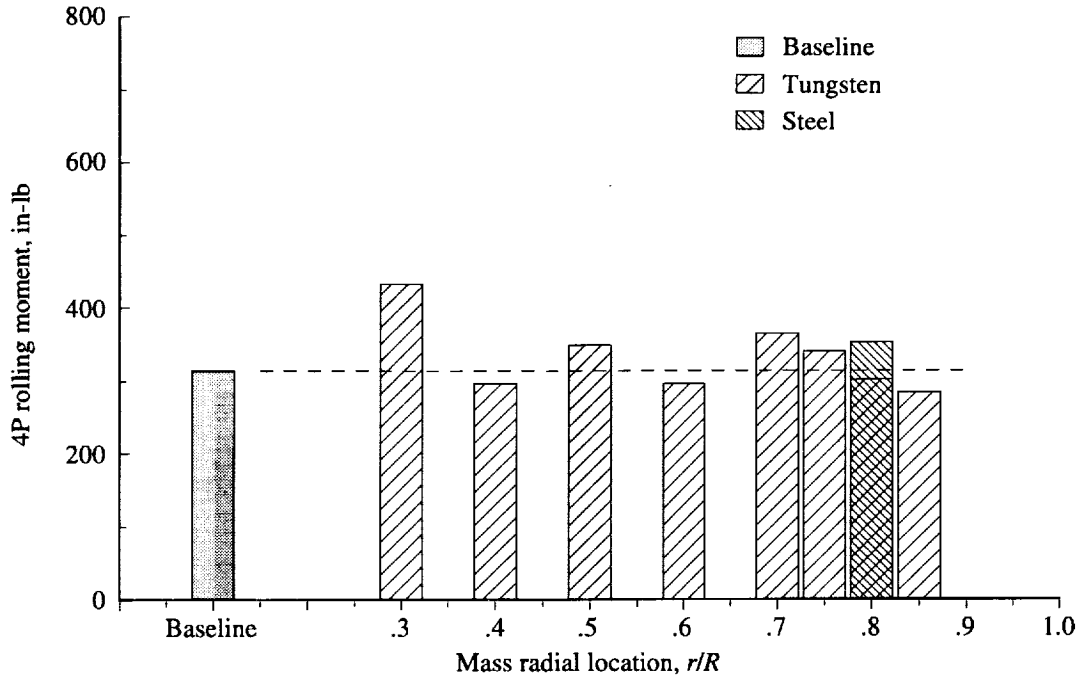


(d) $\mu = 0.175$.

Figure 18. Continued.

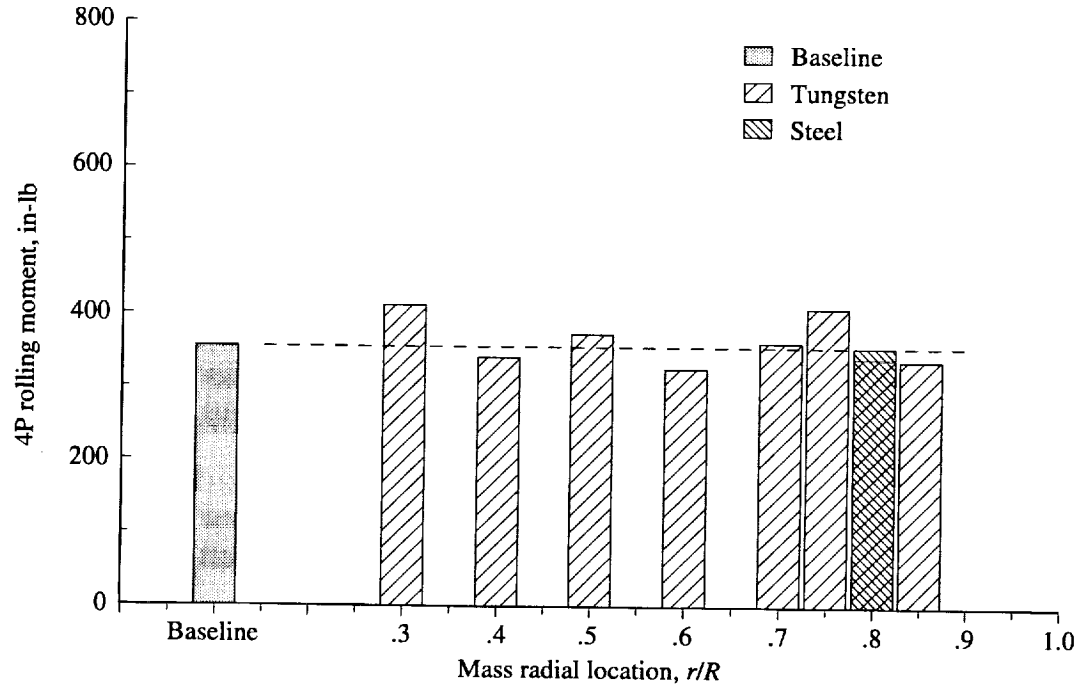


(e) $\mu = 0.200$.

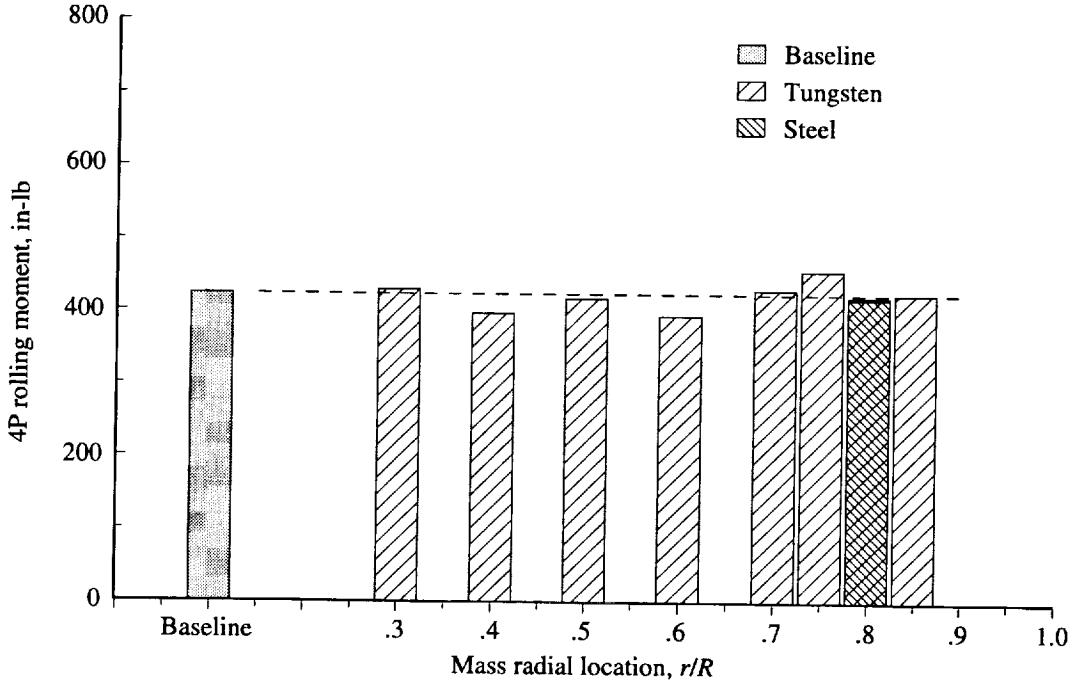


(f) $\mu = 0.225$.

Figure 18. Continued.

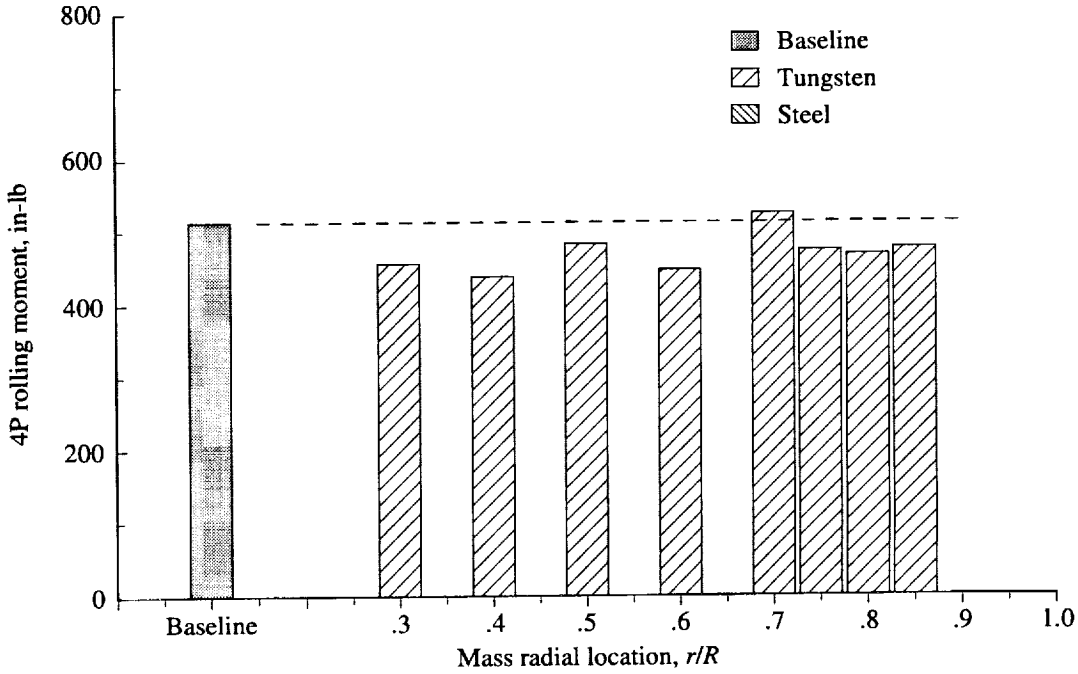


(g) $\mu = 0.250$.



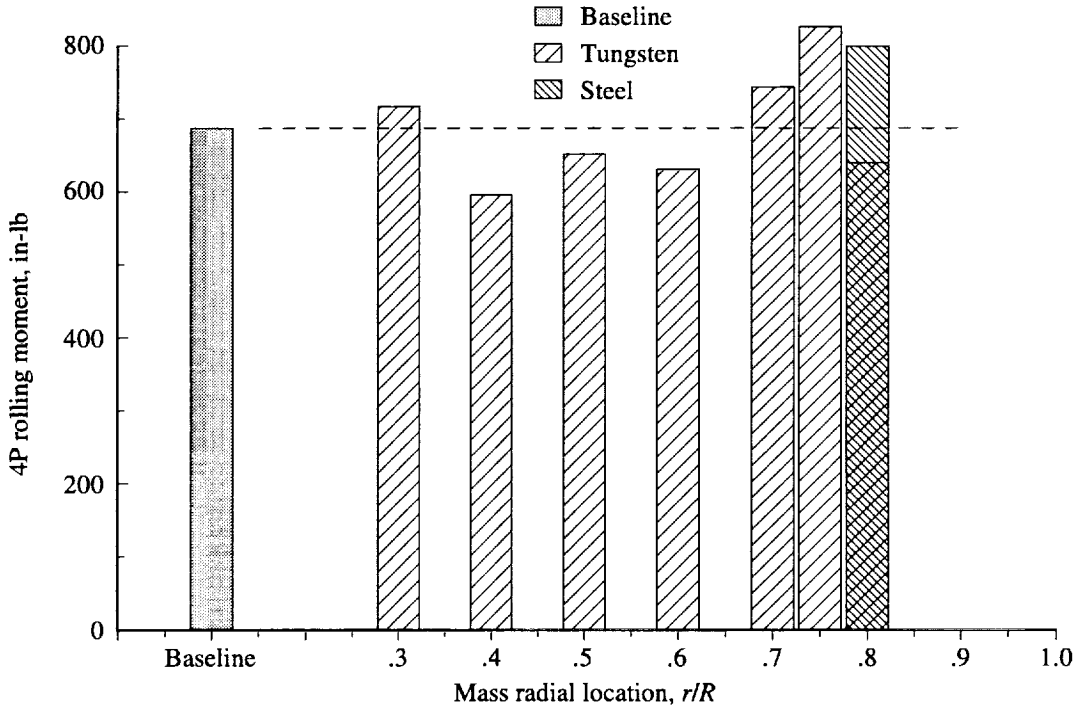
(h) $\mu = 0.300$.

Figure 18. Continued.

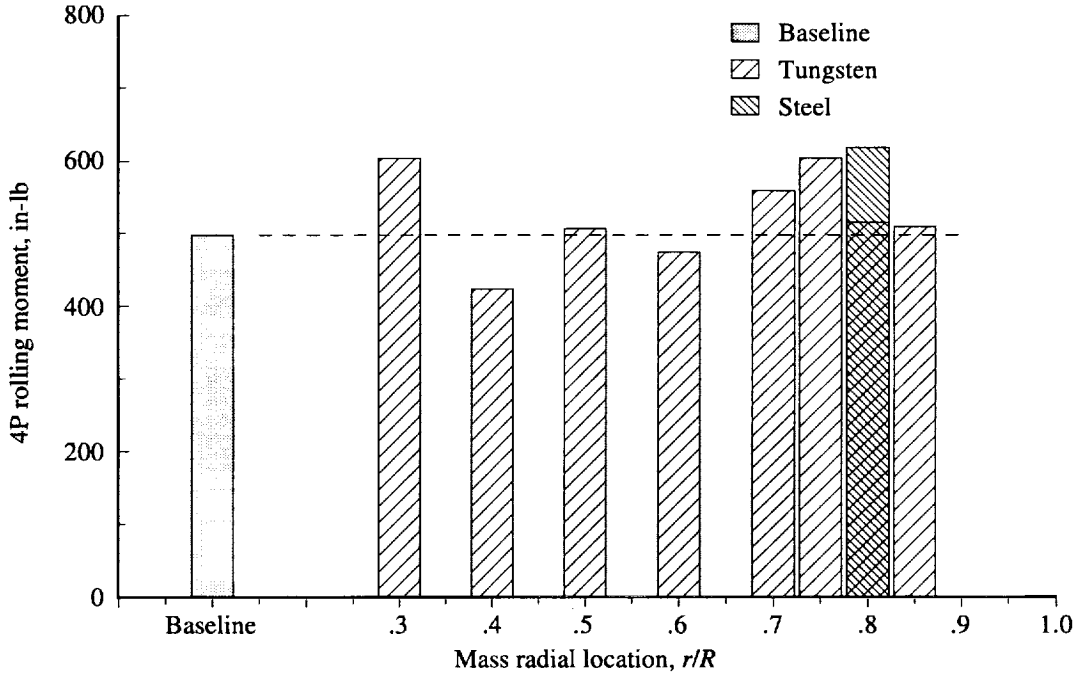


(i) $\mu = 0.350$.

Figure 18. Concluded.

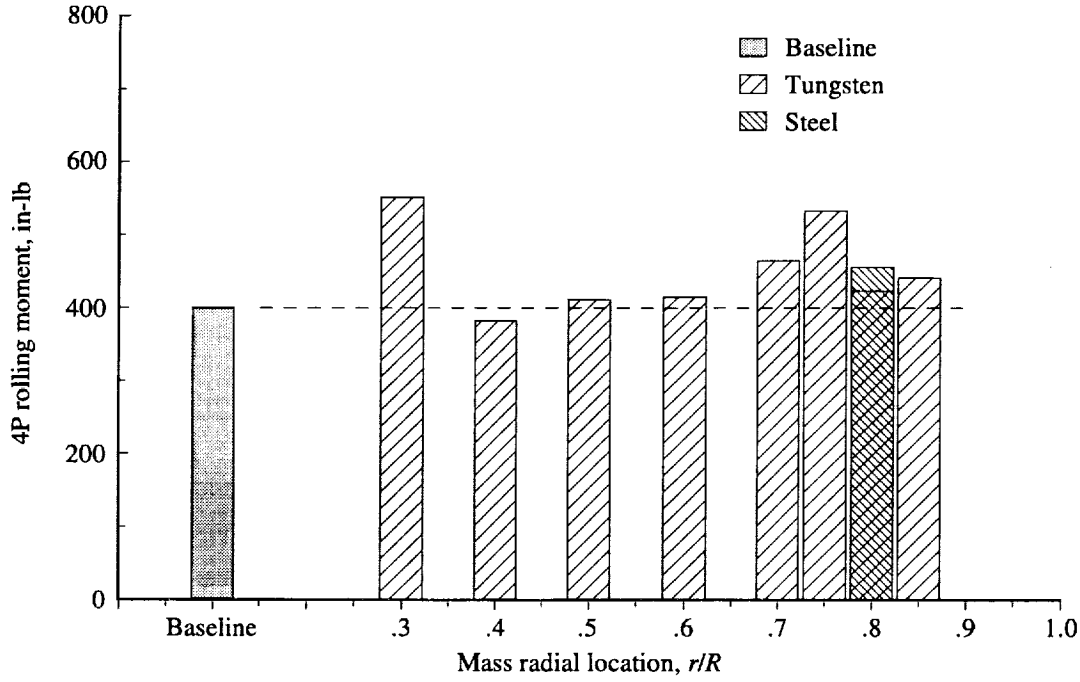


(a) $\mu = 0.100$.

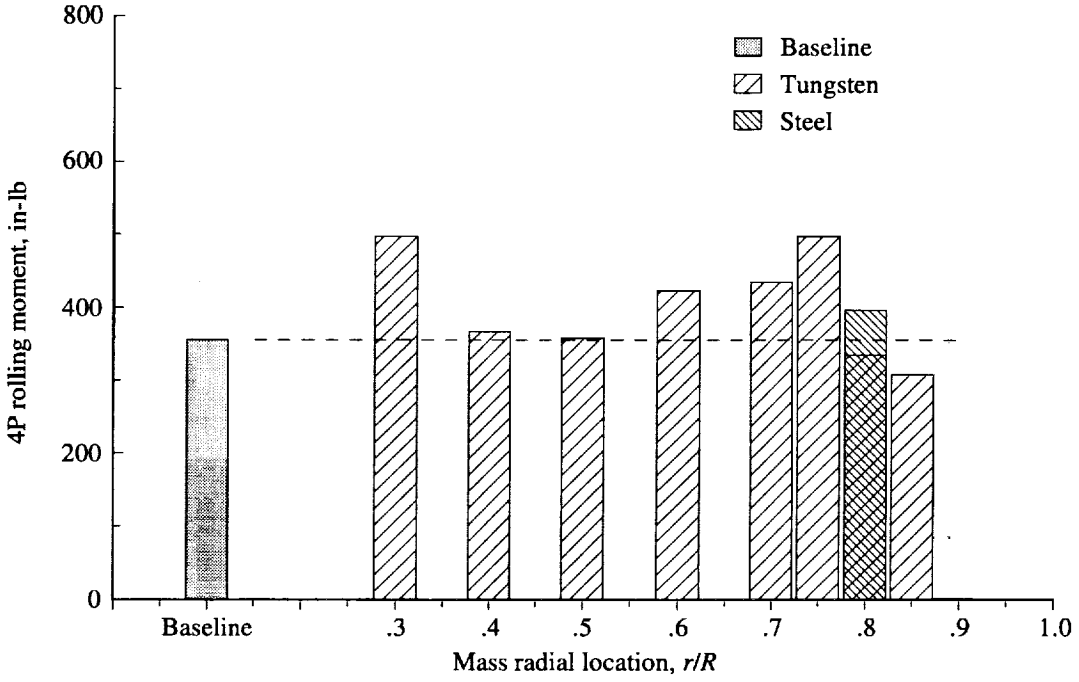


(b) $\mu = 0.125$.

Figure 19. Rolling moment response to mass configuration for $T = 1.25T_{1g}$.

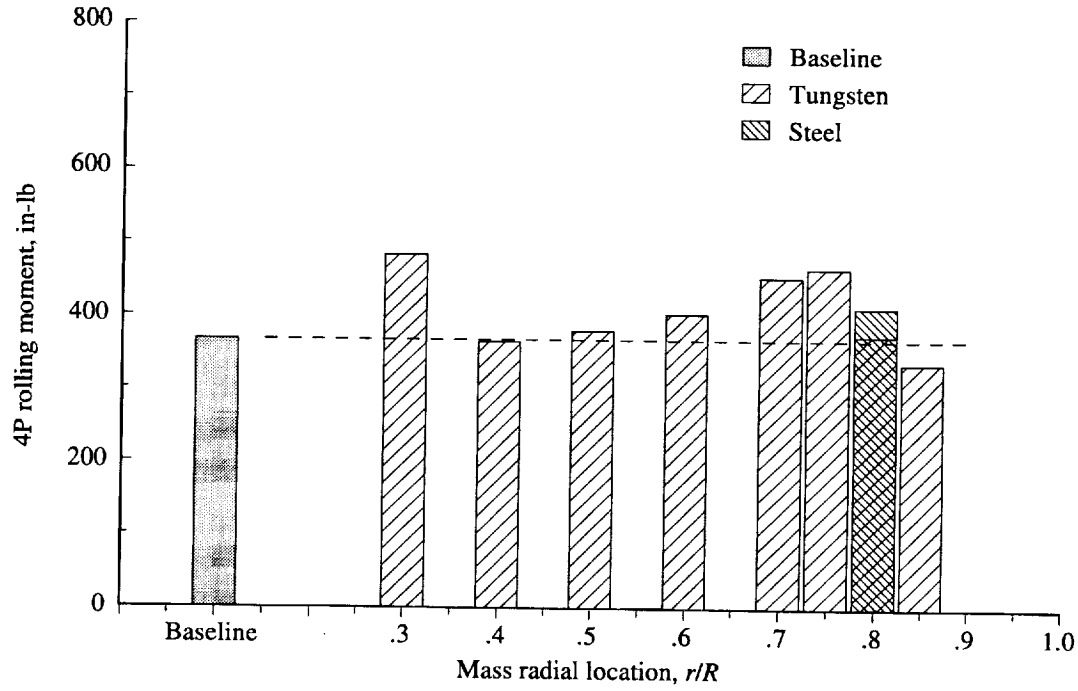


(c) $\mu = 0.150$.

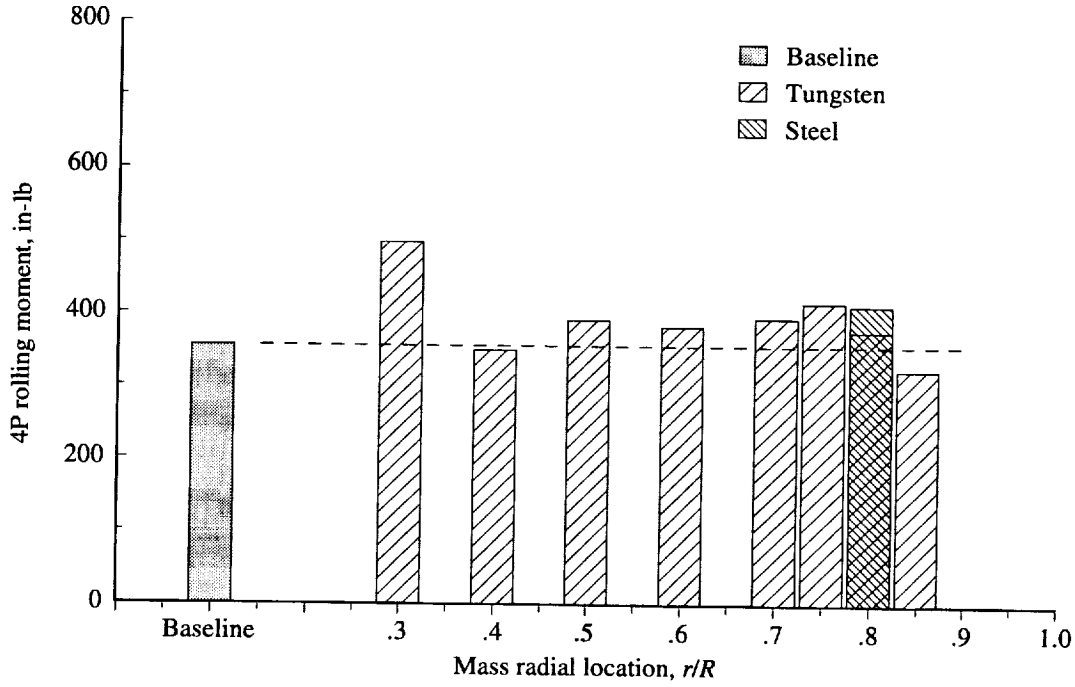


(d) $\mu = 0.175$.

Figure 19. Continued.

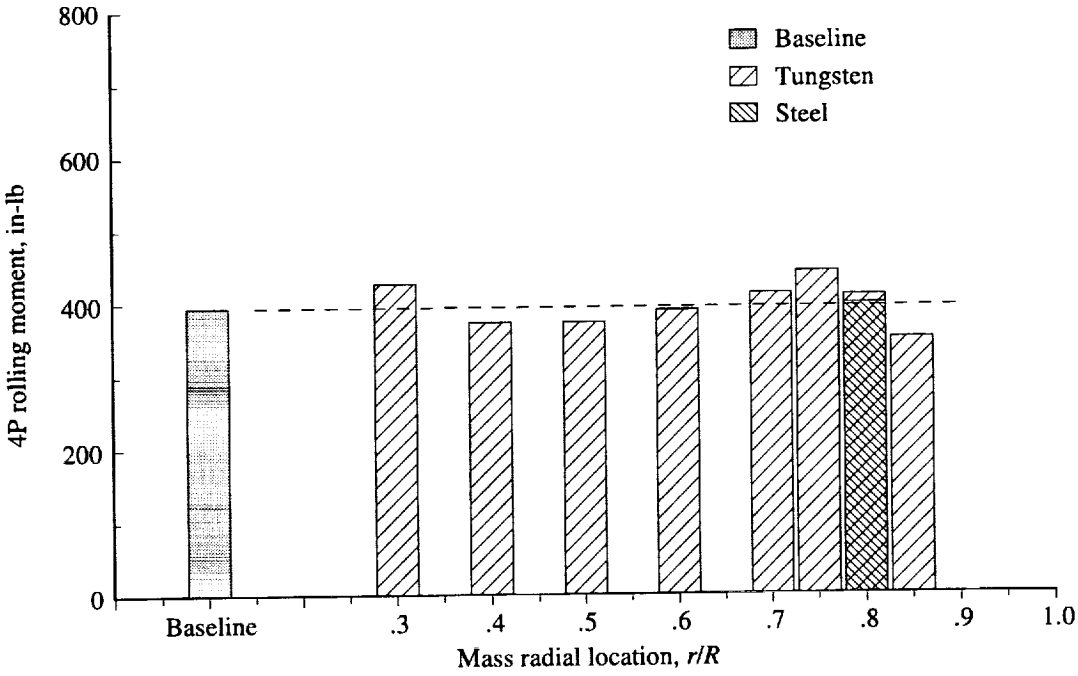


(e) $\mu = 0.200$.

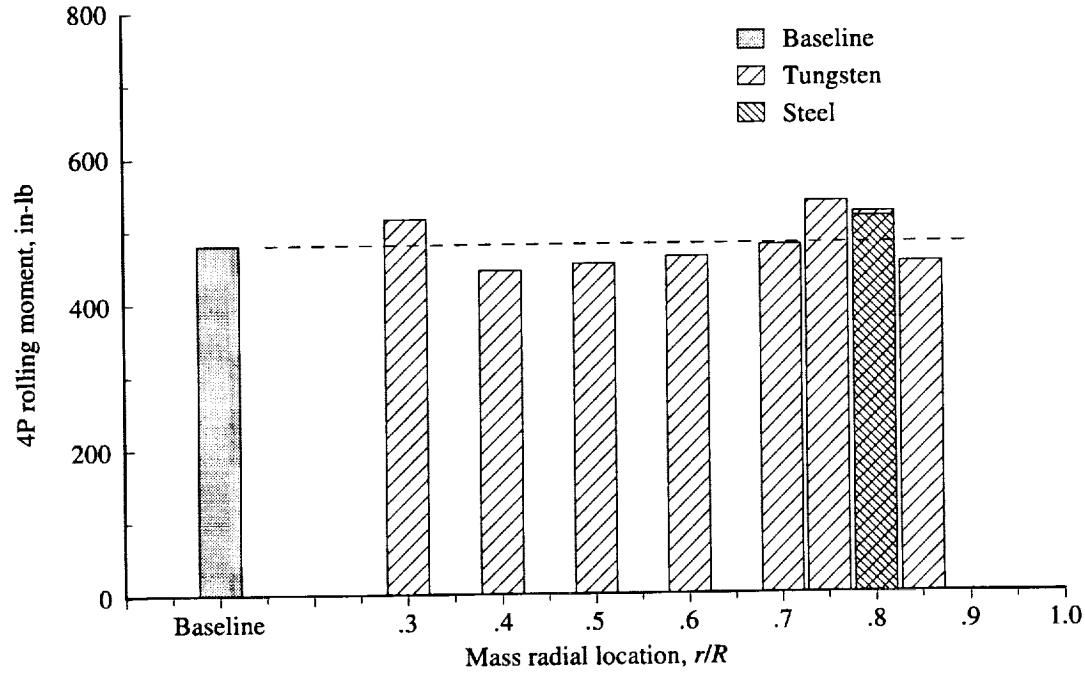


(f) $\mu = 0.225$.

Figure 19. Continued.

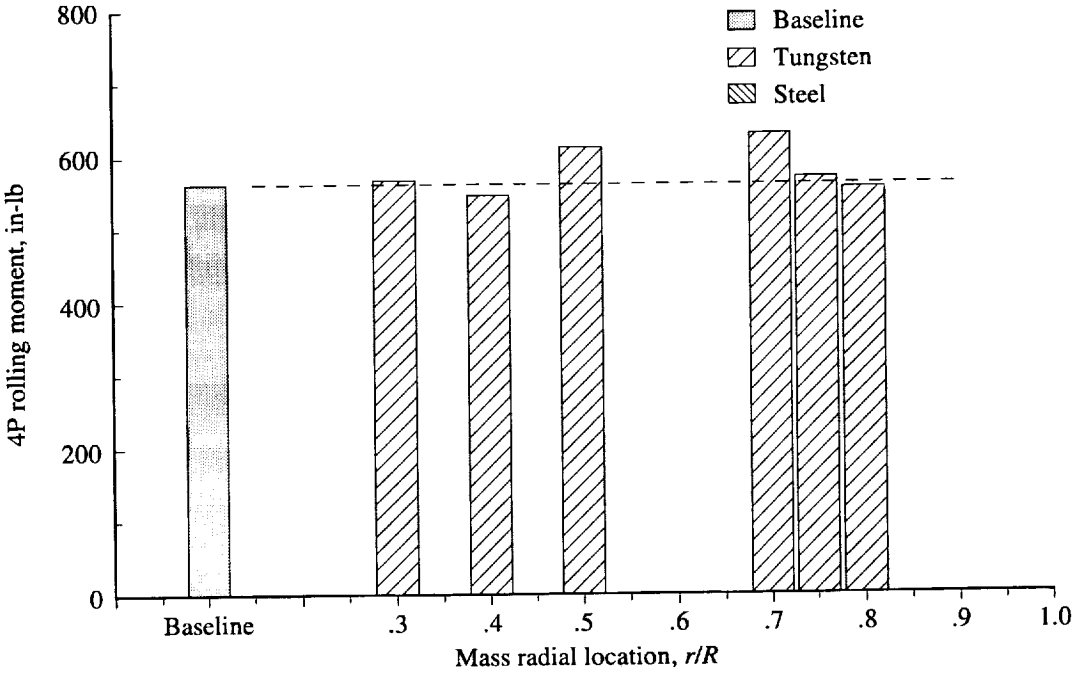


(g) $\mu = 0.250$.



(h) $\mu = 0.300$.

Figure 19. Continued.



(i) $\mu = 0.350$.

Figure 19. Concluded.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	January 1998	Technical Memorandum

4. TITLE AND SUBTITLE
Wind-Tunnel Evaluation of the Effect of Blade Nonstructural Mass Distribution on Helicopter Fixed-System Loads

5. FUNDING NUMBERS
WU 505-63-36-02
PR A5008

6. AUTHOR(S)
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Vehicle Technology Center
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Hampton, VA 23681-2199

8. PERFORMING ORGANIZATION REPORT NUMBER
L-17353

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
National Aeronautics and Space Administration
Washington, DC 20546-0001
and
U.S. Army Research Laboratory
Adelphi, MD 20783-1145

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
NASA/TM-1998-206281
ARL-TR-1401

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Unclassified–Unlimited
Subject Category 05 Distribution: Standard
Availability: NASA CASI (301) 621-0390

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*
This report provides data obtained during a wind-tunnel test conducted to investigate parametrically the effect of blade nonstructural mass on helicopter fixed-system vibratory loads. The data were obtained with aeroelastically scaled model rotor blades that allowed for the addition of concentrated nonstructural masses at multiple locations along the blade radius. Testing was conducted for advance ratios ranging from 0.10 to 0.35 for 10 blade-mass configurations. Three thrust levels were obtained at representative full-scale shaft angles for each blade-mass configuration. This report provides the fixed-system forces and moments measured during testing. The comprehensive database obtained is well-suited for use in correlation and development of advanced rotorcraft analyses.

14. SUBJECT TERMS
Helicopters; Model rotor testing; Helicopter vibration; Structural dynamics; Aeroelasticity

15. NUMBER OF PAGES
252

16. PRICE CODE
A12

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	