



American Customer Satisfaction Index

Report on the NASA – Glenn Research Center

August 2001

NASA – Glenn Research Center
ACSI Results – Report

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Chapter I

Introduction & Methodology

a. Introduction

The American Customer Satisfaction Index (ACSI) is the national indicator of customer evaluations of the quality of goods and services available to U.S. residents. It is the only uniform, cross-industry/government measure of customer satisfaction. Since 1994 ACSI has measured satisfaction, its causes and effects, for seven economic sectors, 34 industries, approximately 170 private sector companies, two types of local government services, the U.S. Postal Service, and the Internal Revenue Service. More than 50 federal government agencies have joined the ACSI since 1999. This will allow benchmarking between the public and private sectors and provide information unique to each agency on how its activities that interface with the public affect the satisfaction of user customers. The effects of satisfaction are estimated, in turn, on specific objectives (such as public trust).

ACSI is produced by a partnership of the University of Michigan Business School, CFI Group, and ASQ (American Society for Quality).

b. Overview of ACSI Methodology

Figure 1 illustrates the multi-equation, cause and effect econometric model that ACSI uses. Data that is used to run the model comes from surveys of customers of each measured company/agency. For private sector industries, company scores for satisfaction (ACSI) and other model components are weighted by company revenues to produce industry indices. Industry indices are weighted by revenues to produce economic sector indices. The sector indices, in turn, are weighted by the sector's contribution to the Gross Domestic Product (GDP) to produce the national ACSI. For the public sector i.e., the federal government agencies, each agency is weighted by the budget expended on activities for the chosen customer segment to produce a federal government ACSI.

The ACSI is updated on a rolling basis with data from 1-2 sectors collected each quarter and used to replace data collected the prior year. Each company or agency is measured annually.

Each federal government agency serves many segments of the public, both those internal to government and external users. For the first year of ACSI measurement, each agency was asked to identify a major customer user segment, central to its mission, for which to measure satisfaction, and the causes and effects of that satisfaction.

c. Customer Segment Choice

This report is about the NASA – Glenn Research Center in 2001. The NASA – Glenn Research Center has two “families” of customers-aerospace and non-aerospace. Individuals from a dozen different customer groups within these two families were invited to participate in the survey. Please note that the aggregate is based on Customers, Partners, Advocates and Stakeholders. Throughout this report, this segment will be referred to as “Customers”. Prospects were not included in the overall results, however, scores for this segment can be found in the Special Analyses Section.

d. Customer Sample

The NASA – Glenn Research Center provided a list containing 306 names including organization and other identifying data to Modern Technologies Corporation. The list included customers, vendors, media, academia and potential customers identified by The NASA – Glenn Research Center.

e. Questionnaire and Interviewing

The questionnaire used is shown in Appendix A. It was designed to be agency and/or center-specific in terms of activities and outcomes, and introductions to the questionnaire and to specific question areas. However, it follows a format common to all the federal agency questionnaires, that allows cause and effect modeling using the ACSI model.

Customer interviews were conducted by telephone June 18 through July 3, 2001, by professional interviewers of Modern Technologies, Inc. Potential interviewees were sent an introduction letter and information packet approximately 10 days prior to the start of the interviews.

To conduct the interviews each interviewer used a standard script. This ensured consistency of the survey data and increased the likelihood of a measurable response. Each survey took approximately 12 minutes to complete. 152 surveys were completed resulting in a 50% survey response rate. MTC attempted to contact each potential interviewee at least three times. A total of 940 phone calls were made. On average, each contact was called 3 times before a completed survey was obtained. A total of 41 people declined to participate and 114 of the names provided by GRC were not successfully contacted.

f. Customer Responses

Customer responses to all questions and the respective means are shown as frequency tables in Appendix B.

g. Benchmarking

Benchmarking of ACSI, and other model components measured in common for multiple agencies, is part of the report: "American Customer Satisfaction Index: Government-wide Satisfaction" issued in late 2000. This report shows indices for the original 30 measured government agencies, along with the most recently released ACSI for 170 private sector companies and two types of local government services (police and solid waste disposal).

Chapter II

ACSI Results

a. Model Indices

The government agency ACSI model is a variation of the model used to measure private sector companies. Both were developed at the National Quality Research Center of the University of Michigan Business School. Whereas the model for private sector, profit making, companies measures Customer Loyalty as the principal outcome of satisfaction (measured by questions on repurchase intention and price tolerance), each government agency, defined the outcome most important to it for the customer segment measured. Each agency also identified the principal activities that interface with its customers. The effects of these activities on customer satisfaction/dissatisfaction are estimated by the model.

The NASA – Glenn Research Center model, illustrated in Figure 1, should be viewed as a cause and effect model that moves from left to right, with satisfaction (ACSI) in the middle. The circles are components that are measured by survey questions. The arrows connecting the components in the circles represent the strength of the effect of the component on the left to the one to which the arrow points on the right. These arrows represent "impacts." The larger the number on the arrow, the more effect the component on the left has on the one on the right. The meanings of the numbers shown in the model are the topic of the rest of this chapter.

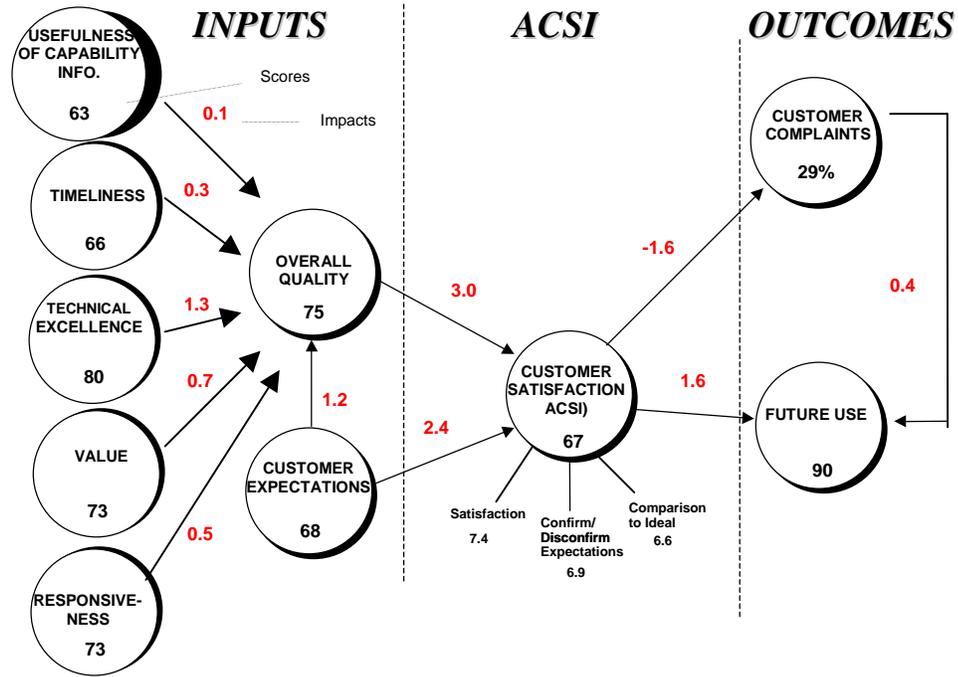
b. Satisfaction: ACSI

The ACSI is a weighted average of three questions, Q8, Q9, and Q10a, in the questionnaire in Appendix A. The questions are answered on 1-10 scales.¹ The three questions measure: Overall satisfaction (Q8); Fallen short of or exceeded expectations (Q9); and Comparison to an ideal (Q10a). The model does the weighting to maximize the effect of satisfaction on the agency outcome at the bottom right of the model in Figure 1.

The 2001 customer satisfaction index (ACSI) for the NASA – Glenn Research Center is 67 on a 0-100 scale. This is 2 points lower than the current national ACSI of 69 for the federal government.

¹ The confidence interval for this agency's customer segment is plus or minus 3.3 points on a 0-100 scale at the 95% confidence level.

PRELIMINARY FINDINGS - NOT FOR RELEASE



c. Drivers of Satisfaction

The NASA – Glenn Research Center identified five activities where it interfaces with its customers: usefulness of capability information, timeliness of technology, products and services, technical excellence of technology, products and services, overall value, and NASA – Glenn’s responsiveness.

Two other components are major drivers of Satisfaction. The first is the customer's expectations of the technology, products and services he/she would receive from the NASA – Glenn Research Center — expectations prior to use or, for longer-term users, prior to recent use (Q1). The second is his/her overall perception of the quality delivered after experience with the NASA – Glenn Research Center (Q7).

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Table 1: Drivers of Satisfaction	
Activities That Drive Satisfaction:	
	2001
Usefulness of Capability Information	63
Timeliness	66
Technical Excellence	80
Value	73
Responsiveness	73
Major Drivers of Satisfaction	
CUSTOMER EXPECTATIONS (Anticipated Quality)	68
OVERALL QUALITY (Experienced Quality)	75

The NASA – Glenn Research Center received its highest marks for the Technical Excellence of its technology, products and services (80).

NASA – Glenn’s Value and Responsiveness both received scores of 73.

The Usefulness of the Capability Information that NASA – Glenn provides and the Timeliness of the Outputs, received relatively lower scores of 63 and 66, respectively.

d. Outcomes of Customer Satisfaction

The NASA – Glenn Research Center wants to measure two outcomes from satisfied customers: Customer Complaints and how likely their customers are to do business with them again in the future (Future Use).

Customer Complaints

The rate of Customer Complaints is 29 percent. Customer Complaints was evaluated by three questions (Q11a, Q11b, and Q11c), but the outcome itself was measured with one question (Q11a): “Have you expressed any concerns or complaints to GRC in the past two years?” twenty-nine percent of customers said they formally contacted the NASA – Glenn Research Center to complain. Those who complained were asked two follow-up questions. Forty-six percent said their complaint was “handled well” (Q11c), while ninety-five percent said that it was “relatively easy” to voice their concern or complaints to GRC (Q11b).²

Future Use (Q12)

The index of Future Use—how likely respondents are to do business with NASA – Glenn in the future—is 90.

² For both of these questions, Q11b and Q11c, the reported percentages are based on the valid percentages of reported responses from 7 to 10.

e. Using the Model

Now, it is time to look again at the NASA – Glenn Research Center model in Figure 1 to examine the components in context and to look at the effects, or "impact" of each component on subsequent components.

Technical Excellence (1.3) is the activity with the highest impact on Overall Quality. The activity with the lowest impact is Usefulness of the Capability Information, which has an impact of 0.1. Timeliness (0.3) also has a very low impact Upon Overall Quality. The impacts that Overall Quality and Customer Expectations have on Customer Satisfaction (ACSI) are 3.0 and 2.4, respectively. This finding implies that Overall Quality has greater relative importance on Customer Satisfaction (ACSI). Next, we discuss the impacts that Customer Satisfaction (ACSI) has on the outcome measures of Customer Complaints and Future Use.

How satisfied the NASA – Glenn Research Center’s customers are with the technology, products and services that the NASA – Glenn Research Center provides drives the outcome measures. If Customer Satisfaction (ACSI) rises, we would expect that the percentage of Customer Complaints would fall, implying a negative relationship between these variables. The impact of Customer Satisfaction (ACSI) on Customer Complaints is –1.6. We would further expect that if Customer Satisfaction rises, customers would be more likely to do business with the NASA – Glenn Research Center in the future. The impact of Customer Satisfaction (ACSI) on Future Use is +1.6.

Impact scores should be read as the effect on the subsequent component if the initial component were to be improved by 5 points. Thus, if the score of Technical Excellence increased by 5 points (80 to 85), Overall Quality would increase from 75 to 76.3, by the amount of the impact Technical Excellence has on Overall Quality (1.3). The full effect of the 5-point change in Technical Excellence would only impact Overall Quality. The impact on subsequent components (Customer Satisfaction (ACSI) and the outcomes; Future Use, in this example) would be a fraction of the initial 5-point change. The change on Customer Satisfaction (ACSI) would be 0.8, thereby increasing Customer Satisfaction (ACSI) from 67 to 67.8. The impact on the outcome Future Use, for example, would be an increase of .3; increasing the score from 90 to 90.3.³

³ The impact of Overall Quality on Customer Satisfaction (ACSI) is calculated as the actual impact (3.0) divided by five and then multiplied by the impact of Technical Excellence on Overall Quality. The calculation, found to be 0.8, would be added to the original score of Customer Satisfaction (67). Customer Satisfaction would increase to 67.8 for an initial 5-point increase in Technical Excellence. Subsequent scores and impacts are calculated with the same logic.

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f. Special Analyses

In addition to the overall customers, we looked at the results of several segments for the NASA – Glenn Research Center. The scores for each of these segments are shown below. Please note that it is important to interpret the results with caution when sample sizes are low.

Customer Sectors

The NASA – Glenn Research Center’s customer base is comprised of individuals from many different types of organizations. In particular, we were interested in the results of those customers from the following categories: Manufacturing, NASA Centers, College/Universities, and All Others.

At a 95% confidence interval, there is no distinction among these four categories.

Table 2: Customer Sector Results				
	Manufacturing (n=51)	NASA Centers (n=17)	College/ Universities (n=14)	All Others (n=46)
USEFULNESS OF CAPABILITY INFO.	61	63	72	62
TIMELINESS	66	73	73	61
TECHNICAL EXCELLENCE	78	78	81	83
VALUE	71	74	78	73
RESPONSIVENESS	71	80	80	70
CUSTOMER EXPECTATIONS	68	64	78	67
OVERALL QUALITY	75	74	74	76
OVERALL SATISFACTION	65	69	74	66
CUSTOMER COMPLAINTS	28%	35%	39%	26%
FUTURE USE	86	90	95	92

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Manufacturing Sub-Sectors

Within the Manufacturing customer segment, we looked at two sub-sectors “Aircraft and Aircraft Engines” and “Spacecraft and Spacecraft Engines”. Upon reviewing these scores, we found that these two segments are not significantly different from each other at a 95% confidence interval. While there is no dissimilarity among the scores, the Aircraft and Aircraft Engines group has a noticeably higher Complaint Rate compared to the Spacecraft and Spacecraft Engines group.

Table 3: Manufacturing Sub-Sectors		
	Aircraft and Aircraft Engines (n=27)	Spacecraft and Spacecraft Engines (n=12)
USEFULNESS OF CAPABILITY INFO.	64	61
TIMELINESS	66	76
TECHNICAL EXCELLENCE	77	76
VALUE	74	64
RESPONSIVENESS	70	79
CUSTOMER EXPECTATIONS	71	64
OVERALL QUALITY	74	76
OVERALL SATISFACTION	65	63
CUSTOMER COMPLAINTS	42%	8%
FUTURE USE	90	90

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Relationship with NASA – Glenn

Participants fall under four different categories depending on their relationship with the NASA – Glenn Research Center. The table below shows the scores for each of these categories.

As evident by their low Future Use score, Prospects fall far behind the other segments when it comes to the likelihood that they will do business with NASA – Glenn in the future. Their score of 68 is significantly lower than the scores for Customers, Partners and Advocates & Stakeholders.

Table 4: Relationship with NASA – Glenn				
	Customers (n=52)	Partners (n=43)	Advocates & Stakeholders (n=33)	Prospects (n=19)
USEFULNESS OF CAPABILITY INFO.	66	58	63	62
TIMELINESS	69	66	60	60
TECHNICAL EXCELLENCE	80	78	82	75
VALUE	75	72	68	89
RESPONSIVENESS	74	71	73	77
CUSTOMER EXPECTATIONS	69	67	68	68
OVERALL QUALITY	76	74	73	75
OVERALL SATISFACTION	67	68	66	63
CUSTOMER COMPLAINTS	28%	33%	28%	11%
FUTURE USE	89	88	93	68

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Frequency of Interaction with NASA – Glenn

Respondents were asked how often they interact with the NASA – Glenn Research Center throughout the year.

Those who communicate with NASA – Glenn one to two times per year scored Usefulness of Capability Information significantly lower than respondents who have contact with NASA – Glenn five or more times per year. Customers who have more exposure to NASA – Glenn are apparently more aware of NASA – Glenn’s capability information.

Respondents with regular communication with NASA – Glenn, totaling five or more times per year, also recognize the timeliness of the technology, products and services that are provided. This group gave significantly higher scores compared to the three other segments.

Customers who only contact NASA – Glenn once a year or less have significantly lower levels of Overall Satisfaction compared to Customers who have more frequent interactions (five or more times per year).

There is also a distinction among the scores if you look at the likelihood of Future Use among the respondents. Individuals who have limited contact with NASA – Glenn (Less than once a year) score Future Use significantly below each of the other three segments. Those who contact NASA – Glenn five or more times per year gave a high score of 95, which is also significantly higher at a 95% confidence level compared to each segment.

Table 5: Frequency of Interaction with NASA – Glenn

	Less than once a year (n=7)	1-2 times per year (n=13)	3-4 times per year (n=9)	5 or more times per year (n=97)
USEFULNESS OF CAPABILITY INFO.	57	47	57	66
TIMELINESS	42	56	51	70
TECHNICAL EXCELLENCE	82	77	--	81
VALUE	67	63	72	74
RESPONSIVENESS	62	68	69	74
CUSTOMER EXPECTATIONS	59	59	70	69
OVERALL QUALITY	76	75	70	75
OVERALL SATISFACTION	52	61	69	68
CUSTOMER COMPLAINTS	14%	8%	11%	35%
FUTURE USE	56	73	78	95

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Summary

In light of the findings, we make the following recommendations to the NASA – Glenn Research Center:

- The NASA – Glenn Research Center is performing well in the area of Technical Excellence, which received the highest score. This activity also has the highest impact on Customer Satisfaction (ACSI). Value (73) has the second highest impact upon Satisfaction. *“Maintain or Improve”*
- Responsiveness also received a score of 73, and has a relatively low impact on Customer Satisfaction (ACSI). *“Keep up the Good Work”*
- Usefulness of Capability Information (63) and Timeliness (66) are the lowest scoring activities. Their very low impacts on Customer Satisfaction (ACSI) signify that improvements to these activities may not have a quick effect on Customer Satisfaction (ACSI) or that it would take a more significant increase to see improvements in the Customer Satisfaction (ACSI) measurement. *“Areas in Need of Attention”*

APPENDIX A
SURVEY QUESTIONNAIRE

NASA – Glenn Customer Survey

Instructions: Ask all of the questions in the order presented. Document all ratings provided by the respondent. Always ask for comments and examples for the ratings, but do not press for them. The survey should take 10 to 20 minutes to complete. Remember that you may be talking to high-level people. Respect and professionalism are essential. If the person does not wish to participate, do not push the issue. Thank them and ask if there is anyone else in their organization who might be better to talk to.

Proceed as follows:

Good morning/afternoon Mr/Ms NAME. This is _____ from the Modern Technologies Corporation, which is conducting a customer survey on behalf of the NASA – Glenn Research Center in Cleveland, Ohio.

Questions Relating to Respondent Demographics:

A. Do you recall receiving a customer survey introduction letter from the NASA – Glenn Research Center Director, Don Campbell recently?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Comments:		

If No: Explain the purpose of survey and then proceed by asking if this is a good time to complete the survey with the following question:

If Yes: **Do you have a few minutes now to respond to the survey or is there a better time when I can call you back?**

If call back is desired: Date _____ Time _____

If now is OK, proceed.

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B. How often do you interact with NASA – Glenn?			
1 Less than once a year	2 1-2 times per year	3 3-4 times per year	4 5 or more times per year
Comments:			

<p>C. What do or might you primarily receive from NASA – Glenn?</p>	<div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Technology <input type="checkbox"/> Products </div> <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Services <input type="checkbox"/> Other </div> <p>{The interviewer will need to indicate the appropriate category based on the response. Remember that prospective customers may not be able to answer this question, and that universities may answer that what they get is funding, which should be recorded in the “Other” category. If necessary, read the definitions.}</p>
Comments:	

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D. Using a 10-point scale, with “1” meaning “Not at all” and “10” meaning “Very knowledgeable”, how knowledgeable are you about what GRC does?									
1 Not at all	2	3	4	5	6	7	8	9	10 Very knowledge able
Comments: (If they are not familiar with NASA – Glenn, direct them to web site: http://www.grc.nasa.gov)									

Questions Needed to Calculate NASA – Glenn’s American Customer Satisfaction Index Score.

Please answer each of the following question with a whole number between 1 and 10, with 1 representing the LOWEST (“worst”) rating possible and 10 representing the HIGHEST (“best”) rating possible.

If a question is not applicable, it is OK to not to provide a rating.

1. Before you had direct experience with NASA – Glenn, you probably knew something about it. Please recall your expectations about NASA – Glenn’s technology, products and services. Using a 10-point scale, with “1” meaning “low” and “10” meaning “ high”, how do you rate NASA – Glenn against your original expectations?										
N/A	1 Low	2	3	4	5	6	7	8	9	10 High
Comments/Examples:										

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2. Using a 10-point scale, with “1” meaning “poor” and “10” meaning “excellent”, how do you rate the usefulness of NASA – Glenn’s capability information? (Examples of capability information include: the NASA – Glenn Annual Report, Strategic Implementation Plan, Research and Technology Reports, NASA – Glenn facility and service brochures, its website information, etc.)

N/A	1 Poor	2	3	4	5	6	7	8	9	10 Excellent
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Comments/Examples:

3. Using a 10-point scale, with “1” meaning “poor” and “10” meaning “excellent”, how do you rate NASA – Glenn with regard to the timeliness of its technology, products and services?

N/A	1 Poor	2	3	4	5	6	7	8	9	10 Excellent
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Comments/Examples:

4. Using a 10-point scale, with “1” meaning “poor” and “10” meaning “excellent”, how do you rate NASA – Glenn with regard to the technical excellence of its technology, products and services?

N/A	1 Poor	2	3	4	5	6	7	8	9	10 Excellent
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Comments/Examples:

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5. On those occasions when NASA – Glenn charges you for its technology, products or services, using a 10-point scale, with “1” meaning “poor” and “10” meaning “excellent”, how do you rate their value?

N/A	1 Poor	2	3	4	5	6	7	8	9	10 Excellent
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Comments/Examples:

6. Using a 10-point scale, with “1” meaning “poor” and “10” meaning “Excellent”, how do you rate NASA – Glenn for responsiveness?

N/A	1 Poor	2	3	4	5	6	7	8	9	10 Excellent
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Comments/Examples:

7. Please consider your recent experiences with NASA – Glenn and all the dimensions of quality. Using a 10-point scale, with “1” meaning “low” and “10” meaning “high”, how would you rate the overall quality of NASA – Glenn’s technology, products and services?

N/A	1 Low	2	3	4	5	6	7	8	9	10 High
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Comments/Examples:

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8. Please consider your recent experiences with NASA – Glenn and all the dimensions of satisfaction. Using a 10-point scale, with “1” meaning “very dissatisfied” and “10” meaning “very satisfied”, overall how satisfied are you with NASA – Glenn?

N/A	1 Very Dissat isfied	2	3	4	5	6	7	8	9	10 Very Satisfi ed
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Comments/Examples:

9. Please consider your recent experiences with NASA – Glenn. Using a 10-point scale, with “1” meaning “falls short of my expectations” and “10” meaning “exceeds my expectations”, how well does NASA – Glenn meet your expectations?

N/A	1 Falls Short	2	3	4	5	6	7	8	9	10 Exceed
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Comments/Examples:

10a. Imagine what an ideal federal laboratory would be like. Using a 10-point scale, with “1” meaning “not at all close to the ideal” and “10” meaning “very close to the ideal”, how would you rate NASA – Glenn?

N/A	1 Not Close	2	3	4	5	6	7	8	9	10 Very Close
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10b. What federal laboratories come to mind which are closer than NASA – Glenn to your ideal?

Comments/Examples:

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11a. Have you expressed any concerns or complaints to GRC in the past two years?	<input type="checkbox"/> Yes <input type="checkbox"/> No
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11b. **If YES: Using a 10-point scale, with “1” meaning “very difficult” and “10” meaning “very easy”, how easy was it to voice your concerns or complaints to GRC?**

N/A	1 Very Difficu It	2	3	4	5	6	7	8	9	10 Very Easy
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Comments/Examples:

11c. **If YES: Using a 10-point scale, with “1” meaning “poor” and “10” meaning “very well”, how well was the concern or complaint handled by GRC?**

N/A	1 Poorly	2	3	4	5	6	7	8	9	10 Very Well
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Comments/Examples:

12. **Using a 10-point scale, with “1” meaning “never” and “10” meaning “absolutely”, how likely are you to do business with NASA – Glenn in the future? {If the respondents consider themselves customer advocates, this should be construed to mean “How often will they recommend NASA – Glenn to their clients?”}**

N/A	1 Never	2	3	4	5	6	7	8	9	10 Absolutel y
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Comments:

APPENDIX B

FREQUENCIES AND MEANS OF SURVEY QUESTIONS

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NAICS NAICS Sector

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	325110	1	.8	.8	.8
	325190	1	.8	.8	1.6
	327000	1	.8	.8	2.3
	332000	1	.8	.8	3.1
	333314	2	1.6	1.6	4.7
	334200	1	.8	.8	5.5
	334400	1	.8	.8	6.3
	334511	2	1.6	1.6	7.8
	335910	2	1.6	1.6	9.4
	336411	11	8.6	8.6	18.0
	336412	16	12.5	12.5	30.5
	336414	6	4.7	4.7	35.2
	336415	6	4.7	4.7	39.8
	485000	1	.8	.8	40.6
	488100	1	.8	.8	41.4
	510000	6	4.7	4.7	46.1
	513340	3	2.3	2.3	48.4
	541330	3	2.3	2.3	50.8
	541380	1	.8	.8	51.6
	541500	1	.8	.8	52.3
	541613	10	7.8	7.8	60.2
	541700	1	.8	.8	60.9
	561200	1	.8	.8	61.7
	611100	1	.8	.8	62.5
	611200	1	.8	.8	63.3
	611300	13	10.2	10.2	73.4
	712000	2	1.6	1.6	75.0
	813900	2	1.6	1.6	76.6
	921110	2	1.6	1.6	78.1
	926120	3	2.3	2.3	80.5
	927000	17	13.3	13.3	93.8
	928000	6	4.7	4.7	98.4
	999999	2	1.6	1.6	100.0
	Total	128	100.0	100.0	

Mean 563070.742

Valid cases 128 Missing cases 0

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A Do you recall receiving a customer survey

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1.00	92	71.9	74.2	74.2
no	2.00	32	25.0	25.8	100.0
	-90.00	1	.8	Missing	
	.00	3	2.3	Missing	
		-----	-----	-----	
	Total	128	100.0	100.0	

Mean 1.258

Valid cases 124 Missing cases 4

B How often do you interact with NASA-Glen

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Less than once a yea	1.00	7	5.5	5.6	5.6
1-2 times a year	2.00	13	10.2	10.3	15.9
3-4 times a year	3.00	9	7.0	7.1	23.0
5 or more times a ye	4.00	97	75.8	77.0	100.0
	-90.00	2	1.6	Missing	
		-----	-----	-----	
	Total	128	100.0	100.0	

Mean 3.556

Valid cases 126 Missing cases 2

C_TECH Primarily receive Technology from NASA G

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Technology	1.00	76	59.4	100.0	100.0
	-90.00	52	40.6	Missing	
		-----	-----	-----	
	Total	128	100.0	100.0	

Mean 1.000

Valid cases 76 Missing cases 52

NASA – Glenn Research Center
ACSI Results – Report

C_SERV Primarily receive Services from NASA Gle

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Services	2.00	48	37.5	100.0	100.0
	-90.00	80	62.5	Missing	
	Total	128	100.0	100.0	

Mean 2.000

Valid cases 48 Missing cases 80

C_PRODS Primarily receive Products from NASA Gle

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Products	3.00	26	20.3	100.0	100.0
	-90.00	101	78.9	Missing	
	-1.00	1	.8	Missing	
	Total	128	100.0	100.0	

Mean 3.000

Valid cases 26 Missing cases 102

C_OTHER Primarily receive Other from NASA - Glenn

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Other	4.00	50	39.1	100.0	100.0
	-90.00	78	60.9	Missing	
	Total	128	100.0	100.0	

Mean 4.000

Valid cases 50 Missing cases 78

NASA – Glenn Research Center
ACSI Results – Report

D how knowledgeable are you about what GRC

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2.00	1	.8	.8	.8
	3.00	5	3.9	4.0	4.8
	4.00	6	4.7	4.8	9.5
	5.00	19	14.8	15.1	24.6
	6.00	6	4.7	4.8	29.4
	7.00	27	21.1	21.4	50.8
	8.00	30	23.4	23.8	74.6
	9.00	18	14.1	14.3	88.9
Very Knowledgeable	10.00	14	10.9	11.1	100.0
	-90.00	2	1.6	Missing	
	Total	128	100.0	100.0	

Mean 7.167

Valid cases 126 Missing cases 2

EXP_QUAL NASA - Glenn against your original expecta

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2.00	1	.8	.9	.9
	3.00	5	3.9	4.6	5.6
	4.00	3	2.3	2.8	8.3
	5.00	11	8.6	10.2	18.5
	6.00	12	9.4	11.1	29.6
	7.00	21	16.4	19.4	49.1
	8.00	35	27.3	32.4	81.5
	9.00	13	10.2	12.0	93.5
high	10.00	7	5.5	6.5	100.0
	-90.00	3	2.3	Missing	
	.00	17	13.3	Missing	
	Total	128	100.0	100.0	

Mean 7.130

Valid cases 108 Missing cases 20

NASA – Glenn Research Center
ACSI Results – Report

INFO the usefulness of NASA - Glenn's capabilit

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	1.00	3	2.3	2.6	2.6
	2.00	4	3.1	3.5	6.1
	3.00	7	5.5	6.1	12.2
	4.00	6	4.7	5.2	17.4
	5.00	14	10.9	12.2	29.6
	6.00	11	8.6	9.6	39.1
	7.00	24	18.8	20.9	60.0
	8.00	19	14.8	16.5	76.5
	9.00	18	14.1	15.7	92.2
excellent	10.00	9	7.0	7.8	100.0
	-90.00	4	3.1	Missing	
	.00	9	7.0	Missing	
Total		128	100.0	100.0	

Mean 6.643

Valid cases 115 Missing cases 13

TIME NASA - Glenn in regard to the timeliness o

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	1.00	1	.8	.9	.9
	2.00	4	3.1	3.7	4.6
	3.00	3	2.3	2.8	7.4
	4.00	5	3.9	4.6	12.0
	5.00	10	7.8	9.3	21.3
	6.00	12	9.4	11.1	32.4
	7.00	22	17.2	20.4	52.8
	8.00	29	22.7	26.9	79.6
	9.00	16	12.5	14.8	94.4
excellent	10.00	6	4.7	5.6	100.0
	-90.00	2	1.6	Missing	
	.00	18	14.1	Missing	
Total		128	100.0	100.0	

Mean 6.944

Valid cases 108 Missing cases 20

NASA – Glenn Research Center
ACSI Results – Report

PRODUCT NASA - Glenn with regard to the technical

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	3.00	1	.8	.8	.8
	4.00	1	.8	.8	1.7
	5.00	2	1.6	1.7	3.4
	6.00	2	1.6	1.7	5.1
	7.00	24	18.8	20.3	25.4
	8.00	44	34.4	37.3	62.7
	9.00	25	19.5	21.2	83.9
excellent	10.00	19	14.8	16.1	100.0
	-90.00	2	1.6	Missing	
	.00	8	6.3	Missing	
	Total	128	100.0	100.0	

Mean 8.169

Valid cases 118 Missing cases 10

VALUE how do you rate their value

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	1.00	1	.8	2.0	2.0
	3.00	1	.8	2.0	4.0
	4.00	1	.8	2.0	6.0
	5.00	4	3.1	8.0	14.0
	6.00	3	2.3	6.0	20.0
	7.00	9	7.0	18.0	38.0
	8.00	15	11.7	30.0	68.0
	9.00	12	9.4	24.0	92.0
excellent	10.00	4	3.1	8.0	100.0
	-90.00	2	1.6	Missing	
	.00	76	59.4	Missing	
	Total	128	100.0	100.0	

Mean 7.540

Valid cases 50 Missing cases 78

NASA – Glenn Research Center
ACSI Results – Report

RESPOND how do you rate NASA - Glenn for responsiv

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	1.00	2	1.6	1.7	1.7
	2.00	1	.8	.8	2.5
	3.00	2	1.6	1.7	4.2
	4.00	3	2.3	2.5	6.7
	5.00	6	4.7	5.0	11.8
	6.00	11	8.6	9.2	21.0
	7.00	29	22.7	24.4	45.4
	8.00	30	23.4	25.2	70.6
	9.00	15	11.7	12.6	83.2
excellent	10.00	20	15.6	16.8	100.0
	-90.00	2	1.6	Missing	
	.00	7	5.5	Missing	
Total		128	100.0	100.0	

Mean 7.529

Valid cases 119 Missing cases 9

OQ_PROG Overall Quality

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
high	3.00	1	.8	.9	.9
	4.00	2	1.6	1.8	2.7
	5.00	5	3.9	4.5	7.3
	6.00	3	2.3	2.7	10.0
	7.00	30	23.4	27.3	37.3
	8.00	39	30.5	35.5	72.7
	9.00	25	19.5	22.7	95.5
	10.00	5	3.9	4.5	100.0
	-90.00	3	2.3	Missing	
.00	15	11.7	Missing		
Total		128	100.0	100.0	

Mean 7.736

Valid cases 110 Missing cases 18

NASA – Glenn Research Center
ACSI Results – Report

SAT1 overall how satisfied are you with NASA-

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
very dissatisfied	1.00	1	.8	.8	.8
	2.00	2	1.6	1.7	2.5
	3.00	3	2.3	2.5	5.0
	4.00	4	3.1	3.3	8.3
	5.00	6	4.7	5.0	13.2
	6.00	15	11.7	12.4	25.6
	7.00	24	18.8	19.8	45.5
	8.00	31	24.2	25.6	71.1
	9.00	20	15.6	16.5	87.6
very satisfied	10.00	15	11.7	12.4	100.0
	-90.00	2	1.6	Missing	
	.00	5	3.9	Missing	
Total		128	100.0	100.0	

Mean 7.405

Valid cases 121 Missing cases 7

SAT2 does NASA - Glenn meet your expectations

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
falls short of my ex	1.00	3	2.3	2.5	2.5
	2.00	2	1.6	1.7	4.1
	4.00	6	4.7	5.0	9.1
	5.00	14	10.9	11.6	20.7
	6.00	14	10.9	11.6	32.2
	7.00	34	26.6	28.1	60.3
	8.00	25	19.5	20.7	81.0
	9.00	17	13.3	14.0	95.0
	exceeds my expectati	10.00	6	4.7	5.0
-90.00		2	1.6	Missing	
.00		5	3.9	Missing	
Total		128	100.0	100.0	

Mean 6.909

Valid cases 121 Missing cases 7

NASA – Glenn Research Center
ACSI Results – Report

SAT3 how close to the ideal federal laborator

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2.00	2	1.6	1.9	1.9
	3.00	2	1.6	1.9	3.8
	4.00	7	5.5	6.6	10.4
	5.00	14	10.9	13.2	23.6
	6.00	21	16.4	19.8	43.4
	7.00	27	21.1	25.5	68.9
	8.00	22	17.2	20.8	89.6
	9.00	8	6.3	7.5	97.2
very close to ideal	10.00	3	2.3	2.8	100.0
	-90.00	5	3.9	Missing	
	.00	17	13.3	Missing	
		-----	-----	-----	
	Total	128	100.0	100.0	

Mean 6.613

Valid cases 106 Missing cases 22

COMPL1 Have you expressed any concerns or compl

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no	1.00	89	69.5	70.6	70.6
yes	2.00	37	28.9	29.4	100.0
	-90.00	2	1.6	Missing	
		-----	-----	-----	
	Total	128	100.0	100.0	

Mean 1.294

Valid cases 126 Missing cases 2

NASA – Glenn Research Center
ACSI Results – Report

COMPL2 how easy was it to voice your concerns o

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2.00	1	.8	2.7	2.7
	3.00	1	.8	2.7	5.4
	7.00	1	.8	2.7	8.1
	8.00	15	11.7	40.5	48.6
	9.00	8	6.3	21.6	70.3
very easy	10.00	11	8.6	29.7	100.0
	-80.00	87	68.0	Missing	
	.00	4	3.1	Missing	
	Total	128	100.0	100.0	

Mean 8.486

Valid cases 37 Missing cases 91

COMPL3 how well was the concern or complaint ha

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poor	1.00	2	1.6	5.7	5.7
	2.00	2	1.6	5.7	11.4
	3.00	2	1.6	5.7	17.1
	4.00	6	4.7	17.1	34.3
	5.00	4	3.1	11.4	45.7
	6.00	3	2.3	8.6	54.3
	7.00	3	2.3	8.6	62.9
	8.00	10	7.8	28.6	91.4
	9.00	2	1.6	5.7	97.1
very well	10.00	1	.8	2.9	100.0
	-90.00	1	.8	Missing	
	-80.00	89	69.5	Missing	
	.00	3	2.3	Missing	
	Total	128	100.0	100.0	

Mean 5.800

Valid cases 35 Missing cases 93

NASA – Glenn Research Center
ACSI Results – Report

FUTURE how likely are you to do business with N

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
never	1.00	1	.8	.8	.8
	3.00	1	.8	.8	1.7
	4.00	3	2.3	2.5	4.1
	5.00	6	4.7	5.0	9.1
	6.00	2	1.6	1.7	10.7
	7.00	6	4.7	5.0	15.7
	8.00	7	5.5	5.8	21.5
absolutely	9.00	9	7.0	7.4	28.9
	10.00	86	67.2	71.1	100.0
	-90.00	3	2.3	Missing	
	.00	4	3.1	Missing	
	Total	128	100.0	100.0	

Mean 9.066

Valid cases 121 Missing cases 7

SECTOR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Manufacturers	1.00	51	39.8	39.8	39.8
NASA Centers	2.00	17	13.3	13.3	53.1
Colleges & Universit	3.00	14	10.9	10.9	64.1
Other	4.00	46	35.9	35.9	100.0
	Total	128	100.0	100.0	

Mean 2.430

Valid cases 128 Missing cases 0

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ACSI Results – Report

TYPE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Aerospace	.00	99	77.3	77.3	77.3
Non-Aerospace	1.00	29	22.7	22.7	100.0
		-----	-----	-----	
Total		128	100.0	100.0	

Mean .227

Valid cases 128 Missing cases 0

RELATE3

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Customer	1.00000	52	40.6	40.6	40.6
Partner	2.00000	43	33.6	33.6	74.2
Customer Advocate	3.00000	31	24.2	24.2	98.4
Stakeholder	4.00000	2	1.6	1.6	100.0
		-----	-----	-----	
Total		128	100.0	100.0	

Mean 1.867

Valid cases 128 Missing cases 0

APPENDIX C

COMMENTS, EXAMPLES, SUGGESTIONS and OTHER REMARKS

*NASA – Glenn Research Center
ACSI Results – Report*

QA. Do you recall receiving a customer survey introduction letter from the NASA Glenn Research Center Director, Don Campbell recently? (Yes/No)

- Been at this job short time. Not much experience or knowledge of GRC.
- Call back tomorrow 6/19/01.
- Dated May 30.
- Does not recall receiving the letter.
- Have used the services of GRC: Problem 1994/1995 fleet of business engines. BGSV supplied business study engine.
- He had been on travel and opened the package during this phone call.
- May have sent to Chuck Chase.
- Mr. Faulconer sent him the letter, but he had not read it.
- Mr. Steveragle did not feel that his organization was either a customer or a user of GRC and could not contribute anything for the survey.
- Not aware of letter.
- Partner on lift program. Program to help new businesses get started using NASA Technology.
- Prefers to fill out mailer and mail it back to MTC. (arrived 6/22/01)
- Seems so.
- Technical transfer and R&D are primary business.
- Wanted to know, "Why am I receiving this letter; I have very little dealings with them"?

**QB. How often do you interact with NASA – Glenn?
(1 = Less than once a year; 2 = 1-2 times a year; 3 = 3-4 times a year; 4 = 5 or more times a year)**

- 1 or 2 per month.
- 1 time every 2 months.
- 1 time per month.
- 10 or 12 times per year.
- 2 fold - Update on ultraeffice Engine Tech. Emkission Rec. and Acces the support combustion engineering.
- 2 per month.
- 2 per week.
- 2 times per month talking to them.
- 2 times per month.
- 20 to 50 per year.
- 2-5 times monthly.
- 4 times per year.
- 6 times year.
- Almost daily.
- Almost never.
- At least every 2 weeks.
- BI-weekly contact.
- BI-weekly.
- As chairman of the National Safety and Training Center, interacts with NASA representative to the NTSB; however, has no specific contact with GRC.
- Constantly.
- Continual.
- Continuously.
- Current customer, continually over a long period of time.
- Currently interacts about once per week.
- Daily contact.
- Daily interface and interaction.
- Daily.
- Depends on Program or Project.

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ACSI Results – Report*

- Does business, interaction on a regular basis.
- I am a board member.
- During the time the program was 5 years ago.
- Everyday.
- Growing. Before this contract it was 1-2 times, now monthly.
- Interfaces with Glenn on a daily basis. They are a contractor who does research for GRC.
- Just got contract. Tech guys weekly.
- Long term contract. Interacts monthly. He is the customer.
- Meetings and conversations.
- Monthly.
- Never.
- Never. They are a past customer.
- New involvement.
- None, no interaction.
- None. A few months ago did a lot more.
- Not at all now. About 6 months ago had more but not much more.
- Not aware of any contact.
- Not very.
- Once a week.
- Once per month.
- Once per week.
- Ongoing.
- Only about 6 times per year.
- Personally it is 4-5 times per year. As an organization it is weekly.
- Personally seldom, but as a company weekly.
- Quarterly.
- Senior researcher at least once a month.
- Technical backer.
- Two times a week for information and general discussion on various subjects.
- University of Akron does business on a daily basis. They have people located at GRC.
- Used to be more.
- Variety of project - next engines.
- Very little within the last 6 months.
- We deal with GRC on a regular basis, at least once a month.
- Weekly for 9 months.
- Weekly.

**QC. What do or might you primarily receive from NASA – Glenn?
(1= Technology; 2 = Services; 3 = Products; 4 = Other)**

- #4 is consulting. Informative exchange.
- #4 outside committees.
- #4 testing.
- Agreement is ending after 4 years.
- All the above. They are partners and customers of GRC.
- Also occasional user of facilities.
- An incubator.
- Area partners.
- Community business.
- Company provides products and services, plus technology information.
- Connect GRC with prospective customer.
- Contractor and a consultant.
- Contractor. In NRA - NASA Research - NASA GRC is subtle.
- Contractors of NASA Glenn. Some services.
- Co-operative research.

*NASA – Glenn Research Center
ACSI Results – Report*

- Didn't use their services, but tested it.
- Display in airport - showing the types of technology. Also did a job fair.
- Does research for GRC that feed into their technology, services and products.
- Doesn't get anything. Deal mostly with NASA Ames.
- Doesn't get anything. Used to be different.
- Employees, customers and partners.
- Engineering for Aero propulsion.
- Engineering.
- Feedback to GRC.
- Funded programs.
- Funding and partnering.
- Get a letter. Partners and Icing area tunnels finalized for test. And gear box and transition. They use the icing tunnel, gear box and transmission group facility.
- Get reports.
- He primarily provided GRC the technology and services. He writes reports to GRC. HQ NASA Marshall.
- Icing work.
- Information.
- Information on technology. Use to disseminate to customer in Great Lake Region.
- Information, business newsletter.
- Instrument manufacturing.
- Interact with student event.
- Involved in planning and execution of programs and technical support. Noise emission, main fuel development.
- Is a supplier to NASA.
- Joint research.
- Looking for business or marketing.
- Management support.
- Manager of program with task. Prefer at Glenn.
- Match technology and loss of funding.
- May use the technology generated by research in aeronautical safety and communication.
- Modems.
- Most communications are in relation to news stories or possible news stories involving NASA Glenn.
- NASA pace contract with them.
- Not a customer nor partner. Get funding from them. FDE Incorporated. More of a supplier than partner. They get funding from GRC for services.
- Nothing.
- Part of communication technology project.
- Partner in project.
- Partner on projects. GRC does analysis for them and vice-versus.
- Power management, distribution and space propulsion.
- Pretty clear on receipt (RFP's). Very thorough and clear. Finding the POC is sometimes a problem. NASA website is very useful and informative.
- Primarily partners with NASA GRC to help new business get started using NASA Technology and products.
- Produced decommission.
- Programs as contractors.
- Provide gas to NASA. Interested in future business where they have our mutual interest such as gas and fuel.
- Provide GRC with R&D technology.
- Public affairs and media relations.
- R&D contract developer with financial support.
- Really, no clue.
- Receive reports from GRC.
- Receives information from GRC and is an advocate for what they do.

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ACSI Results – Report*

- Receives primarily contracting information, i.e. requests for offer (proposals).
- Responded to their research RFP. They get funding from GRC to do research.
- Safety and flight safety, programs and procedures.
- Scientific information.
- Selling technology to them.
- Special test performed.
- Tech support. Pragmatic support.
- Technical roadmap.
- Technological plans in communications.
- Technology and analysis.
- Technology exchange regarding second generation RLV development and etc.
- Test data and reports.
- Testing.
- They (GRC) provide progress report on tech advances.
- They are also corporate sponsors.
- They provide GRC electronic measuring equipment.
- Under GRC contract.
- What is their plan? Lacking for business and timing.
- Work with on space exhibits. Partner with them on training.
- Working as a facility to provide joint center access to Ohio business community.
- Would like to receive contracts.
- Would like to see more business plans.

QD. How knowledgeable are you about what GRC does? (1 = Not at All; 10 = Very)

- About your area.
- Electric propulsion.
- Familiar with them RFP's. Does business with them on a regular basis.
- Former NASA Engineer.
- From University of Akron, Institutional views as well as personnel view.
- Has visited and worked with icing tunnels and gear people. Knowledge of other areas is limited.
- Has worked with NASA GRC for 32 years.
- Help with sample preparation. Clean artwork.
- Icing branch. Pretty knowledgeable.
- In area that he works in, Space Fluid Mechanics.
- In his particular area.
- Involved more lately which has increased his knowledge.
- Know particular individuals on certain projects.
- Know people who work there.
- Knows primarily air breath engines.
- Limited relationship with GRC.
- Often, we get mailings from GRC.
- Past, Deputy Director.
- Personally not very much.
- Significant things changed.
- Specific area ok. Not very knowledgeable in specific area of semiconductors and electronics.
- Their business is fuel cell technology... In this specific area very knowledgeable, however, for GRC as a whole give them a 2.
- Very familiar.
- Very knowledgeable in space communication, but not that knowledgeable in other areas.
- Very knowledgeable about fluid dynamics and structure, but not other areas.
- Very knowledgeable with aerospace and propulsion.
- Work project with them.

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ACSI Results – Report*

- Work with them 20 years.

Q1. How do you rate NASA – Glenn against your original expectations? (1 = Low; 10 = High)

- 15 years experience.
- 20-30 years.
- 30 years.
- A little disappointed that instruments weren't used on other programs.
- About what expected. Wide variation. Some articles invaluable and structural analysis stuff is great.
- ACTS program -- expected certain level that was only marginally met.
- Areas of interest were broader.
- Beyond ordinary expectation. Project Space Station and Propulsion.
- Both areas worked with are good.
- Can't remember original expectations.
- Cryo Tech exceeded expectations. Advanced Power activities too focused in one direction, so, underwhelmed.
- Dealt with GRC in prior job in marketing.
- Didn't appreciate the scope and level of work until got survey packet.
- Didn't know what to expect.
- Didn't think about it.
- Don't seem to be doing as much technical as expected.
- Expectations were high and they were met.
- Expected them to be more capable.
- From another area. Have high expectations.
- GRC's focus has changed over the years.
- Greatest was NASP program. Inlet testing work was good work and good people.
- Had high expectation and failed to live up to them.
- Have done business with GRC for a long time.
- Have grown over the years.
- He expected that they would fit his needs better than they do. Should be more entrepreneurial. Have more technology that is applicable to industry.
- I thought they would be more cutting edge than they really are.
- Icing tunnel knowledge.
- Initial contact was the only person interacted with.
- Knew primary aeronautics/propulsion. First class in the area.
- Knowledge was low before.
- Learned that they have broader skills than what he was familiar with.
- Not applicable in regards to being an AF Safety Officer. However, opinion is that by reputation...GRC would get an 8 or 9.
- NASA GRC meets my expectations. However, 32 years ago when I first started, I knew nothing about them and then had no expectations.
- NASA has become more of a program management group. They have let fundamental research deteriorate. Drifted away from solving lofty technical problems.
- NASA has not done a good job relating to the community. [The people I have worked with] have done a great job; GRC has done a lousy job. Totally irrelevant to the community.
- Not sure how GRC interrelates to support the National Transportation System. Had no expectation of GRC in this area.
- Once he started working with Glenn, found them to be broader than expected.
- Outstanding turbine and research.
- Pretty capable. Most interactions are in electric propulsion. GRC needs a larger budget.
- Pretty pleased with responses answered.
- Primarily wind tunnels and aero research. Not aware of their association with GRC. Space communication capability.
- Prior to interaction, was not aware of breadth of technology going on at GRC.

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- Q-Lab.
- Strong facilities and laboratories assets.
- Strong tech.
- The original experience was as a kid and as I got older, the real world came to light.
- They are looking at you.
- Thought they'd be a small center, but was surprised by the competence of people. Best people in the agency.
- Very close to what was expected.
- Was fairly knowledgeable.
- Working with NASA is expected from day one.
- Working with them 15 years.

**Q2. How do you rate the usefulness of NASA – Glenn's capability information?
(1 = Poor; 10 = Excellent)**

- A win prog is very good.
- All information through presentation or per discussions.
- Annual report last year was good. Format is good.
- Annual report was good. Huge proponent of space, but NASA does lousy job promoting itself. He commented that if he had a hard time finding out what GRC does, then others must have an awful time. He is hungry for information, but it is hard to get information. Budget, where is it, how does it get distributed to each center? Would like to see budget. Hard time finding HEDS information. Not enough information. Would like to see information on other centers as well.
- Didn't know it existed.
- Doesn't receive any correspondence.
- Doesn't get any information.
- Doesn't tend to use. Interaction is person to person level.
- Doesn't use at all.
- Don't get enough communication. Would like more.
- Don't need them much.
- Don't provide anything. They are not pro-active and they never call him. They should work on communication.
- Don't really have a strong need for.
- Don't use any.
- Even though well written, this company's needs are more specific and they have to drill down to get their information.
- Excellent job assembling information, but it is not really helpful. Poor communication tool.
- First copy of information was with the survey.
- From his perspective, the information is on too high of a level. His perspective is the commercialization of technology. He needs nitty-gritty detail.
- Get them, but follow-up. Micro Systems is best thing done, but it isn't enough. Out of 4000 people, how big is their marketing staff? GRC as a private company, wouldn't stay in business long.
- Glanced through stuff.
- Good.
- Good as normal information provided by other laboratory. Need to use this to be knowledgeable.
- Has received no marketing information over the past year.
- Has worked with GRC to help put some of the information together.
- Have good information, but it is only given out once a year. I receive the bulk of my communication via telecom.
- Have not received data. Last project was 2 years ago.
- Have not seen.
- High-speed research work is excellent. Good experience.

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- His program isn't promoted. Report seems ok.
- In documents, there doesn't seem to be a strategic view to put everything in context. Appears collated by different people.
- May be great, but not familiar with any.
- One on one with people at GRC.
- Not as useful as desired.
- Pretty good job.
- Pretty useful.
- Provided with cover letter... Not normally provided on a regular basis.
- Provides good overview.
- Public data brochures less than what you expect on technical area... Too general.
- R&T and website equals 8. Other items equal 2.
- Recognized GRC's research and analysis capability in areas of critical risk analysis, fatigue failure and aviation communication, but not sure how it has helped the National Transportation System or the aviation communication network.
- Research and Technology reports are good.
- RT reports are 10.
- Some items are a 10 some are a 4.
- Some things fairly useful. Advanced communication material.
- Surprised expectation.
- Technology reports and good stuff they do not seem to get out to where and when it is needed.
- The mailing with letter, is good, but never received it before. If they keep doing it, that would be great.
- The material is meant for people with no knowledge of GRC. For experienced people, it is not good!
- The material sent to him isn't really on the point; doesn't turn into a story. Doesn't reflect reality.
- The RF work is particularly of interest.
- The website is most useful for timeliness. Other stuff isn't timely.
- Their safety program as described in their Strategic Plan brochures and other documents, is very useful to the FF Safety Office.
- They should prepare business plans.
- Unfair question since they are so knowledgeable about GRC, thus can see where they can do better.
- Use for budget (increase marketing of products and getting the word out to industry and public).
- Use people and their expertise. Reports analysis, not their strategic plans, brochures and etc.
- What they provide for display at airport.
- When they (NASA) shares information, it isn't always detailed enough.
- Working with aerospace, aware of cutbacks. Need to do better advertising, benchmarking and stakeholding. Doing okay working and sub-K, but should publicize self more. Build entrepreneurship. Encourage it. Publicize spin-offs more. Commercial applications.
- Years ago...5 years since close contact.

Q3. How do you rate NASA – Glenn with regard to the timeliness of its technology, products and services? (1 = Poor; 10 = Excellent)

- ACTS program winding down and there was no plan on what to do with assets. It was over 1 year before a plan was developed.
- Adequate funding of programs to come into fruition sooner.
- Based on the individual involved on the project.
- [He] is an excellent program officer. [He] has provided excellent support to Lockheed in regards to timeliness of information regarding the program.

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- Bring very little that he can use.
- Budget limits them.
- Compared to industry, not in the same league. System is slow and cumbersome.
- Cutting edge work.
- Delivered generally within one week.
- Depending on individual.
- Don't make people aware.
- Due to budget cuts, reports are not out quickly enough.
- Electric propulsion timely. Cyro management is fantastic.
- Given budgets, they manage to make milestones on time.
- Good timing... Plasma contractor unit to EUA crew members. Very good problem resolution, solution.
- Government timeline is different than that of industry. Slower, with a lot of bureaucracy.
- GRC is doing what they are supposed to be doing.
- Has moved promptly in weather displays. Has been very impressive.
- Meets schedules.
- Meeting schedule. Being there when needed.
- NASA delivers on commitments.
- NASA isn't carrying quite engine technology as far as industry needs it to.
- NASA objectives are cutting edge. Politics bring whole thing down. NASA budgets are on one-year cycles and industry has a hard time with this. US propulsion module was terminated in one fell swoop. 37% of this company's annual sales were lost in that fell swoop.
- Never missed a date.
- No sense of urgency.
- No experiences. Contrary in their approach. Put under one office, batteries as an example.
- Normally, very timely.
- Not applicable to public transportation.
- Only time they hear from GRC in this area is when there is problem. Doesn't appear to get out in the public domain where it can be taken advantage of.
- Project and people dependent. Range maybe 4 to 8, but usually on the high side.
- Response time is not bad, but sometimes slow.
- SLOW! Make commitments, but they don't fulfill.
- Some things they do well and some not so well. A lot depends on the individuals and organizations involved.
- Sometimes it takes NASA a long time to get started. Long time to get things done or under contract.
- Sometimes things in technology don't go smoothly. Wind tunnel schedule slippage.
- Technology work is good. Problem reporting financial data. Problem costing funds provided to them.
- The market moves rapidly. NASA budgeting process much slower, it can take years.
- The place to go for cutting edge.
- They are real slow.
- They do push the envelope.
- They have been waiting for technology, which has not been received. Internal priorities may conflict.
- They support the areas of space very well.
- Transfer of technology outside is slow compared to commercial trans. equals 4. Services are timely equals 8.
- Varies.
- Varies. Tech support in testing is between 8-9. Admin/contracting is between 3-4.
- Very good especially on probabilistic methods.
- What they are doing timely in research is lower than anticipated.
- Wide variation. Probabilistic stuff ahead of time a 10, other stuff less so. NPSS seems like good timing 8.

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- Working hard. Have always worked above average.
- Working with NASA regarding intellectual property is very slow.
- You provide the technology research to GRC.

Q4. How do you rate NASA – Glenn with regard to the technical excellence of its technology, products and services? (1= Poor; 10 = Excellent)

- Cutting edge stuff.
- Data received is useful and informative.
- Did receive some incorrect information.
- Displays are well done.
- Done wonderful work that gives new direction to industry. Quality is great.
- Engineers are highly qualified.
- Excellent.
- First rate.
- For whatever they're doing, sure they're good.
- GFE to ISS Program. Circuit interruption device. On time and excellent.
- Good collection of experts. Close association with industry.
- Good quality people at GRC.
- Good technical and excellent resources. Sometimes headstrong.
- GRC has eroded over last decade.
- Great strength is their technical talent. Should nurture and improve.
- Great and highly skilled people.
- Have extremely highly qualified people in technology. Their project managers are efficient. GRC is the only one that comes back with project plans in reasonable time.
- Icing training, less impressive.
- Interesting write. Not on cutting edge as a NASA Center. Has been marginalized HQ with regard to "space". Cost overruns on Station have cut them.
- Meet requirements.
- Normally, data meets requirements.
- Outstanding tech capability, but sometimes they don't treat people as well as they should, primarily the customers.
- People are excellent in field.
- Pleased with them.
- Pretty good, but industry is doing well in this area.
- Rated on individuals' talents.
- Receive excellent support. All program managers have been great. Both admin and tech.
- Safety program appears to be excellent.
- Same. Based on the individual involved on the project.
- Sensor work is impressive.
- Services are an 8 and Tech is an 8.
- Some great people.
- Sometimes have to improve.
- Spotty and average computational fluid dynamics equals a 9. System Analysis is a 6.
- Strength is technical, but in some cases this is contractor as opposed to civil service.
- Takes so much longer.
- Tech is good. Not bold enough research.
- Technical skills among best of all centers in space communications. However, leadership and vision of what needs to be done is lacking.
- The completeness of technical information packets are good.
- Turbine team is great. Propulsion.
- Very good results with the tools provided by them.
- Very High Q and vendor.
- Wide variation.

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Q5. How do you rate their value? (1 = Poor; 10 = Excellent)

- Actual product is valuable.
- Charges between NASA centers are not related to products or outputs. Bookkeeping exercise only.
- Cost share, but never where they have to pay.
- Data has meaning and considered useful.
- Expensive! Technology quality OK. Tends to be more expensive than others
- Good value for funds.
- Good value. Provide funding to Glenn and get good ROI.
- Good work.
- Have not charged FDE for services.
- Joint program with Cleveland and State of Ohio. Hybrach electric power system... State grant for the project.
- Meet requirements.
- [He] could not recall a specific case in which Glenn charged them for their services, etc.
- NATC program facility time for testing. Personnel view: feels the taxpayer has already paid for the facility and should not have to pay to use it. From a business viewpoint, poor approach for business to have to pay the government for services.
- No charge.
- Overhead rates are excessive.
- Passengers seem interested and enjoy the displays.
- Quality of work is good; pace is slow. Tends to not remain focused on original goal. Much time spent on alternate paths. When outside organizations are paying, this is not what's expected.
- Space Act agreement went well.
- Struggling to get insight into center taxes. GRC's taxes not able to understand system. Seems fuzzy.
- Timeliness of reports. Doesn't see material they put out.
- Uses space agreements. Pleased with outcomes
- Valuable.
- Value is provided, not received.
- Value is very good upon receipt.
- Work is cost effective.

Q6. How do you rate NASA – Glenn for responsiveness? (1 = Poor; 10 = Excellent)

- 8 or 10 - depending on situation.
- Again, meets schedule.
- Always a fast response.
- [The person we work with is] doing a good job. More PR lately.
- Concerned about cost of using NASA services. Lack of R&D funds. Reduce O/H cost for use.
- Contracting side of house drags down.
- Didn't use instruments. Didn't show initiative.
- Email has improved things.
- Excellent. One of the better centers. Gets products to you on time.
- Good to return calls. Good turn-a-round time, usually 1 week.
- Happy with interactions.
- Has had some cases where they did not respond in timely manner.
- Hasn't been tested.
- In cases where there have been needs they've been ok.
- In contracts very responsive.
- Low. Contract experience slow.
- Needs improvement - when you get attention, there are some people that do good work.

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- No directly related experience lately.
- Not sure if it was due to GRC or HQ. Always have given reason.
- Paper work gets in the way.
- People are responsive.
- Personnel great to work with.
- Program Managers are always on top and provide information ASAP. None of the other centers do that.
- Project and people dependent. Range 4 to 8. More on high side.
- Prompt. Return calls quickly.
- PSA office tech support is great; NPSS is excellent.
- Responsive to your (HW) request.
- Seem interested in trying to work with information technology industry.
- Some organizations are a 10 and some organizations are a 1. Overall they're a 7.
- Some people are a 10. Some are not so good.
- Spotty.
- Tech good, but financial poor.
- Technology is good.
- Tend to be expensive, overhead.
- They are responsive upon request.
- They don't respond to voice mail. So, respond to e-mail.
- They tend to have a slow response. Many in the industry have commented on this.
- Ponderous: bogged down in approvals and reviews. Things get lost frequently.
- This gets down to individuals.
- Try to respond. Technical transfer office is responsive.
- Unwilling to respond/discuss critical issues about NASA Glenn. A lot of folks get news from NASA Watch. Fighting to survive. Don't cooperate. Not helping cause!
- Very easy to work with. Good rapport with people at GRC.
- Very responsible.
- Very responsive.
- Very responsive concerning things they control. Not as responsive about things outside their control.
- Very responsive on electric power project, but not totally satisfied on a state project for space prospect...Meeting cancelled, but not notified.
- Very responsive to specific request. Finding input, etc.
- Voice mail can be a lengthy response.
- When call them they are very helpful with information or where can find information.
- When needing to fund, they had to shake the tree and prompt them too much.
- Wide range of variability. Depends upon person

**Q7. How would you rate the overall quality of NASA – Glenn's technology, products and services?
(1 = Low; 10 = High)**

- # 8 rating on Technology. #3 rating talking about product.
- A lot of variation. On case researcher isn't providing information in a timely fashion.
- Again, a lot has to do with individual and situations.
- Balanced.
- Because at all cutbacks, GRC has gotten the short end of the stick. Behind in technical investment. Isn't considered as leading edge. Aging facilities.
- Good technical quality.
- GRC is not a team player on NASA team. Management seems poor, but researchers seem good.
- GRC was 7-8, ten years ago, but has dropped
- Have built good gear box facility plus icing test area very good.
- Have very limited knowledge of what they do.
- High quality.

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- High quality. Not always timely.
- Impressed.
- Lower levels need to interact more. Top down approach isn't always effective.
- Material is useful and a good source for information.
- My contacts are fine, but I couldn't assess how to center deals with others outside of the news business.
- Not enough information.
- Once provided, it is helpful to FAA and meets requirements.
- Overall a 7-10. Computational fluid dynamics is between 9-10. Other areas are lower.
- Pretty good electric power system. Aero project better communication.
- Probabilistic structure analysis. NESSUS code - Research excellent code needs work.
- Public outreach is good. Unsure if Program Management skills where need to be.
- Rating based on personal knowledge of their safety program.
- Rating based on specific area. They are involved with GRC, (semiconductor, lithium batteries, etc.).
- Some of the public failures makes one wonder if they had it all together.
- Some people and organizations are outstanding, but others need to improve.
- Superb organization. Clearly focused on quality.
- Tech results are very good quality. No bad experiences.
- Technology is most important and they are good here.
- The technology is good, but the administration is low.
- They are responsive upon request.
- They get inadequate material. Need more reporting success. This rating is based on GRC's inability to get the good research and technology out for use by others.
- Very good. Pleased with test data and testing.
- Very professional and courteous. Get good help in finding information.
- Very professional staff.
- Well presented and interested.
- What they do is pretty good work. High temperature is great work.
- Would be higher, but can't compare to other rational programs.

Q8. Overall, how satisfied are you with NASA – Glenn? (1 = Very Dissatisfied; 10 = Very Satisfied)

- Administration side drags down.
- Again, a lot has to do with individual and situations.
- As far as working with employee (PM) but as far as upper management maybe a 3 poorly.
- At working level pleased. At macro level need more information.
- Better communications would improve scope.
- Current program.
- Customer has good relation with GRC.
- Didn't work to apply on other program while program was good it lacks follow-up.
- FAA has learned to live with output - limited facilities available.
- From contracting viewpoint.
- Generally very good except for aero Project.
- Get things we need. Sometimes it is hard to know what is there.
- Good completion of what they signed up to do. Meeting commitments.
- Good experience with GRC.
- GRC has been great partner. Noise, HSR is very good.
- GRC has desire to cooperate
- I know how good it could be. Excellent capability, but do not always apply it.
- Intentions always good, trying to do a very good job and making improvements.
- Lack of projects applicable to their needs. Their needs are concepts and technology for new companies.
- Much more satisfied with bolder, pro-active vision for GRC. Need follow through.

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- NASA Glenn has to fight battles with NASA HQ.
- No attempt to contact, it used to be different, GRC would call once a week.
- Not because it's GRC's fault, it's budget constraints. Budget constraints limit what GRC can do in a lot of cases.
- Not enough information or experience.
- Not very. So many issues just work contracting.
- Ok PR side. Government advisor board at NASA is very receptive to allowing meetings and etc.
- Project dependent from recent experience.
- Quality high, but responsiveness is low.
- See above.
- Some improvements should be made, used to be better in the past.
- Space Act satisfied. Power area is low. SLI activity... Glenn's OC is focused at throwing money at previous plays.
- Tech good and cost poor.
- The time delays are critical to companies trying to help. Long delays kill companies
- They had an on-going discussion on NASA on whether we're a US or foreign company.
- Total lack of relevance. They don't do any marketing or community outreach. Marshall has outplayed them. They didn't take the bull by the horns; they fell way behind and just floated around rudderless. Management not providing leadership.
- Waiting for technology.

Q9. How well does NASA – Glenn meet your expectations? (1 = Falls Short; 10 = Exceeds)

- Administration is great.
- Again, a lot has to do with individual and situations.
- Any dissatisfaction would be due to lack of funds for U.S. Government to do the type of marketing, which they should be staffed to do.
- Budget constraints are the limiting factor. Could meet my expectation more if funds were available.
- Community level interaction. Resources would have to be better for the score.
- Didn't follow-up on past program.
- Disappointed on recent design for safety initiative. Asked to be involved, but not in the loop.
- Don't have high expectations. Do many great things, but they are marginalized. Not fighting to save themselves.
- Expect high standards and get high quality work.
- Frustration on dealing with government regulations.
- Good working relationship. More information and communication would be helpful.
- Has high expectations.
- His expectations are that PM would have stronger control over contracting.
- History has been good.
- Level of innovation and boldness. Boldness-- the current GRC management team plays it safe. There is very little risk taking in tech. Supposed to be working on low-readiness projects, but they are actually working on high readiness projects. Should have innovation in R&D. Next generation of communication capability. No ACTS like vision. ACTS was bold.
- Low response.
- Meets expectations.
- Meets them.
- On products provided very thorough and on target. Always able to point you in right direction.
- Overall it met expectations.
- Personal relations with program manager, directors, it is very useful to resolve inquiries.
- PR side is a 10. Very open interaction.

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- Program management staff is less than what could be.
- Proud of the work. Does a good job.
- Range of 7-10.
- Reservation, plan made with expectations.
- Same as above. Over the last 10, they have dropped. Things could be better.
- Satisfied with people, but feel the problem is planning. This is a HQ problem. Technology transfer is suffering. TRL.
- Seemingly disorganized in recent times.
- Show willingness and is proactive.
- Sometimes the creativity or breadth of what is being done could be improved.
- Tech is outstanding. Response is lacking.
- They know who they are and work with them daily. Happy to be associated with GRC.
- Timely and understanding customer requirements and needs.
- Timely products and services.
- Would like to be able to have greater interaction with GRC.

Q10b. What federal laboratories come to mind which are closer than NASA – Glenn to your ideal?

- 0
- Access issues. How to navigate GRC.
- AF Labs. NASA Glenn not as aggressive in fighting for budget as they need be. Also needs to be more visionary.
- AFRL.
- AFRL (WPAFB), AMES and Huntsville visits are limited. More familiar with GRC.
- AFRL at WPAFB.
- AFRL-Air Force Research Lab because of the diversity of technology, the higher government support and the higher quality of in-house research.
- All about the same.
- All experiences with Federal Labs have been good. Primarily get funds for research. Closer to GRC, but all about the same.
- All NASA has ways to go. No federal labs rate over 7.
- AMES, Langley, Marshall and Drickman. Mostly Glenn involvement.
- Because of overall Q of scientists.
- DARPA. Navy Air Warfare China Lake. Experience with GRC is in contracting.
- Do not close relations with other federal labs.
- DoE Energy Labs.
- Does not have any experience with any other Federal lab.
- Doesn't seem like technology transition is transferred to the private sector. No real push within GRC to transfer technology into commercial industry or private/commercial sector.
- Don't think they meet the needs. Lab draws on other sources.
- Most all of them such as WPAFB, Oak Ridge and all other NASA labs, Ames, Army Research, need to redefine Federal Labs. Federal Labs are losing relevance. Mission and vision are lost. What is their purpose? Support facilities that can only be done selectively. 1 or 2 very expensive facilities need big science facilities. Core competence project personnel so they can accomplish, manage and coordinate. Should be done by contractors. Government pay scale doesn't allow and attract world class people. Monitoring/grooming. Should have small Federal Lab System.
- Experience with JPL and Lawrence Livermore, but does not rate them above GRC.
- Facility is old and there is a lack of resources. For the work they do should be able to upgrade. FFRD - JPL. GRC should be upgraded to JPL standards.
- Finds defects in all Federal labs
- Goddard and Ames visited, but no project work.
- Goddard Lab, JPL, Sandia Lab and Idaho Nat. Lab.

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- GRC is very focused on propulsion, so they work with industry. Deviation from ideal is that they don't concentrate on fundamental research. Their research is too applied. Their research is too directly to industry. Needs as opposed to larger term.
- GRC. LBL, Berkley.
- Huntsville.
- I have no clue what an ideal federal laboratory would act like.
- Icing work could be improved. Tunnel too small. Needs full-scale capability.
- John Hopkins, MIT (Labs) and some small labs.
- Johns Hopkins Applied physics Lab.
- Johnson is good, Ames.
- JPL - more research focused versus applied is better. Livermore weapons lab is better.
- JPL (but arrogant), John Hopkins APL, DoE Labs and Draper Lab.
- JPL because they have fundamental breakthroughs in research and application. Sandia-same
- JPL. On shuttle, NASA has become a competitor. NASA does a lot of work in-house that should be farmed out. NASA's charter isn't to compete with industry, but they do! Government has to step forward to spur space growth. Would like to see more coordination relationship with NASA and industry.
- Langley and Marshall Labs.
- Langley slightly above.
- Langley, Sandia.
- Lawrence Berkley, Oakridge. They are lean and focused, technically better, better staffed and have consistent delivery.
- Lawrence Livermoore, Los Alamos.
- Limited experience.
- Lincoln and Sandia.
- Los Alamos, which deals with, classified programs in terms of technical excellence.
- Marshall about the same.
- MIT (Grant) Fed Highway (DoT)
- MSFC is similar, but not better.
- Not applicable.
- NASA Glenn exceeds other federal labs.
- NASA has unique facilities. AEDC in TN is newer and better.
- NASA Langley. DOD. WPAFB
- NATICK R&D center at soldier's system command. NASA Langley. The technology developed there has been implemented or transferred out.
- Needs upgrading. NIH
- NIH because they are more focused
- NIH, Brookhaven, Sandia, CDG and Disease Control.
- NIST. Glenn close.
- None that I am aware of. U of Georgia Tech who is very good and has a very advanced approach.
- None come to mind.
- None do. DoD, WPAFB, Pax River and Fort Eustos Labs. Try to do too much and not the same things. Too much overlap.
- None. Unique capability doing quality.
- Not the place to go for industry research
- Oakridge is more focused on mission. GRC is too diverse and not focused. Sandia and Livermoore are better.
- Oakridge because they are more in line with this companies product line.
- Open.
- Partnership of a new generation of vehicles. So, feels like they have with D of T labs.
- Probably higher if not for Government regulations. Johns Hopkins applied physics research center. Depends a lot on how the management structure is set-up.
- Reason for 8 is their schedule. The facilities are always booked up.
- Sandia.

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- Sandia equals high and Oak Ridge equals higher.
- Sandia.
- Sandia Lab. Sandia seems to have more in-house capability in technology development and technical knowledge.
- Sandia Labs. Considers GRC one of the top labs, but no one seems to know about them. They need to toot their own horn.
- Sandia, DoE Labs.
- Sandia has the most experience and exposure.
- Sandia, NRL and NIST
- Sandia, Oak Ridge and NETL. The experience has been favorable. Problem with property issues, specifically intellectual property.
- Sandia, Oak Ridge.
- Sandia has very innovative stuff. How-to business is great.
- Sandia's customer orientation. Their products demonstrate their excellence not just history.
- Should be much more interactive and friendly. Model should be different than rules of contracting allow. Industry should be able to use facilities since it is government -- open labs
- Similar, rank about the same.
- Smithsonian Center for Conservation Research
- Software and AI labs.
- There are none.
- They are on par with each other.
- Unable to say.
- Underfunded. Sandia, JPL and Los Alamos are better.
- Unknown.
- Use only GRC for propulsion requirements.
- User input into programs is poor. 2 DoE - NETL, Pitt and NREL and Denver. Much better at getting input.
- Would be more long-term research. JPL
- Would not rate any one agency higher than another. Rating is against an ideal lab vs. other Federal labs.
- WPAFB seems more willing to help. Work on relationship.
- Wright-Patterson Air Force Base Labs. Engine Group ranks high.

**Q11b. How easy was it to voice your concerns or complaints to GRC?
(1 = Very Difficult; 10 = Very Easy)**

- Able to talk to them, but there is no follow-up.
- Answers seem to go toward upper management not applying authority to approve work by lower working level.
- But they don't listen.
- Close to GRC so knew people.
- Cuts in funding, poor selection of cuts and pet projects receive money.
- Didn't know who to talk to, hard to navigate GRC.
- First project very easy because of industrial. Second project improvement. Communications.
- Easy for people you work with daily not as easy for higher level management.
- Easy to communicate, but no response.
- NASA in general at HQ level. Pulling out of rotorcraft technology. This is Army issue, but also Navy and Air Force.
- Some concerns expressed but minor differences in interpretation of government regulations.
- They didn't do any thing, but it was easy to talk to them.
- They listen and respond when applicable.
- Very selective on whom you talk with and only deal with people that will effect change.

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- Worked together to develop a risk reduction plan early.

Q11c. How well was your concern or complaint handled by GRC? (1 = Poorly; 10 = Very Well)

- Are responsive, but not sure if ability to manage risk and priorities is where it needs to be.
- Changed planning to move satellite to insure we would not run out of fuel. Very responsive to changing the plan and recognized the need to do so.
- Control of PM over contracting side of house.
- Couple of iterations. Face to face verbal not enough often requires more contact.
- Didn't follow-up.
- Doesn't listen. Nice people equals 7. Code R [they] do not listen!
- Fighting for survival. NASA should talk/fight more. Reluctant to acknowledge these issues.
- Finance is difficult to work through, but technology side is great.
- Had to shake the tree.
- Heard but not acted upon.
- Mostly beyond their control.
- No feedback.
- No results. It was handled very quickly only unfavorably.
- Not very receptive to issues or improvements.
- Often the responsiveness wasn't there.
- Problem not being addressed by upper management.
- Some complaints outside GRC control. HQ issues. GRC understood.
- Some delays.
- System is slow and ponderous.
- This is a HQ issue.
- To be determined.
- Upper officials handled well. Tech and middle people messed up.
- Very satisfied.

**Q12. How likely are you to do business with NASA – Glenn in the future?
(1 = Never; 10 = Absolutely)**

- Actually working on project at this time.
- As required and would recommend to other agencies.
- Assumes leadership problem is taken care of.
- Based on interaction with GRC.
- Don't have a choice.
- Due to funding and matching funds. Research for the sake of research isn't needed here.
- Flight safety program is of interest to AF Safety Office.
- GRC is the customer.
- Have an on-going program now and in the future.
- Hoping to get funding for 2002 budget.
- How do we find out what is going on? We seem to get information irregularly. We need to be linked with on an on-going basis.
- In the news business, we don't really have a choice so this rating reflects nothing from my standpoint.
- Just getting started on the second generation RLV and thus, hope to do business with GRC in the future.
- More information on each center.
- No way of knowing. NASA does not provide business plans.
- There are a lot of tasks coming. We just received a contract.
- They expect to continue to try and get GRC business in the future.
- They have recommitted to the community.
- Unique capabilities.

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- UNK at this time. Depends on projects and interest.
- Would like to do business with them.
- Would like to do more business with them.

Q13. Do you have any suggestions on how NASA – Glenn can improve its performance or increase its value to you?

- "Master volume" of all NASA center programs? Like to see relationship be more strategic.
- Across all centers there is a lot of duplication. GRC's facilities need to be improved. Two opportunities are 1) focus and 2) infrastructure investment.
- Actually get a distribution of data information for upcoming projected programs.
- Adequate funding by Congress. Last 8 years it has gone downhill as far funding.
- Administration process could be improved.
- Ask the customer what his problems are. That is the first step. When Glenn decided to get out of the rocket business, that closed the door, but there was still a lot of room for good work. Much needed work was dropped.
- Be able to conduct co-operative tests. Easily meet these types of needs: testing, test data and under gone general NASA funding. Making this process much more simple. Livermoore was good about this. Easy to get testing done. Readily accessible.
- Be more in tune to customer needs.
- Become more of a team player. They do have talented engineering staff, but they need to focus on team goals.
- Becoming more expert in reacting to the MSFC/Johnson SC funding cartel.
- Believes GRC and other NASA centers may be able to the ASTC as mutual third party to risk analysis of the National Transportation System in the areas of fatigue failure, aviation communication and etc. Make recommendations regarding risk and assumption of risk.
- Believes if you go into their lab, they are as good as anyone. Developed a new code (NPSS) National Propulsion is outstanding. It analyzes engine from front to back. NASA has a lot of bureaucracy. If they could break it down, they would have more success (i.e. let the people at lower levels do what they are good at.
- Better communication with customer.
- Beyond GRC's control. Most of the things that I would suggest are beyond GRC's control.
- Biggest suggestion is to apply instrument and product to more then one application. Lessons learned...Don't try to keep inventing the wheel.
- Build more facilities. Provide survey results to respondents.
- Business as usual.
- By having more discussion on technology. To discuss what activities are being planned. Long range plans and budgeted item projects/programs.
- Can't think of anything. GRC is very easy to work with and out front with dealings.
- Centers should continue to work cooperatively. Centers work well together now.
- Completed and mailed to GRC.
- Completed the survey and mailed it back to GRC.
- Concerned about NASA being able to keep the quality of personnel they now have. Would like to be more scientific and engineers promoted to the higher level of management. Believe the organization management levels are becoming more political than technical.
- Consistent budget and proactive staffing. Consistent with what industry has to do. Prime sources of funding in the propulsion work. Funding cycle inconsistency in contract value... changes. Budgets are difficult. Overruns come into play and are reflected in other progress. Make workish. 30% tax on contract dollars to fund in-house progress. Reduce staff for current realities. Eliminate workers. When should we eliminate administration?
- Continue the excellent work they have been doing in TRIBOLOGY with Friction and Ware.
- Continue to provide test availability and support at a minimum cost.
- Continue to send information...Like old, with this survey. GRC should provide information on where their websites are and what they contain.
- Corporate policy is that they do not participate in surveys.

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- Crisper definition of what is going to be done by GRC or space related efforts managed by GRC for Marshall.
- Develop method to measure projected cost as well as performance.
- Difficult to presume to make a suggestion. Behind them all the way in any way possible to help get more funds for GRC.
- Doing a lot of good work. Listen to industries.
- Doing great on value to ISS.
- Don't think so. Hope to continue with the relationship.
- Encourage employees to be more receptive in dealing with outside agencies and companies.
- Establish an Arcom II Communication Satellite Program now, beginning phase A. Rationale: industry may leapfrog from ka. Need to anticipate needs and begin research and technology program in low cost WNV and reliable orbit switching.
- Focus technology work on customer needs.
- Focus toward results (generalized vs. specific). Separate from industry results. Don't specialize, do a general approach.
- Focus. Need top level leadership. AMES is the benchmark. GRC is slipping. Increase quality of personnel.
- Funding of projects needs improvement. Improve collaboration.
- Further explanation of services. They keep sending me all this information and I don't know why. I'm not interested in cold fusion or airplanes.
- General view - not easy to do business with them not able to customize to customer needs. Make them easier to work with and less bureaucratic, in terms of paperwork and regulations. One plan, policy not adaptable, too easy for lab to do business with. Need to be more flexible.
- Go back to taking technology to a higher level.
- GRC and Langley should strengthen partnership more. There needs to be more cooperation, more joint planning and advocacy.
- GRC has strong expertise for high-speed turbine technology. Looking to have GRC be the national leader in this area in the future.
- GRC should defend the aeronautical budget against the space budget. They keep robbing the budget and sending it in to space.
- Had some difficulties at Program Manager level that couldn't be solved, personality conflicts.
- Have adequate resources to support research activity. When they contract out it sometimes takes too long to see results. Not enough in-house resources to meet the required schedule.
- Have more communication with the AF Safety Office at Kirtland. More crossfeed of information from NASA to services i.e. AF, Army and Navy safety programs.
- Hire more civil servants and train them the same way they are now. May need more manpower.
- I have limited interaction with GRC. He wondered how his company showed up on call list.
- NASA GRC needs to make a serious effort to reduce the overhead cost that's rolled into their programs. Their program support efforts (part of overhead) takes valuable money away from the hands-on work. This overhead reduces the money to be expended in the products and services. This is both internal and external.
- Important that they continue these so that they may be able to provide consensus or feedback.
- In area of technical transfer, system is antiquated and subject to individual interpretation and requires individual action. Technical is originated from researches that can have a large impact. Researchers are hamstrung by how much time they can use. Time must be accounted for and they don't have specific accounts to charge technical transfer time to. The way GRC interacts with small companies should be improved and not based upon huge companies. Small companies' needs are different.
- In general make sure that highly integrate FAA into planning. Close coordination with FAA guides and requirements in planning.

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- In regards to commercialization of new technology, need to be more specific on what technology is available as well as when. Streamline the SPACE-DACK agreement on how you transfer new technology to private sector.
- Increase resources so that they can fulfill obligations. People want to do things, but funding staff is not supportive. Can we get results with this?
- Increase responsibility of financial reporting. The ability to cost funds promptly.
- Increase technology transfer activities for the benefit of northeast Ohio's economy.
- It doesn't communicate its highly technical capability in simple language, so that the public can understand. It needs to explain that this technology is used in medicine and communication. It has many applications.
- Keep focused on aeronautic propulsion.
- Limited knowledge and experience with NASA GRC. Where they overlap, they have an interest in future business.
- Lobby hard for budget. Keep personnel in place.
- Maintain efforts in transmission area and gear box facility. Will need upgraded facility for next generation boxes for the unmanned aerial vehicles (UAVs). Need full scale icing tunnel to do icing test on full-scale components and systems.
- May be too soon to tell.
- Maybe in their technology transfer, they could offer solution to problem in community an immediate area. Not sure what they do have to offer. Very professional in the dealings with RTA.
- Maybe provide information about upcoming projects and programs, in which Dana Corp could become more involved, also fund these projects.
- More communication getting the word out of what they are capable of doing.
- More direct and realistic on problems. Provide better news releases. More candor about problems, issues and challenges.
- More information to the public. There are always questions. More is better.
- More open to new processes which aren't invented there
- More university and contractor corporation programs.
- Move to Columbus so we can have easier access. Short of that; establish a satellite office here so we have access to NASA TV.
- NASA is at the bottom of productivity in spin-offs, lower than universities. If run through the list of top 100 Cleveland startups, none are NASA related or spin-offs. In Silicon Valley, every engineer has a biz plan and is looking for financing. NASA is not an entrepreneurial organization. They are not a fountain of entrepreneurship. NASA is not beating down venture capitalists doors to see what they need to be better and more useful. They don't listen. They think they know, but they don't know!
- NASA organizational structure is complicated. Would like more clarification on who does what. How to navigate to get FAA information. Very confusing to outsider as to who has what information and how to get it. Need to be better at managing dollars.
- NASA has to improve; they need to make more funding available to contractors. More open-mindedness with regards to going out of the country for advances on engines. They stay with American companies on new business. Need to go global on their thinking.
- Need to focus more technology to lower market place. Funding technology more rapidly to the less suffocated projects and programs.
- Need to get better aligned with the needs and interests of businesses. Need to meet the needs of the community and industry. NASA has been arrogant and not willing to change to meet requirements i.e., "Our way or the highway".
- Need to have better visibility. Better exposure in the scientific community.
- Need to take a leading role in developing Cleveland economy. How many NASA employees donate time to educational items? How many technologies have been licensed to local community in the last 2 years? What is ROI? Lecture circuit...What is the total number of hours donated to groups versus total employee hours speaking on technology? How does that compare to the '60s? How many tours do they do now vs. in the past? How much work is done extramural vs. intramural? How much is done local vs. national? What is the local impact? How many hours NASA people on TV, Radio, and Press vs. 40

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years ago? Name change to John Glenn and yet honor him? Glenn provided little support for Space and NASA.

- Need to take long term view in programs. Develop partnerships with DoD to develop and demonstrate techs vital to DoD and commercial. Long term commitment and stability.
- Needs a bigger budget.
- Needs to have a balanced portfolio, Space vs. Aeronautics and short vs. long term requirement. All eggs in 2050 future timeframe. No vision for trying to address present and near term problems. Center needs to be more aggressive. Management needs to fight more for funding and programs. Appears disorganized in leadership to passive. Other centers passing them by.
- No. Very happy with service provided.
- None. Get more information out. Try to improve on their education of the public on what they do. More PR.
- Not very happy with NASA in general. They are very arrogant in their dealing and now want to know "How are we doing". They don't always work with industry. They have very little interest in what is happening outside of their world or interest.
- Number one is the need for a mechanism that really encourages technology transfer. They still don't have a charge number for the time spent doing tech transfer. Bureaucracy is slow. No organized effort for them to be commercially responsive.
- One area - Rotorcraft are manufacture and Vic Sikovski.
- One that comes to mind is expand their TLR System to a higher technology level, so that industry can pick it up sooner and it will be more useful.
- Overall NASA budget has been restructured and not in favor of this company.
- Paper work is cumbersome. Streamline the processes. They put announcement out, but funding is a long time before comes out. Should be imminent returns. PERs Program announced 2 years ago. Contractors spend a lot of money up front. Should be more efficient.
- Part of Lift Program to help start new companies. If GRC is going to continue the Lift Program, they should consider providing more seed funding to qualifier for up to 1 to 2 years. Business plan includes NASA Technology. Must be accepted. If NASA technology and funding is part of the business plan of a new company, then it will open doors for other investors.
- Possibly more rapid turn around in how they communicate their technical data.
- Provide more information of upcoming projects and programs, in which you could provide input. Past and ongoing programs provide data and get the word out to industry on where they are heading.
- Provide necessary funding! Have capable people. Suggestion or observation is that given the capabilities of NASA GRC personnel, thought they would do more in-house research and development of the technologies and less sub-contracting out.
- Publicize center more. Ways NASA can help museum? Spin-offs. A sit-down would be good.
- Publicize. Do marketing of technologies and services offered.
- RASER proposal - 6 months to get and 3 weeks to answer. \$194 Million was what it should cost and these were not even real projects and a 2 months extension after 6-month review. Small disadvantaged business was a requirement each 8 took orders that weren't even real tasks. NASA has to come up with a better plan to put proposals together. NASA needs a better partner.
- Re-craft survey for a contractor relationship. Do survey questions specific for contractor or suppliers. This survey is almost not applicable for an organization or individual who is a contractor or supplier to GRC. (Contractors and/or suppliers do not consider themselves to be customers.)
- Redefine its mission and realign its thinking to support the aeronautical business and less on space. Survey: they recognize that they are going to have to redefine its mission. The aeronautical community is not happy with the direction that NASA is going.
- Reorganized, flatten out levels and stop worrying about future year's budget and concentrate on present day work.

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- Responsiveness they must learn to empower people to make decisions. Reviews and approvals take a long time. Improve responsiveness.
- [He] is a problem. GRC has an identity crisis. They must choose which area they are going to focus on 61, 62, 63. Need clear focus and stick to it. 63 is very poor, GAO has said ISS is the worst government program ever.
- Seems to be conflict of interest in poly materials. Folks in tech group are provided money for patents, which biases them.
- Should improve overall cost satisfaction. Improve complaint process. Filter down need for Q customer service to lower levels of organization.
- Should look at integrating Systems Analysis into one unit. Would be valuable to combine space and air breathing. Current set-ups based on old technology; the overlap is now much closer. Need to think about high speed, orbital and transportation.
- Should look at more areas to coordinate with WPAFB.
- Specific and overly focused. Expand activities to be more broad based. Should improve and emphasize integration of technology with that of other agencies like Langly Airframe and Info at Ames.
- Start putting out press releases and calling on regular basis. Not slick brochure in mail once a year.
- Stronger advocacy on programs in their control. Glenn is the quietest of the centers in fighting for their piece of the pie. Low visibility. Could be more supportive of spacepower management. Should expand view.
- Suggest that GRC continues to increase its DIRECT contact to universities with Ohio. Emphasized direct and all universities within Ohio.
- Suggest that in regards to GRC contracting practices, that Glenn be more flexible regarding commercial practices, i.e., Glenn's RFP ask for commercial products, yet still impose a lot of government requirements/regulations. If they want a commercial product, they should accept commercial practices.
- Take over micro gravity program. Since MSFC took over problem.
- Technical Briefs Magazine is received and reviewed for possible application of the resin, composite mfg. and etc., by this facility. High temperature application of material.
- Technical excellence is very good interaction and management cooperation with the agency is poor. Poor in terms of team player within NASA.
- The head of NASA has to let GRC have a larger budget. Stop pulling resources away. Do more work with us in the RF field. Number of times and ways that NASA can collaborate with Case Western of Akron.
- The survey is a very impressive thing to do. The business approach is the right thing to do.
- There is no mention of Ohio View and NASA Glenn's outreach to education and to minority groups through Ohio View. These two enclosed documents are "same old stuff" for work done chiefly in the past. Where is the future of NASA Glenn? Education! The top of NASA Glenn has been far less responsive to service of NASA Glenn in terms of education and Ohio in general than the lower echelons [Names given]. [Name] is coming around too. Where is [Name]? He didn't return my phone calls of two months ago. Look forward more than backward. Serve educational needs with NASA technology and services (space communications). Do more for Ohio. Advertise more and make people aware of NASA Glenn. Go visit Stennis in Mississippi and see how they are attracting visitors.
- There should be more technology transfer events to establish relationships and interactions. Increase interactions at lower levels. Personal interaction.
- They fund things and then don't release the money. People start working, but then funding is cut. Trying to work out intellectual property agreements. NASA is inflexible and makes it hard for entrepreneurial activities. Using facilities can be difficult. Should be a more cooperative method.
- They treat GRC as another branch of NASA, instead of like a research facility. Would like to understand GRC roadmap -- who does what and where. How do GRC technologies get inserted into industry? Work with industry as a forum to exchange information. Get rid of contracting mindset.

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- Think they should concentrate on areas not covered by other Government labs. Like to see some level of funding available to do research.
- To continue its efforts with local organizations to increase their federal funds so that they can improve their capabilities both local and nationally.
- To his knowledge, they have never done business with GRC; however, they would be interested in data in the future on projects and programs they could participate in.
- To increase their leadership to come up with practical ideas that applies directly to needs of the agency. They bite more than they could chew in most cases. Leadership does not seem to have the technical vision to anticipate what is needed in the future and start the necessary R&D Phase A programs to address the need.
- Try to have more representation in the space arena.
- Very special vacuum tanks and test equipment and people. Fell that emphasis on funding those areas.
- Work seems more aerospace. Doesn't know if applicable. Interested in less high tech and more uses that are applicable. Wants to know how to apply to his company. More information is needed on GRC activities.
- Would be nice if GRC was more visible. Put out bulletins. Have a consortium with local business to work on solving problems, for example Georgia Tech MARC.
- Would like to see more partnerships with NASA. [Name] works well. Cooperative education program with Cuyahoga Community College has been eliminated. Think about raising to 4-year level. GRC should try being intellectual here. BH College graduates leave OH. GRC should help graduates get experience...nurture.
- Yes - NASA (Aeronautic) needs to sustain program executed to conclusions. Do not start and stop it. It is not cost effective and it's disruptive.
- Yes. Need to learn to work together. Need to partner and work for better relationships between the various sites for the advancement in the areas of aero and space.
- Yes.... There's been talk about a need for a small engine test facility. Modify PSO facility to accommodate small engine usage.