

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. New controller chairs						
1. Strongly helps		3		3		3
2. Helps somewhat		24		24		25
3. Neither helps nor hinders		58		58		57
4. Hinders somewhat		10		10		9
5. Strongly hinders		6		5		6
Total		100		100		100
6. No basis to judge/ Doesn't apply ^b		2		2		3
Estimated respondents		5,146		3,531		1,615
c. New strip printer						
1. Strongly helps		7		5		14
2. Helps somewhat		33		30		45
3. Neither helps nor hinders		40		43		32
4. Hinders somewhat		15		17		9
5. Strongly hinders		4		5		3
Total		100		100		100
6. No basis to judge/ Doesn't apply ^b		10		1		29
Estimated respondents		4,743		3,567		1,176
d. Revised traffic flows						
1. Strongly helps		3		3		3
2. Helps somewhat		36		36		34
3. Neither helps nor hinders		24		21		32
4. Hinders somewhat		27		28		22
5. Strongly hinders		11		12		9
Total		100		100		100
6. No basis to judge/ Doesn't apply ^b		5		2		12
Estimated respondents		4,971		3,505		1,466
e. Resectorization						
1. Strongly helps		3		3		3
2. Helps somewhat		30		31		28
3. Neither helps nor hinders		32		30		38
4. Hinders somewhat		25		25		24
5. Strongly hinders		10		11		8
Total		100		100		100
6. No basis to judge/ Doesn't apply ^b		12		7		22
Estimated respondents		4,641		3,347		1,294

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
f. TMU (Traffic Management Unit)						
1. Strongly helps		4		4		4
2. Helps somewhat		35		36		30
3. Neither helps nor hinders		22		20		29
4. Hinders somewhat		26		26		27
5. Strongly hinders		13		14		11
Total		100		100		100
6. No basis to judge/ Doesn't apply ^b		6		1		18
Estimated respondents		4,924		3,556		1,368
g. Host computer						
1. Strongly helps		16		20		4
2. Helps somewhat		41		45		27
3. Neither helps nor hinders		36		31		52
4. Hinders somewhat		5		3		13
5. Strongly hinders		1		0		4
Total		100		100		100
6. No basis to judge/ Doesn't apply ^b		17		6		39
Estimated respondents		4,370		3,359		1,011
h. Other						
1. Strongly helps		8		8		7
2. Helps somewhat		4		4		4
3. Neither helps nor hinders		1		1		0
4. Hinders somewhat		21		22		19
5. Strongly hinders		67		66		70
Total		100		100		100
6. No basis to judge/ Doesn't apply ^b		1		0		2
Estimated respondents		2,346		1,714		632

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
32. Of the factors listed below, which do you think are the three most serious problems facing the air traffic control system today? ^a Write the letters of the three problems in the boxes below. You need not use all three boxes. Use letter "A" if you see no serious problems. (The order is not important.)						
A. No serious problems		2		2		2
One or more serious problems		98		98		98
Total		100		100		100
Estimated respondents		5,306		3,616		1,690

	Percent of controllers citing serious problems		
B. Too much air traffic	27	30	23
C. Morale of the work force	44	43	46
D. Too few FPLs	44	40	52
E. Too few developmentals	5	4	6
F. Poor pilot performance	7	5	12
G. Skill level of developmentals	13	14	10
H. Too much scheduled or unscheduled overtime	5	3	8
I. Out-of-date hardware/equipment	46	43	52
J. Limited software capabilities	11	7	18
K. Inadequate training for developmentals	14	17	8
L. Airlines' use of hubs	14	17	8
M. Current airline scheduling practices	40	45	29
N. Other	19	19	18
Missing choices ^b	12	13	9
Total^c	300	300	300
Estimated respondents	5,221	3,555	1,666

^aQuestion was not asked in 1985 survey.

^bRespondents selected only one or two serious problems.

^cBecause respondents could select up to 3 choices, percentages add to 300; rounding may affect that total.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
33. Where minimum standards for maintaining separation of aircraft exist (3 miles for terminals; 5 miles for centers), what distance do you typically try to maintain? ^a						
1. 3 - 3.9 miles		20		0		63
2. 4 - 4.9 miles		10		0		31
3. 5 - 5.9 miles		8		9		6
4. 6 - 6.9 miles		12		18		0
5. 7 - 7.9 miles		24		36		0
6. 8 - 8.9 miles		13		19		0
7. 9 - 9.9 miles		6		9		0
8. 10 - 15 miles		7		11		0
9. Over 15 miles		0		0		0
Total		100		100		100
Estimated respondents		5,266		3,586		1,680

**AUTOMATED OPERATIONAL ERROR
DETECTION PROGRAM**

34. Do you work at an enroute center?

1. Yes	68	68	100	100	0	0
2. No*	32	32	0	0	100	100
Total	100	100	100	100	100	100
Estimated respondents	3,958	5,287	2,673	3,609	1,285	1,678

*SKIP TO QUESTION 38

35. How much positive or negative impact, if any, does the automated operational error detection program have in each of the following areas at your facility?

a. Identifying operational errors		
1. Significant positive impact	32	29
2. Some positive impact	31	34
3. No impact	7	8
4. Some negative impact	15	20
5. Significant negative impact	15	10
Total	100	100
Estimated respondents	2,639	3,554

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. Helping management identify system problems (e.g., airspace configuration)						
1. Significant positive impact			5	4		
2. Some positive impact			23	21		
3. No impact			53	56		
4. Some negative impact			6	10		
5. Significant negative impact			13	9		
Total			100	100		
Estimated respondents			2,613	3,575		
c. Ensuring adequate separation of aircraft						
1. Significant positive impact			19	17		
2. Some positive impact			38	42		
3. No impact			23	26		
4. Some negative impact			10	9		
5. Significant negative impact			10	6		
Total			100	100		
Estimated respondents			2,640	3,583		
d. Efficient controller performance						
1. Significant positive impact			4	3		
2. Some positive impact			16	20		
3. No impact			13	20		
4. Some negative impact			33	31		
5. Significant negative impact			34	26		
Total			100	100		
Estimated respondents			2,638	3,585		
e. Controller morale						
1. Significant positive impact			1	0		
2. Some positive impact			1	1		
3. No impact			2	7		
4. Some negative impact			27	44		
5. Significant negative impact			69	48		
Total			100	100		
Estimated respondents			2,650	3,612		
f. ATC system capacity						
1. Significant positive impact			1	1		
2. Some positive impact			2	4		
3. No impact			20	31		
4. Some negative impact			37	37		
5. Significant negative impact			40	27		
Total			100	100		
Estimated respondents			2,617	3,582		

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
g. Pilot/controller relationships						
1. Significant positive impact			1	0		
2. Some positive impact			2	3		
3. No impact			22	36		
4. Some negative impact			44	43		
5. Significant negative impact			32	19		
Total			100	100		
Estimated respondents			2,637	3,601		
h. Other						
1. Significant positive impact				12		
2. Some positive impact				0		
3. No impact				3		
4. Some negative impact				19		
5. Significant negative impact				66		
Total				100		
Estimated respondents				250		
36. Have you personally had an operational error detected by the automated operational error detection program during the past 18 months? ^a						
1. Yes			32	19		
2. No			68	81		
Total			100	100		
Estimated respondents			2,596	3,607		
37. Overall, how satisfied or dissatisfied are you with the approach management currently uses to confirm whether or not an event detected by the automated operational error program is an actual operational error on the part of the controller?						
1. Very satisfied			3	4		
2. Generally satisfied			22	22		
3. Neither satisfied nor dissatisfied			22	23		
4. Generally dissatisfied			26	26		
5. Very dissatisfied			27	24		
Total			100	100		
6. No basis to judge ^b			4	5		
Estimated respondents			2,535	3,406		

^aThe 18 month period was added to the 1988 question because the program had been automated about 18 months at the time of the 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
RETIREMENT						
38. Are you now or will you be eligible to retire within the next 2 years?						
1. Yes	15	10	16	12	12	7
2. No*	85	90	84	89	88	93
Total	100	100	100	100	100	100
Estimated respondents	3,811	5,311	2,567	3,618	1,244	1,693

*SKIP TO QUESTION 41

39. Do you plan to retire within the next 2 years?						
1. Definitely yes	42	39	44	39	38	40
2. Probably yes	42	37	40	38	45	35
3. Probably not*	14	19	14	19	14	19
4. Definitely not*	3	5	3	4	3	7
Total	100	100	100	100	100	100
Estimated respondents	558	529	409	405	149	124

*SKIP TO QUESTION 41

40. How much of a reason, if any, is each of the following for your planned retirement?						
a. Personal health						
1. Major reason	9	9	10	9	7	9
2. Somewhat of a reason	22	18	22	16	23	23
3. Not a reason	69	73	68	74	71	68
Total	100	100	100	100	100	100
Estimated respondents	463	386	344	298	119	88
b. Health of family member						
1. Major reason	2	1	2	1	1	0
2. Somewhat of a reason	5	3	5	3	5	2
3. Not a reason	93	97	93	96	94	98
Total	100	100	100	100	100	100
Estimated respondents	462	380	344	296	118	84

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
c. Proposed changes to retirement system						
1. Major reason	49	32	48	32	52	33
2. Somewhat of a reason	37	41	36	40	38	44
3. Not a reason	14	27	16	28	10	23
Total	100	100	100	100	100	100
Estimated respondents	477	392	354	305	123	87
d. Work-related burnout						
1. Major reason	33	30	35	30	27	30
2. Somewhat of a reason	35	38	34	39	39	34
3. Not a reason	32	32	32	31	34	36
Total	100	100	100	100	100	100
Estimated respondents	470	398	346	309	124	89
e. Dissatisfaction with FAA						
1. Major reason	42	54	44	54	37	54
2. Somewhat of a reason	36	33	36	34	37	30
3. Not a reason	22	13	21	12	25	17
Total	100	100	100	100	100	100
Estimated respondents	476	398	353	307	123	91
f. Career change						
1. Major reason	7	6	7	7	8	5
2. Somewhat of a reason	18	17	20	18	15	13
3. Not a reason	74	77	73	76	78	82
Total	100	100	100	100	100	100
Estimated respondents	438	377	321	294	117	83
g. Other						
1. Major reason		90		94		79
2. Somewhat of a reason		8		6		14
3. Not a reason		2		0		7
Total		100		100		100
Estimated respondents		51		37		14

BACKGROUND QUESTIONS

	Mean years					
41. What is your age?	36.7	35.2	37.4	35.3	35.3	35.0
Estimated respondents	3,818	5,301	2,576	3,608	1,242	1,693

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
42. What is your grade?						
GS-11	2	1	2	1	3	0
GS-12	8	4	8	5	8	2
GS-13	27	25	16	14	51	49
GS-14	63	70	75	80	37	49
Total	100	100	100	100	100	100
Estimated respondents	3,824	5,309	2,578	3,615	1,246	1,694

43. (FPLs ONLY:) Which of the following comes closest to describing your current duties? ^a				
1. Working control positions full-time (including providing QJT)		92	91	94
2. TMU/Traffic management coordinator		4	5	1
3. Working other duties (e.g. staff detail, special projects) but also maintaining currency on at least one position		3	3	3
4. Working other duties, but not maintaining currency on any control position		0	0	0
5. Other		2	2	1
Total	100	100	100	100
Estimated respondents	4,794	3,281	1,513	

44. Have you been an FPL at another FAA facility? ^a			
1. Yes	37	19	76
2. No	63	81	24
Total	100	100	100
Estimated respondents	5,216	3,538	1,678

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
45. How many total years of experience do you have for each of the following? (Round to the nearest year. If none for military, enter 0.)	Mean years					
a. Total years with FAA	11.2	9.9	11.7	10.0	10.0	9.7
Estimated respondents	3,822	5,289	2,580	3,600	1,242	1,689
b. Years controlling traffic with FAA (Developmental and FPL) ^a		9.3		9.3		9.4
Estimated respondents		5,197		3,545		1,652
c. Years controlling traffic for the military ^b		4.8		4.6		5.0
Estimated respondents		1,907		967		940
46. Thank you for your help with this study. If you have any other comments, please write them in the space below.						
Written comments provided	57	45	58	43	55	48
No comments provided	43	55	42	57	45	52
Total	100	100	100	100	100	100
Estimated respondents	3,981	5,334	2,682	3,635	1,299	1,699

^aQuestion is not comparable to 1985 survey.

^bQuestion was not asked in 1985 survey. The 1988 answer is the mean for all controllers with 1 or more years' military experience.

1988 SURVEY RESULTS INCLUDING COMPARABLE RESPONSES FROM 1985 SURVEY
(OVERALL, BY CENTERS, AND BY TERMINALS)
AIR TRAFFIC CONTROL -- FIRST LINE SUPERVISORS

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
1. According to FAA records you are a first-line supervisor. Is this correct?						
1. Correct (%)	100	100	100	100	100	100
2. Incorrect - I am ...	*	*	*	*	*	*
Total	100	100	100	100	100	100
Estimated respondents	886	1,006	539	614	347	392

*Respondents checking incorrect were instructed to not complete the questionnaire and were not included in the results.

WORK LOAD

2. Consider the complexity of the sectors and the capabilities of controllers under your supervision as a first-line supervisor. During typical daily peak periods, how many radar controllers under your supervision, if any, are handling more traffic than you feel they should?

- NOTES: (1) Estimated respondents universe is the actual number of terminal supervisors who responded and our estimate of the number of center supervisors who would have responded had they received questionnaires. Center supervisors were sampled and results calculated using appropriate projections.
- (2) Percentages may not add to 100 because of rounding.
- (3) Comparisons between 1985 and 1988 are not shown for "other" categories because of the wide range of written responses received. Comparisons are also omitted where modifications of a question make such comparisons inappropriate.
- (4) The terms "center," "enroute center," and "air route traffic control center" have the same meaning in this report.
- (5) Respondents were instructed to "check one" response for each question or part of a question whenever response categories were presented.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
	Total radar controllers					
Number of radar controllers handling too much traffic*	2,024	2,040	1,362	1,338	662	702
Estimated respondents	875	1,003	537	614	338	389

*IF NONE SKIP TO QUESTION 4

3. For those controllers you were referring to in question 2, how much, if any, does each of the following factors represent a reason for their handling more traffic than they should?

a. Sector configuration (complexity)

(1) Major reason	40	44	45	48	33	37
(2) Somewhat of a reason	42	40	41	38	43	42
(3) Not a reason	18	17	15	15	25	21
Total	100	100	100	100	100	100
Estimated respondents	595	585	383	356	212	229

b. Controller capability

(1) Major reason	28	23	23	20	37	28
(2) Somewhat of a reason	48	41	49	40	48	44
(3) Not a reason	24	36	29	41	16	28
Total	100	100	100	100	100	100
Estimated respondents	589	576	370	348	219	228

c. Shortage of radar controllers

(1) Major reason	45	33	45	27	46	43
(2) Somewhat of a reason	33	33	34	34	32	32
(3) Not a reason	22	34	22	39	22	26
Total	100	100	100	100	100	100
Estimated respondents	584	577	373	349	211	228

d. Shortage of non-radar controllers

(1) Major reason	6	5	9	6	2	4
(2) Somewhat of a reason	18	17	24	24	8	7
(3) Not a reason	76	78	68	70	90	90
Total	100	100	100	100	100	100
Estimated respondents	536	541	351	331	185	210

e. Shortage of other staff qualified to assist radar controllers

(1) Major reason	10	7	7	5	14	9
(2) Somewhat of a reason	22	23	20	19	25	29
(3) Not a reason	69	71	73	76	61	62
Total	100	100	100	100	100	100
Estimated respondents	532	546	343	330	189	216

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
f. Inadequate flow control procedures						
(1) Major reason	23	26	23	28	23	23
(2) Somewhat of a reason	49	50	53	52	42	47
(3) Not a reason	28	24	24	20	36	30
Total	100	100	100	100	100	100
Estimated respondents	566	569	366	351	200	218
g. Airline schedules						
(1) Major reason	49	56	57	64	35	43
(2) Somewhat of a reason	34	31	34	30	35	32
(3) Not a reason	16	13	9	6	30	25
Total	100	100	100	100	100	100
Estimated respondents	590	592	386	363	204	229
h. Other						
(1) Major reason		65		67		63
(2) Somewhat of a reason		7		6		8
(3) Not a reason		28		28		29
Total		100		100		100
Estimated respondents		141		76		65
4. Have any of the sectors in your area of responsibility been reconfigured (procedural and/or boundary changes) during the past 18 months?						
1. Yes	66	71	73	76	56	63
2. No*	34	29	27	24	44	37
Total	100	100	100	100	100	100
Estimated respondents	883	1001	527	611	345	390
*SKIP TO QUESTION 7						
5. Did reconfiguration of your sector(s) increase, decrease, or have no effect on the work load of the radar controllers you supervise?						
1. Increased work load	32	28	35	29	28	27
2. No effect on work load	16	9	14	9	21	9
3. Decreased work load	23	28	24	31	23	23
4. Increased some and decreased some - more than one sector affected	28	35	28	32	29	41
Total	100	100	100	100	100	100
Estimated respondents	580	706	390	463	190	243

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
6. How satisfied or dissatisfied are you with the amount of say you had in the reconfiguration(s) that took place during the past 18 months?						
1. Very satisfied	14	14	12	15	17	11
2. Generally satisfied	30	33	30	31	30	36
3. Neither satisfied nor dissatisfied	17	21	16	22	21	17
4. Generally dissatisfied	25	21	26	19	24	24
5. Very dissatisfied	14	12	17	13	8	12
Total	100	100	100	100	100	100
Estimated respondents	584	707	392	463	192	244
7. Do you feel any of your current sectors should be reconfigured?						
1. Definitely yes	42	40	48	47	33	29
2. Probably yes	28	29	28	28	27	31
3. Uncertain	4	6	4	5	6	7
4. Probably not	21	21	17	17	26	28
5. Definitely not	6	4	4	3	8	5
Total	100	100	100	100	100	100
Estimated respondents	873	1,003	534	613	344	390
8. FAA has established TMUs (Traffic Management Units) at ARTCCs (Centers) to assist in controlling the flow of traffic. Over the last 12 months, do you believe these TMUs have helped you manage the volume of traffic that controllers you supervise required to handle? ^a						
1. Definitely yes		31		40		18
2. Probably yes		32		34		29
3. Uncertain		7		5		11
4. Probably not		18		13		24
5. Definitely not		13		9		18
Total		100		100		100
Estimated respondents		1,001		609		392

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
9. During daily peak periods, how often, if ever, are radar controllers under your supervision taking each of the following actions? ^a						
a. Provide another aircraft with instructions without waiting for first aircraft to acknowledge receipt of its instructions						
(1) Very often	5	5	3	4	8	5
(2) Often	17	13	11	9	27	20
(3) Occasionally	45	44	44	40	45	51
(4) Seldom, if ever	34	38	42	47	20	24
Total	100	100	100	100	100	100
Estimated respondents	874	993	531	607	343	386
b. Drop track before target leaves area of jurisdiction						
(1) Very often	2	2	3	2	1	2
(2) Often	8	5	11	7	3	3
(3) Occasionally	29	31	35	40	21	18
(4) Seldom, if ever	61	62	51	52	75	77
Total	100	100	100	100	100	100
Estimated respondents	874	997	532	612	342	385
c. Use inefficient vector patterns						
(1) Very often	3	2	1	1	6	3
(2) Often	12	12	10	9	15	16
(3) Occasionally	53	54	54	53	52	55
(4) Seldom, if ever	32	33	35	37	27	26
Total	100	100	100	100	100	100
Estimated respondents	863	981	523	597	340	384

^aQuestion asked in 1985 survey included one additional item in the list of actions.

Question	Overall		Centers		Terminals	
	1985	1983	1985	1983	1985	1983
d. Decline to provide weather advisories						
(1) Very often	3	3	3	3	2	2
(2) Often	8	7	9	7	7	3
(3) Occasionally	33	28	33	29	32	25
(4) Seldom, if ever	57	63	55	61	60	63
Total	100	100	100	100	100	100
Estimated respondents	365	992	525	607	340	385
e. Decline to provide traffic advisories						
(1) Very often	6	3	7	3	3	4
(2) Often	17	10	18	10	16	11
(3) Occasionally	41	44	40	47	43	39
(4) Seldom, if ever	36	43	35	41	38	47
Total	100	100	100	100	100	100
Estimated respondents	875	996	532	609	343	387
f. Decline user requests for services (direct routes, altitude changes, etc.)						
(1) Very often	11	9	11	9	10	8
(2) Often	23	22	24	23	23	22
(3) Occasionally	45	46	46	45	45	47
(4) Seldom, if ever	20	23	19	23	22	23
Total	100	100	100	100	100	100
Estimated respondents	875	996	532	610	343	386
g. Other(s)						
(1) Very often		50		52		45
(2) Often		27		21		37
(3) Occasionally		11		14		7
(4) Seldom, if ever		12		13		11
Total		100		100		100
Estimated respondents		122		76		46

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
10. During daily peak traffic periods, do you believe radar-certified developmental and FPL controllers under your supervision are typically required to spend too much, too little, or about the right amount of time continuously on radar positions between breaks?						
<u>FPLs</u>						
1. Much too much	11	5	12	5	9	6
2. Somewhat too much	33	26	33	27	32	25
3. Appropriate amount	53	61	51	58	55	65
4. Somewhat too little	4	7	3	9	4	4
5. Much too little	0	1	0	1	0	0
Total	100	100	100	100	100	100
Estimated respondents	874	999	534	615	340	384
<u>Developmentals</u>						
1. Much too much	5	3	5	3	5	2
2. Somewhat too much	27	18	29	20	24	14
3. Appropriate amount	59	67	60	67	57	68
4. Somewhat too little	8	11	6	9	12	13
5. Much too little	1	2	0	1	2	2
Total	100	100	100	100	100	100
Estimated respondents	871	990	532	613	339	377
11. Approximately what percentage of your duty time do you typically spend working traffic per pay period?						
	Mean percent					
Percent of time working traffic	36	19	41	19	28	20
Estimated respondents	869	971	527	596	342	375

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
12. Do you feel you spend too much, too little, or an appropriate amount of time working traffic?						
1. Much too much	14	6	16	6	10	6
2. Somewhat too much	32	18	35	17	27	18
3. Appropriate amount	31	41	30	42	33	38
4. Somewhat too little	18	27	15	26	23	28
5. Much too little	6	9	5	8	8	9
Total	100	100	100	100	100	100
Estimated respondents	873	980	530	602	343	378

STAFFING

13. In your opinion, is the current number of staff available for each of the following types of positions higher than needed, lower than needed, or at the appropriate level? If you work at an enroute center, answer for your area of specialization; if you work at a terminal, answer for your schedule.^a

a. First-line supervisors

(1) Much higher than needed	3	1	3	1	3	1
(2) Somewhat higher than needed	8	4	7	4	9	5
(3) Appropriate number	68	69	72	78	61	55
(4) Somewhat lower than needed	17	23	13	15	24	35
(5) Much lower than needed	4	3	5	2	3	4
Total	100	100	100	100	100	100
Estimated respondents	881	1,001	539	614	342	387

b. FPLs

(1) Much higher than needed	1	1	1	1	1	0
(2) Somewhat higher than needed	2	3	2	4	1	1
(3) Appropriate number	12	20	9	21	17	18
(4) Somewhat lower than needed	49	52	51	52	47	52
(5) Much lower than needed	37	25	38	22	35	30
Total	100	100	100	100	100	100
Estimated respondents	880	1,003	538	615	342	388

^aQuestion asked in 1985 included one additional type of staff.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
c. Air traffic assistants (ATAs) ^a						
(1) Much higher than needed	5	3	5	3	6	3
(2) Somewhat higher than needed	7	4	5	2	9	5
(3) Appropriate number	41	22	36	10	50	41
(4) Somewhat lower than needed	34	37	38	36	29	39
(5) Much lower than needed	13	35	16	49	7	12
Total	100	100	100	100	100	100
Estimated respondents	876	997	534	610	342	387
d. Staff specialists (training, quality assurance, planning and procedures, etc.) ^b						
(1) Much higher than needed		4		4		4
(2) Somewhat higher than needed		15		16		13
(3) Appropriate number		43		44		42
(4) Somewhat lower than needed		27		26		29
(5) Much lower than needed		12		11		12
Total		100		100		100
Estimated respondents		999		611		388
e. Other(s)						
(1) Much higher than needed		27		25		30
(2) Somewhat higher than needed		7		8		6
(3) Appropriate number		9		8		10
(4) Somewhat lower than needed		19		21		16
(5) Much lower than needed		38		38		38
Total		100		100		100
Estimated respondents		149		86		63

^aAcronym "ATA" added in 1988.

^bItem was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
14. In your opinion, do you currently have too many, too few, or an appropriate number of developmental controllers to meet future controller needs? If you work at an enroute center, answer for your area of specialization; if you work at a terminal, answer for your schedule. ^a						
1. Much too many	1	1	1	1	1	0
2. Somewhat too many	4	4	3	4	5	2
3. Appropriate number	32	32	27	34	41	30
4. Somewhat too few	42	47	43	46	41	50
5. Much too few	21	16	26	15	13	18
Total	100	100	100	100	100	100
Estimated respondents	882	1,005	537	614	345	391

15. Which of the following best describes the current situation for developmentals in regard to the ability to provide them with quality training now? Again, if you work at an enroute center, answer for your area of specialization; if you work at a terminal, answer for your schedule. ^b						
1. We have a lot more developmentals than we can train now.		6		7		5
2. We have somewhat more developmentals than we can train now.		19		21		16
3. We have about the right number of developmentals to train now.		32		32		32
4. We could train somewhat more developmentals than we do now.		36		34		39
5. We could train a lot more developmentals than we do now.		7		6		9
Total		100		100		100
Estimated respondents		1,004		614		390

^aWording of 1988 question was derived from the first part of a two-part question in 1985 survey.

^bQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
16. (FOR CENTERS ONLY:) In your opinion, is the current number of FPLs on board in your TMU higher than needed, lower than needed, or at the appropriate level? ^a						
1. Much higher than needed				8		
2. Somewhat higher than needed				26		
3. Appropriate number				42		
4. Somewhat lower than needed				20		
5. Much lower than needed				4		
Total				100		
6. Unsure ^b				4		
Estimated respondents				585		
17. In the last 12 months, to what extent, if at all, have shortages of controllers or first-line supervisors limited <u>you personally</u> in each of the following areas? ^c						
a. Your ability to take your first 2 weeks of annual leave each year						
(1) Very great extent		3		1		5
(2) Great extent		4		3		6
(3) Moderate extent		8		6		12
(4) Some extent		15		14		17
(5) Little, no extent		70		76		61
Total		100		100		100
Estimated respondents		999		609		390
b. Your ability to take the rest of your annual leave each year						
(1) Very great extent		6		4		9
(2) Great extent		8		6		12
(3) Moderate extent		13		13		14
(4) Some extent		24		25		23
(5) Little, no extent		49		53		43
Total		100		100		100
Estimated respondents		999		610		389

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

^cQuestion asked in 1985 used a different list of areas. Answers to identical areas are reported for 1985.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
c. Your ability to take annual leave on short notice (2 weeks or less)						
(1) Very great extent		21		15		30
(2) Great extent		20		17		24
(3) Moderate extent		17		19		15
(4) Some extent		21		23		18
(5) Little, no extent		20		26		12
Total		100		100		100
Estimated respondents		1,001		610		391
d. Your ability to take needed sick leave						
(1) Very great extent	8	4	7	3	9	5
(2) Great extent	11	7	13	5	7	10
(3) Moderate extent	16	9	17	8	13	10
(4) Some extent	16	14	18	15	13	14
(5) Little, no extent	50	66	44	70	58	61
Total	100	100	100	100	100	100
Estimated respondents	877	990	533	603	344	387
e. Your ability to refuse scheduled overtime						
(1) Very great extent	16	9	18	6	14	13
(2) Great extent	15	7	16	6	13	9
(3) Moderate extent	14	9	13	8	17	10
(4) Some extent	18	13	18	10	18	18
(5) Little, no extent	37	63	36	71	38	50
Total	100	100	100	100	100	100
Estimated respondents	863	964	523	521	340	383
f. Your ability to get required training						
(1) Very great extent		10		9		12
(2) Great extent		14		13		16
(3) Moderate extent		20		19		22
(4) Some extent		26		25		27
(5) Little, no extent		30		35		24
Total		100		100		100
Estimated respondents		992		605		387

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
g. Your ability to get or provide team briefings						
(1) Very great extent		12		10		14
(2) Great extent		12		12		13
(3) Moderate extent		17		15		18
(4) Some extent		25		26		24
(5) Little, no extent		35		37		31
Total		100		100		100
Estimated respondents		1,002		611		391
h. Your ability to take needed personal breaks						
(1) Very great extent	15	13	14	12	18	15
(2) Great extent	16	15	14	12	18	19
(3) Moderate extent	21	17	24	17	17	17
(4) Some extent	24	25	27	26	21	24
(5) Little, no extent	24	30	22	33	27	25
Total	100	100	100	100	100	100
Estimated respondents	879	1,001	536	611	343	390
i. Your ability to take duty FAM (familiarization) airline trips						
(1) Very great extent		21		17		27
(2) Great extent		14		13		15
(3) Moderate extent		12		11		13
(4) Some extent		20		22		18
(5) Little, no extent		34		38		27
Total		100		100		100
Estimated respondents		997		607		390
j. Other						
(1) Very great extent		59		57		61
(2) Great extent		28		25		33
(3) Moderate extent		9		12		4
(4) Some extent		1		1		0
(5) Little, no extent		4		4		2
Total		100		100		100
Estimated respondents		124		78		46

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
COMPENSATORY TIME/OVERTIME						
18. In the last 12 months, how many days of compensatory time have you accumulated? ^a						
1. None		20		19		22
2. 1-5 days		43		41		47
3. 6-10 days		24		25		23
4. 11-20 days		9		11		6
5. 21-30 days		2		3		1
6. 31-50 days		1		1		0
7. Over 50 days		0		0		1
Total		100		100		100
Estimated respondents		1,000		610		390

*SKIP TO QUESTION 20

19. Are you generally working more compensatory time than you think you should? ^a						
1. Definitely yes		10		10		11
2. Probably yes		20		22		18
3. Uncertain		13		12		13
4. Probably not		40		40		40
5. Definitely not		17		16		18
Total		100		100		100
Estimated respondents		799		493		306

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
20. Which of the following best describes the current situation in regard to overtime at your facility? ^a						
1. Too much overtime is assigned so that our personnel are overworked		12		10		15
2. Too little overtime is allowed so that we can't cover training, leave, and other duties		42		44		40
3. Overtime assignments are appropriate at this time		36		35		38
4. No overtime assigned here; no overtime needed		4		6		2
5. Other		6		6		4
Total		100		100		100
6. No basis to judge ^b		1		1		1
Estimated respondents		990		603		387

TRAINING

21. In your opinion, how adequate or inadequate is the training developmental controllers get before beginning on-the-job training?						
1. Much more than adequate	3	2	2	1	5	3
2. Somewhat more than adequate	8	7	5	5	14	8
3. Generally adequate	41	44	43	39	39	50
4. Somewhat less than adequate	31	29	33	33	28	23
5. Much less than adequate	17	18	18	20	15	15
Total	100	100	100	100	100	100
6. No basis to judge ^{b,c}		1		1		1
Estimated respondents	870	994	526	606	344	388

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

^cAnswer was not offered as a choice in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
22. How do you rate the quality of the on-the-job training developmental controllers <u>currently</u> receive at your facility in each of the following areas?						
a. Using backup systems						
(1) Excellent	2	2	2	2	2	4
(2) Good	15	11	13	11	16	11
(3) Adequate	39	40	36	34	44	49
(4) Less than adequate	33	33	36	37	28	27
(5) Poor	11	14	12	17	9	10
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		2		1		2
Estimated respondents	875	988	532	608	343	380
b. Controlling traffic in bad weather						
(1) Excellent	5	5	5	5	6	6
(2) Good	25	17	24	17	26	18
(3) Adequate	35	36	35	35	36	39
(4) Less than adequate	29	32	30	32	27	32
(5) Poor	6	9	7	12	6	6
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		1		0		1
Estimated respondents	879	997	532	612	347	385
c. Emergency procedures						
(1) Excellent	2	2	1	2	3	3
(2) Good	13	13	12	12	14	14
(3) Adequate	43	43	41	42	46	46
(4) Less than adequate	34	33	38	35	29	29
(5) Poor	8	9	8	10	8	8
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		0		0		1
Estimated respondents	876	997	530	608	346	389

^aThe categories totaling 100 percent do not include these responses.

^bAnswer was not offered as a choice in the 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
d. Handling heavy traffic						
(1) Excellent	15	15	14	13	12	19
(2) Good	31	31	33	31	29	31
(3) Adequate	30	34	29	35	32	31
(4) Less than adequate	18	18	20	17	16	18
(5) Poor	5	3	4	4	6	2
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		0		0		1
Estimated respondents	877	1,003	530	613	347	390
e. Holding patterns						
(1) Excellent	2	4	3	4	1	2
(2) Good	11	12	14	15	7	6
(3) Adequate	41	39	41	38	41	41
(4) Less than adequate	34	33	32	32	36	35
(5) Poor	12	12	10	11	15	16
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		10		3		23
Estimated respondents	858	895	524	596	334	299
f. Operational characteristics of types of aircraft						
(1) Excellent	7	6	6	4	9	9
(2) Good	20	19	18	16	23	23
(3) Adequate	39	39	39	38	38	40
(4) Less than adequate	26	26	27	31	23	19
(5) Poor	9	11	10	12	8	9
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		1		1		1
Estimated respondents	879	1,000	532	611	347	339
g. Direct routings (expediting traffic)						
(1) Excellent	9	8	9	8	9	8
(2) Good	29	24	30	24	29	26
(3) Adequate	44	50	43	50	45	49
(4) Less than adequate	15	13	16	13	13	13
(5) Poor	3	5	2	5	5	5
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		3		1		5
Estimated respondents	870	974	527	604	343	370

^aThe categories totaling 100 percent do not include these responses.

^bAnswer was not offered as a choice in the 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
h. Control techniques						
(1) Excellent	12	11	11	10	14	13
(2) Good	35	33	36	34	34	31
(3) Adequate	35	38	35	39	34	37
(4) Less than adequate	16	16	17	15	14	16
(5) Poor	3	2	1	2	5	3
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		0		0		1
Estimated respondents	878	995	532	607	346	388
i. Phraseology						
(1) Excellent	11	11	7	10	17	13
(2) Good	37	37	38	35	35	39
(3) Adequate	38	36	39	36	35	37
(4) Less than adequate	11	14	12	17	10	10
(5) Poor	3	2	4	3	2	2
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		0		0		1
Estimated respondents	876	1,002	530	612	346	390
j. Flow control procedures						
(1) Excellent	4	5	3	5	6	5
(2) Good	19	17	19	14	19	21
(3) Adequate	42	42	40	41	45	44
(4) Less than adequate	27	28	29	30	24	24
(5) Poor	8	9	10	10	6	6
Total	100	100	100	100	100	100
(6) No basis to judge ^{a,b}		3		2		5
Estimated respondents	875	967	530	597	345	370
k. Other						
(1) Excellent		4		3		6
(2) Good		2		0		6
(3) Adequate		4		0		13
(4) Less than adequate		25		22		31
(5) Poor		65		75		44
Total		100		100		100
(6) No basis to judge ^{a,b}		8		9		5
Estimated respondents		48		32		16

^aThe categories totaling 100 percent do not include these responses.

^bAnswer was not offered as a choice in the 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
23. Overall, how do you rate the quality of on-the-job training (OJT) that developmentals currently receive at your facility? ^a						
1. Excellent		9		7		10
2. Good		40		40		41
3. Adequate		36		39		37
4. Poor		12		13		11
5. Very poor		1		1		1
Total		100		100		100
6. No basis to judge ^b		0		0		1
Estimated respondents		1,004		613		391
24. Do you believe developmental controllers are provided with sufficient training involving live traffic before being certified on a position?						
1. Definitely yes	41	42	38	39	46	48
2. Probably yes	38	40	41	40	33	41
3. Uncertain	3	3	4	4	3	2
4. Probably not	14	11	14	13	14	8
5. Definitely not	4	3	4	4	4	1
Total	100	100	100	100	100	100
6. No basis to judge ^{b,c}		0		0		1
Estimated respondents	882	999	535	610	347	389
25. Does your facility have an adequate amount of simulator equipment? ^a						
1. Definitely yes		20		18		24
2. Probably yes		41		45		36
3. Uncertain		8		10		5
4. Probably not		17		18		15
5. Definitely not		14		10		21
Total		100		100		100
Estimated respondents		996		608		388
26. To what extent, if at all, is your facility's simulator equipment used by developmental controllers? ^a						

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

^cAnswer was not offered as a choice in the 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
1. Very great extent		12		13		9
2. Great extent		28		35		18
3. Moderate extent		25		27		20
4. Some extent		23		21		27
5. Little, or no extent		12		4		26
Total		100		100		100
6. Don't know; uncertain ^b		4		3		4
Estimated respondents		955		587		368

27. Are there currently enough FPLs available to provide OJT to all developmentals (either to new developmentals or those from other facilities)?^a If you work at an enroute center, answer for your area of specialization; if you work at a terminal, answer for your schedule.

1. Definitely yes	33	34	30
2. Probably yes	38	36	41
3. Uncertain	3	3	3
4. Probably not	16	14	18
5. Definitely not	11	13	9
Total	100	100	100
Estimated respondents	995	608	387

28. What portion of the OJT instructors you supervise have sufficient ATC experience and teaching skills to provide OJT to developmentals?^a

ATC Experience

1. All/Almost all	26	28	24
2. Most	34	35	31
3. About half	25	22	29
4. Some	13	13	13
5. Few/None	3	3	3
Total	100	100	100
Estimated respondents	995	608	387

Teaching Skills

1. All/Almost all	10	10	9
2. Most	27	28	25
3. About half	26	26	26
4. Some	30	29	33
5. Few/None	7	7	8
Total	100	100	100
Estimated respondents	974	593	381

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
29. In the last 12 months, to what extent, if any, have the following groups of employees provided QJT? ^a If you work at an enroute center, answer for your area of specialization; if you work at a terminal, answer for your schedule.						
a. FPLs fully qualified 5 or more years at your facility						
(1) Very great extent		32		37		25
(2) Great extent		27		29		24
(3) Moderate extent		18		17		18
(4) Some extent		15		13		19
(5) Little, no extent		8		5		14
Total		100		100		100
Estimated respondents		986		602		384
b. FPLs fully qualified less than 5 years at your facility						
(1) Very great extent		30		27		35
(2) Great extent		38		38		37
(3) Moderate extent		20		21		19
(4) Some extent		12		14		9
(5) Little, no extent		1		1		1
Total		100		100		100
Estimated respondents		992		605		387
c. Developmentals at your facility 2 or more years						
(1) Very great extent		5		5		4
(2) Great extent		9		8		11
(3) Moderate extent		16		16		17
(4) Some extent		27		29		25
(5) Little, no extent		43		42		44
Total		100		100		100
Estimated respondents		975		596		379
d. Developmentals at your facility less than 2 years						
(1) Very great extent		3		3		3
(2) Great extent		6		5		8
(3) Moderate extent		9		9		10
(4) Some extent		24		24		24
(5) Little, no extent		57		60		54
Total		100		100		100
Estimated respondents		985		602		383

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
e. First-line supervisors						
(1) Very great extent		4		1		8
(2) Great extent		7		4		14
(3) Moderate extent		18		14		25
(4) Some extent		37		37		36
(5) Little, no extent		34		44		13
Total		100		100		100
Estimated respondents		989		603		386
f. Other						
(1) Very great extent		28		14		50
(2) Great extent		5		8		0
(3) Moderate extent		4		6		0
(4) Some extent		35		45		20
(5) Little, no extent		28		27		30
Total		100		100		100
Estimated respondents		26		16		10
30. Do you believe developmental controllers today are better, worse, or about the same as developmental controllers were in each of the following areas 3 years ago? ^a If you feel that you do not have enough knowledge to compare the two groups for any of the items, please check "No Basis to Judge" for those items.						
a. Overall skill level when arriving on floor for on-the-job training						
(1) Much better		2		2		3
(2) Somewhat better		19		12		28
(3) About the same		51		51		52
(4) Somewhat worse		22		28		13
(5) Much worse		6		6		4
Total		100		100		100
(6) No basis to judge ^b		3		3		2
Estimated respondents		970		590		380

^aQuestion is not comparable to 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. Aptitude or ability to learn controller duties						
(1) Much better		3		3		3
(2) Somewhat better		16		13		22
(3) About the same		63		64		61
(4) Somewhat worse		15		16		12
(5) Much worse		3		4		2
Total		100		100		100
(6) No basis to judge ^b		2		3		2
Estimated respondents		973		593		381
c. Work attitude						
(1) Much better		5		4		5
(2) Somewhat better		14		12		18
(3) About the same		47		46		48
(4) Somewhat worse		27		29		24
(5) Much worse		8		10		6
Total		100		100		100
(6) No basis to judge ^b		2		2		2
Estimated respondents		975		594		381
d. Other						
(1) Much better		11		5		18
(2) Somewhat better		3		5		0
(3) About the same		0		0		0
(4) Somewhat worse		25		25		24
(5) Much worse		62		64		59
Total		100		100		100
(6) No basis to judge ^b		20		27		11
Estimated respondents		37		20		17

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
31. For each of the following types of FPL proficiency training that FPLs have received, is the amount of training more or less than needed, or is it about the right amount? ^a If you work at an enroute center, answer for your area of specialization; if you work at a terminal, answer for your schedule.						
a. Tape monitor review						
(1) Much more than needed		5		5		4
(2) Somewhat more than needed		10		9		11
(3) About the right amount		64		66		62
(4) Somewhat less than needed		17		16		13
(5) Much less than needed		5		4		6
Total		100		100		100
(6) No basis to judge/Don't know		0		1		0
Estimated respondents		993		606		387
b. Over-the-shoulder evaluations						
(1) Much more than needed		5		5		6
(2) Somewhat more than needed		9		9		10
(3) About the right amount		73		74		71
(4) Somewhat less than needed		11		10		11
(5) Much less than needed		2		2		2
Total		100		100		100
(6) No basis to judge/Don't know		0		0		0
Estimated respondents		994		609		385
c. Annual specialized training (map, operating procedures, letters of agreement, etc.)						
(1) Much more than needed		2		2		1
(2) Somewhat more than needed		4		4		4
(3) About the right amount		39		39		38
(4) Somewhat less than needed		34		34		35
(5) Much less than needed		22		22		22
Total		100		100		100
(6) No basis to judge/Don't know		1		2		1
Estimated respondents		982		599		383

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these categories.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
d. DARC/Other backup systems						
(1) Much more than needed		1		1		0
(2) Somewhat more than needed		1		1		1
(3) About the right amount		30		32		27
(4) Somewhat less than needed		40		37		46
(5) Much less than needed		27		28		25
Total		100		100		100
(6) No basis to judge/Don't know ^b		7		0		18
Estimated respondents		920		608		312
e. QJT instructor performance evaluation						
(1) Much more than needed		4		4		4
(2) Somewhat more than needed		7		8		6
(3) About the right amount		53		54		52
(4) Somewhat less than needed		24		23		25
(5) Much less than needed		12		11		12
Total		100		100		100
(6) No basis to judge/Don't know ^b		1		1		1
Estimated respondents		990		606		384
f. Computer-based instruction						
(1) Much more than needed		6		9		2
(2) Somewhat more than needed		8		10		6
(3) About the right amount		39		44		29
(4) Somewhat less than needed		25		21		31
(5) Much less than needed		22		16		33
Total		100		100		100
(6) No basis to judge/Don't know ^b		6		3		12
Estimated respondents		931		591		340
g. Simulation (DYSIM/ETG) lab						
(1) Much more than needed		2		3		1
(2) Somewhat more than needed		3		4		3
(3) About the right amount		31		34		25
(4) Somewhat less than needed		31		30		33
(5) Much less than needed		33		29		39
Total		100		100		100
(6) No basis to judge/Don't know ^b		8		5		13
Estimated respondents		912		578		334

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
h. Other						
(1) Much more than needed		3		4		0
(2) Somewhat more than needed		0		0		0
(3) About the right amount		0		0		0
(4) Somewhat less than needed		10		15		0
(5) Much less than needed		87		80		100
Total		100		100		100
(6) No basis to judge/Don't know ^b		9		12		0
Estimated respondents		34		23		11

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1986	1985	1986	1985	1986
32. In the last 12 months, have you received any formal training (classroom or individual instruction) in recognizing substance abuse (drugs and alcohol)? ^a						
1. Yes		35		34		35
2. No		65		66		65
Total		100		100		100
Estimated respondents		998		610		388
33. Do you feel that you have received sufficient training in recognizing substance abuse (drugs and alcohol)? ^a						
1. Definitely yes		4		4		4
2. Probably yes		15		15		14
3. Uncertain		12		13		10
4. Probably not		38		37		40
5. Definitely not		32		32		32
Total		100		100		100
Estimated respondents		998		610		388

SAFETY AND ATC OPERATIONS

34. How would you rate the overall safety of the ATC system today?						
1. Excellent	24	18	25	20	23	15
2. Good	42	43	43	43	40	44
3. Adequate	27	31	27	29	28	32
4. Poor	7	7	5	7	9	8
5. Very poor	0	1	0	1	1	2
Total	100	100	100	100	100	100
6. No basis to judge ^b	0	0	0	0	0	1
Estimated respondents	378	982	536	596	342	386

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1983	1985	1983	1985	1983
35. Please consider your own observations and experience for each of the factors listed below. Then indicate your opinion as to whether that factor is currently helping, is currently hindering, or currently has no impact on the maintenance of ATC system safety today. ^a						
a. Current skill level of developmental controllers						
(1) Strongly helps		4		5		3
(2) Helps somewhat		26		24		30
(3) No impact		27		29		24
(4) Hinders somewhat		39		40		38
(5) Strongly hinders		4		3		4
Total		100		100		100
Estimated respondents		983		596		387
b. Current number of developmental controllers available						
(1) Strongly helps		2		1		2
(2) Helps somewhat		23		22		24
(3) No impact		31		32		29
(4) Hinders somewhat		40		40		38
(5) Strongly hinders		6		4		7
Total		100		100		100
Estimated respondents		983		596		387
c. Current number of FPL controllers available						
(1) Strongly helps		10		12		6
(2) Helps somewhat		21		20		23
(3) No impact		13		15		10
(4) Hinders somewhat		39		37		42
(5) Strongly hinders		17		16		19
Total		100		100		100
Estimated respondents		985		598		387
d. Current amount of traffic work load						
(1) Strongly helps		1		1		1
(2) Helps somewhat		8		5		12
(3) No impact		21		20		22
(4) Hinders somewhat		49		51		47
(5) Strongly hinders		21		23		19
Total		100		100		100
Estimated respondents		984		597		387

^aQuestion is not comparable to 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
e. Current amount of overtime being worked						
(1) Strongly helps		1		1		1
(2) Helps somewhat		7		6		9
(3) No impact		52		55		47
(4) Hinders somewhat		30		28		32
(5) Strongly hinders		10		10		11
Total		100		100		100
Estimated respondents		980		595		385
f. Current hardware reliability						
(1) Strongly helps		11		14		7
(2) Helps somewhat		21		25		16
(3) No impact		23		25		20
(4) Hinders somewhat		31		26		38
(5) Strongly hinders		14		10		20
Total		100		100		100
Estimated respondents		980		593		387
g. Current software reliability						
(1) Strongly helps		11		14		7
(2) Helps somewhat		22		26		16
(3) No impact		26		28		22
(4) Hinders somewhat		29		26		36
(5) Strongly hinders		11		6		19
Total		100		100		100
Estimated respondents		984		598		386
h. Current controller morale						
(1) Strongly helps		5		4		6
(2) Helps somewhat		20		20		19
(3) No impact		17		17		18
(4) Hinders somewhat		44		43		44
(5) Strongly hinders		15		16		13
Total		100		100		100
Estimated respondents		983		596		387
i. Other						
(1) Strongly helps		3		2		4
(2) Helps somewhat		0		0		0
(3) No impact		4		7		0
(4) Hinders somewhat		31		28		36
(5) Strongly hinders		62		63		61
Total		100		100		100
Estimated respondents		75		47		28

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
16. In general, how would you describe your morale as a first-line supervisor at this facility? ^a						
1. Very high		8		8		8
2. High		30		30		29
3. Neither high nor low		27		25		29
4. Low		28		29		27
5. Very low		8		8		7
Total		100		100		100
6. Uncertain ^b		2		1		3
Estimated respondents		982		603		379
37. How do you rate the typical "performance" of each of the following types of pilots with whom you communicate? ^a By "performance," we mean following control instructions, using correct phraseology, and keeping unnecessary communication to a minimum.						
a. Major airlines						
(1) Excellent		25		23		30
(2) Good		41		43		39
(3) Adequate		21		22		19
(4) Less than adequate		11		11		10
(5) Poor		2		2		2
Total		100		100		100
(6) Don't know/No basis to judge ^b		0		0		0
Estimated respondents		1 002		610		393

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Questio	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. Commuters and taxis						
(1) Excellent		10		8		13
(2) Good		42		42		42
(3) Adequate		33		36		29
(4) Less than adequate		13		12		14
(5) Poor		3		3		3
Total		100		100		100
(6) Don't know/No basis to judge ^b		0		0		0
Estimated respondents		1,001		608		393
c. General aviation						
(1) Excellent		2		2		1
(2) Good		17		16		18
(3) Adequate		41		46		34
(4) Less than adequate		30		28		32
(5) Poor		11		8		15
Total		100		100		100
(6) Don't know/No basis to judge ^b		0		0		0
Estimated respondents		1,000		608		392
d. Military						
(1) Excellent		11		12		8
(2) Good		36		37		34
(3) Adequate		35		34		38
(4) Less than adequate		14		14		13
(5) Poor		4		3		7
Total		100		100		100
(6) Don't know/No basis to judge ^b		3		0		6
Estimated respondents		976		609		357

^aQuestion not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
38. What effect, if any, do you think the following have on the flow of traffic in the ATC system? ^a						
a. Airlines' use of hubs						
(1) Strongly helps		2		1		3
(2) Helps somewhat		6		6		6
(3) Neither helps nor hinders		12		8		18
(4) Hinders somewhat		38		34		45
(5) Strongly hinders		42		51		27
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		6		4		9
Estimated respondents		946		588		358
b. Current airline scheduling practices						
(1) Strongly helps		1		0		1
(2) Helps somewhat		2		2		2
(3) Neither helps nor hinders		3		2		5
(4) Hinders somewhat		31		26		39
(5) Strongly hinders		62		69		52
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		2		1		4
Estimated respondents		984		606		378
39. What contribution, if any, has each of the following made in helping the controllers you supervise perform their duties as air traffic controllers? ^a						
a. Recommendations from FAB (Facility Advisory Board)						
(1) Strongly helps		9		9		10
(2) Helps somewhat		63		63		63
(3) Neither helps nor hinders		24		25		22
(4) Hinders somewhat		3		3		4
(5) Strongly hinders		1		0		1
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		1		1		1
Estimated respondents		990		602		388

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. New controller chairs						
(1) Strongly helps		3		3		3
(2) Helps somewhat		29		31		26
(3) Neither helps nor hinders		57		56		57
(4) Hinders somewhat		7		7		9
(5) Strongly hinders		4		3		6
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		2		2		3
Estimated respondents		972		595		377
c. New strip printer						
(1) Strongly helps		10		7		15
(2) Helps somewhat		41		39		44
(3) Neither helps nor hinders		34		36		29
(4) Hinders somewhat		12		14		8
(5) Strongly hinders		5		5		4
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		11		1		28
Estimated respondents		879		602		277
d. Revised traffic flows						
(1) Strongly helps		5		5		5
(2) Helps somewhat		44		46		40
(3) Neither helps nor hinders		19		13		28
(4) Hinders somewhat		24		26		22
(5) Strongly hinders		8		9		5
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		6		1		14
Estimated respondents		938		600		338

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
e. Resectorization						
(1) Strongly helps		7		8		4
(2) Helps somewhat		38		41		34
(3) Neither helps nor hinders		26		19		37
(4) Hinders somewhat		20		20		20
(5) Strongly hinders		9		12		5
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		13		7		23
Estimated respondents		862		562		300
f. TMU (Traffic Management Unit)						
(1) Strongly helps		11		13		7
(2) Helps somewhat		52		58		42
(3) Neither helps nor hinders		18		14		24
(4) Hinders somewhat		14		10		22
(5) Strongly hinders		5		5		5
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		4		0		10
Estimated respondents		955		606		349
g. Host computer						
(1) Strongly helps		22		29		5
(2) Helps somewhat		42		48		28
(3) Neither helps nor hinders		31		22		52
(4) Hinders somewhat		3		1		10
(5) Strongly hinders		2		0		5
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		20		6		40
Estimated respondents		800		571		229
h. Other						
(1) Strongly helps		7		6		8
(2) Helps somewhat		5		6		2
(3) Neither helps nor hinders		1		0		0
(4) Hinders somewhat		15		15		16
(5) Strongly hinders		73		73		73
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		2		2		0
Estimated respondents		400		273		127

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
40. Of the factors listed below, which do you think are the three most serious problems facing the air traffic control system today? ^a Write the letters of the three problems in the boxes below. You need not use all three boxes. Use letter "A" if you see no serious problems. (The order is not important.)						
A. No serious problems		3		4		3
One or more serious problems		97		96		97
Total		100		100		100
Estimated respondents		1,005		613		392

	Percent of supervisors citing serious problems		
B. Too much air traffic	29	35	21
C. Morale of the work force	32	30	35
D. Too few FPLs	40	37	45
E. Too few developmentals	7	8	5
F. Poor pilot performance	8	6	12
G. Skill level of developmentals	13	10	17
H. Too much scheduled or unscheduled overtime	6	5	4
I. Out-of-date hardware/equipment	38	31	44
J. Limited software capabilities	11	7	14
K. Inadequate training for developmentals	14	16	11
L. Airlines' use of hubs	21	26	12
M. Current airline scheduling practices	49	56	37
N. Other	21	21	21
Missing choices ^b	12	12	11
Total^c	300	300	300
Estimated respondents	970	588	382

^aQuestion was not asked in 1985 survey.

^bRespondents selected only one or two serious problems.

^cBecause respondents could select up to three choices, percentages add to 300.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
41. Where minimum standards for maintaining separation of aircraft exist (3 miles for terminals; 5 miles for centers), what distance do the controllers you supervise typically try to maintain? ^a						
1. 3 - 3.9 miles		24		0		61
2. 4 - 4.9 miles		11		0		29
3. 5 - 5.9 miles		8		8		9
4. 6 - 6.9 miles		14		23		0
5. 7 - 7.9 miles		23		37		0
6. 8 - 8.9 miles		9		15		0
7. 9 - 9.9 miles		4		6		0
8. 10 - 15 miles		7		11		0
9. Over 15 miles		0		0		0
Total		100		100		100
Estimated respondents		988		605		383

AUTOMATED OPERATIONAL ERROR DETECTION PROGRAM

42. Do you work at an enroute center?

1. Yes	61	62	100	100	0	0
2. No*	39	38	0	0	100	100
Total	100	100	100	100	100	100
Estimated respondents	876	996	534	613	342	383

*SKIP TO QUESTION 46

43. Based on your experience, how much positive or negative impact, if any, does the automated operational error detection program have in each of the following areas?

a. Identifying operational errors		
(1) Significant positive impact	44	42
(2) Some positive impact	28	32
(3) No impact	3	4
(4) Some negative impact	12	14
(5) Significant negative impact	14	8
Total	100	100
Estimated respondents	533	605

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. Helping management identify system problems (e.g., airspace configuration)						
(1) Significant positive impact			12	5		
(2) Some positive impact			34	34		
(3) No impact			41	51		
(4) Some negative impact			4	6		
(5) Significant negative impact			10	5		
Total			100	100		
Estimated respondents			533	610		
c. Ensuring adequate separation of aircraft						
(1) Significant positive impact			27	27		
(2) Some positive impact			45	46		
(3) No impact			18	17		
(4) Some negative impact			6	7		
(5) Significant negative impact			5	3		
Total			100	100		
Estimated respondents			532	605		
d. Efficient controller performance						
(1) Significant positive impact			9	6		
(2) Some positive impact			32	31		
(3) No impact			14	24		
(4) Some negative impact			29	28		
(5) Significant negative impact			16	11		
Total			100	100		
Estimated respondents			530	605		
e. Controller morale						
(1) Significant positive impact			1	1		
(2) Some positive impact			3	3		
(3) No impact			4	6		
(4) Some negative impact			44	60		
(5) Significant negative impact			48	31		
Total			100	100		
Estimated respondents			533	611		
f. ATC system capacity						
(1) Significant positive impact			2	1		
(2) Some positive impact			6	5		
(3) No impact			24	36		
(4) Some negative impact			41	40		
(5) Significant negative impact			27	18		
Total			100	100		
Estimated respondents			529	603		

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
g. Pilot/Controller relationships						
(1) Significant positive impact			1	0		
(2) Some positive impact			4	3		
(3) No impact			30	34		
(4) Some negative impact			45	47		
(5) Significant negative impact			21	16		
Total			100	100		
Estimated respondents			532	611		
h. Other						
(1) Significant positive impact				17		
(2) Some positive impact				3		
(3) No impact				5		
(4) Some negative impact				30		
(5) Significant negative impact				44		
Total				100		
Estimated respondents				37		
44. Have you personally had an operational error detected by the automated operational error detection program during the past 18 months? ^a						
1. Yes			16	8		
2. No			84	92		
Total			100	100		
Estimated respondents			527	610		
45. Overall, how satisfied or dissatisfied are you with the approach management currently uses to confirm whether or not an event detected by the automated operational error program is an actual operational error on the part of the controller?						
1. Very satisfied			13	14		
2. Generally satisfied			46	46		
3. Neither satisfied nor dissatisfied			13	16		
4. Generally dissatisfied			17	16		
5. Very dissatisfied			10	8		
Total			100	100		
6. No basis to judge ^b			1	0		
Estimated respondents			522	612		

^aThe 18-month period was added to the 1988 question because the program had been automated about 18 months at the time of the 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
RETIREMENT						
46. Are you now or will you be eligible to retire within the next 2 years?						
1. Yes	50	37	55	38	43	34
2. No*	50	63	45	62	57	66
Total	100	100	100	100	100	100
Estimated respondents	880	1,008	535	616	345	392

*SKIP TO QUESTION 49

47. Do you plan to retire within the next 2 years?						
1. Definitely yes	38	32	40	35	35	26
2. Probably yes	43	42	42	42	45	42
3. Probably not*	16	21	15	18	18	24
4. Definitely not*	3	6	3	5	3	8
Total	100	100	100	100	100	100
Estimated respondents	436	363	290	237	146	131

*SKIP TO QUESTION 49

48. How much of a reason, if any, is each of the following for your planned retirement?						
a. Personal health						
(1) Major reason	6	5	5	6	10	5
(2) Somewhat of a reason	22	17	23	14	19	22
(3) Not a reason	72	78	73	80	71	73
Total	100	100	100	100	100	100
Estimated respondents	346	248	232	167	114	81
b. Health of family member						
(1) Major reason	1	0	1	1	2	0
(2) Somewhat of a reason	3	3	2	2	5	4
(3) Not a reason	96	97	97	97	93	96
Total	100	100	100	100	100	100
Estimated respondents	344	245	230	165	114	80

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
c. Proposed changes to retirement system						
(1) Major reason	53	40	54	43	51	33
(2) Somewhat of a reason	36	36	34	35	40	37
(3) Not a reason	11	24	12	21	10	30
Total	100	100	100	100	100	100
Estimated respondents	350	255	234	171	116	84
d. Work-related burnout						
(1) Major reason	15	18	14	15	19	26
(2) Somewhat of a reason	41	37	42	37	40	36
(3) Not a reason	43	45	45	48	41	38
Total	100	100	100	100	100	100
Estimated respondents	346	247	231	166	115	81
e. Dissatisfaction with FAA						
(1) Major reason	30	31	27	31	37	29
(2) Somewhat of a reason	36	39	37	37	35	45
(3) Not a reason	34	30	37	32	28	26
Total	100	100	100	100	100	100
Estimated respondents	348	258	233	173	115	85
f. Career change						
(1) Major reason	7	8	7	7	7	10
(2) Somewhat of a reason	21	18	19	18	24	18
(3) Not a reason	72	74	74	76	70	72
Total	100	100	100	100	100	100
Estimated respondents	344	240	229	161	115	79
g. Other						
(1) Major reason		81		85		75
(2) Somewhat of a reason		17		12		25
(3) Not a reason		2		4		0
Total		100		100		100
Estimated respondents		48		28		20

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
BACKGROUND QUESTIONS						
	Mean years					
49. What is your age?	46.3	45.8	47.0	46.5	45.3	44.8
Estimated respondents	875	1,008	531	615	344	393
50. What is your grade?	Responses in percent					
GS/GM 14	32	27	15	13	60	50
GS/GM 15	68	73	85	87	40	50
Total	100	100	100	100	100	100
Estimated respondents	879	1,006	535	614	344	392
51. How many years experience do you have for each of the following?	Mean years					
A. Total years with FAA	21.9	20.9	22.5	21.3	20.9	20.3
Estimated respondents	880	1,009	537	616	343	393
B. Years controlling traffic with FAA (only as a developmental and FPL) ^a	15.1		15.5		14.4	
Estimated respondents	1,006		613		393	
C. Years experience as first-line supervisor	7.5	6.6	7.3	6.1	7.7	7.3
Estimated respondents	881	1,009	537	616	344	393
52. Thank you for your help with this study. If you have any other comments, please write them in the space below.	Responses in percent					
Written comments provided	55	49	55	50	55	48
No comments provided	45	51	45	50	45	52
Total	100	100	100	100	100	100
Estimated respondents	886	1,009	539	616	347	393

Question is not comparable to 1985 survey.

1988 SURVEY RESULTS INCLUDING COMPARABLE RESPONSES FROM 1985 SURVEY
(OVERALL, BY CENTERS, AND BY TERMINALS)
AIR TRAFFIC CONTROL -- FACILITY MANAGERS

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988

WORK LOAD

1. In your opinion, during typical daily peak periods approximately what percentage of your facility's radar controllers, if any, are handling more traffic than they feel they should?

Percent of radar controllers who feel <u>they</u> are handling too much traffic	Mean percent ^a					
	1985	1988	1985	1988	1985	1988
	18	14	19	14	17	16
Respondents	69	73	18	18	51	55

2. Considering the complexity of the sectors and the capabilities of controllers at your facility, do you feel any of your radar controllers are currently handling more traffic than they should during typical daily peak periods?

^aEstimate of percent of all controllers based on aggregate of all responses provided.

NOTES: (1) Percentages may not add to 100 because of rounding.

- (2) Comparisons between 1985 and 1988 are not shown for "other" categories because of the wide range of written responses received. Comparisons are also omitted where modifications of a question make such comparisons inappropriate.
- (3) The terms "center," "enroute center," and "air route traffic control center" have the same meaning in this report.
- (4) Respondents were instructed to "check one" response for each question or part of a question whenever response categories were presented.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
1. Definitely yes	7	3	0	5	10	2
2. Probably yes	29	26	39	32	26	25
3. Uncertain*	4	7	0	0	6	9
4. Probably not*	28	37	33	37	26	37
5. Definitely not*	32	28	28	26	33	28
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57

*SKIP TO QUESTION 5

3. In your opinion, approximately what percentage of your radar controllers are handling more traffic than <u>you</u> feel they should during typical daily peak periods?						
Percent of radar controllers handling too much traffic		Mean percent ^a				
	5	5	3	5	8	6
Respondents	66	71	18	19	48	52

4. For those controllers you were referring to in question 3, how much, if any, does each of the following factors represent a reason for their handling more traffic than they should?						
a. Sector configuration (complexity)						
(1) Major reason	22	25	17	33	24	21
(2) Somewhat of a reason	57	55	67	67	53	50
(3) Not a reason	22	20	17	0	24	29
Total	100	100	100	100	100	100
Respondents	23	20	6	6	17	14
b. Controller capability						
(1) Major reason	42	14	17	0	50	21
(2) Somewhat of a reason	46	57	50	29	44	71
(3) Not a reason	13	29	33	71	6	7
Total	100	100	100	100	100	100
Respondents	24	21	6	7	18	14

^aEstimate of percent of all controllers based on aggregate of all responses provided, considering question 2, answers 4 and 5, and question 3.

Question	Overall		Centers		Terminals	
	1985	1983	1985	1983	1985	1988
c. Shortage of radar controllers						
(1) Major reason	22	11	17	17	24	8
(2) Somewhat of a reason	26	26	33	17	24	31
(3) Not a reason	51	63	50	67	53	62
Total	100	100	100	100	100	100
Respondents	23	19	6	6	17	13
d. Shortage of non-radar controllers						
(1) Major reason	0	0	0	0	0	0
(2) Somewhat of a reason	4	16	0	33	6	8
(3) Not a reason	96	84	100	67	94	92
Total	100	100	100	100	100	100
Respondents	23	19	6	6	17	13
e. Shortage of other staff qualified to assist radar controllers						
(1) Major reason	0	0	0	0	0	0
(2) Somewhat of a reason	26	37	17	50	29	31
(3) Not a reason	74	63	83	50	71	69
Total	100	100	100	100	100	100
Respondents	23	19	6	6	17	13
f. Inadequate flow control procedures						
(1) Major reason	9	20	17	17	6	21
(2) Somewhat of a reason	65	50	67	50	65	50
(3) Not a reason	26	30	17	33	29	29
Total	100	100	100	100	100	100
Respondents	23	20	6	6	17	14
g. Airline schedules						
(1) Major reason	38	32	57	57	29	20
(2) Somewhat of a reason	21	46	29	29	18	53
(3) Not a reason	42	23	14	14	53	27
Total	100	100	100	100	100	100
Respondents	24	22	7	7	17	15
h. Other						
(1) Major reason		50		0		75
(2) Somewhat of a reason		33		50		25
(3) Not a reason		17		50		0
Total		100		100		100
Respondents		6		2		4

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
5. How much sector reconfiguration (procedural and/or boundary changes) do you anticipate will take place at your facility during the next 12 months?						
1. Great deal	13	16	17	17	12	16
2. Moderate amount	26	22	22	28	29	20
3. Some	44	46	56	56	39	43
4. None*	17	16	6	0	22	21
Total	100	100	100	100	100	100
Respondents	69	74	18	18	51	56

*SKIP TO QUESTION 7a

6. In your opinion, to what extent, if at all, does each of the following factors contribute to the sector reconfigurations you anticipate taking place at your facility during the next 12 months?						
1. Sector(s) handling too much traffic						
(1) Very great extent	7	7	0	12	11	5
(2) Great extent	20	22	33	18	13	24
(3) Moderate extent	13	11	11	12	13	11
(4) Some extent	21	31	28	47	18	24
(5) Little, no extent	39	29	28	12	45	37
Total	100	100	100	100	100	100
Respondents	56	55	18	17	38	38
2. Sector(s) handling too little traffic						
(1) Very great extent	0	0	0	0	0	0
(2) Great extent	5	6	11	12	3	3
(3) Moderate extent	9	11	11	12	8	11
(4) Some extent	14	13	17	35	13	3
(5) Little, no extent	71	70	61		76	84
Total	100	100	100	100	100	100
Respondents	56	54	18	17	38	37

a"Skip" instruction was not included in the 1985 survey.

Question	Overall		Centers		Terminal*	
	1985	1988	1985	1988	1985	1988
3. Sector(s) too complex						
(1) Very great extent	5	4	0	11	3	0
(2) Great extent	18	24	33	37	11	17
(3) Moderate extent	11	22	11	26	11	19
(4) Some extent	20	22	22	16	18	15
(5) Little, no extent	46	29	33	11	53	39
Total	100	100	100	100	100	100
Respondents	56	55	18	19	38	16
4. Improve service to system users						
(1) Very great extent	22	23	29	16	20	16
(2) Great extent	41	36	35	42	44	33
(3) Moderate extent	17	27	12	26	20	19
(4) Some extent	10	13	6	16	12	12
(5) Little, no extent	9	2	18	0	5	2
Total	100	100	100	100	100	100
Respondents	58	62	17	19	41	43
5. Response to other system changes						
(1) Very great extent	16	20	17	32	15	15
(2) Great extent	28	19	28	11	28	23
(3) Moderate extent	14	29	6	37	18	25
(4) Some extent	24	20	28	21	23	20
(5) Little, no extent	19	12	22	0	18	18
Total	100	100	100	100	100	100
Respondents	58	59	18	19	40	40
6. Other						
(1) Very great extent		39		57		17
(2) Great extent		33		29		16
(3) Moderate extent		6		0		9
(4) Some extent		11		0		13
(5) Little, no extent		11		14		9
Total		100		100		100
Respondents		18		7		11

Question	Overall		Centers		Terminals	
	1985	1982	1985	1988	1985	1988
7. FAA has established TMUs (Traffic Management Units) at ARTCCs (centers) to assist in controlling the flow of traffic. To what extent, if at all, do you believe these TMUs have helped manage the volume of traffic at <u>your</u> facility over the last 12 months? ^a						
1. Very great help		20		58		7
2. Great help		25		42		19
3. Moderate help		21		0		18
4. Some help		17		0		13
5. Little or no help		17		0		13
Total		100		100		100
Respondents		76		19		57
8. During daily peak traffic periods, do you believe FPL and radar-certified developmental controllers at your facility are typically required to spend too much, too little, or about the right amount of time continuously on radar positions between breaks?						
<u>FPLs</u>						
1. Much too much	0	0	0	0	0	0
2. Somewhat too much	10	7	6	5	12	7
3. Appropriate amount	81	88	83	95	80	86
4. Somewhat too little	6	5	11	0	4	7
5. Much too little	3	0	0	0	4	0
Total	100	100	100	100	100	100
Respondents	69	75	18	19	51	56
<u>Developmentals</u>						
1. Much too much	0	0	0	0	0	0
2. Somewhat too much	7	3	11	0	6	4
3. Appropriate amount	79	81	78	84	80	80
4. Somewhat too little	9	15	11	16	8	15
5. Much too little	4	1	0	0	6	2
Total	100	100	100	100	100	100
Respondents	68	74	18	19	50	55

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
9. Do you feel your first-line supervisors are currently spending too much, too little, or an appropriate amount of time working traffic?						
1. Much too much	7	3	11	5	6	2
2. Somewhat too much	38	18	50	11	33	21
3. Appropriate amount	48	63	39	58	51	65
4. Somewhat too little	7	15	0	21	10	12
5. Much too little	0	1	0	5	0	0
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57

10. At your facility, approximately what percentage of a typical first-line supervisor's duty time during a week is spent working traffic?

	Mean percent					
Percent time working traffic	31	18	38	16	28	18
Respondents	69	76	18	19	51	57

STAFFING:

11. In your opinion, is the current number of staff available for each of the following types of positions at your facility higher than needed, lower than needed, or at the appropriate level?^a

a. First-line supervisors						
(1) Much higher than needed	4	3	17	11	0	0
(2) Somewhat higher than needed	9	1	0	0	12	2
(3) Appropriate number	68	70	83	74	63	68
(4) Somewhat lower than needed	16	22	0	16	22	25
(5) Much lower than needed	3	4	0	0	4	5
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57

^aQuestion asked in 1985 listed one additional type of staff.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. FPLs (fully certified)						
(1) Much higher than needed	0	0	0	0	0	0
(2) Somewhat higher than needed	4	1	0	0	6	2
(3) Appropriate number	24	28	12	26	28	28
(4) Somewhat lower than needed	38	53	41	47	37	54
(5) Much lower than needed	34	18	47	26	29	16
Total	100	100	100	100	100	100
Respondents	62	76	17	19	51	57
c. Air traffic assistants (ATAs) ^b						
(1) Much higher than needed	1	1	0	5	2	0
(2) Somewhat higher than needed	13	5	11	0	14	7
(3) Appropriate number	42	51	39	26	51	60
(4) Somewhat lower than needed	32	30	44	42	28	26
(5) Much lower than needed	6	12	6	26	6	7
Total	100	100	100	100	100	100
Respondents	69	74	18	19	51	55
d. Staff specialists (training, quality assurance, planning and procedures, etc.)						
(1) Much higher than needed	0	0	0	0	0	0
(2) Somewhat higher than needed	3	0	6	0	2	0
(3) Appropriate number	38	40	22	37	43	40
(4) Somewhat lower than needed	42	47	56	42	37	49
(5) Much lower than needed	17	13	17	21	18	11
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57
e. Other(s)						
(1) Much higher than needed		5		0		6
(2) Somewhat higher than needed		0		0		0
(3) Appropriate number		10		0		13
(4) Somewhat lower than needed		43		40		44
(5) Much lower than needed		43		60		38
Total		100		100		100
Respondents		21		5		16

^bAcronym "ATA" added in 1988.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
12. Regardless of whether or not you are currently at your authorized staffing level, do you believe your authorized staffing level for each type of position listed below is higher than you need, lower than you need, or about right? ^a						
a. First-line supervisors						
(1) Much higher than needed	1	1	6	5	0	0
(2) Somewhat higher than needed	12	1	17	0	10	2
(3) Appropriate number	64	75	72	90	61	70
(4) Somewhat lower than needed	19	20	6	5	24	25
(5) Much lower than needed	4	3	0	0	6	4
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57
b. FPLs						
(1) Much higher than needed	0	0	0	0	0	0
(2) Somewhat higher than needed	7	4	11	11	6	2
(3) Appropriate number	57	70	61	74	55	68
(4) Somewhat lower than needed	29	25	28	16	29	28
(5) Much lower than needed	7	1	0	0	10	2
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57
c. Air traffic assistants (ATAs) ^b						
(1) Much higher than needed	2	1	0	0	2	2
(2) Somewhat higher than needed	12	7	6	5	14	7
(3) Appropriate number	52	65	50	58	53	67
(4) Somewhat lower than needed	27	20	33	21	25	20
(5) Much lower than needed	8	7	11	16	6	4
Total	100	100	100	100	100	100
Respondents	67	74	18	19	49	55

^aQuestion asked in 1985 listed one additional type of staff. Question 13 preceeded question 12 in 1985 survey.

^bAcronym "ATA" added in 1988.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
d. Staff specialists (training, quality assurance, planning and procedures, etc.)						
(1) Much higher than needed	0	0	0	0	0	0
(2) Somewhat higher than needed	2	0	6	0	0	0
(3) Appropriate number	47	47	56	53	44	46
(4) Somewhat lower than needed	38	43	33	26	40	49
(5) Much lower than needed	13	9	6	21	16	5
Total	100	100	100	100	100	100
Respondents	68	76	18	19	50	57
e. Other(s)						
(1) Much higher than needed		5		0		6
(2) Somewhat higher than needed		0		0		0
(3) Appropriate number		16		0		19
(4) Somewhat lower than needed		32		0		38
(5) Much lower than needed		47		100		38
Total		100		100		100
Respondents		19		3		16
13. In your opinion, do you currently have too many, too few, or an appropriate number of developmental controllers to meet future controller needs? ^a						
1. Much too many	0	0	0	0	0	0
2. Somewhat too many	4	3	6	5	4	2
3. Appropriate number	61	47	72	47	57	47
4. Somewhat too few	29	38	17	37	33	39
5. Much too few	6	12	6	11	6	12
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57

^aWording of 1988 question was derived from the first part of a two-part question in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
14. Which of the following best describes the current situation at your facility for developmentals in regard to the ability to provide them with quality training <u>now</u> ? ^a						
1. We have a lot more developmentals than we can train now.		3		0		4
2. We have somewhat more developmentals than we can train now.		11		26		5
3. We have about the right number of developmentals to train now.		41		37		42
4. We could train somewhat more developmentals than we do now.		40		37		40
5. We could train a lot more developmentals than we do now.		7		0		9
Total		100		100		100
Respondents		76		19		57

15. (FOR CENTERS ONLY:) In your opinion, is the current number of FPLs on board in your TMU higher than needed, lower than needed, or at the appropriate level?^a

1. Much higher than needed	0
2. Somewhat higher than needed	5
3. Appropriate number	53
4. Somewhat lower than needed	37
5. Much lower than needed	5
6. Unsure	0
Total	100
Respondents	19

OVERTIME

16. Overall, are radar controllers at your facility working more, less, or about at much overtime as you believe they should be working?

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
1. Much more than they should	7	8	17	11	4	7
2. Somewhat more than they should	34	18	33	32	24	14
3. About right	53	70	50	53	24	75
4. Somewhat less than they should	6	4	0	5	2	4
5. Much less than they should	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	68	76	18	19	31	57

17. In your opinion, to what extent, if at all, does the amount of overtime controllers at your facility are working positively or negatively affect their overall ATC duties?

1. Significant positive effect	0	3	0	0	0	4
2. Some positive effect	9	7	6	6	10	7
3. Little or no effect	70	76	61	83	73	74
4. Some negative effect	22	15	33	11	13	16
5. Significant negative effect	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	69	75	18	12	31	57

18. Which of the following best describes the current situation in regard to overtime at your facility?^a

1. Too much overtime has to be assigned so that our personnel are overworked	11	16	9
2. Too little overtime is authorized so that we can't cover training, leave, and other duties	12	21	9
3. Overtime assignments are appropriate at this time	70	58	74
4. No overtime assigned here; no overtime needed	1	0	2
5. Other	7	5	7
Total	100	100	100
Respondents	76	19	57

^aQuestion was not asked in 1985 survey.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
TRAINING						
19. Do you believe you have sufficient resources in each of the following areas to provide adequate training at your facility?						
a. Number of training specialists or contract personnel to train developmentals upon completion of Academy training						
(1) Definitely yes	50	40	50	56	50	35
(2) Probably yes	16	24	22	28	14	22
(3) Uncertain	2	3	6	6	0	2
(4) Probably no	18	29	17	11	18	35
(5) Definitely no	15	4	6	0	18	6
Total	100	100	100	100	100	100
Respondents	68	72	18	18	50	54
b. Number of FPLs qualified to provide OJT						
(1) Definitely yes	52	48	50	56	53	46
(2) Probably yes	23	33	33	22	20	37
(3) Uncertain	3	3	6	6	2	2
(4) Probably no	10	16	5	17	12	16
(5) Definitely no	12	0	6	0	14	0
Total	100	100	100	100	100	100
Respondents	69	75	18	18	51	57
c. Number of supervisors to provide OJT						
(1) Definitely yes	68	59	72	71	67	55
(2) Probably yes	20	25	28	18	18	27
(3) Uncertain	1	3	0	0	2	4
(4) Probably no	9	12	0	12	12	13
(5) Definitely no	1	1	0	0	2	2
Total	100	100	100	100	100	100
Respondents	69	73	18	17	51	56
d. Equipment at facility for training						
(1) Definitely yes	57	21	56	6	57	26
(2) Probably yes	16	25	28	39	12	21
(3) Uncertain	3	0	11	0	0	0
(4) Probably no	10	29	6	33	12	28
(5) Definitely no	15	24	0	22	20	25
Total	100	100	100	100	100	100
Respondents	69	75	18	18	51	57

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
e. Other						
(1) Definitely yes		0		0		0
(2) Probably yes		0		0		0
(3) Uncertain		13		0		17
(4) Probably no		0		0		0
(5) Definitely no		87		100		83
Total		100		100		100
Respondents		8		2		6
20. In your opinion, how adequate or inadequate is the training developmental controllers get before <u>beginning</u> on-the-job training? ^a						
1. Much more than adequate		16		11		18
2. Somewhat more than adequate		38		37		39
3. Generally adequate		42		53		39
4. Somewhat less than adequate		4		0		5
5. Much less than adequate		0		0		0
Total		100		100		100
Respondents		76		19		57
21. How do you rate the quality of the on-the-job training developmental controllers <u>currently</u> receive at your facility in each of the following areas?						
a. Using backup systems						
(1) Excellent	19	15	28	0	16	19
(2) Good	41	38	33	26	43	42
(3) Adequate	36	37	28	42	39	35
(4) Less than adequate	4	9	11	32	2	2
(5) Poor	0	1	0	0	0	2
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57
b. Controlling traffic in bad weather						
(1) Excellent	28	24	33	26	26	23
(2) Good	51	46	39	37	55	49
(3) Adequate	17	28	17	32	18	26
(4) Less than adequate	4	1	11	5	2	0
(5) Poor	0	1	0	0	0	2
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57

^aQuestion was not asked in 1985 survey.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
c. Emergency procedures						
(1) Excellent	27	17	29	16	26	18
(2) Good	44	40	35	26	47	44
(3) Adequate	27	40	29	53	26	35
(4) Less than adequate	3	4	6	5	2	4
(5) Poor	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	68	76	17	19	51	57
d. Handling heavy traffic						
(1) Excellent	48	47	33	47	53	47
(2) Good	38	37	50	32	33	39
(3) Adequate	13	13	17	16	12	12
(4) Less than adequate	1	3	0	5	2	2
(5) Poor	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57
e. Holding patterns						
(1) Excellent	12	11	17	21	10	7
(2) Good	26	28	44	32	19	27
(3) Adequate	42	54	17	42	52	58
(4) Less than adequate	15	5	22	5	13	6
(5) Poor	5	1	0	0	6	2
Total	100	100	100	100	100	100
Respondents	66	74	18	19	48	55
f. Operational characteristics of types of aircraft						
(1) Excellent	28	18	28	21	28	18
(2) Good	42	43	32	26	45	49
(3) Adequate	22	33	11	42	26	30
(4) Less than adequate	9	5	28	11	2	4
(5) Poor	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57
g. Direct routings (expediting traffic)						
(1) Excellent	38	21	50	21	33	21
(2) Good	33	44	22	37	37	46
(3) Adequate	29	33	28	37	29	32
(4) Less than adequate	0	1	0	5	0	0
(5) Poor	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	69	75	18	19	51	56

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
h. Control techniques						
(1) Excellent	39	29	39	26	39	30
(2) Good	44	52	39	47	45	54
(3) Adequate	12	16	11	21	12	14
(4) Less than adequate	6	3	11	5	4	2
(5) Poor	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	69	75	18	19	51	56
i. Phraseology						
(1) Excellent	32	25	17	16	37	29
(2) Good	44	40	44	21	43	45
(3) Adequate	19	28	39	47	12	21
(4) Less than adequate	6	7	0	16	8	4
(5) Poor	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	69	75	18	19	51	56
j. Flow control procedures						
(1) Excellent	23	16	44	26	16	13
(2) Good	39	30	11	26	49	32
(3) Adequate	25	51	17	42	28	54
(4) Less than adequate	12	3	28	5	6	2
(5) Poor	1	0	0	0	2	0
Total	100	100	100	100	100	100
Respondents	69	73	18	19	51	54
k. Other						
(1) Excellent		0		0		0
(2) Good		0		0		0
(3) Adequate		33		0		33
(4) Less than adequate		33		0		33
(5) Poor		33		0		33
Total		100		0		100
Respondents		3		0		3

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
22. Overall, how do you rate the quality of on-the-job training that developmentals currently receive at your facility? ^a						
1. Excellent		26		21		28
2. Good		63		58		65
3. Adequate		11		21		7
4. Poor		0		0		0
5. Very poor		0		0		0
Total		100		100		100
Respondents		76		19		57

23. What portion of the OJT instructors at your facility have the ATC experience and teaching skills they need to provide OJT to developmentals?^a

ATC Experience

1. All/Almost all	41	58	35
2. Most	42	32	41
3. About half	15	11	16
4. Some	3	0	4
5. Few/None	0	0	0
Total	100	100	100
Respondents	76	19	57

Teaching Skills

1. All/Almost all	16	11	18
2. Most	38	33	39
3. About half	31	44	27
4. Some	15	11	16
5. Few/None	0	0	0
Total	100	100	100
Respondents	74	18	56

24. Do you believe today's developmental controllers are better, worse, or about the same as developmental controllers were in each of the following areas 3 years ago?^b

^aQuestion was not asked in 1985 survey.

^bQuestion is not comparable to 1985 survey.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
a. Overall skill level when arriving on floor for on-the-job training						
(1) Much better		15		0		19
(2) Somewhat better		41		44		40
(3) About the same		40		50		37
(4) Somewhat worse		4		6		4
(5) Much worse		0		0		0
Total		100		100		100
(6) No basis to judge ^a		1		5		0
Respondents		75		18		57
b. Aptitude or ability to learn controller duties						
(1) Much better		11		11		11
(2) Somewhat better		32		22		35
(3) About the same		55		67		51
(4) Somewhat worse		3		0		4
(5) Much worse		0		0		0
Total		100		100		100
(6) No basis to judge ^a		1		5		0
Respondents		75		18		57
c. Work attitude						
(1) Much better		12		12		12
(2) Somewhat better		30		24		32
(3) About the same		46		41		47
(4) Somewhat worse		11		24		7
(5) Much worse		1		0		2
Total		100		100		100
(6) No basis to judge ^a		3		11		0
Respondents		74		17		57
d. Other						
(1) Much better		0		0		0
(2) Somewhat better		0		0		0
(3) About the same		0		0		0
(4) Somewhat worse		50		0		100
(5) Much worse		50		100		0
Total		100		100		100
(6) No basis to judge ^a		0		0		0
Respondents		2		1		1

^aThe categories totaling 100 percent do not include these responses.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
25. Do you believe developmental controllers at your facility are provided with sufficient training involving live traffic before being certified on a position?						
1. Definitely yes	83	90	78	95	84	88
2. Probably yes	15	9	11	5	16	11
3. Uncertain	1	0	6	0	0	0
4. Probably not	1	1	6	0	0	2
5. Definitely not	0	0	0	0	0	0
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57
26. Does your facility have an adequate amount of simulator equipment? ^a						
1. Definitely yes		23		5		29
2. Probably yes		16		26		13
3. Uncertain		3		0		4
4. Probably not		19		37		13
5. Definitely not		40		32		43
Total		100		100		100
Respondents		75		19		56
27. To what extent, if at all, is your facility's simulator equipment used by developmental controllers? ^a						
1. Very great extent		38		58		31
2. Great extent		24		32		22
3. Moderate extent		12		11		13
4. Some extent		15		0		20
5. Little, or no extent		11		0		15
Total		100		100		100
Respondents		74		19		55

^aQuestion was not asked in 1985 survey.

Responses in percent.

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
28. The next two questions after this one (29 and 30) cover first-line supervisor training for recognizing substance abuse (drugs and alcohol). Do you believe that substance abuse is currently a significant problem affecting the performance of controllers at your facility? ^a						
1. Definitely yes		0		0		0
2. Probably yes		0		0		0
3. Uncertain		3		5		2
4. Probably not		26		26		26
5. Definitely not		71		68		72
6. Other		0		0		0
Total		100		100		100
Respondents		76		19		57
29. During the last 12 months, how many of your facility's first-line supervisors, if any, have received any formal training (classroom or individual instruction) in recognizing substance abuse (drugs and alcohol)? ^a						
1. All/Almost all		37		32		39
2. Most		7		21		2
3. About half		4		5		4
4. Some		15		26		11
5. Few/None		38		16		46
Total		100		100		100
Respondents		76		19		57
30. About what portion of your first-line supervisors, if any, do you think have received sufficient formal training in recognizing substance abuse (drugs and alcohol)? ^a						
1. All/Almost all		22		11		26
2. Most		15		16		14
3. About half		4		5		4
4. Some		20		32		16
5. Few/None		40		37		40
Total		100		100		100
Respondents		76		19		57

^aQuestion was not asked in 1985 survey.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
31. (FOR CENTERS ONLY:) In your opinion, has the quality of the facility classroom and laboratory training provided to developmentals gotten better or worse or stayed about the same since October 1, 1986, when the contract personnel started training? ^a						
1. Much better						12
2. Somewhat better						35
3. About the same						41
4. Somewhat worse						12
5. Much worse						0
Total						100
6. No basis to judge/ Not here before 10/1/86 ^b Respondents						11 17

32. (FOR CENTERS ONLY:) Do you believe that the contract to provide center classroom and laboratory training should be renewed for centers only, expanded to terminals, or should FAA let it lapse? ^a						
1. Renew for centers only						11
2. Expand to terminals						16
3. Let it lapse						53
4. Other						21
Total						100
5. Don't know/No basis to judge ^b Respondents						0 19

SYSTEM SAFETY AND AIR TRAFFIC OPERATIONS

33. How would you rate the overall safety of the ATC system today?						
1. Excellent	70	59	83	79	65	53
2. Good	28	37	17	21	31	42
3. Adequate	3	4	0	0	4	5
4. Poor	0	0	0	0	0	0
5. Very poor	0	0	0	0	0	0
Total	100	100	100	100	100	100
6. No basis to judge ^b Respondents	0 69	0 76	0 18	0 19	0 51	0 57

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
34. Please consider your own observations and experience for each of the factors listed below. Then, indicate your opinion as to whether that factor is currently helping, is currently hindering, or currently has no impact on the maintenance of ATC system safety today. ^a						
a. Current skill level of developmental controllers						
(1) Strongly helps		16		16		16
(2) Helps somewhat		40		16		47
(3) No impact		32		47		26
(4) Hinders somewhat		13		21		11
(5) Strongly hinders		0		0		0
Total		100		100		100
Respondents		76		19		57
b. Current number of developmental controllers available						
(1) Strongly helps		8		5		9
(2) Helps somewhat		32		16		38
(3) No impact		37		63		29
(4) Hinders somewhat		23		16		25
(5) Strongly hinders		0		0		0
Total		100		100		100
Respondents		75		19		56
c. Current number of FPL controllers available						
(1) Strongly helps		17		16		13
(2) Helps somewhat		28		21		30
(3) No impact		20		37		14
(4) Hinders somewhat		32		26		34
(5) Strongly hinders		3		0		4
Total		100		100		100
Respondents		75		19		56
d. Current amount of traffic work load						
(1) Strongly helps		8		6		9
(2) Helps somewhat		8		0		11
(3) No impact		42		33		45
(4) Hinders somewhat		41		61		34
(5) Strongly hinders		1		0		2
Total		100		100		100
Respondents		74		18		56

^aQuestion is not comparable to 1985 survey.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
e. Current amount of overtime being worked						
(1) Strongly helps		5		11		4
(2) Helps somewhat		8		5		9
(3) No impact		66		63		57
(4) Hinders somewhat		18		21		18
(5) Strongly hinders		3		0		7
Total		100		100		100
Respondents		76		19		57
f. Current hardware reliability						
(1) Strongly helps		26		47		19
(2) Helps somewhat		22		21		23
(3) No impact		22		0		30
(4) Hinders somewhat		25		21		26
(5) Strongly hinders		4		11		2
Total		100		100		100
Respondents		76		19		57
g. Current software reliability						
(1) Strongly helps		33		53		26
(2) Helps somewhat		25		26		25
(3) No impact		29		16		33
(4) Hinders somewhat		13		5		16
(5) Strongly hinders		0		0		0
Total		100		100		100
Respondents		76		19		57
h. Current controller morale						
(1) Strongly helps		26		26		26
(2) Helps somewhat		30		21		33
(3) No impact		22		37		18
(4) Hinders somewhat		21		16		23
(5) Strongly hinders		0		0		0
Total		100		100		100
Respondents		76		19		57
i. Other						
(1) Strongly helps		0		0		0
(2) Helps somewhat		0		0		0
(3) No impact		0		0		0
(4) Hinders somewhat		36		0		40
(5) Strongly hinders		64		100		60
Total		100		100		100
Respondents		11		1		10

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
35. How would you describe the morale of controllers and first-line supervisors at this facility? ^a						
<u>Controllers</u>						
1. Very high		13		11		14
2. High		43		26		49
3. Neither high nor low		40		58		33
4. Low		4		5		4
5. Very low		0		0		0
6. Uncertain		0		0		0
Total		100		100		100
Respondents		76		19		57
<u>First-line Supervisors</u>						
1. Very high		13		11		14
2. High		52		47		54
3. Neither high nor low		32		42		29
4. Low		3		0		4
5. Very low		0		0		0
6. Uncertain		0		0		0
Total		100		100		100
Respondents		75		19		56
36. What effect, if any, do you think the following have on the flow of traffic in the ATC system? ^a						
a. Airlines' use of hubs						
(1) Strongly helps		0		0		0
(2) Helps somewhat		4		0		6
(3) Neither helps nor hinders		7		0		9
(4) Hinders somewhat		53		47		56
(5) Strongly hinders		36		53		30
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		3		0		4
Respondents		73		19		4
b. Current airline scheduling practices						
(1) Strongly helps		1		0		2
(2) Helps somewhat		1		0		2
(3) Neither helps nor hinders		3		0		4
(4) Hinders somewhat		42		26		47
(5) Strongly hinders		53		74		46
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		3		0		4
Respondents		74		19		55

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
37. What contribution, if any, has each of the following made in helping controllers perform their duties as air traffic controllers? ^a						
a. Recommendations from FAB (Facility Advisory Board)						
(1) Strongly helps	47		53		46	
(2) Helps somewhat	49		42		51	
(3) Neither helps nor hinders	4		5		4	
(4) Hinders somewhat	0		0		0	
(5) Strongly hinders	0		0		0	
Total	100		100		100	
(6) No basis to judge/Doesn't apply ^b	0		0		0	
Respondents	76		19		57	
b. New controller chairs						
(1) Strongly helps	1		5		0	
(2) Helps somewhat	21		32		18	
(3) Neither helps nor hinders	63		42		70	
(4) Hinders somewhat	8		11		7	
(5) Strongly hinders	7		11		5	
Total	100		100		100	
(6) No basis to judge/Doesn't apply ^b	1		0		2	
Respondents	75		19		56	
c. New strip printer						
(1) Strongly helps	27		21		30	
(2) Helps somewhat	44		21		55	
(3) Neither helps nor hinders	17		26		13	
(4) Hinders somewhat	12		32		3	
(5) Strongly hinders	0		0		0	
Total	100		100		100	
(6) No basis to judge/Doesn't apply ^b	21		0		29	
Respondents	59		19		40	
d. Revised traffic flows						
(1) Strongly helps	15		16		15	
(2) Helps somewhat	67		68		66	
(3) Neither helps nor hinders	14		11		15	
(4) Hinders somewhat	4		5		4	
(5) Strongly hinders	0		0		0	
Total	100		100		100	
(6) No basis to judge/Doesn't apply ^b	5		0		7	
Respondents	72		19		53	

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
e. Resectorization						
(1) Strongly helps		21		24		20
(2) Helps somewhat		58		65		56
(3) Neither helps nor hinders		19		12		22
(4) Hinders somewhat		2		0		2
(5) Strongly hinders		0		0		0
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		16		11		18
Respondents		62		19		45
f. TMU (Traffic Management Unit)						
(1) Strongly helps		32		74		17
(2) Helps somewhat		49		26		57
(3) Neither helps nor hinders		10		0		13
(4) Hinders somewhat		7		0		9
(5) Strongly hinders		3		0		4
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		5		0		7
Respondents		72		19		53
g. Host computer						
(1) Strongly helps		37		63		25
(2) Helps somewhat		41		37		43
(3) Neither helps nor hinders		21		0		30
(4) Hinders somewhat		2		0		2
(5) Strongly hinders		0		0		0
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		17		0		23
Respondents		63		19		44
h. Other						
(1) Strongly helps		11		0		14
(2) Helps somewhat		11		0		14
(3) Neither helps nor hinders		0		0		0
(4) Hinders somewhat		26		67		14
(5) Strongly hinders		52		33		57
Total		100		100		100
(6) No basis to judge/Doesn't apply ^b		0		0		0
Respondents		27		6		21

^bThe categories totaling 100 percent do not include these responses.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
38. Of the factors listed below, which do you think are the three most serious problems facing the air traffic control system today? ^a Write the letters of the three problems in the boxes below. You need not use all three boxes. Use letter "A" if you see no serious problems. (The order is not important.)						
A. No serious problems	7		11		5	
One or more serious problems	93		89		95	
Total	100		100		100	
Respondents	76		19		57	
Percent of facility managers citing serious problems						
B. Too much air traffic	11		24		7	
C. Morale of the work force	11		6		13	
D. Too few FPLs	31		12		37	
E. Too few developmentals	13		12		13	
F. Poor pilot performance	11		29		6	
G. Skill level of developmentals	3		0		4	
H. Too much scheduled or unscheduled overtime	4		0		6	
I. Out-of-date hardware/equipment	44		41		44	
J. Limited software capabilities	11		0		15	
K. Inadequate training for developmentals	6		6		6	
L. Airlines' use of hubs	24		18		26	
M. Current airline scheduling practices	58		77		52	
N. Other	38		47		36	
Missing choices ^b	31		28		32	
Total^c	300		300		300	
Respondents	71		17		54	

^aQuestion was not asked in 1985 survey.

^bRespondents selected only one or two serious problems.

^cBecause respondents could select up to three choices, percentages add to 300.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
39. Where minimum standards for maintaining separation of aircraft exist (3 miles for terminals; 5 miles for centers), what distance do your controllers typically try to maintain? ^a						
1. 3 - 3.9 miles		51		0		63
2. 4 - 4.9 miles		23		0		30
3. 5 - 5.9 miles		3		5		2
4. 6 - 6.9 miles		7		26		0
5. 7 - 7.9 miles		15		58		0
6. 8 - 8.9 miles		1		5		0
7. 9 - 9.9 miles		1		5		0
8. 10 - 15 miles		0		0		0
9. Over 15 miles		0		0		0
Total		100		100		100
Respondents		75		19		56

AUTOMATED OPERATIONAL
ERROR DETECTION PROGRAM

40. Is your facility an enroute center?						
1. Yes	26	26	100	100	0	0
2. No*	74	74	0	0	100	100
Total	100	100	100	100	100	100
Respondents	69	74	18	19	51	55

*SKIP TO QUESTION 43

41. How much positive or negative impact, if any, does the automated operational error detection program have in each of the following areas at your facility?

a. Identifying operational errors

(1) Significant positive impact	72	58
(2) Some positive impact	11	11
(3) No impact	11	11
(4) Some negative impact	0	11
(5) Significant negative impact	6	11
Total	100	100
Respondents	18	19

^aQuestion was not asked in 1985 survey.

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
b. Helping management identify system problems (e.g., airspace configuration)						
(1) Significant positive impact			39	11		
(2) Some positive impact			44	42		
(3) No impact			17	42		
(4) Some negative impact			0	0		
(5) Significant negative impact			0	5		
Total			100	100		
Respondents			18	19		
c. Ensuring adequate separation of aircraft						
(1) Significant positive impact			44	32		
(2) Some positive impact			44	53		
(3) No impact			0	16		
(4) Some negative impact			11	0		
(5) Significant negative impact			0	0		
Total			100	100		
Respondents			18	19		
d. Efficiency of controller performance						
(1) Significant positive impact			44	0		
(2) Some positive impact			22	68		
(3) No impact			11	11		
(4) Some negative impact			22	21		
(5) Significant negative impact			0	0		
Total			100	100		
Respondents			18	19		
e. Controller morale						
(1) Significant positive impact			11	0		
(2) Some positive impact			6	0		
(3) No impact			6	11		
(4) Some negative impact			44	68		
(5) Significant negative impact			33	21		
Total			100	100		
Respondents			18	19		

Responses in percent

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
f. ATC system capacity						
(1) Significant positive impact			11	0		
(2) Some positive impact			6	0		
(3) No impact			67	53		
(4) Some negative impact			17	42		
(5) Significant negative impact			0	5		
Total			100	100		
Respondents			18	19		
g. Pilot/Controller relationships						
(1) Significant positive impact			0	0		
(2) Some positive impact			11	5		
(3) No impact			28	47		
(4) Some negative impact			61	47		
(5) Significant negative impact			0	0		
Total			100	100		
Respondents			18	19		
h. Other						
(1) Significant positive impact				0		
(2) Some positive impact				0		
(3) No impact				0		
(4) Some negative impact				0		
(5) Significant negative impact				0		
Total				0		
Respondents				0		
42. Approximately what percentage of the operational errors detected by the automated operational error detection program at your facility in the last 12 months were operational errors on the part of your controllers?						
			Mean percent			
Percent controller error			93	76		
Respondents			17	18		

Responses in percent (unless indicated otherwise)

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
STRIKE RECOVERY						
43. Since the PATCO strike, to what extent, if at all, has your facility recovered its capability to handle traffic (volume and complexity)?						
1. Totally	44	71	39	74	45	70
2. Great extent	35	17	50	21	29	16
3. Moderate extent	16	8	6	5	20	9
4. Some extent	4	3	6	0	4	4
5. Little or no extent	1	1	0	0	2	2
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57

BACKGROUND

44. How many total years of experience do you have for each of the following?^a

	Mean years		
A. Total years with FAA Respondents	26.9 75	25.9 19	27.3 56
B. Years as an ATC facility manager Respondents	7.8 76	5.9 19	8.5 57

45. How long have you been the manager of this facility?^a

1. 6 months or less	12	32	5
2. 7-12 months	13	5	16
3. 13-24 months	5	16	2
4. 25-48 months	37	37	37
5. More than 4 years	33	11	40
Total	100	100	100
Respondents	76	19	57

^aQuestion was not asked in 1985 survey.

Responses in percent

Question	Overall 1988	Centers 1983	Terminals 1988
46. Do you believe that information from this survey will be useful to FAA for improving air traffic control conditions? ^a			
1. Definitely yes	6	6	5
2. Probably yes	29	25	30
3. Uncertain	18	13	20
4. Probably not	38	50	34
5. Definitely not	10	6	11
Total	100	100	100
6. No basis to judge ^b	5	16	2
Respondents	72	16	56

^aQuestion was not asked in 1985 survey.

^bThe categories totaling 100 percent do not include these responses.

Responses in percent (unless indicated otherwise)

Question	Overall 1988	Centers 1988	Terminals 1988
FACILITY INFORMATION ^a			
47. What is your facility's current goal (in number of months) for releasing FPLs for (a) promotions, (b) lateral transfers for career enhancements, and (c) other lateral and downgrade transfers, once your facility is notified of an FPL's offer for a job at another facility. (Enter number of months for each.)	Mean months		
a. Promotions Respondents	3.7 70	1.6 17	4.5 53
b. Lateral transfers for career enhancements Respondents	5.3 72	4.6 18	5.5 54
c. Other lateral and downgrade transfers Respondents	8.2 66	8.3 14	8.1 52
48. During calendar year 1987, how many FPLs left your facility for the following reasons? (Enter number for each category.)	Total FPLs leaving		
a. Promotions Respondents	186 68	39 17	147 51
b. Lateral transfers for career enhancements Respondents	116 70	39 17	77 53
c. Other lateral and downgrade transfers Respondents	92 68	56 18	36 50

^aQuestions 47 to 61 were not part of the 1985 survey. Facility managers were explicitly informed that answers to this part of the questionnaire would not be held confidential and may be reported on a facility by facility basis.

Responses in percent (unless indicated otherwise)

Question	Overall 1988	Centers 1988	Terminals 1988
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49. For the FPLs who left your facility for promotions or career enhancements in calendar year 1987, please show the time periods these FPLs waited before leaving your facility. By "waited," we mean the length of time from when you were first notified of the transfer until the FPL's last day of work at the facility.

CALENDAR YEAR 1987
RELEASES FOR FPLS

a. Promotions

Number of FPLs who waited for...

(1) Less than 3 months

(2) 3-6 months

(3) 7-12 months

(4) 13-18 months

(5) Over 18 months

Total FPLs^a

Respondents

	Total FPLs		
	71	15	56
	67	6	61
	35	6	29
	2	0	2
	0	0	0
	175	27	148
	65	15	50

b. Lateral transfers for career enhancements

Number of FPLs who waited for...

(1) Less than 3 months

(2) 3-6 months

(3) 7-12 months

(4) 13-18 months

(5) Over 18 months

Total FPLs^a

Respondents

	Total FPLs		
	47	15	32
	49	15	34
	19	2	17
	2	0	2
	0	0	0
	117	32	85
	67	15	52

^a"Total FPLs" does not equal the corresponding total in question 48 because some managers listed different numbers for both questions and some managers responded to question 48 but not to question 49.

Responses in percent (unless indicated otherwise)

Question	Overall 1988	Centers 1988	Terminals 1988
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50. Please consider the time period you anticipate that FPLs will typically wait to leave your facility in 1988 for (a) promotions or (b) career-enhancement transfers. Do you think these waiting periods will be longer, shorter, or about the same in calendar year 1988 compared to calendar year 1987?

a. Promotions

1988 waiting period will be ...

(1) Much shorter	1	0	2
(2) Somewhat shorter	10	12	9
(3) About the same	59	77	54
(4) Somewhat longer	23	12	27
(5) Much longer	7	0	9
Total	100	100	100
(6) No basis to judge ^a	3	11	0
Respondents	73	17	56

b. Lateral transfers for career enhancements

1988 waiting period will be ...

(1) Much shorter	2	0	2
(2) Somewhat shorter	6	12	4
(3) About the same	65	77	61
(4) Somewhat longer	19	0	26
(5) Much longer	9	12	8
Total	100	100	100
(6) No basis to judge ^a	9	11	5
Respondents	68	17	51

51. During calendar year 1987, how many FPLs, if any, had outstanding requests for release from your facility for noncareer-enhancing lateral or downgrade transfers?

	Total FPLs		
Number of FPLs*	158	128	30
Respondents	74	17	57

*IF NONE SKIP TO QUESTION 54

^aThe categories totaling 100 percent do not include these responses.

Responses in percent (unless indicated otherwise)

Question	Overall 1988	Centers 1988	Terminals 1988
52. Of those FPLs requesting such releases (see question 51), how many FPLs were actually released in calendar year 1987 for noncareer-enhancing lateral or downgrade transfers?	Total FPLs		
Number of FPLs*	63	45	18
Respondents	31	15	16
*IF NONE SKIP TO QUESTION 54			
53. How many months did these FPLs (reported in question 52) actually wait from the time they first requested release until their last day at this facility? Give the number of FPLs for each category.	Total FPLs		
1. 1-30 days	2	1	1
2. 1-3 months	17	13	4
3. 4-6 months	17	11	6
4. 7-12 months	18	13	5
5. 13-24 months	2	1	1
6. 25-36 months	0	0	0
7. Over 3 years	0	0	0
Total	56	39	17
Respondents	20	10	10
54. Considering the current FPL staffing at your facility and the desires of some FPLs for noncareer-enhancing lateral or downgrade transfers, please indicate how strongly you agree or disagree with each of the following statements.			
a. Currently, no one can be released from this facility for such transfers.			
(1) Strongly agree	31	11	38
(2) Generally agree	15	16	14
(3) Neither agree nor disagree	11	11	11
(4) Generally disagree	23	32	20
(5) Strongly disagree	21	32	18
Total	100	100	100
Respondents	75	19	56

*The total of FPLs does not equal the corresponding total in question 52 because some managers responded to question 52 but not to question 53.

Responses in percent

Question	Overall 1988	Centers 1988	Terminals 1988
b. There are no outstanding requests for such transfers because FPLs at this facility know that <u>now</u> is not the time to ask to leave.			
(1) Strongly agree	7	0	9
(2) Generally agree	3	5	2
(3) Neither agree nor disagree	16	16	16
(4) Generally disagree	29	32	29
(5) Strongly disagree	45	47	45
Total	100	100	100
Respondents	75	19	56
c. The only releases granted are to accommodate unusual individual circumstances.			
(1) Strongly agree	16	11	18
(2) Generally agree	21	32	18
(3) Neither agree nor disagree	12	5	14
(4) Generally disagree	19	16	20
(5) Strongly disagree	32	37	30
Total	100	100	100
Respondents	75	19	56
d. Current staffing limitations make it difficult to release as many of the FPLs as would like such transfers.			
(1) Strongly agree	31	42	27
(2) Generally agree	21	26	20
(3) Neither agree nor disagree	16	5	20
(4) Generally disagree	15	16	14
(5) Strongly disagree	17	11	20
Total	100	100	100
Respondents	75	19	56
e. We are able to release some FPLs each year based on their personal preferences.			
(1) Strongly agree	15	17	14
(2) Generally agree	49	67	43
(3) Neither agree nor disagree	12	0	16
(4) Generally disagree	15	11	16
(5) Strongly disagree	10	6	11
Total	100	100	100
Respondents	74	18	56

Responses in percent

Question	Overall	Centers	Terminals
	1988	1988	1988
f. Most FPLs requesting such releases are generally released within a time period they find acceptable.			
(1) Strongly agree	12	5	14
(2) Generally agree	40	32	42
(3) Neither agree nor disagree	16	26	12
(4) Generally disagree	21	32	18
(5) Strongly disagree	12	5	14
Total	100	100	100
Respondents	76	19	57
g. FPLs at this facility can be released within 60 days, if they wish, for such transfers.			
(1) Strongly agree	7	5	7
(2) Generally agree	10	0	13
(3) Neither agree nor disagree	14	11	15
(4) Generally disagree	23	32	20
(5) Strongly disagree	47	53	46
Total	100	100	100
Respondents	74	19	55
h. This facility releases most FPLs within a year after they request release.			
(1) Strongly agree	21	5	27
(2) Generally agree	32	32	32
(3) Neither agree nor disagree	17	21	16
(4) Generally disagree	13	21	11
(5) Strongly disagree	16	21	14
Total	100	100	100
Respondents	75	19	56
i. All FPLs requesting such releases in calendar year 1988 can leave this facility within 2 years.			
(1) Strongly agree	25	16	29
(2) Generally agree	29	26	30
(3) Neither agree nor disagree	25	26	25
(4) Generally disagree	8	16	5
(5) Strongly disagree	12	16	11
Total	100	100	100
Respondents	75	19	56

Responses in percent (unless indicated otherwise)

Question	Overall	Centers	Terminals
	1988	1988	1988
j. Other:			
(1) Strongly agree	100	100	100
(2) Generally agree	0	0	0
(3) Neither agree nor disagree	0	0	0
(4) Generally disagree	0	0	0
(5) Strongly disagree	0	0	0
Total	100	100	100
Respondents	7	3	4

55. How many FPLs are waiting for release from your facility as of May 1, 1988, for noncareer-enhancing lateral and downgrade transfers.

	Total FPLs		
Number of FPLs*	87	70	17
Respondents	75	18	57

*IF NONE, SKIP TO QUESTION 57

56. Of these FPLs (see question 55) currently waiting for release from your facility for noncareer-enhancing downgrade or lateral transfers, what portion of them, if any, do you anticipate releasing by the end of this calendar year (that is, by December 31, 1988)?

1. None	23	7	45
2. Few	23	40	0
3. Less than half	0	0	0
4. About half	8	13	0
5. More than half	4	7	0
6. Most	8	13	0
7. All	35	20	55
Total	100	100	100
Respondents	26	15	11

57. Please provide (or attach) any additional information that you think would help us better understand your facility's policy on promotional, lateral, or downgrade transfers for FPLs.

Written comments provided	55	42	60
No comments provided	45	58	40
Total	100	100	100
Respondents	76	19	57

Responses in percent (unless indicated otherwise)

Question	Overall 1988	Centers 1988	Terminals 1988
58. <u>Excluding permanent staff positions</u> , please think about the FPLs and first-line supervisors in staff positions (temporary, detail, special project, etc.) at your facility as of May 1, 1988. Please give the number of such FPLs and supervisors at your facility (Column A), the number of them retaining currency on position (Column B), and the number of them included in the controller work force count for your facility as of May 1, 1988 (Column C). For staff positions, consider FPLs performing duties such as training, quality assurance, plans and programs, airspace and procedures, military operations, automation, etc. Do not include TMU positions in the numbers you give below.			
a. FPLs in nonpermanent staff positions (temporary assignment, detail, special projects, etc.)			
(A) Total Number on Board as of May 1, 1988	179	93	86
(B) Number of Those (From Column A) Retaining Currency on ATC Positions	165	82	83
(C) Number of Those (From Column A) in Controller Work Force Count (as of 5/1/88)	108	38	70
Respondents	74	17	57
b. First-line supervisors in nonpermanent staff positions (temporary assignment, detail, special projects, etc.)			
(A) Total Number on Board as of May 1, 1988	20	11	9
(B) Number of Those (From Column A) Retaining Currency on ATC Positions	14	7	7
(C) Number of Those (From Column A) in Controller Work Force Count (as of 5/1/88)	19	10	9
Respondents	72	16	56

Responses in percent (unless indicated otherwise)

Question	Overall 1988	Centers 1988	Terminals 1988
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IF YOU ARE

(1) A FACILITY MANAGER FOR A
TRACON THAT SERVICES MORE
THAN ONE AIRPORT TERMINAL

OR (2) A CENTER FACILITY MANAGER,
----->PLEASE SKIP TO 60.

ALL OTHERS----->CONTINUE WITH NEXT
QUESTION.

59. (LEVEL 4 AND 5 TERMINALS ONLY:)

Please list the names of the
airlines that had hubs at your
facility as of May 1, 1988.
If you would prefer to just
give the number of airlines,
please do so.

Total airline hubs

Respondents	48
	41

60. Please provide the number of
developmentals on board at your
facility as of May 1, 1988, for
each of the categories below.
Item (e) should be the total of
items (a) through (d).

Developmentals who...	<u>Total developmentals</u>		
a. Came directly to this facility from the Academy	1,599	1,461	138
b. Came directly from another radar facility	418	98	320
c. Came directly from nonradar facility	127	13	114
d. Other	125	96	29
e. TOTAL DEVELOPMENTALS AS OF MAY 1, 1988	2,269	1,668	601
Respondents	74	17	57

Responses in percent (unless indicated otherwise)

Question	Overall		Centers		Terminals	
	1985	1988	1985	1988	1985	1988
61. Considering the developmental controllers who were certified in the last 12 months at your facility, what is the typical length of time it took for them to become fully certified (FPL)? Your answer should be based on total elapsed calendar time between facility entry date and FPL certification date. Answer separately for each category shown. (ENTER TIME IN MONTHS)						
Developmentals who...						
a. Came directly to this facility from the Academy or a nonradar facility						
Respondents	24.8		34.2		19.3	
	46		17		29	
b. Came directly from another radar facility						
Respondents	11.6		13.9		10.9	
	63		14		49	
62. Thank you for your help with this study. If you have any other comments, please write them in the space below. Any written comments will be considered confidential. Attach additional sheet(s) if you need more space.						
Written comments provided	39	33	22	37	45	32
No comments provided	61	67	78	63	55	68
Total	100	100	100	100	100	100
Respondents	69	76	18	19	51	57

SECTION 4 OBJECTIVE, SCOPE, AND METHODOLOGY

The Ranking Minority Member, Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, and the Chairman, House Committee on Public Works and Transportation, requested that we update and replicate our previous evaluation of the air traffic control system. To accomplish this, we mailed separate questionnaires to air traffic controllers, first-line supervisors of controllers, and facility managers at the 84 largest air traffic control facilities. The following sections provide details on our scope and methodology in designing and administering the questionnaires and estimating the overall results.

SCOPE

Our 1988 survey included the 84 largest air traffic control facilities, consisting of all 20 air route traffic control centers in the continental United States and all 64 of the largest terminal facilities (level 4 and 5) in March 1988, the survey selection period. Appendix I shows the specific facilities included in the 1988 survey, in addition to those included in our 1985 survey. Ten more facilities were included in 1988 because (1) the volume of their air traffic had increased, resulting in FAA's including them in the group of largest facilities, or (2) FAA had reorganized some facilities by splitting them into two distinct components (see app. I for details). We performed our review from November 1987 to December 1988, in accordance with generally accepted government auditing standards.

METHODOLOGY

Between May 2 and August 5, 1988, we surveyed the air traffic control work force. Specifically, we mailed similar, but not identical, questionnaires to (1) full performance level controllers and developmental level controllers certified on at least one radar position, (2) first-line supervisors of controllers, and (3) facility managers. The topics of the survey included work load, staffing, overtime, training, system safety and air traffic control operations, operational error detection, and retirement.

To meet our objective, we replicated questions from the 1985 survey. To gain further insight into a variety of issues--such as working conditions, safety, and morale--we added questions to the 1988 survey. In developing the questionnaires, suggested changes were provided by Representative Molinari, FAA, the National Transportation Safety Board, and the controllers' union. Individual controller, supervisor, and manager comments were considered during our questionnaire pretesting at nine specific FAA facilities.

We designed three separate questionnaires for each of the three work force components for both the 1983 and 1985 surveys. Each questionnaire was designed to gain a unique perspective of the air traffic work force: controllers directly work and control air traffic primarily using radar; first-line supervisors represent a manager's view and also reflect personal observations from directly working and controlling traffic; facility managers represent the perspective of FAA field management.

Research Design

To establish the universe of controllers, we used an FAA computer file, containing names and home addresses, of all controllers (GS-2152 series) employed at the 84 largest facilities as of March 23, 1988. Since some of the controllers on this file were not radar qualified, we developed criteria in consultation with FAA to identify qualified controllers. This procedure identified 7,742 air traffic controllers; however, the criteria to screen FAA's file for radar-certified controllers were inexact. Therefore, we included a screening question in the questionnaire to more precisely identify full performance level controllers and developmental controllers who were certified on at least one radar position.

We used a similar selection and screening process for first-line supervisors and identified 1,196.

We sent questionnaires to all facility managers at the 84 largest facilities. FAA provided a list of the facility managers' names and addresses. At four terminals (Chicago, Dallas-Fort Worth, Denver, and St. Louis), FAA has one manager overseeing two facilities, or organizational components--the control tower and the terminal radar approach control, or TRACON, facility. Thus, questionnaires were sent to 80 facility managers.

Sample, Universe, and Return-Related Data

The largest FAA facilities in the air traffic control system consist of air route traffic control centers, which control flights between airports, and terminal facilities. Because a center has a considerably greater number of controllers and supervisors than does a terminal, we used a stratified sample at centers for selection; at terminals, all controllers and supervisors were sent questionnaires. The number of controllers and supervisors sampled at each center was large enough to yield a sampling error of no more than 5 percent at the 95-percent confidence level for each center.

Table 4.1 shows universe, sample, and return-related data for the 1988 survey.

Table 4.1: Universe, Sample, and Return-Related Data
for the Three Questionnaires Used in the 1988 Survey

Return rate in percent

Questionnaire and location	Size		Responses		Not returned		Return rate ^b
	Universe	Sample	Eligible	Ineligible ^a	Incorrect address	No response	
<u>Controllers</u>							
Terminals	2,451	2,451	1,699	152	32	568	75.5
Centers	<u>5,291</u>	<u>2,824</u>	<u>1,859</u>	<u>333</u>	<u>25</u>	<u>607</u>	77.6
Total	<u>7,742</u>	<u>5,275</u>	<u>3,558</u>	<u>485</u>	<u>57</u>	<u>1,175</u>	76.6
<u>Supervisors</u>							
Terminals	478	478	393	16	3	66	85.6
Centers	<u>718</u>	<u>636</u>	<u>546</u>	<u>24</u>	<u>2</u>	<u>64</u>	89.6
Total	<u>1,196</u>	<u>1,114</u>	<u>939</u>	<u>40</u>	<u>5</u>	<u>130</u>	87.9
<u>Managers</u>							
Terminals	50	60	57	0	0	3	95.0
Centers	<u>20</u>	<u>20</u>	<u>19</u>	<u>0</u>	<u>0</u>	<u>1</u>	95.0
Total	<u>80</u>	<u>80</u>	<u>76</u>	<u>0</u>	<u>0</u>	<u>4</u>	95.0

^aIneligibles represent respondents who were either (1) not full performance level controllers or developmentals certified on at least one radar position or (2) not first-line supervisors.

Return rates were calculated by dividing the total of all responses by the applicable sample size.

Table 4.2 compares universes, samples, and return rates for the 1988 and 1985 surveys.

Table 4.2: Universe, Sample, and Return Rates for the 1988 and 1985 Surveys

Return rate in percent

<u>Category</u>	<u>Universe</u>		<u>Sample size</u>		<u>Return rate</u>	
	<u>1988</u>	<u>1985</u>	<u>1988</u>	<u>1985</u>	<u>1988</u>	<u>1985</u>
Controllers	7,742	6,248	5,275	4,472	76.6	73.4
Supervisors	1,196	1,150	1,114	1,052	87.9	81.4
Managers	80	74	80	74	95.0	93.2

Survey Results

Survey questions (see sections 1, 2, and 3) are presented with responses to each item. Further, responses to each item are shown (1) overall for all 84 facilities, (2) for the 20 centers, and (3) for the 64 terminal facilities. We used stratified sampling at centers and assigned appropriate weights to sampled cases prior to analyzing the survey results. Thus, responses shown for centers and overall represent weighted estimates. We examined selected estimates to ensure sampling errors of no more than ± 5 percent at the 95-percent confidence level.

Questionnaire Procedures

The 1988 questionnaires were developed using the 1985 questionnaires as our starting point. (Sections 1, 2, and 3 show 1985 results for comparable questions.) We added and deleted questions on the basis of suggestions provided by the Ranking Minority Member, FAA officials, the National Transportation Safety Board, union officials, and members of the air traffic control work force. We conducted pretests with a total of 36 individuals at 9 facilities: 4 centers (Cleveland, Jacksonville, Oakland, and Seattle) and 5 terminal facilities (Cleveland, Jacksonville, Oakland TRACON, Orlando, and Seattle TRACON).

During each session, an individual respondent filled out a questionnaire in the presence of two GAO observers. The GAO observers timed the respondent and observed reactions to questions and question flow. Afterwards, the observers debriefed the respondent to identify ambiguities, incorrect use of technical language, potential bias, or other problems in question wording or questionnaire format.

Questionnaires for controllers and supervisors were mailed to the respondents' home address. If a home address was not available, questionnaires were mailed to controllers at the facilities where they worked. Questionnaires for the facility managers were also mailed to each facility.

Because of the sensitive nature of some questions, respondents were promised confidentiality to encourage a reply. The only exception to this pledge was one section of questions on facility information in the 1988 facility manager questionnaire. The facility managers were informed that information in this section could be specifically identified to their facilities.

In order to maintain confidentiality, a control number was written on each questionnaire to identify the respondents without using their names and to facilitate follow-up mailings. The nonconfidential section of the managers' questionnaire was detached and processed separately so that no identification remained on the confidential questions.

On June 6, 1988, we sent follow-up letters to all nonrespondents. The letters also included a second copy of the questionnaire in case the respondent could not locate the original. We subsequently phoned some facility managers to clarify facility staffing information.

THE 84 MAJOR AIR TRAFFIC CONTROL
FACILITIES INCLUDED IN GAO'S SURVEY

Air Route Traffic Control Centers

- | | | |
|----------------|------------------|----------------------|
| 1. Albuquerque | 8. Houston | 15. Minneapolis |
| 2. Atlanta | 9. Indianapolis | 16. New York |
| 3. Boston | 10. Jacksonville | 17. Oakland |
| 4. Chicago | 11. Kansas City | 18. Salt Lake City |
| 5. Cleveland | 12. Los Angeles | 19. Seattle |
| 6. Denver | 13. Memphis | 20. Washington, D.C. |
| 7. Fort Worth | 14. Miami | |

Terminal Facilities

- | | | |
|---|--------------------------------|-----------------------------------|
| 1. Atlanta | 22. Houston | 44. Ontario TRACON |
| 2. Austin Tower ^a | 23. Indianapolis | 45. Orlando |
| 3. Baltimore-Washington | 24. Jacksonville | 46. Pensacola |
| 4. Boston | 25. Kansas City | 47. Philadelphia |
| 5. Burbank | 26. Kennedy Tower | 48. Phoenix |
| 6. Charlotte | 27. LaGuardia Tower | 49. Phoenix TRACON |
| 7. Chicago O'Hare ^b | 28. Las Vegas | 50. Pittsburgh |
| 8. Chicago TRACON ^b | 29. Los Angeles | 51. Portland TRACON ^c |
| 9. Cleveland | 30. Los Angeles TRACON | 52. Sacramento |
| 10. Columbus | 31. Lubbock | 53. St. Louis ^b |
| 11. Dallas-Fort Worth ^b | 32. Memphis | 54. St. Louis TRACON ^b |
| 12. Dallas-Fort Worth TRACON ^b | 33. Miami | 55. Salt Lake TRACON ^c |
| 13. Dallas-Love Tower ^a | 34. Milwaukee | 56. San Antonio |
| 14. Dayton | 35. Minneapolis | 57. San Diego |
| 15. Denver ^b | 36. Nashville ^a | 58. San Francisco |
| 16. Denver TRACON ^b | 37. Newark | 59. Santa Ana |
| 17. Detroit | 38. New Orleans | 60. Seattle TRACON ^c |
| 18. Dulles Tower ^a | 39. New York TRACON | 61. Tampa |
| 19. Edwards Air Force Base | 40. Norfolk | 62. Washington National |
| 20. Fort Lauderdale | 41. Oakland Tower ^a | 63. West Palm Beach |
| 21. Hebron ^a | 42. Oakland TRACON | 64. Windsor Locks |
| | 43. Oklahoma City | |

Note: TRACON = Terminal radar approach control facility.

^aFacility upgraded subsequent to 1985 survey and now included in FAA's list of largest facilities (level 4 and 5).

^bFacility reorganized subsequent to 1985 survey to include separate tower and TRACON activity; each organizational unit is sufficiently large to be separately included in FAA's list of largest facilities.

^cFacility reorganized subsequent to 1985 survey to include separate tower and TRACON. Towers (Portland, Salt Lake City, and Seattle) no longer included in our survey since FAA deleted them from its list of largest facilities.

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United States General Accounting Office

Briefing Report to the Honorable
Bill Bradley
United States Senate

March 1986

FARM FINANCE

Farm Debt, Government Payments, and Options to Relieve Financial Stress





UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY
AND ECONOMIC DEVELOPMENT
DIVISION

March 18, 1986

B-220507

The Honorable Bill Bradley
United States Senate

Dear Senator Bradley:

As requested in your November 8, 1985, letter and modified in subsequent discussions with your office, we are providing you with information on (1) the nature of current farm debt, (2) the distribution of federal farm program direct payments to financially-stressed farms, and (3) alternatives for reducing excessive farm debt. You indicated that the long-run interests of American farmers may be better served by their placing less reliance on future federal farm program payments if the federal government could initiate new programs to ease their current debt problems. This briefing report presents the results of our work.

We have divided the briefing report into five sections. The first summarizes the report. The second section provides information on the nature of farm debt, including how much is held by each major lender; how much is held by financially-stressed farms and by farms receiving federal farm program direct payments; and how much is nonperforming and/or delinquent.

The third section identifies the distribution of direct payments to farms in 1984 by sales class and debt-to-asset ratio class. This section also analyzes the importance of direct payments to farmers' 1984 cash flow and compares the leverage and profitability of farms that did and did not receive federal farm program direct payments in 1984.

Section four presents an analysis of alternatives for dealing with excessive farm debt. Iowa State University's Robert W. Jolly and Damona G. Doye prepared this analysis under contract with us using their cash flow model. The analysis provides estimates of the costs and impacts of these alternatives on farm assets, farm debt, farm operators, the government, and lenders. The alternatives, in probable increasing order of direct cost to the government, are:

- a federal loan guarantee with a 10 percent principal write-down by lenders,
- an interest rate buydown,

B-220507

--a holding tank that would buy farm land and other assets and lease them out to farmers, and

--a federal discharge of debt.

Section five describes our objectives, scope, and methodology in preparing this briefing report. Details on Jolly and Doye's cash flow model are presented in this section. We obtained overall farm debt information from various sources, such as the Federal Reserve System, the Farm Credit System, and the Department of Agriculture's Farmers Home Administration and Economic Research Service (ERS). The information developed on the distribution of federal farm program direct payments was based on our analyses of ERS data.

As agreed with your office, we did not obtain agency comments, but we did discuss the results of the analyses in sections two and three with ERS officials and incorporated their comments where appropriate. As arranged with your office, we plan no further distribution of this report until 15 days after the issue date, unless you publicly announce its contents earlier. We will then send copies to the chairmen of the House and Senate agricultural committees, Secretary of Agriculture, Director of the Office of Management and Budget, and other interested parties. If we can be of further assistance, please contact me on (202) 275-5138.

Sincerely yours,



Brian P. Crowley
Senior Associate Director

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ABBREVIATIONS

ERS	Economic Research Service
FCRS	Farm Costs and Returns Survey
FJ	<u>Farm Journal</u>
FmHA	Farmers Home Administration
GAO	General Accounting Office
GFP	Government farm payments
D/A	Debt-to-asset ratio
D/E	Debt-to-equity ratio
OFI	Off-farm income

SECTION 1

REPORT SUMMARY

This section summarizes information on (1) the nature of current farm debt, (2) the distribution of federal farm program direct payments to financially-stressed farms, and (3) alternatives for reducing excessive farm debt.

NATURE OF FARM DEBT

There is more than \$200 billion of outstanding farm debt. As of September 30, 1985, five major institutional lenders--Farm Credit System (FCS), commercial banks, Farmers Home Administration (FmHA), Commodity Credit Corporation, and life insurance companies--reported that they held \$168 billion of farm debt. The balance was held by individuals, input suppliers, and others. The debt was split about equally between real estate and non-real estate loans. (See p. 20.)

The extent of debt repayment problems can be measured in various ways. One is the debt held by financially-stressed farmers. According to the the Department of Agriculture's Economic Research Service (ERS):

--Seventy four billion dollars in farm debt was held in 1984 by all farms with debt-to-asset ratios of 40 percent or more. (See p. 22.) ERS has found that financial troubles typically begin at the 40 percent ratio and worsen as the ratio increases.

--Of this \$74 billion, \$36 billion was held by farms receiving federal farm program direct payments. (See p. 32.)

Another measure of debt repayment problems is the amount of delinquent and/or nonperforming farm loans. As of September 30, 1985, the major lenders reported that such loans totaled \$25.7 billion. (See p. 28.)

DISTRIBUTION OF FEDERAL FARM
PROGRAM DIRECT PAYMENTS

Using ERS's 1984 Farm Costs and Returns Survey (FCRS) data, we identified the recipients of federal farm program direct cash payments (deficiency, conservation, storage, and diversion) by sales class and debt-to-asset ratio class. We did not attempt to identify trends over time or variations by farm type and location.

--Direct government farm payments totaled \$3.3 billion in 1984. Commercial farms (sales of \$40,000 or more) received \$3.0 billion, or 91 percent, of these payments. Commercial farms with debt-to-asset ratios of 40 percent or more received almost \$1.2 billion. (See p. 36.)

--The average payment per commercial farm by debt-to-asset ratio ranged from \$13,863 for the most-leveraged farms (100 percent or more debt-to-asset ratios) to \$10,606 for the least-leveraged farms (0-39 percent debt-to-asset ratios). By sales class, small commercial producers (sales between \$40,000 and \$99,999) received an average \$5,847 per farm. The largest producers (sales of \$500,000 or more) received an average payment of \$31,175. (See pp. 38 to 43.)

--About 43 percent of commercial farms received direct payments. (See p. 40.)

Cash Flow

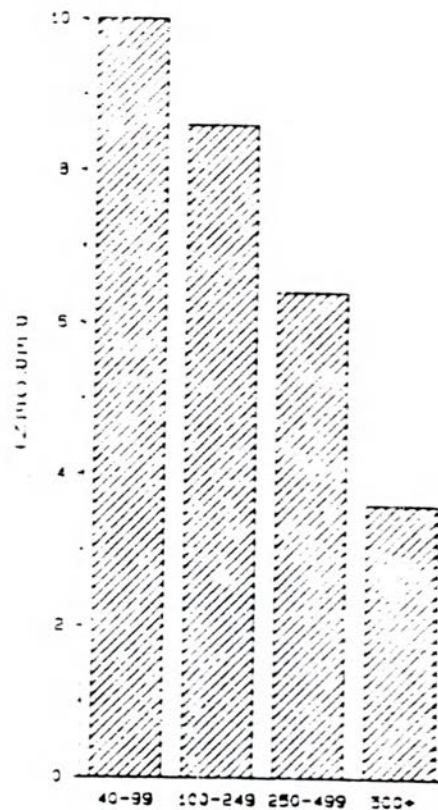
Overall, 44 percent of the commercial farms had a negative cash flow in 1984. The total shortfall for these farms was \$14.8 billion. (See p. 58.)

We analyzed the importance of direct government farm payments to farmers' annual cash flow (see p. 92 for definition of cash

flow). First, we divided the average government farm payment by the average cash farm sales. The analysis showed that government payments became relatively less important as a percentage of farm sales as farms got larger. Payments were, on average, 10 percent of sales for farms with sales between \$40,000 and \$99,999 and 3.6 percent for farms with sales of \$500,000 or more. (See p. 46.)

Figure 11

AVERAGE DIRECT FEDERAL FARM PAYMENTS
AS PERCENTAGE OF AVERAGE CASH FARM SALES



SALES CLASS IN THOUSANDS

Source: GAO analysis of ERS data.

Second, we subtracted total government farm payments from the total cash flow of farms receiving payments. With this calculation,

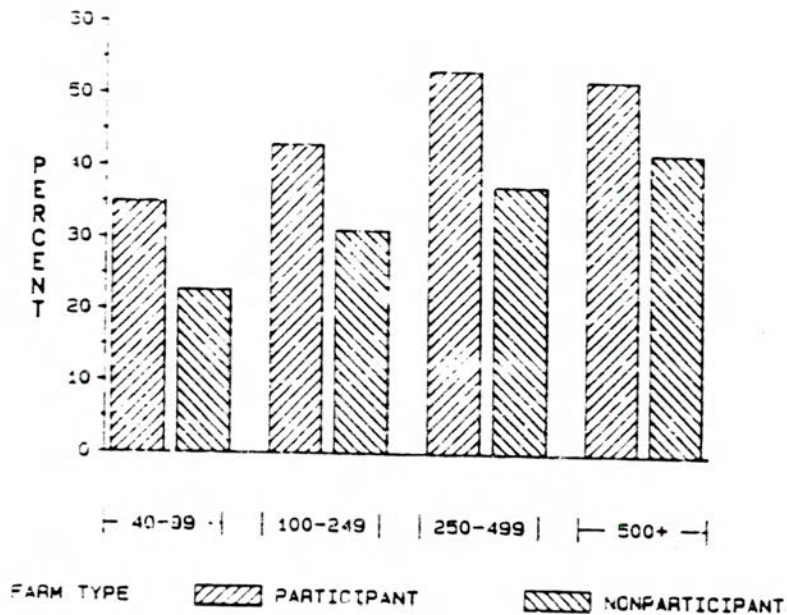
- only the largest and least-leveraged groups of farms retained their positive cash flow,
- the positive cash flow for the second largest group of farms (\$250,000 - \$499,999) was almost wiped out,
- the group of farms with sales between \$100,000 and \$249,999 went from a positive to negative total cash flow, and
- small commercial farms (\$40,000 - \$99,999) and farms with debt-to-asset ratios of 40 percent or more, which already had a negative cash flow, ended up with an even more negative cash flow. (See p. 44.)

Leverage and Profitability

We compared the level of leverage and profitability of commercial farms that did receive and did not receive direct government farm payments in 1984. We found that participating farms (those receiving payments) were more highly leveraged, on average, than nonparticipating farms. In the aggregate, participating farms held an average debt of \$189,690 with a 43.9 percent debt-to-equity ratio, while nonparticipating farms held an average debt of \$131,044 with a 30.9 percent debt-to-equity ratio. (See pp. 48 to 49.)

Figure 1.2

DEBT-TO-EQUITY RATIO BY SALES CLASS



Source: GAO analysis of ERS data.

The higher leverage subjects farms to greater financial risks. In the boom years of the 1970's, when rates of return to assets exceeded the cost of debt, leverage worked to the advantage of farmers. In the troubled 1980's, rates of return plunged relative to the cost of debt, and leverage worked to their disadvantage.

Our analysis of profitability also revealed differences between participating and nonparticipating farms. We divided cash

flow by equity to determine the returns on equity (excluding unrealized capital gains and losses). Participating farms had generally lower returns on equity than nonparticipating farms.

--Including off-farm income, the average returns on equity were 2.00 percent for participating farms and 2.33 percent for nonparticipating farms. Excluding off-farm income, the returns on equity became slightly negative for both farm groups.

--By sales class, participating farms had lower returns on equity in 1984 than nonparticipating farms for all but the largest sales class (\$500,000 or more). For example, including off-farm income, the average returns on equity for farms with sales between \$250,000 and \$499,999 were 3.20 percent for participating farms and 4.32 percent for nonparticipating farms. Excluding off-farm income, the returns on equity were 1.74 percent for participating farms and 2.49 percent for nonparticipating farms. (See p. 52.)

For the purposes of this study, we made no attempt to determine why participating farms, on average, had more debt and lower returns on equity.

ALTERNATIVES FOR REDUCING EXCESSIVE DEBT

American agriculture in the 1980's has been suffering from excessive debt, high real interest rates, lower commodity prices, reduced exports, and declining asset values.¹ Indications are

¹The financial trends of the 1970's and 1980's are detailed in our recent report, Financial Condition of American Agriculture (GAO/RCED-86-09, October 10, 1985).

that the farm sector had even weaker cash flow and returns on equity in 1985 than in 1984, and the prospects for 1986 are widely considered to be poor. The current farm debt is not expected to be fully repaid at projected levels of income, although the amount of the eventual write-off is not known.

We contracted with Iowa State University's Robert W. Jolly and Damona G. Dove for the use of their cash flow model, which uses the Farm Journal (FJ) 1984 survey data base to analyze alternatives for reducing excessive debt against a "status quo" approach. These alternatives, in probable increasing order of direct cost to the government, are:

- a federal loan guarantee with a 10 percent principal write-down by lenders,
- an interest rate buydown, ranging from 1.60 to 2.86 percentage points,
- a holding tank that would buy farm land and other assets and lease them out to farmers, and
- a federal discharge of debt.

We consider the model and data base to be adequate for the purposes of identifying "order of magnitude" estimates of costs and impacts. The estimates depend, of course, on assumptions about debt levels, asset values, interest rates, rates of return on assets, and other variables. The estimates can be higher or lower if different assumptions are made. (See page 88.)

The estimated results, as shown in Table 1.1, are for a mid-range set of assumptions--for example, cash rates of return on owned assets of 6.5 percent and recovery rates on liquidated

Table 1.1
Estimated Results from Jolly and Dove's Analysis of Alternatives
for Reducing Excessive Farm Debt

ALTERNATIVE	FARM ASSETS	FARM DEBT	OPERATORS	COST TO GOVERNMENT	COST TO LENDERS
STATUS QUO	*21 percent of assets sold for restructuring purposes (\$136 billion)	*57 percent of debt liquidated for restructuring purposes (\$91 billion)	*25 percent of operators go out of business (almost 160,000) *25 percent sell some assets to remain in business	*cost of current programs plus costs associated with economic dislocations	*7 percent of debt written off (\$11 billion)
LOAN GUARANTEE	*asset sales unnecessary for qualified operators *asset sales still required for other operators	*\$62,206 of debt discharged per qualified operator *debt liquidation still required for farms not covered by program	*3 percent of operators qualify *25 percent go out of business *70 percent still need to sell assets to remain in business	*\$11 billion contingent liability	*\$1.22 billion principal written down *writeoff of debt not covered by guarantee
INTEREST RATE BUYDOWN (2.11 percentage points)	*asset sales delayed for qualified operators *asset sales required for other operators	*debt liquidation delayed for farms helped to achieve zero cashflow *debt liquidation still required for farms not achieving zero cashflow	*35 percent qualify *13 percent go out of business *59 percent of aid goes to farms with debt-to-asset ratios of more than 70 percent	*\$1.31 billion annual subsidy *\$5,864 per farm	*\$2.04 billion interest short-fall remains
HOLDING TANK	*13 percent of assets purchased by tank and leased back to operators	*51 percent of debt liquidated	*22 percent sell all assets to tank *26 percent sell some assets to tank	*annual cost is interest on \$32 billion in Treasury securities less rental payments received on leased assets	*7 percent of debt written off
DEBT DISCHARGE	*no asset sales required because government discharged all debt of operators with negative cash flows	*42 percent discharged by government	*22 percent get all debt discharged *26 percent get some debt discharged *operators receive assets free and clear	*\$66 billion	*lenders receive \$66 billion from federal government

assets of 70 percent. Higher and lower sets of assumptions are also used, and the range of results is provided in section 4. The alternatives are targeted to commercial farmers (sales of \$40,000 or more) with negative cash flows who can make only partial or no interest payments; the intention of each alternative is to balance a farm's cash inflows and outflows. For the analysis, total farm assets are estimated to be \$647 billion, farm operator debt is \$159 billion, and the number of farm operators is 636,456.

Other Questions and Considerations

These estimated results tell, of course, only part of the story. Other questions could be raised in reviewing alternatives for reducing farm financial stress. For example, (1) what are the indirect costs to taxpayers and consumers; (2) who benefits from government actions; (3) who bears the risks of further declines in asset values or receives the benefits of future increases in asset values; (4) who bears the risks of future changes in interest rates; (5) does the proposal encourage the necessary adjustments and promote economic efficiency in the farm sector; (6) what are the administrative costs and feasibility of program implementation; and (7) is the program flexible enough to change with changing conditions?²

In examining the alternatives, we think certain considerations are important. First, for the purpose of these analyses, it is assumed that the federal government pays the full cost. Since the current situation can, arguably, be attributed to actions of the federal government, farmers, and lenders, the costs of making the necessary adjustments could be shared. Further, since farmers, lenders, and others would receive benefits from any

²These questions are discussed in "The Financial Crisis in U.S. Agriculture," by Neil Harl. Iowa State University, November 1985.

federal intervention, they might be expected to share in the costs. Recent interest buydown proposals, for example, have made provision for federal and state government and lender participation in the costs of such buydowns.

Second, while targeting of benefits on the basis of need may reduce costs of the alternatives, it also poses some difficulties. There may be little sense in supporting farmers who cannot be expected to survive even with assistance. Also, farmers who took a conservative approach and stayed out of debt may resent benefits flowing to their risk-taking neighbors.

SECTION 2

NATURE OF FARM DEBT

Table 2.1
Total Farm Debt Held by Major Institutional Lenders
September 30, 1985

<u>Lender</u>	<u>Real estate</u>	<u>Non-real estate</u>	<u>Total</u>
	----- (billions) -----		
Farm Credit System: ^a			
Federal Land Banks	\$49.3	\$ 0	\$ 49.3
Production Credit Associations	0	16.4	16.4
Commercial banks	11.0	39.3	50.3
Farmers Home Administration	9.9	18.1	28.0
Commodity Credit Corporation	0	12.2	12.2
Life insurance companies	<u>12.0</u>	<u>0</u>	<u>12.0</u>
Total ^b	<u>\$82.2</u>	<u>\$86.1</u>	<u>\$168.2</u>

^aFCS loans from Federal Intermediate Credit Banks (FICBs) and Banks for Cooperatives (BCs) are not included here because they do not make loans directly to farmers. FICB loans are made to Production Credit Associations and other financial institutions serving agriculture. BC loans are made to businesses rather than farm commodity producers.

^bTotals may not add due to rounding.

MOST FARM DEBT IS HELD BY
FIVE MAJOR INSTITUTIONAL LENDERS

Five major institutional lenders provide most of the loans to the nation's farmers. As of September 30, 1985, the outstanding debt held by these institutional lenders totaled over \$168 billion.

In addition, ERS annually reports on the farm debt held by other lenders, such as individuals. ERS's current estimate is that, as of December 31, 1985, these other lenders had \$25.9 billion outstanding in real estate loans and \$16.9 billion outstanding in non-real estate loans.

Table 2.2
Amount and Percent of Total Farm Debt by Debt-to-Asset Ratio and Sales Class

		Debt-to-asset ratio ^B											
		0 - 1%		10 - 19%		20 - 29%		30 - 39%		40% and more		Total ^A	
Sales class (thousands)		A	P	A	P	A	P	A	P	A	P	A	P
		amount	percent	amount	percent	amount	percent	amount	percent	amount	percent	amount	percent
		(bill.)		(bill.)		(bill.)		(bill.)		(bill.)		(bill.)	
\$500 and more	Amount Percent	\$0.3 5.2		\$6.3 5.3		\$3.3 2.7		\$4.4 3.7		\$20.2 16.9			
\$250-499	Amount Percent	7.9 6.6		6.9 5.8		3.4 2.9		2.3 1.9		20.4 17.2			
\$100-249	Amount Percent	12.6 10.8		13.0 10.9		5.8 4.8		3.9 3.3		35.5 29.8			
\$40-99	Amount Percent	3.7 7.3		7.8 6.5		3.7 3.1		.8 2.4		22.9 19.3			
\$0-39	Amount Percent	9.5 8.0		5.4 4.6		2.4 2.0		2.7 2.3		20.0 16.8			
Total ^B	Amount Percent	\$45.1 37.9		\$39.4 33.1		\$18.5 15.5		\$16.1 13.5		\$119.1 100.0			

^ATotals may not add due to rounding.

^BThe debt-to-asset ratio compares the value of assets to the amount of debt and is one indicator of financial soundness. According to ERS, farmers start having difficulties making principal payments at a 40-percent ratio. At 70 percent, farmers generally have problems making principal and interest payments and may start moving toward insolvency. At 100 percent, farmers are technically insolvent, unable to make principal and interest payments, and the value of assets, if sold, would not be sufficient to pay the debts.

Source: GAO analysis of ERS data.

FARM DEBT BY SALES CLASS AND
DEBT-TO-ASSET RATIO

In March 1985, ERS reported that total farm debt outstanding was \$212.1 billion as of December 31, 1984.¹ For our analysis, ERS provided us with farm debt information (from its 1984 Farm Costs and Returns Survey) that showed 1984 farm debt of \$119.1 billion. An ERS official explained the difference between the two figures. First, the \$119.1 billion only included farm operators' debt related to farming operations, including real estate used in those operations. Second, it excluded farm operators' debt held for non-farm purposes, farm debt held by individuals other than farm operators, some Commodity Credit Corporation loans, and some small, noncommercial farmers. The \$212.1 billion included all of these debts.

Comparing farms by sales class, ERS's data shows: (1) the greatest share of farm debt, 29.8 percent, was held by commercial farms with \$100,000 to \$249,999 in sales, (2) commercial farms with sales of \$500,000 or more accounted for 16.9 percent of the total farm debt, and (3) noncommercial farms (sales less than \$40,000) accounted for 16.8 percent of the debt.

Comparing farms by debt-to-asset ratio, ERS's data shows: (1) the greatest share of farm debt, 37.9 percent, was held by farms with less than a 40 percent ratio and (2) farms with a 70-percent or greater debt-to-asset ratio accounted for 29 percent of the total farm debt.

¹The Current Financial Condition of Farmers and Farm Lenders, Economic Research Service's Agriculture Information Bulletin Number 490, March 1985.

Table 2.3
Percentage of Farms, Debt, and Assets for Commercial Farms by
Debt-to-Asset Ratio and Sales Class

		Debt-to-asset ratio														
		0 - 39%			40 - 69%			70 - 89%			90% and more			Total		
Sales class (thousands)		F	D	A	F	D	A	F	D	A	F	D	A	F	D	A
		a	e	s	a	e	s	a	e	s	a	e	s	a	e	s
		n	b	s	n	b	s	n	b	s	n	b	s	n	b	s
		m	t	e	m	t	e	m	t	e	m	t	e	m	t	e
		s	t	s	s	t	s	s	t	s	s	t	s	s	t	s
		(percent)			(percent)			(percent)			(percent)			(percent)		
\$500 and more	Farms Debt Assets	3.1 6.3 12.2	1.0 6.4 3.3	0.4 3.3 1.1	0.3 4.4 0.6	4.8 20.4 17.3										
\$250- 499	Farms Debt Assets	6.7 7.9 12.6	2.5 7.0 3.6	1.0 3.4 1.1	0.6 2.7 0.4	10.8 20.6 18.0										
\$100- 249	Farms Debt Assets	24.1 12.9 26.4	7.6 13.1 6.5	2.6 6.8 1.9	1.7 4.0 0.8	36.2 35.8 35.7										
\$40- 99	Farms Debt Assets	34.9 8.8 23.4	8.2 7.8 3.9	2.9 3.7 1.2	2.2 2.8 0.9	48.2 23.2 29.0										
Total	Farms Debt Assets	68.8 35.9 74.7	19.3 34.3 17.4	7.0 16.5 6.4	4.9 13.5 2.5	100.0 100.0 100.0										

Source: GAO analysis of ERS data.

PERCENTAGE OF FARMS, DEBTS, AND
ASSETS FOR COMMERCIAL FARMS

Our analysis of commercial farms' financial data shows that

- A relatively small percentage of commercial farms (11.9 percent) had a debt-to-asset ratio of 70 percent or more. These farms had a relatively high amount of debt (29.3 percent) yet had a smaller amount of assets (7.9 percent).
- Most commercial farms (68.8 percent) had a debt-to-asset ratio of less than 40 percent. These farms accounted for a relatively much smaller amount of debt (35.9 percent) but a large proportion of assets (74.7 percent).
- The largest commercial farms, which have annual sales of \$500,000 or more, accounted for 4.8 percent of all commercial farms, yet had 20.4 percent of the debt and 17.3 percent of the assets.

Table 2.4
Average Amount of Debt and the Average Value of Assets for All Farms
by Debt-to-Asset Ratio and Sales Class

		Debt-to-asset ratio										
		0 - 39%		40 - 59%		60 - 79%		80% and more		Average		Overall
Sales Class (thousands)		D	A	D	A	D	A	D	A	D	A	Average debt-to- asset ratio
		e b t	s e t	e b t	s e t	e b t	s e t	e b t	s e t	e b t	s e t	
		(thousands)	(thousands)	(thousands)	(thousands)	(thousands)	(thousands)	(thousands)	(thousands)	(thousands)	(thousands)	(percent)
\$500 and more	Debt Assets	\$322 \$2,316		\$990 \$1,905		\$1,181 \$1,461		\$2,392 \$1,517		\$665 \$2,104		31.6
\$250- 499	Debt Assets	185 1,118		435 323		550 680		666 411		298 969		30.8
\$100- 249	Debt Assets	84 638		268 507		345 431		356 257		155 577		26.9
\$40- 99	Debt Assets	39 390		150 281		199 234		198 145		75 351		21.4
\$0-39	Debt Assets	10 171		73 138		95 113		126 87		19 166		11.4
Average	Debt Assets	\$33 \$321		\$200 \$378		\$268 \$329		\$306 \$213		\$71 \$325		21.8
Overall average debt-to-asset ratio (percent)		10.3		52.9		61.4		143.6		21.8		

Source: GAO analysis of ERS data.

AVERAGE DEBT AND AVERAGE
ASSETS FOR ALL FARMS

As would be expected, the largest commercial farms had the highest average amounts of debt and assets. These farms also had the highest overall average debt-to-asset ratio (31.6 percent). As farm sales decreased, the average debt-to-asset ratios also decreased to 21.4 percent for the smallest commercial farms and to 11.4 percent for the noncommercial farms.

Table 2.5
Average Debt, Assets, and Debt-to-Asset Ratio
for Commercial, Noncommercial, and All Farms

<u>Farms</u>	<u>Average</u>		<u>Overall average</u>
	<u>Debt owed</u> (thousands)	<u>Assets owned</u> (thousands)	<u>Debt-to-asset ratio</u> (percent)
Commercial farms	\$156	\$583	26.8
Noncommercial farms	19	166	11.4
All farms	71	325	21.8

Source: GAO analysis of ERS data.

Table 2.6
Amount and Percent of Nonperforming and/or Delinquent Farm Loans Held by Four
Major Institutional Lenders, September 30, 1985^a

Lender	Real estate	Non-real estate	Total	Percent of portfolio nonperforming and/or delinquent ^f
	----- (millions) -----			
Farm Credit System ^b :				
Federal Land Banks	\$ 6,098	\$ 0	\$ 6,098	12.4
Production Credit Associations	0	2,469	2,469	15.0
Commercial banks ^c	0	3,616	3,616	9.2
Farmers Home Administration ^d	3,040	8,747	11,788	42.1
Life insurance companies ^e	<u>1,729</u>	<u>0</u>	<u>1,729</u>	<u>14.4</u>
Total	<u>\$10,867</u>	<u>\$14,832</u>	<u>\$25,700</u>	<u>16.5</u>

^aExcludes Commodity Credit Corporation loans because borrowers have the option of repaying the loan or giving the commodity to the government to satisfy the loan. The Commodity Credit Corporation has estimated that the collateral crop on \$4.1 billion of its loans will be forfeited to the government during fiscal year 1986.

^bThe Farm Credit Administration (FCA) reported that the Omaha Federal Land Bank nonperforming loan data was preliminary, and it anticipated revisions. Also, FCA's data excluded some production credit associations in the St. Paul district.

^cFor commercial banks, the amount and percent of nonperforming and/or delinquent loans are incomplete because all banks are not required to report farm real estate and non-real estate loan quality data. The amount and percent included here are those reported by the Federal Reserve System.

^dDelinquency information provided by the Farmers Home Administration.

^eGAO's estimate of the delinquent amount and percent for life insurance companies is based on an adjustment to their June 1985 delinquency rates. Primary data was supplied by the American Council of Life Insurance.

^fDefinitions of nonperforming and/or delinquent farm loans vary somewhat by lender.

OVER \$25 BILLION OF FARM DEBT IS
NONPERFORMING AND/OR DELINQUENT

The farm loan portfolio of the major institutional lenders reflects the problems being experienced in the nation's farm sector. These lenders are experiencing stress in terms of high rates of nonperforming and delinquent loans, nonaccruals,² and loan charge-offs.³ Table 2.6 shows that, as of September 30, 1985, nonperforming and/or delinquent loans held by four of these institutional lenders totaled \$25.7 billion, or 16.5 percent of their total outstanding principal.

Nonaccrual loans are the most severe category of nonperforming loans and may indicate future loan charge-offs by lenders, given continued high stress in agriculture. As of September 30, 1985, nonaccrual farm loans totaled \$2.2 billion, for commercial banks and totaled \$4.2 billion for Federal Land Banks and Production Credit Associations in the Farm Credit System.

High levels of nonaccrual loans have occurred despite the rising trend in farm loan charge-offs. Through the first three quarters of 1985, charge-offs totaled \$775 million for commercial banks and \$622 million for Federal Land Banks and Production Credit Associations in the Farm Credit System.

²Nonaccrual loans are those where the accrual of interest has been suspended because full collection of principal and interest is in doubt.

³Loan chargeoffs are that portion of loans written off by lenders as uncollectible.

Table 2.7
Farm Debt For Farms With Negative Cash Balances^a

<u>Sales class</u> <u>(thousands)</u>	<u>Debt-to-asset ratio</u>				<u>Total debt</u>
	<u>0-39%</u>	<u>40-69%</u>	<u>70-99%</u>	<u>100% +</u>	
	<u>(millions)</u>				
\$500 and more	\$ 2,620	\$ 3,692	\$ 1,787	\$ 3,573	\$11,672
250-499	3,216	3,930	2,739	1,548	11,434
100-249	5,479	8,933	4,645	3,216	22,272
40- 99	5,121	6,193	3,335	2,263	16,912
0- 39	5,598	3,930	2,025	2,144	13,697
Total	<u>\$22,034</u>	<u>\$26,679</u>	<u>\$14,530</u>	<u>\$12,744</u>	<u>\$75,986</u>

^aSee appendix II for ERS's definition of cash balances.

Source: GAO analysis of ERS data.

Table 2.8
Percentage of Total Farm Debt For Farms With Negative Cash Balances

<u>Sales class</u> <u>(thousands)</u>	<u>Debt-to-asset ratio</u>				<u>Total debt</u>
	<u>0-39%</u>	<u>40-69%</u>	<u>70-99%</u>	<u>100% +</u>	
	<u>(percent)</u>				
\$500 and more	2.2	3.1	1.5	3.0	9.8
\$250-499	2.7	3.3	2.3	1.3	9.6
\$100-249	4.6	7.5	3.9	2.7	18.7
\$ 40- 99	4.3	5.2	2.8	1.9	14.2
\$ 0- 39	<u>4.7</u>	<u>3.3</u>	<u>1.7</u>	<u>1.8</u>	<u>11.5</u>
Total	<u>18.5</u>	<u>22.4</u>	<u>12.2</u>	<u>10.7</u>	<u>63.8</u>

Source: GAO analysis of ERS data.

MOST FARM DEBT HELD BY FARMS
WITH NEGATIVE CASH BALANCES

One measure of a farm's financial condition is its cash flow. The annual cash flow or--to use ERS's term--cash balance is derived by adding up all income received (including cash farm sales, off-farm income, and government payments) and subtracting expenses (including operating costs, interest and principal payments, and family living expenses). If a farm has a negative cash flow, it must cover the shortfall by using existing savings, selling off owned assets, or borrowing additional funds. Of course, care must be taken in using a cash flow measure. Even profitable businesses may experience annual cash flow problems if, for example, they are increasing inventories or productive assets. Conversely, unprofitable firms may have a positive cash flow in the short run if assets are being liquidated.

The FCRS survey shows that farms with negative cash balances in 1984 held \$76 billion, or 64 percent, of all U.S. farm debt. Some 46 percent of the debt was held by operators with negative cash balances and debt-to-asset ratios of 40 percent or more. If farmers continue to suffer cash shortfalls, the risk of defaults on these loans of course increases.

Table 2.9

Amount and Percent of Debt Held by Farms that Participated In and That Did
Not Participate In Government Payment Programs, by Debt-to-Asset Ratio

Debt-to-Asset Ratio (percent)	Participating farms		Nonparticipating farms		Totals ^a	
	Debt (millions)	Percent	Debt (millions)	Percent	Debt (millions)	Percent
0 - 39 Amount Percent	\$20,137	16.9	\$24,999	21.0	\$45,137	37.0
40 - 69 Amount Percent	20,341	17.1	19,066	16.0	39,406	33.1
70 - 99 Amount Percent	8,996	7.6	9,402	8.0	18,478	15.5
100 and more Amount Percent	6,642	5.6	9,438	7.9	16,080	13.5
Total Amount Percent	\$56,116	47.1	\$62,985	52.9	\$119,101	100.0

^aTotals may not add due to rounding.

Source: GAO analysis of ERS data.

DEBT HELD BY PARTICIPATING
AND NONPARTICIPATING FARMS
BY DEBT-TO-ASSET RATIO

Farms receiving government farm payments in 1984 accounted for \$56.1 billion, or 47.1 percent, of the \$119.1 billion debt reported by ERS. Some 13.2 percent, or \$15.6 billion, of this debt was held by participating farms that had a 70 percent or greater debt-to-asset ratio.

SECTION 3

DISTRIBUTION OF FEDERAL FARM
PROGRAM DIRECT PAYMENTS

Table 3.1
Government Payments Received by Participating Farms

Sales class (thousands)	Debt-to-asset ratio				Total
	0-39%	40-69%	70-99%	100% +	
-----(millions)-----					
Commercial farms					
\$500 and more	\$ 244.36	\$104.30	\$ 52.69	\$ 39.10	\$ 440.45
250-499	326.00	204.82	50.25	28.83	609.89
100-249	325.12	280.19	95.26	69.76	1,270.33
40- 99	471.63	126.45	63.47	42.91	704.46
Subtotal	<u>\$1,867.11</u>	<u>\$715.76</u>	<u>\$261.67</u>	<u>\$180.60</u>	<u>\$3,025.14</u>
Noncommercial farms					
\$20-39	\$ 146.33	\$ 28.44	\$ 7.12	\$ 5.85	\$ 187.74
10-19	51.79	7.98	a	a	72.42
5- 9	24.41	0.29	a	a	26.82
0- 4	11.75	0.49	a	a	12.27
Subtotal	<u>\$ 234.28</u>	<u>\$ 37.20</u>	<u>\$ 7.12</u>	<u>\$ 5.85</u>	<u>\$ 299.25</u>
Total	<u>\$2,101.39</u>	<u>\$752.95</u>	<u>\$277.96</u>	<u>\$192.08</u>	<u>\$3,324.39</u>

^aData not available.

Source: GAO analysis of ERS data.

MOST GOVERNMENT FARM PAYMENTS RECEIVED BY COMMERCIAL
FARMS AND FARMS WITH LOW DEBT-TO-ASSET RATIOS

Direct government farm payments to participating farms under the commodity programs totaled \$3.3 billion in 1984. Commercial farms received \$3.0 billion, or 91 percent, of these payments. Commercial farms with debt-to-asset ratios of 40 percent or more received almost \$1.2 billion, or 38 percent, of payments to commercial farms.

Direct government farm payments are defined by ERS as cash income from deficiency, storage, conservation, and diversion payments. Deficiency payments are cash payments made directly to farmers to supplement their incomes when a commodity's market price is lower than a set or target price established by law. Storage payments reimburse farmers for storing commodities in the farmer-owned grain reserve. Conservation payments are made to farmers to encourage soil conservation. Diversion payments are made under certain circumstances to farmers who agree to take a specified percentage of their acreage (or dairy cows) out of production. Not included in the definition of government farm payments are any payment-in-kind disbursements and indirect price benefits to farms from the commodity programs' acreage reduction provisions or non-recourse loan rates.

Table 3.2
Government Farm Payments (GFP) Received by Participating Farms by
Debt-to-Asset Ratio

Debt-to-asset ratio (percent)	GFP for all farms	GFP for commercial farms	No. of farms	No. of commercial farms	Average GFP	
	----- millions)-----				All farms	Commercial farms
100 or more	\$ 192.0	\$ 180.6	18,062	13,023	\$10,635	\$13,868
70 - 99	278.0	261.7	27,492	22,300	10,111	11,734
40 - 69	753.0	715.8	72,622	60,766	10,368	11,779
0 - 39	<u>2,101.4</u>	<u>1,867.1</u>	<u>302,285</u>	<u>176,039</u>	<u>6,952</u>	<u>10,606</u>
Total	<u>\$3,324.4</u>	<u>\$3,025.1</u>	<u>420,460</u>	<u>272,128</u>	<u>\$ 7,907</u>	<u>\$11,117</u>

Source: GAO analysis of ERS data.

GOVERNMENT FARM PAYMENTS
BY DEBT-TO-ASSET RATIOS

About 36.8 percent of total government farm payments in 1984 went to farms with debt-to-asset ratios of 40 percent or more. Technically-insolvent farms (with ratios of 100 percent or more) received \$192.0 million.

Technically-insolvent commercial farms received an average of 30.8 percent, or \$3,262, more in payments than low-leveraged commercial farms (debt-to-asset ratios of less than 40 percent). Farms with debt-to-asset ratios between 70 and 99 percent received 10.6 percent, or \$1,128, more than low-leveraged farms.

Table 3.3
Number and Percentage of Farms Receiving Government
Farm Payments by Sales Class

<u>Sales class</u> <u>(thousands)</u>	<u>Total</u> <u>number</u> <u>of farms</u>	<u>Number</u> <u>of farms</u> <u>receiving</u> <u>payments</u>	<u>Percentage</u> <u>of farms</u> <u>receiving</u> <u>payments</u>
\$500 and more	30,363	12,522	41
250-499	68,573	30,779	45
100-249	229,255	108,340	47
40- 99	305,943	120,483	39
20- 39	198,460	61,028	31
10- 19	193,086	36,808	19
5- 9	201,412	25,452	13
0- 4	442,206	25,044	6
Total	<u>1,669,308</u>	<u>420,460</u>	<u>25</u>

Source: GAO analysis of ERS data.

Table 3.4
Percentage of Farms Receiving Government Farm Payments by
Sales Class and Debt-to-Asset Ratio

<u>Sales class</u> <u>(thousands)</u>	<u>-----Debt-to-asset ratio-----</u>				<u>Aggregate</u> <u>average</u>
	<u>0-39%</u>	<u>40-69%</u>	<u>70-99%</u>	<u>100% +</u>	
	<u>------(percent)-----</u>				
\$500 and more	41	45	38	39	41
250-499	41	56	46	41	45
100-249	45	55	54	39	47
40- 99	37	43	50	45	39
20- 39	30	34	30	33	31
10- 19	19	13	a	a	19
5- 9	13	4	a	a	13
0- 4	<u>6</u>	<u>8</u>	<u>a</u>	<u>a</u>	<u>6</u>
Aggregate average	<u>22</u>	<u>37</u>	<u>40</u>	<u>34</u>	<u>25</u>

aData not available.

Source: GAO analysis of ERS data.

MANY COMMERCIAL FARMS
RECEIVED PAYMENTS

Federal direct support for agricultural producers is commodity specific. Commodities that receive direct government farm payments include wheat, feedgrains, cotton, and rice.

The overall rate of farms receiving direct farm program payments was 25 percent in 1984. There were, however, differences in rates by sales class. Commercial farms (sales of \$40,000 or more) had rates ranging from 29 percent to 47 percent with an average of 43 percent. Farms with sales of less than \$10,000 had much lower rates.

Table 3.5
Average Government Farm Payments Received by
Participating Farms by Sales Class and Debt-to-Asset Ratio

Sales class (thousands)	-----Debt-to-asset ratio-----				Aggregate average
	0-39%	40-59%	70-99%	100% +	
\$500 and more	\$30,924	\$36,353	\$50,596	\$55,118	\$35,170
250-499	18,712	23,097	17,508	17,801	19,815
100-249	12,076	10,515	10,450	16,396	11,725
40- 99	5,725	5,649	6,845	6,664	5,847
20- 39	3,001	3,931	3,308	2,030	3,076
10- 19	1,644	3,983	a	a	1,967
5- 9	1,049	689	a	a	1,054
0- 4	517	223	a	a	490
Aggregate average	\$ 6,952	\$10,368	\$10,111	\$10,635	\$ 7,907

^aData not available.

Source: GAO analysis of ERS data.

AVERAGE GOVERNMENT FARM PAYMENTS
VARIED WITH SIZE OF FARM

Small commercial farms (sales between \$40,000-\$99,999) received less than \$6,000 in payments, on average, in 1984. Large producers (sales of \$500,000 or more) received about \$35,000, on average.

There were no clear trends in government farm payments within a sales class for different debt-to-asset ratios. However, among the largest producers, the size of the average payment increased significantly as the debt-to-asset ratio increased.

Table 3.6
Government Farm Payments (GFP) and Cash Balances for
Commercial Farms Receiving Payments By Sales Class and
Debt-to-Asset Ratio

<u>Sales class</u> <u>(thousands)</u>	<u>Cash</u> <u>balances</u> ----- <u>(millions)</u> -----	<u>GFP</u>	<u>Cash balances</u> <u>minus GFP</u>	<u>GFP/</u> <u>cash balances</u> <u>(percent)</u>
\$500 and more	\$1,543.7	\$ 440.5	\$1,103.3	28.5
250 - 499	665.3	609.9	55.4	91.7
100 - 249	578.2	1,270.3	(692.1)	219.7
40 - 99	(437.7)	704.5	(1,142.2)	(160.9) ^b
	<u>\$2,349.6^a</u>	<u>\$3,025.1^a</u>	<u>(\$ 675.6)</u>	<u>128.8</u>
<u>Debt-to-asset</u> <u>ratio</u> <u>(percent)</u>				
100 and more	\$ (472.3)	\$ 180.6	\$ (652.9)	(38.2) ^b
70-99	(635.2)	261.7	(896.9)	(41.2) ^b
40-69	(974.9)	715.8	(1,690.6)	(73.4) ^b
0-39	<u>4,432.0</u>	<u>1,867.1</u>	<u>2,564.9</u>	<u>42.1</u>
	<u>\$2,349.6</u>	<u>\$3,025.1^a</u>	<u>(\$675.6)^a</u>	<u>128.8</u>

^aTotals may not add due to rounding.

^bIn the absence of government farm payments, cash balances would have decreased by these percentages.

Source: GAO analysis of ERS data.

IMPORTANCE OF GOVERNMENT FARM PAYMENTS

The importance of government farm payments to farmers' cash flow is analyzed by using two indicators. One is the proportion of total payments to total cash balances. By sales class, total payments were less than 30 percent of the largest farms' (\$500,000 and more in sales) total cash balance in 1984. Payments were a much higher proportion for other farms. For farms with sales between \$100,000 and \$249,999, total payments were more than twice the amount of the total cash balance.

The second indicator is the contribution that payments make to farmers' cash balances. If payments were excluded, the farms with sales between \$100,000 and \$249,999 would go from a positive to negative total cash balance. Almost the entire positive cash balance for the next largest group (\$250,000 to \$499,999) would be wiped out. By debt-to-asset ratio, the farms with ratios of 100 percent or more, 70 to 99 percent, and 40 to 69 percent--which already have negative cash balances--would have even lower cash balances. This is particularly true for farms with debt-to-asset ratios between 40 and 69 percent. For this group the total cash balance would move from -\$974.9 million to -\$1,690.6 million.

Table 3.7
Ratio of Average Government Farm Payments
To Average Cash Farm Sales^a

Sales class (thousands)	-----Debt-to-asset ratio-----				Aggregate average
	<u>0-39%</u>	<u>40-69%</u>	<u>70-99%</u>	<u>100% +</u>	
	----- (percent) -----				
\$500 and more	3.5	3.6	4.4	3.3	3.6
250-499	6.1	7.5	5.5	6.1	6.4
100-249	3.9	7.3	7.7	12.1	8.6
40- 99	9.9	9.0	11.9	12.0	10.0
Aggregate average	<u>7.1</u>	<u>6.6</u>	<u>6.7</u>	<u>7.4</u>	<u>6.9</u>

^aCash farms sales is an average for all farms.

Source. ERS Bulletin No. 495, Appendix Table 5, and GAO analysis of ERS data.

RATIO OF GOVERNMENT FARM PAYMENTS TO
CASH SALES DECREASED WITH FARM SIZE

Farmers receive income from the cash sales of crops and livestock and from other sources such as customwork, machine hire, off-farm income, and government payments.

In 1984 government payments were more important as a percentage of sales to the smaller commercial farmers, regardless of their debt-to-asset ratio. On average, government farm payments were 10 percent of cash farm sales for small commercial farms, decreasing to 3.6 percent for the large commercial farms.

It should be noted that we had data on the average government payments to participating farms, but not on cash farm sales for participating farms only. Therefore, we divided average government farm payments for participating farms by average cash farm sales for all farms.

Table 3.8
Commercial Farms
Average Assets, Debt, and Equity
By Sales Class

Participating farms			Sales class (thousands)	Nonparticipating farms		
Average assets	Average debt	Average equity		Average assets	Average debt	Average equity
\$2,238,460	\$764,453	\$1,472,608	\$500 and more	\$2,009,977	\$593,857	\$1,416,064
1,034,666	359,336	675,363	250-499	915,474	248,208	667,266
617,001	184,817	432,184	100-249	540,543	127,988	412,555
351,560	90,892	260,667	40-99	350,512	64,610	285,896
\$621,312	\$189,690	\$431,623	Aggregate average	\$554,749	\$131,044	\$423,719

Source: GAO analysis of ERS data.

Table 3.9
Commercial Farms
Average Assets, Debt, and Equity
By Debt-to-Asset Ratio

Participating farms			Debt-to-asset ratio (percent)	Nonparticipating farms		
Average assets	Average debt	Average equity		Average assets	Average debt	Average equity
\$327,396	\$454,545	(\$127,457)	100 and more	\$280,182	\$413,338	(\$133,100)
457,982	373,991	84,215	70-99	436,968	354,914	32,145
591,499	315,143	276,306	40-69	459,486	240,121	219,414
674,032	103,443	570,601	Less than 40	606,279	66,763	539,508
\$621,312	\$189,689	\$431,623	Aggregate average	\$554,749	\$131,044	\$423,719

Source: GAO analysis of ERS data.

PARTICIPATING COMMERCIAL FARMS
WERE MORE HIGHLY LEVERAGED

Participating commercial farms (those receiving government farm payments) held greater amounts of debt, on average, than nonparticipating farms in relation to their assets and equity in 1984. In the aggregate, participating commercial farms held an average debt of \$189,690 with a 43.9 percent debt-to-equity ratio. Nonparticipating farms held an average debt of \$131,044 with a 30.9 percent debt-to-equity ratio. We made no attempt to determine why participating commercial farms were more highly leveraged.

Participating farms' relatively higher financial leverage--as measured by debt-to-asset and debt-to-equity ratios--subject participating farms to greater financial risks and possibly negative returns on equity when rates of return on assets decline relative to the cost of debt (as in the 1980's). Conversely, more highly-leveraged farms enjoy greater returns to equity than low-leveraged farms when returns to assets exceed the cost of debt (as in the 1970's).

Table 3.10
Commercial Farms Debt-to-Asset (D/A) Ratio
and Debt-to-Equity (D/E) Ratio By Sales Class

<u>Participating farms</u>		<u>Sales class</u>	<u>Nonparticipating farms</u>	
<u>D/A ratio</u>	<u>D/E ratio</u>		<u>D/A ratio</u>	<u>D/E ratio</u>
----- (percent) -----		(thousands)	----- (percent) -----	
34.2	52.0	\$500 or more	29.5	42.0
34.7	53.2	250-499	27.1	37.2
30.0	42.8	100-249	23.7	31.0
25.9	34.9	40-99	18.4	22.6
30.5	43.9	Aggregate average	23.6	30.9

Source: GAO analysis of ERS data.

Table 3.11
Commercial Farms Average Cash Balances Including and
Excluding Off-Farm Income (OFI) by Sales Class

<u>Participating farms</u> <u>average cash balances</u>		<u>Sales class</u> <u>(thousands)</u>	<u>Nonparticipating farms</u> <u>average cash balances</u>	
<u>Including</u> <u>OFI</u>	<u>Excluding</u> <u>OFI</u>		<u>Including</u> <u>OFI</u>	<u>Excluding</u> <u>OFI</u>
\$123,303	\$103,558	\$500 and more	\$69,559	\$59,302
21,606	11,762	250-499	23,837	16,641
5,335	(2,999)	100-249	13,713	1,448
(3,635)	(12,607)	40-99	(2,211)	(11,717)
\$ 8,636	(\$672)	Aggregate average	\$ 9,886	(\$862)

Source: GAO analysis of ERS data.

Table 3.12
Commercial Farms Average Cash Balances Including and
Excluding Off-Farm Income (OFI) by Debt-to-Asset Ratio

<u>Participating farms</u> <u>average cash balances</u>		<u>Debt-to-asset</u> <u>ratio</u> <u>(percent)</u>	<u>Nonparticipating farms</u> <u>average cash balances</u>	
<u>Including</u> <u>OFI</u>	<u>Excluding</u> <u>OFI</u>		<u>Including</u> <u>OFI</u>	<u>Excluding</u> <u>OFI</u>
\$ (36,241)	\$ (41,616)	100 and more	\$ (41,667)	\$ (49,490)
(28,475)	(35,381)	70-99	(23,190)	(31,427)
(16,045)	(24,471)	40-69	(12,119)	(19,264)
25,176	15,411	0-39	21,462	9,385
\$ 8,636	(\$672)	Aggregate average	\$ 9,886	(\$862)

Source: GAO analysis of ERS data.

PARTICIPATING COMMERCIAL FARMS GENERALLY HAD
LOWER CASH BALANCES

Commercial farms receiving government farm payments generally had lower cash balances than those not receiving payments in 1984. In the aggregate, participating farms had an average balance of \$8,636 compared to \$9,886 for nonparticipating farms. The exception to this rule is the \$500,000 and more sales class, which had significantly higher cash balances for participating farms. When off-farm income is excluded, both participating and nonparticipating farms had a small average negative cash balance. We made no attempt to determine why participating commercial farms generally had lower cash balances.

Table 3.13
Commercial Farms Return On Equity By Sales Class

<u>Participating farms</u> <u>return on equity</u>		<u>Sales class</u> <u>(in thousands)</u>	<u>Nonparticipating farms</u> <u>return on equity</u>	
<u>Including</u> <u>off-farm</u> <u>income</u>	<u>Excluding</u> <u>off-farm</u> <u>income</u>		<u>Including</u> <u>off-farm</u> <u>income</u>	<u>Excluding</u> <u>off-farm</u> <u>income</u>
----- (percent) -----			----- (percent) -----	
3.37	7.04	\$500 and more	4.91	4.19
3.20	1.74	250-499	4.32	2.49
1.23	(0.69)	100-249	3.32	0.35
(1.39)	(4.31)	40-99	(0.77)	(4.10)
2.00	(0.16)	Aggregate average	2.33	(0.20)

Source: GAO analysis of ERS data.

Table 3.14
Commercial Farms Return On Equity By Debt-to-Asset Ratio

<u>Participating farms</u> <u>return on equity</u>		<u>Debt-to-asset</u> <u>ratio</u>	<u>Nonparticipating farms</u> <u>return on equity</u>	
<u>Including</u> <u>off-farm</u> <u>income</u>	<u>Excluding</u> <u>off-farm</u> <u>income</u>		<u>Including</u> <u>off-farm</u> <u>income</u>	<u>Excluding</u> <u>off-farm</u> <u>income</u>
----- (percent) -----			----- (percent) -----	
a	a	100 and more	a	a
(33.81)	(42.01)	70-99	(28.23)	(37.40)
(5.81)	(8.86)	40-69	(5.52)	(8.78)
4.41	2.70	0-39	3.98	1.74
2.00	(0.16)	Aggregate average	2.33	(0.20)

^aNegative equity precludes use of return-on-equity measure.

Source: GAO analysis of ERS data.

PARTICIPATING COMMERCIAL FARMS GENERALLY
HAD LOWER RETURNS ON EQUITY

We calculated returns on equity by dividing cash balance by equity, excluding unrealized capital gains and losses.

Substantial capital losses have been experienced by much of the farm sector in recent years, driving the sector's overall return on equity below zero.

Participating commercial farms generally had lower returns on equity than nonparticipating farms in 1984. The aggregate returns on equity were 2.00 percent for participating farms and 2.33 percent for nonparticipating farms. Excluding off-farm income, the returns became negative. We made no attempt to determine why participating farms generally had lower returns on equity than nonparticipating farms.

Table 3.15
Selected Information on Commercial Farms by Sales Class

	Sales class (thousands)				
	\$40 to 99	\$100 to 249	\$250 to 499	\$500 and over	Total
Number of farms	305,949	229,255	68,578	30,359	634,141 ^a
Percent of commercial farms	48.2	36.2	10.8	4.8	100.0
----- (average per farm) -----					
Cash sales	\$58,711	\$136,908	\$307,227	\$971,860	\$157,572
Off-farm income	9,298	10,409	11,141	14,120	10,130
Operating expenses	49,704	106,750	242,642	819,331	128,038
Interest payments	8,430	17,565	35,048	76,634	17,876
Principal payments	6,447	13,317	25,636	57,166	13,434
Total assets	350,924	576,675	968,977	2,104,025	583,314
Total debt	74,962	154,843	298,090	664,723	156,205
Equity/net worth	277,948	424,827	674,956	1,443,342	429,774
----- (percent) -----					
Average debt-to-asset ratio	21.4	26.9	30.8	31.6	26.8
Commercial farm debt	23.2	35.8	20.6	20.4	100.0
Farms with negative or zero cash flow	48.0	40.0	38.0	40.0	43.6

^aERS has also reported that there were 636,456 commercial farms in 1984.

Source: GAO analysis of ERS data.

SELECTED INFORMATION ON COMMERCIAL FARMS

In 1984 there were approximately 634,000 commercial farms (sales of \$40,000 or more) in the United States. While these farms overall had a relatively low average debt-to-asset ratio and substantial net worth, they were not all necessarily financially strong. Between 38 and 48 percent of these farms, depending on sales class, had negative or zero cash flows.

Table 3.16
Percentage of Selected Balance Sheet and Income Measures Held
by Commercial and Noncommercial Farms by Sales Class

<u>Sales class</u> (thousands)	<u>Sales</u>	<u>Assets</u>	<u>Debts</u> (percent)	<u>Off-farm income</u>	<u>Cash balances</u>
Commercial farms					
\$500 and more	27.1	11.8	16.9	10.3	38.8
250-499	19.2	12.3	17.2	10.9	24.5
100-249	28.6	24.4	29.8	22.9	31.2
40- 99	16.3	19.8	19.3	20.0	(11.8)
Subtotal	91.2	68.3	83.2	64.1	82.6
Noncommercial farms					
\$ 20- 39	4.4	8.8	6.5	9.4	7.8
10- 19	2.2	6.8	3.9	7.7	(2.5)
0- 9	2.2	16.1	6.4	18.8	12.1
Subtotal	8.8	31.7	16.8	35.9	17.4
Total	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: ERS publication No. 495, Table 1, and GAO analysis of ERS data.

COMMERCIAL FARMS ACCOUNTED FOR HIGH PERCENTAGE OF
SELECTED BALANCE SHEET AND INCOME MEASURES

In 1984 commercial farms (those with sales of more than \$40,000) accounted for 91 percent of sales, 68 percent of assets, and 83 percent of debts. They also accounted for 64 percent of off-farm income and 83 percent of cash balances. The top two categories--farms with sales of at least \$250,000--accounted for 46 percent of all sales, 24 percent of assets, 34 percent of debt, 21 percent of off-farm income, and 63 percent of cash balances.

Noncommercial farms (sales of less than \$40,000) accounted for 9 percent of sales, 32 percent of assets, 17 percent of debt, 36 percent of off-farm income, and 17 percent of cash balances.