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**ONE-YEAR RESULTS FOR THE KELLY AIR FORCE BASE
COMPRESSED WORK WEEK SURVEY**

Patrick J. Dowd
Carolyn J. Oakley
Jonathan French
Joseph R. Fischer, Jr.
William F. Storm

**CREW SYSTEMS DIRECTORATE
CREW TECHNOLOGY DIVISION
2504 D Dr, Suite 1
Brooks Air Force Base, TX 78235-5104**

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PATRICK J. DOWD, M.S.
Project Scientist



WILLIAM F. STORM, Ph.D.
Chief, Sustained Operations Branch



RICHARD L. MILLER, Ph.D.
Chief, Crew Technology Division

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13. ABSTRACT (Maximum 200 words) <p>The Armstrong Laboratory, Sustained Operations Branch, (AL/CFTO), was requested by the San Antonio Air Logistics Center, Human Resources Center, (SA-ALC/HRC) at Kelly AFB, TX, in May 1991 to evaluate worker attitudes during a trial transition from an 8-hour per day, 5-day work week to a 10-hour per day, 4-day work week. The trial period for this Compressed Work Schedule (CWS) began September-October of 1991. The one-year results were collected between Nov-Dec 1992, and there were 1,784 surveys collected, of which 1,695 were acceptable for statistical analysis. Overall, 59% of the workers indicated a preference for the CWS and 8% had no preference. However, 33% of those surveyed preferred their previous schedule of 8 hours per day during a 5-day work week. The 1-year survey examined the social impact of the CWS and the demographic characteristics of those who preferred and those who did not prefer the CWS. Although the majority consistently favored the CWS, certain characteristics emerged for those who did not. For example, certain directorates, or older employees, or those over 30 years in Federal service, or higher wage grade employees, or worked night shift, were demographic groupings that expressed less preference for the CWS than other groupings. Improvements under CWS in the quality of life were family life, spouse's happiness, and more time with spouse and children, plus improving morale at work, satisfaction at home and at work, resulting in social stability.</p>								
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ONE-YEAR RESULTS FOR THE KELLY AIR FORCE BASE COMPRESSED WORK WEEK SURVEY

INTRODUCTION

Federal agencies were empowered to alter employee duty hours by the Federal Employees Flexible and Compressed Work Schedule Act of 1978. Compressed Work Schedules (CWS), as alternatives to the 8 hours per day, 5 days per week Standard Work Schedule (SWS), have been tried and found positively productive in various industrial corporations. The Air Force Logistics Command (AFLC) in 1991 decided to evaluate CWS as an altered work schedule for its civilian work force. Accordingly, the San Antonio Air Logistics Center, Human Resources Center (SA-ALC/HRC) at Kelly Air Force Base (AFB), Texas, implemented an assessment of CWS on a representative number of its employees using the 10-hour day, 4-day CWS before making the decision basewide.

SA-ALC/HRC requested the Armstrong Laboratory to assess worker/supervisor attitudes to CWS. Subjective responses of employees involved in the prototype CWS were evaluated in the 30-day report (6), which was the first in a series of evaluations during the yearlong trial period. The 30-day report indicated that 82% favored CWS or had no preference while the 6-month report (4) showed that 79% favored CWS or had no preference. This report covers the subjective responses of the same employees after having been on CWS for 1-year.

Few published studies have investigated the impact of CWS on the lifestyle or quality of life of the employee, particularly over extended evaluation periods of sufficient length to gauge attitude change during the adjustment period. In a previous study, 4-day CWS produced improvements in job satisfaction and morale, but only for employees who actively participated in leisure activities (11). The author recommended that employees should be trained to effectively use leisure time. In a report, using a 12-hour, 3-day CWS, the strongest preference was found for the new schedule among those who participated in the decision to implement it (14). Another study of a 3-day CWS found that employees with experience on 12-hour shifts preferred them and felt that they reduced commuting costs and provided more useable time off (2). These findings correspond with other research results (22) that indicated that a greater percentage preferred CWS among employees with CWS experience than without it, perhaps indicating that over time attitudes change toward CWS.

Not all CWS studies reported employee or employer satisfaction. One review estimates that 28% of companies initiating CWS will return to the SWS (22). Another study showed that initial response to the 4-day work week indicated greater self actualiza-

tion, less absenteeism, and better performance after 13 months, but not at 25 months (13). Older workers and women with children seem to prefer CWS least. One of the objectives of this report was to identify characteristics of employees at Kelly AFB who were negatively impacted by CWS, thus providing guidance to management for making changes in alternative schedules or for applying special considerations to employees who are impaired by the CWS.

Both the 30-day and six-month CWS studies (4,6) examined the extent that fatigue affected job satisfaction and off-duty time. There were no detrimental consequences found in these studies (4,6). Other studies indicated that fatigue may have physical repercussions in addition to subjective consequences. One study found that the 4-day CWS significantly degraded physiological indexes of fatigue, strength, and alertness when the first day of the work week was compared to the last day of the work week (23). Likewise, a 4-day CWS produced measurable fatigue on cognitive, perceptual-motor, and subjective tasks for data entry personnel on the last day of the week compared to a SWS (19). Subjective reports of fatigue and difficulty in arranging meetings with staff on other schedules were some typical complaints about CWS, although work productivity did not usually suffer (8). Others, particularly among groups experienced with long shifts like medical staff, reported less fatigue and greater employee satisfaction with 4-day CWS (5,7,16); management can use this data to develop training information for employees on how to effectively manage sleep and leisure time on a CWS.

This CWS assessment provided an opportunity to analyze CWS worker attitudes at Kelly AFB over the duration of a 1-year trial period, an important and unique test program in Federal work force practices (17). These results may be useful to help management decide whether to implement, modify, or ignore any CWS basewide at Kelly AFB or at other Department of Defense (DOD) organizations.

METHODS

The 6-month model survey, developed by AL/CFTO (4), was the main instrument for the 1-year evaluation of worker attitudes toward CWS, 10-hour per day, 4-day work week at Kelly AFB. This survey was patterned after previously published comparable studies for monitoring job and personal satisfaction (3,6,8,9,12,18,19,20,21,22,24). A copy of the survey is included in Appendix A of the 6-month study (4). Standard bubble sheets (AF Form 1200) were used to record the responses for subsequent processing on a Scantron 8200 Optical Mark Reader (10). SA-ALC/HRC arranged for well-lighted and quiet facilities for employees to complete the surveys during duty time. Investigators were always on hand to answer questions and to ensure the integrity of the survey. Effects of CWS on employee safety and productivity were assessed by SA-ALC and are not included in this report.

SA-ALC selected various organizations to start CWS in September 1991. In the Directorate of Distribution (DS) is the Transportation Division (DST) which three branches in CWS (Air Terminal Branch (DSTA), Packaging and Transportation Support Branch (DSTD), and Passenger & Household Goods Branch (DSTH) that cover the terminal services and operations and AF packaging. LAB is the Aircraft Division that provides maintenance for C-5 and B-52 aircraft. In the Directorate of Aerospace Equipment Management (LD) is the Automatic Test Systems Division (LDA) surveyed in CWS. LDS, also in LD is the Software Division that develops software development for test standards. For the 30-day results both LDA and LDS were grouped together as LD. In TI, the Technology and Industrial Support Directorate, TIMPF, the Foundry and Rubber Shop, was surveyed in the CWS survey.

A total of 1,784 workers voluntarily completed the survey, representing about 75% of the original 2300 Kelly AFB employees participating in the prototype CWS. Errors in completing the standard bubble response form resulted in the exclusion of 82 surveys, leaving 1,695 surveys of civilians and 7 military personnel for analysis. The most common errors were selection of unassigned response choices and misalignment of responses to survey items.

RESULTS

The main result of the 1-year survey concerns the response to the question, "Which work schedule do you prefer?" (question 119), in which 59% of the respondents indicated a preference for the CWS, 8% expressed no preference for either CWS or SWS, and 33% of the respondents selected the SWS. Thus, 67% either preferred CWS or were neutral, and 33% indicated negative concerns on CWS.

Survey sections A, B, and C provided information concerning the impact of CWS transition on life-style and job satisfaction. These data comprise the results in Table 1 and in Appendix A in which the 91 attitude questions are grouped into lifestyle subcategories (family, community, health, leisure, social, cultural, sleep, and finances) or job related subcategories (satisfaction, productivity, and stress). The subcategories represent a subjective organization of the items until a more thorough correlational grouping can be made. The data for these items (questions 1 - 91) are presented as percentages of those responding in each subcategory heading. The columns from left to right in Appendix A indicate the number responding (N), the percent increased or improved (\uparrow), the percent not changed or the same (\rightarrow), the percent decreased or worsened (\downarrow) and the percent indicating not applicable (NA) for each item. A + sign after a percentage indicates a significant difference ($p < .01$) between either percent improved/increased and percent worsened/decreased.

Responses to the lifestyle and job impact portion of the survey generally support the main finding that the majority of the workers preferred CWS to the old schedule. These data, along with the previously reported data from 30-days and 6-months, indicated that lifestyle and job factors have generally improved or stayed the same under CWS as compared to SWS. For example, the section in Table 1 concerning Job Related Factors revealed that 81% of the 1-year respondents felt that under CWS, job productivity had improved or stayed as it was. Alternatively, only 19% felt that productivity was down under CWS. This finding means that even among those who prefer SWS (33%), there were a substantial number that did not believe CWS had interfered with job output.

Table 1. Perceived Impact of CWS

PERCENT INDICATING BETTER OR NO CHANGE				
LIFESTYLE FACTORS	30-DAY	6-MONTH	1-YEAR	
FAMILY	87%	85%	80%	
COMMUNITY	87%	84%	79%	
HEALTH	89%	84%	80%	
LEISURE	86%	83%	79%	
SOCIAL	86%	84%	79%	
CULTURAL	86%	85%	80%	
SLEEP	75%	72%	69%	
FINANCES	89%	89%	86%	
JOB FACTORS				
SATISFACTION	90%	88%	81%	
PRODUCTIVITY	92%	90%	81%	
STRESS	84%	83%	80%	

Demographics data covering age, gender, education, marital status, dependents, etc., (questions 92 to 120 in Appendix B) were evaluated by anchoring each response with the response to question 119, which concerned preference for either the CWS or the SWS. In this way, a profile was obtained of those preferring the CWS vs. those not preferring the CWS. A Chi-Square statistic was used to determine if significant relationships ($p < 0.05$) existed between demographic response and work schedule (CWS or SWS) preference. Those demographic items associated with statistically significant trends are described first.

Chronic fatigue is an important consideration in the decision to implement CWS. A series of survey questions (questions 104 to 111) were designed to address the amount of sleep obtained and the subjective impressions of alertness. Table 2 indicates that the majority of people surveyed were getting the same amount of sleep

on CWS as they did on SWS (n= 934). However, a substantial number reported getting less sleep on CWS (n= 595). In Table 2, 60% of those reporting less sleep on CWS preferred the 8-hour SWS schedule. Time to adjust to the new sleep schedules required of CWS must still be considered. Thus, there is no real positive or negative impact of CWS on sleep after the 1-year survey. Table 2 was derived from responses to questions 104 and 105 regarding the amount of sleep obtained on SWS after a typical workday, compared to the amount obtained on CWS for the 1-year CWS; one can compare them to the 6-month results within parentheses.

Table 2. Change in Sleep Obtained after a Workday under the CWS compared to the SWS. Results are organized by preference for work schedule; (SWS = 8-hour; CWS = 10-hour; (NP = No Preference indicated; numbers in parentheses are from 6-month survey results.)

	SCHEDULE PREFERENCE			
	SWS	CWS	NP	N
SLEEP COMPARISON				
LESS	60% (43%)	30% (49%)	10% (9%)	595 (720)
SAME	17% (10%)	75% (85%)	8% (5%)	934 (1147)
MORE	24% (15%)	74% (80%)	2% (5%)	166 (191)

Organizing work schedule preference by subjective rating of alertness at the beginning or ending of a workday approached the issue of schedule-induced fatigue from another perspective. Considering questions 110 and 111 regarding the degree of alertness at the end of the workday, Table 3 compares those preferring SWS to those favoring CWS. The same pattern emerged as in Table 2. The majority (n= 932) reported no change in alertness as a result of CWS. However, a large number (n= 600) reported being less alert at the end of the day. Of those reporting less alertness, 73% preferred SWS. It is noteworthy that only 4% of those reporting feeling more alert and 12% reporting the same alertness level preferred SWS. Similar findings were obtained considering alertness at the beginning of a day (question 108-109). Again, the 1-year CWS results can be compared with the 6-month CWS in parentheses.

Table 3. Change in Alertness at the End of the Workday under the CWS Compared to the SWS. Results are organized by preference for work schedule. (SWS = 8-hour; CWS = 10-hour; NP = No Preference indicated; numbers in parentheses are from the 6-month survey results.)

	SCHEDULE PREFERENCE			
	SWS	CWS	NP	N
ALERTNESS COMPARISON				
LESS	73% (59%)	19% (31%)	9% (10%)	600 (600)
SAME	12% (6%)	79% (88%)	9% (6%)	932 (1231)
MORE	4% (4%)	94% (94%)	2% (2%)	163 (227)

The age of the respondent influenced preference for CWS (question 93 in Appendix B). Preference for CWS was indicated by 62% of the younger workers, 30 years old or less. However, this number was reduced to 57% of workers over 50 years old. Question 93 shows that the majority at every age preferred CWS or the 10-hour schedule. However, as age increased beyond 30 years, preference for SWS or 8-hour schedule increased while preference for CWS decreased.

In two related demographics in Appendix B, years employed in Federal service (question 96) and years employed at Kelly AFB (question 115), the results indicated similar preferences. Of those with 31 years or more of Federal service, 49% preferred the CWS compared to 64% of those with less than 5 years of Federal service. In response to question 115, years employed at Kelly AFB, 65% of those with less than 5 years preferred the CWS compared to 45% of those with 31 or more years.

A significant finding indicated that Federal service grade level from WG 5 through GM 15 (question 95 in Appendix B) had a significant effect on work schedule preference. Looking at the GM 13 - 15, we see that their CWS preference (65%) as the highest for all grade levels, whereas it was the lowest for the 6-month study (4).

Another significant response showed the difference between work shifts (Question 112 in Appendix B), where the 1st shift (Day) had 61% CWS preference and 31% SWS preference while the 2nd shift (Night) showed 39% CWS preference and 52% SWS preference.

A few people used public transportation (question 118 in

Appendix B) to get to work under the CWS (n=21) as opposed to other forms of transportation; of those, 38% preferred CWS and 52% preferred SWS. However, 66% of those who car pooled or 59% of those who drove preferred CWS. Public transportation may not be as available under CWS and is not an important factor here.

The organization to which the respondent belonged did make a difference in the overall preference for the CWS (question 103 in Appendix B). Table 4 shows each organization broken out by preference for SWS, CWS, or no preference (NP) with 1-year data, and the 6-month survey results in brackets. For DS we see a decrease after 1-year to 69% from 77% for 6-months for CWS, and a rise in 1-year to 29% from 14% for 6-months for SWS; for LA we see 60% for 1-year and 74% for 6-month CWS, another decrease here. For LDA we see 79% for CWS preference, but for LDS, only 53% for CWS preference, indicating that reorganization problems still influenced subjective feelings on this survey. TI also had a significant drop to 51% for 1-year CWS compared to the 63% for 6-month CWS and the increase to 41% for 1-year SWS compared to the 31% for 6-month SWS. Again we see the influence of reorganization of personnel in both LDS and TI organizations.

TABLE 4. Work Schedule Preference by Organization (SWS = 8-hour; CWS = 10-hour; NP = no preference indicated; numbers in [] are 6-month results.)

Organization	SWS	CWS	NP	N
DS	29% [14%]	69% [77%]	2% [9%]	48 [96]
LA	32% [20%]	60% [74%]	9% [6%]	1072 [1283]
LDA	15% [14%]	79% [81%]	6% [5%]	112 [160]
LDS	40% [31%]	53% [62%]	7% [7%]	238 [331]
TI	41% [31%]	51% [63%]	8% [6%]	178 [111]
OTHER	36% [23%]	56% [70%]	9% [7%]	45 [74]

Educational background (question 94 in Appendix B) did not appear to influence the preference for the CWS. There was no preference for the work schedule on the basis of gender (question 92 in Appendix B). About 58% males and 64% females preferred CWS. There was no indication that singles (59%) were different from married respondents (59%) in their preference for CWS (question 97 in Appendix B). There was no tendency for job type (question 102 in Appendix B) to influence the overall preference for CWS. For example, preference for CWS was expressed by 65% of those

identifying their job as secretarial and 58% of managers; 70% was the high for administrators, and 60% for trade/craft/labor job types.

CONCLUSIONS AND DISCUSSION

The results of this survey sample, based on a 1-year experience with CWS, indicated that over 67% of the workers surveyed either preferred CWS or had no preference. These results show a definite decreasing trend from the 30-day high 82% and the 6-month 78% preference of CWS or no preference. The responses for the majority of lifestyle or job related questions paralleled this overall result.

During the 1-year survey exercise there were many rumors about base closings and instances of supervisors informing employees that CWS was to be eliminated after our 1-year survey had been completed. Many of the CWS employees felt that this survey was useless because a decision had already been made to discontinue the CWS at Kelly AFB. Such comments indicated to the survey staff that a bias in their responses was definitely apparent that resulted in more negative answers to all questions. A demographic profile of this group would include older workers and those on second shift. The impact of CWS on those workers less satisfied by CWS may be lessened with more experience on the schedule. Management should search for ways to teach employees to reduce CWS negative lifestyle impact by developing a more positive self-attitude; management should also provide education incentives or special arrangements for those individuals reporting negative effects from CWS.

A few anecdotal comments, made to the investigators by the respondents, deserve mention. Several workers commented on the lack of supervisor support for CWS, rumors about CWS being eliminated by Jan 93, and the threat of Kelly AFB being shut down by the Pentagon and Congress. Another area was the inequities in overtime with CWS. For example, it was easier to get overtime if one worked Monday through Thursday than if one worked Tuesday through Friday, or that working overtime now required working longer than 10 hours, often 12 hours a day. Meetings were sometimes scheduled on days off abrogating the 4-day work week.

These 1-year, 6-month, and 30-day CWS results show many of the same improvements in employee morale reported by other studies (15). In those studies productivity was increased by extending service hours or by better matching employee schedules to peak workloads. There was also reduced absenteeism, tardiness, and turnover. With more leisure time, there were fewer days away from home, savings on commuter costs, more opportunities to spend time differently with different family members, and it was easier to schedule medical and other appointments. There were economic advantages due to CWS (e.g., moonlighting), and there was more time

for leisure travel in boats, in recreational vehicles, and to vacation homes, etc. There was increased attendance at entertainment facilities in communities, and more available time for taking educational courses. This review study (15) concluded that workers favoring CWS also participated in more leisure activities. Our three CWS studies (30-day, 6-month, and 1-year) indicate that some aspects of the quality of life, family life, spouse's happiness, and more time with spouse and children are improved under CWS, increasing morale at work, satisfaction at home and at work, and resulting in social stability.

Of course, there are disadvantages. One of the key issues is fatigue with its effect on concentration, errors, quality of work, injuries, productivity, and the long-term health of valuable employees. Another disadvantage is scheduling problems, most often affecting CWS supervisors and key operational personnel (8). Poor (18) found that a greater proportion of women under 30 years old (assume many are single or do not have children) adjusted better than women over 30 years old. Some studies indicated that employees in CWS found it difficult to participate in a variety of community, social, or recreational activities that were previously accessible.

Glueck (7) reported employee disadvantages such as fatigue from 10-hour workdays, causing poorer quality work, scheduling difficulties, overtime problems, reduced service to customers, increased moonlighting on the 5th and 6th days, increased job dissatisfaction, especially by older employees and mothers with young children. Also CWS does not create more jobs for the unemployed. For example, present CWS employees such as police and firefighters have the "highest moonlighting rate" of any workers other than teachers. Glueck (7) predicted that CWS will become less used and flextime will be highly preferable, claiming that older employees find CWS physically and mentally taxing (1), single young people find CWS interferes with their social lives, women with younger children find it more difficult to keep up with child care and housekeeping. Glueck also stated that productivity is reduced due to fatigue, and that employees physically and/or mentally taxed are not working as efficiently at 6 p.m. as they did at 8:30 a.m. Also, human physiology dampens effectiveness as evidenced by "early morning people" who find it difficult to perform well on the 9th or 10th hours of the day. Glueck indicated that unions would use CWS as a bargaining point for lesser hours, like 4 days with 36- or 32-hours, thus reducing productivity.

Flextime schedules a normal 40 hours in 5 days with "core time" of midmorning through midafternoon (9 a.m. to 3 p.m.), discretionary time of arrival from 6 a.m. to 9 a.m. and departure time from 3 p.m. to 7 p.m. Also, some flextime allows employees to work certain core times each day, but does not require 8 hours per day as long as their weekly total is met. Glueck claims that the trend is away from CWS toward flexible systems (7).

From the three Kelly AFB studies using 30-day (6), 6-month (4), and the 1-year CWS survey results, the preference for CWS decreases from 75% after 30-day CWS to 72% after 6-month CWS to 59% after 1-year CWS. Even though there is a decreasing trend more than half (59%) of these CWS employees prefer this CWS of 4-day, 10-hour work scheduling.

After two or three years of CWS employment, two possible results might occur. One, the workers might become more experienced with the demands of CWS and adapt their lifestyles to accommodate the schedule, and, as a result, could increase their CWS preference levels above those found in this study. Two, on the other hand, the euphoria of "3-day weekends" might fade after a few years and these workers may find more dissatisfaction with CWS due to presently unrealized stresses such as those reported in another previous study (13). And, if the decreasing trend for CWS over time continues as it did in our three different time period studies of Kelly AFB CWS employees, maybe CWS will become less than 50% preferable by those workers in CWS. A polling of those involved in CWS for 2 to 3 years should be continued if SA-ALC/HRC plans to continue CWS past its 1-year original plan.

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APPENDIX A

**Responses to the Lifestyle and Job Related
Questions (1-91) on the Survey (Sections A, B, and C)**

Kelly AFB CWW Schedule: Survey of Civilians after 1 Year

* indicates item shared one other sub-category. Shown are the total number responding (N), the percent increased or improved (↑), the percent not changed or the same (→), the percent decreased or worsened (↓) and the percent not applicable (NA) for each item.

+ indicates the significant difference between percent improvement/increased and the percent worsened/decreased ($p < .01$).

LIFESTYLE/SOCIAL FACTORS

<u>FAMILY</u>	N	% ↑	% →	% ↓	% NA
1 Doing chores around the house	1669	51+	18	29	2
2 Gardening *	1669	30+	20	24	26
3 Doing errands	1669	49+	21	28	2
4 Grocery shopping	1669	35+	33	22	9
5 Caring for children	1665	25	19	22	35
14 Keeping personal appointments	1669	45+	30	23	3
19 Preparing meals	1667	18	36	25+	21
20 Dining out *	1668	27+	50	18	4
21 Attending religious service *	1667	18+	55	14	13
24 Being with spouse	1670	32+	27	23	18
25 Spending time with children	1666	29+	23	22	25
32 Spending time with parents	1666	24	37	20	19
33 Dropping off/picking up children	1665	18	16	22+	44
34 Attending child school events *	1665	18	23	20	39
38 Reaching family goals	1668	31+	41	23	4
43 Marital life	1668	24+	44	15	18
45 Attitude at home	1672	36+	46	17	1
46 Meals at home	1670	20	56	22	2
49 Family life	1672	33+	45	18	4
58 Spouse's attitude	1672	22+	42	17	19
59 Spouse's schedule	1671	18	45	17	20
60 Spouse's happiness	1672	24+	41	17	18
63 Home life	1671	34+	48	18	1
67 Scheduling leave/vacation *	1673	49+	36	14	1
71 Stress at home	1668	22	49	25	3
81 Family pride	1671	26+	62	8	4
85 Happiness at home	1670	34+	50	15	1
87 Family problems	1672	12	60	19+	8

<u>COMMUNITY</u>	N	% ↑	% →	% ↓	% NA
11 Socializing *	1665	33+	38	25	4
12 Participating in cultural events *	1667	24	33	23	21
15 Doing Volunteer work	1664	21	27	20	32
21 Attending religious service *	1667	18+	55	14	13
27 Helping in my community	1670	19	37	22	22
34 Attending child school events *	1665	18	23	20	39

HEALTH	N	% ↑	% →←	% ↓	% NA
7 Resting or relaxing *	1664	42+	28	29	2
31 Exercising	1664	25	40	27	8
36 Attending to personal appearance	1662	25+	50	17	9
56 Outlook of life	1671	36+	49	14	1
61 Personal happiness	1672	37+	43	19	1
62 Health	1672	24+	59	16	1
LEISURE	N	% ↑	% →←	% ↓	% NA
2 Gardening *	1669	30+	20	24	26
6 Spending time outdoors	1667	47+	21	30	2
7 Resting or relaxing *	1664	42+	28	29	2
9 Traveling *	1669	49+	25	16	9
10 Studying	1668	25	26	22	27
13 Watching TV	1667	23	46	25	7
16 Watching sports *	1667	20	46	17	17
17 Participating in sports	1663	18	31	21	30
18 Going to movies *	1663	24+	40	18	18
22 Working on hobbies	1668	32+	30	26	7
30 Going on vacation	1665	46+	36	13	4
39 Having fun	1669	40+	35	23	2
40 Recreation	1669	41+	31	25	2
70 Holiday enjoyment	1669	64+	27	8	0
SOCIAL	N	% ↑	% →←	% ↓	% NA
11 Socializing *	1665	33+	38	25	4
16 Watching sports *	1667	20	46	17	17
18 Going to movies *	1663	24+	40	18	18
20 Dining out *	1668	27+	50	18	4
23 Being with friends	1669	29	43	25	3
28 Being with companions	1669	27	42	23	7
35 Participating in clubs/societies *	1666	18	30	21	32
CULTURAL	N	% ↑	% →←	% ↓	% NA
9 Traveling *	1669	49+	25	16	9
12 Participating in cultural events *	1667	24	33	23	21
35 Participating in clubs/societies *	1666	18	30	21	32
SLEEP	N	% ↑	% →←	% ↓	% NA
7 Resting or relaxing *	1664	42+	28	29	2
41 Sleeping	1668	25	40	34+	1
48 Sleep	1672	22	46	32+	1
57 Waking up	1669	19	49	31+	0
78 Tiredness	1669	30+	45	22	4
FINANCES	N	% ↑	% →←	% ↓	% NA
8 Moonlighting	1667	14	13	17	55
51 Personal finances	1672	27+	60	13	1
65 Economic outlook	1672	26+	60	13	1
88 Expenses	1672	14	65	19+	3

JOB RELATED FACTORS

SATISFACTION

	N	% ↑	% →←	% ↓	% NA
26 Training on the job *	1669	24+	50	11	15
37 Achieving job goals *	1665	34+	49	14	3
42 Commute to/from work	1672	35+	48	15	2
44 Attitude at work	1671	37+	44	18	1
47 Motivation on the job *	1672	36+	46	17	1
50 Job environment *	1671	30+	53	16	1
52 Fellow workers' attitude *	1669	27+	52	19	2
53 Supervisor's attitude *	1671	22	57	19	2
54 Rest breaks *	1672	17	63	18	2
55 Outlook on work	1669	35+	47	18	0
66 Drive to/from work	1669	35+	47	16	1
67 Scheduling leave/vacation *	1673	49+	36	14	1
69 Work conditions *	1673	27+	59	14	0
72 Work tardiness *	1670	15	54	18	12
73 Job enrichment	1671	30+	56	12	1
74 Job satisfaction	1672	35+	51	13	1
83 Job complaints	1671	15	60	20+	5
84 Happiness at work	1672	31+	49	19	2
86 Job problems *	1672	14	63	20+	4

PRODUCTIVITY

	N	% ↑	% →←	% ↓	% NA
26 Training on the job *	1669	24+	50	11	15
29 Doing my job effectively	1669	39+	46	12	2
37 Achieving job goals *	1665	34+	49	14	3
47 Motivation on the job *	1672	36+	46	17	1
50 Job environment *	1671	30+	53	16	1
64 Job skills	1673	29+	61	9	1
68 Work output	1671	40+	47	13	1
72 Work tardiness *	1670	15	54	18	12
75 Job productivity	1671	41+	46	12	1
77 Job efficiency	1670	36+	50	13	1
82 Work punctuality	1671	23+	64	11	2
86 Job problems *	1672	14	63	20+	4
89 Work backlog	1672	14	60	21+	4
90 Clock watching	1673	21	47	18	14
91 Work output	1671	38+	49	11	2

STRESS

	N	% ↑	% →←	% ↓	% NA
52 Fellow workers' attitude *	1669	27+	52	19	2
53 Supervisor's attitude *	1671	22	57	19	2
54 Rest breaks *	1672	17	63	18	2
69 Work conditions *	1673	27+	59	14	0
76 Job fatigue/stress	1672	28	44	25	2
79 Job load	1672	18+	69	11	1
80 Job strain	1670	22	57	19	2

APPENDIX B

**Demographic Data for Survey Section D
(Questions 92 to 120) for all Organizations**

Q92(Sex) and Q119(Which work schedule do you prefer ?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Male	483 33.40	844 58.37	119 8.23	1446
Female	71 28.51	160 64.26	18 7.23	249
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	2	3.060	0.217	

Q93(Age) and Q119(Which work schedule do you prefer ?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
30 yrs or less	72 25.90	173 62.23	33 11.87	278
31-40 yrs	167 33.27	294 58.57	41 8.17	502
41-50 yrs	196 33.79	345 59.48	39 6.72	580
51 yrs or more	119 35.63	191 57.19	24 7.19	334
Total	554	1003	137	1694
Frequency Missing = 1				
Statistic	DF	Value	Prob	
Chi-Square	6	12.363	0.054	

Q94(Educational background) & Q119(Which work schedule do you prefer now?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Some high school	17 39.53	25 58.14	1 2.33	43
HS diploma/GED	159 29.17	340 62.39	46 8.44	545
Technical/ vocational	136 33.83	231 57.46	35 8.71	402
Associates degree	164 35.34	260 56.03	40 8.62	464
Bachelors degree	64 32.65	121 61.73	11 5.61	196
Graduate degree	11 28.95	23 60.53	4 10.53	38
Total	551	1000	137	1688
Frequency Missing = 7				

Statistic	DF	Value	Prob
Chi-Square	10	10.111	0.431

Q95(Federal Service Grade?) & Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
WG 5-9	91 25.63	231 65.07	33 9.30	355
WG 10-14	263 35.98	412 56.36	56 7.66	731
WL 1-14	28 44.44	32 50.79	3 4.76	63
WS	18 39.13	21 45.65	7 15.22	46
GS 1-6	25 30.86	50 61.73	6 7.41	81
GS 7-13	117 30.23	239 61.76	31 8.01	387
GM 13-15	7 30.43	15 65.22	1 4.35	23
Other CIV	5 55.56	4 44.44	0 0.00	9
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	14	25.305	0.032	

Q96(Years of federal service) and Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
0-5 yrs	31 24.03	83 64.34	15 11.63	129
6-10 yrs	148 30.77	292 60.71	41 8.52	481
11-20 yrs	193 33.10	344 59.01	46 7.89	583
21-30 yrs	128 34.32	222 59.52	23 6.17	373
31 yrs or more	54 41.86	63 48.84	12 9.30	129
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	8	14.343	0.073	

Q97(Marital status?) and Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Single	134 31.53	251 59.06	40 9.41	425
Married	420 33.07	753 59.29	97 7.64	1270
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	2	1.474	0.478	

Q98(Children under 18 depend on you) and
Q119(Which work schedule do you prefer now?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
None	206 29.99	421 61.28	60 8.73	687
1	128 33.07	228 58.91	31 8.01	387
2	135 36.99	205 56.16	25 6.85	365
3 or more	84 33.07	149 58.66	21 8.27	254
Total	553	1003	137	1693

Statistic	DF	Value	Prob
Chi-Square	6	5.776	0.449

Q98 BY Q119 CONTROLLING FOR Q97=Single
Q98(Children under 18 depend on you) and
Q119(Which work schedule do you prefer now?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
None	85 32.20	157 59.47	22 8.33	264
1	23 30.26	45 59.21	8 10.53	76
2	17 33.33	29 56.86	5 9.80	51
3 or more	9 26.47	20 58.82	5 14.71	34
Total	134	251	40	425

Statistic	DF	Value	Prob
Chi-Square	6	1.902	0.929

Q98 BY Q119 CONTROLLING FOR Q97=Married
 Q98(Children under 18 depend on you) and
 Q119(Which work schedule do you prefer now?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
None	121 28.61	264 62.41	38 8.98	423
1	105 33.76	183 58.84	23 7.40	311
2	118 37.58	176 56.05	20 6.37	314
3 or more	75 34.09	129 58.64	16 7.27	220
Total	419	752	97	1268

Statistic	DF	Value	Prob
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Chi-Square	6	7.599	0.269
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Q99(# Adults living in your home?) and
 Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
None	135 33.58	228 56.72	39 9.70	402
1	267 32.88	478 58.87	67 8.25	812
2	101 32.69	188 60.84	20 6.47	309
3 or more	51 29.65	110 63.95	11 6.40	172
Total	554	1004	137	1695

Statistic	DF	Value	Prob
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Chi-Square	6	4.752	0.576
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Q100(# Adults provide help in home?) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
None	235 33.91	403 58.15	55 7.94	693
1	261 32.63	472 59.00	67 8.38	800
2	42 27.81	95 62.91	14 9.27	151
3 or more	16 31.37	34 66.67	1 1.96	51
Total	554	1004	137	1695

Statistic	DF	Value	Prob
Chi-Square	6	5.139	0.526

Q101(# Adults depend on your care?) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
None	282 32.30	521 59.68	70 8.02	873
1	178 32.19	327 59.13	48 8.68	553
2	59 34.71	100 58.82	11 6.47	170
3 or more	35 35.35	56 56.57	8 8.08	99
Total	554	1004	137	1695

Statistic	DF	Value	Prob
Chi-Square	6	1.458	0.962

Q102(Job description) and Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Secretary/Clerk	17 26.98	41 65.08	5 7.94	63
Administrator	14 20.59	48 70.59	6 8.82	68
Trade/Craft/Labor	276 32.17	511 59.56	71 8.28	858
Technical	145 34.52	242 57.62	33 7.86	420
Engineer/ Scientist	37 38.95	49 51.58	9 9.47	95
Manager/ Supervisor	47 34.81	79 58.52	9 6.67	135
Other	17 31.48	33 61.11	4 7.41	54
Total	553	1003	137	1693
Frequency Missing = 2				

Statistic	DF	Value	Prob
Chi-Square	12	9.262	0.680

Q103(Work center) & Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
DS	14 29.17	33 68.75	1 2.08	48
LA	340 31.72	639 59.61	93 8.68	1072
LDA	17 15.18	88 78.57	7 6.25	112
LDS	94 39.50	127 53.36	17 7.14	238
TI	73 41.01	90 50.56	15 8.43	178
Other	16 35.56	25 55.56	4 8.89	45
Total	554	1002	137	1693
Frequency Missing = 2				

Statistic	DF	Value	Prob
Chi-Square	10	33.210	0.000

Q104(Hrs sleep after workday(old schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
5 hrs or less	43 19.91	160 74.07	13 6.02	216
6 hrs	142 25.72	364 65.94	46 8.33	552
7 hrs	207 35.69	320 55.17	53 9.14	580
8 hrs	143 47.35	138 45.70	21 6.95	302
9 hrs	15 46.88	14 43.75	3 9.38	32
10 hrs or more	4 33.33	7 58.33	1 8.33	12
Total	554	1003	137	1694
Frequency Missing = 1				

Statistic	DF	Value	Prob
Chi-Square	10	69.410	0.000

Q105(Hrs sleep after workday(new schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
5 hrs or less	237 52.32	178 39.29	38 8.39	453
6 hrs	182 29.50	378 61.26	57 9.24	617
7 hrs	84 20.64	291 71.50	32 7.86	407
8 hrs	33 18.75	135 76.70	8 4.55	176
9 hrs	11 40.74	15 55.56	1 3.70	27
10 hrs or more	7 46.67	7 46.67	1 6.67	15
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	10	140.504	0.000	

Q106(Hrs sleep after day off(old schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
5 hrs or less	34 22.22	110 71.90	9 5.88	153
6 hrs	97 29.31	205 61.93	29 8.76	331
7 hrs	138 28.99	298 62.61	40 8.40	476
8 hrs	217 40.33	276 51.30	45 8.36	538
9 hrs	55 40.74	73 54.07	7 5.19	135
10 hrs or more	13 21.67	40 66.67	7 11.67	60
Total	554	1002	137	1693
Frequency Missing = 2				

Statistic	DF	Value	Prob
Chi-Square	10	38.704	0.000

Q107(Hrs sleep after day off(new schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
5 hrs or less	82 43.16	96 50.53	12 6.32	190
6 hrs	91 28.44	200 62.50	29 9.06	320
7 hrs	113 26.10	282 65.13	38 8.78	433
8 hrs	119 27.05	285 64.77	36 8.18	440
9 hrs	71 39.66	95 53.07	13 7.26	179
10 hrs or more	76 58.02	46 35.11	9 6.87	131
Total	552	1004	137	1693
Frequency Missing = 2				

Statistic	DF	Value	Prob
Chi-Square	10	70.242	0.000

Q108(How feel beginning workday(old schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Alert	422 39.37	569 53.08	81 7.56	1072
Little tired	117 22.03	364 68.55	50 9.42	531
Very tired	7 13.46	41 78.85	4 7.69	52
Exhausted	6 15.79	30 78.95	2 5.26	38
Total	552	1004	137	1693
Frequency Missing = 2				

Statistic	DF	Value	Prob
Chi-Square	6	64.766	0.000

Q109(How feel beginning workday(new schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Alert	80 9.85	681 83.87	51 6.28	812
Little tired	267 42.86	293 47.03	63 10.11	623
Very tired	127 77.44	21 12.80	16 9.76	164
Exhausted	79 84.04	8 8.51	7 7.45	94
Total	553	1003	137	1693
Frequency Missing = 2				

Statistic	DF	Value	Prob
Chi-Square	6	532.170	0.000

Q110(How feel at end of workday(old schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Alert	130 38.12	184 53.96	27 7.92	341
Little tired	395 33.82	679 58.13	94 8.05	1168
Very tired	26 20.31	92 71.88	10 7.81	128
Exhausted	3 5.17	49 84.48	6 10.34	58
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	6	34.900	0.000	

Q111(How feel at end of workday(new schedule)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Alert	15 5.86	229 89.45	12 4.69	256
Little tired	133 15.41	659 76.36	71 8.23	863
Very tired	249 63.68	101 25.83	41 10.49	391
Exhausted	157 84.86	15 8.11	13 7.03	185
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	6	648.426	0.000	

Q112(Work shift) and Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
First(DAY)	486 31.09	952 60.91	125 8.00	1563
Second(NIGHT)	68 51.52	52 39.39	12 9.09	132
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	2	25.222	0.000	

Q113(Years living in Texas) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
0-5 yrs	10 30.30	22 66.67	1 3.03	33
6-10 yrs	30 40.54	38 51.35	6 8.11	74
11-20 yrs	42 27.10	101 65.16	12 7.74	155
21-30 yrs	104 27.73	235 62.67	36 9.60	375
31 or more	368 34.78	608 57.47	82 7.75	1058
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	8	12.757	0.120	

Q114(Worked official overtime last 2 months?) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Yes	337 32.19	623 59.50	87 8.31	1047
No	217 33.49	381 58.80	50 7.72	648
Total	554	1004	137	1695

Statistic	DF	Value	Prob
Chi-Square	2	0.415	0.813

Q115(Years working at Kelly AFB) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
0-5 yrs	48 22.97	136 65.07	25 11.96	209
6-10 yrs	183 32.05	345 60.42	43 7.53	571
11-20 yrs	180 33.96	309 58.30	41 7.74	530
21-30 yrs	110 34.81	183 57.91	23 7.28	316
31 or more	32 47.76	30 44.78	5 7.46	67
Total	553	1003	137	1693

Frequency Missing = 2

Statistic	DF	Value	Prob
Chi-Square	8	19.815	0.011

Q116(Entrance gate) and Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
North(36th St)	145 34.94	238 57.35	32 7.71	415
Main(Hudnell)	242 32.79	440 59.62	56 7.59	738
Gen. McMullen	76 29.23	160 61.54	24 9.23	260
South(Mil. Dr)	84 32.56	153 59.30	21 8.14	258
Other	5 33.33	9 60.00	1 6.67	15
Total	552	1000	134	1686
Frequency Missing = 9				

Statistic	DF	Value	Prob
Chi-Square	8	2.827	0.945

Q117(How did you get to work (old schedule?)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Carpool	59 35.98	97 59.15	8 4.88	164
Drive	475 31.82	891 59.68	127 8.51	1493
Public trans	20 52.63	16 42.11	2 5.26	38
Total	554	1004	137	1695

Statistic	DF	Value	Prob
Chi-Square	4	10.236	0.037

Q118(How did you get to work (new schedule?)) and
Q119(Which work schedule do you prefer?)

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Carpool	46 29.87	101 65.58	7 4.55	154
Drive	497 32.70	895 58.88	128 8.42	1520
Public trans	11 52.38	8 38.10	2 9.52	21
Total	554	1004	137	1695
Statistic	DF	Value	Prob	
Chi-Square	4	8.184	0.085	

Q120(Which work schedule prefer 6 mo. ago?) and
Q119(Which work schedule do you prefer now?) for Civilians:

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Old Schedule (5-day)	320 18.88	33 1.95	9 0.53	362 21.36
New Schedule (4-day)	175 10.32	885 52.21	55 3.24	1115 65.78
No Preference	30 1.77	26 1.53	64 3.78	120 7.08
Did not take	29 1.71	60 3.54	9 0.53	98 5.78
Total	554 32.68	1004 59.23	137 8.08	1695 100.00

Q120(Which work schedule prefer 6 mo. ago?) and
Q119(Which work schedule do you prefer now?) for Military:

Row Pct	Prefer 5-Day	Prefer 4-Day	No Pref.	Total
Old Schedule (5-day)	2 28.57	0 0.00	0 0.00	2 28.57
New Schedule (4-day)	1 14.29	2 28.57	2 28.57	5 71.43
No Preference	0 0.00	0 0.00	0 0.00	0 0.00
Did not take	0 0.00	0 0.00	0 0.00	0 0.00
Total	3 42.86	2 28.57	2 28.57	7 100.00