

COMPARISON OF 267X AND 261X JOBS

A Group Difference description was run to highlight the similarity and difference between the Behavioral Scientist (AFSC 267X) and Scientific Manager (AFSC 261X) jobs. All those tasks where there was less than 20 percent difference in the two groups were eliminated from the computer product so as to highlight the tasks performed by one group and not the other. Table 12 highlights some of the tasks performed by more Behavioral Scientists than Scientific Managers. Note that almost all of the tasks where more Behavioral Scientists are performing are direct research tasks. Less than 20 percent of the Scientific Managers report performing tasks involved in collecting and analyzing research data.

Conversely, there are 55 tasks where the difference is 20 percent or greater, which more 2611/6 Scientific Managers perform than do Behavioral Scientists. Examples of some of these tasks are shown in Table 13. Note that the majority of these tasks are administrative or managerial in nature--none are core technical tasks of the behavioral science area. Thus, the major differences seem to be in the general areas of administration and management, as would be expected from the AFR 36-1 specialty descriptions and normal differences between company grade and field grade staff positions.

Close review of the tasks in Tables 12 and 13 also gives a picture of the common tasks performed by both 261X and 267X officers. Note that for some tasks, even where there is a difference of 20 percent or greater, the majority of both groups are performing some of the activities--for example, more than 66 percent of both groups "Conduct briefings" (Task D81, in Table 13). There is an overlap of 10 to 30 percent of the basic research tasks (see Table 12) and an overlap of 16 to 60 percent of the two groups performing administrative, supervisory, and general management tasks.

This type of overlap can be quantified in the CODAP system either as "task overlap" or as "time-spent overlap." Task overlap can be expressed in several ways. In terms of total number of tasks performed by any member of the two groups, we find that 2671/5 officers perform all 330 tasks in the USAF job inventory (that is, at least one individual marked each task, even though no one person marked every task). For 2611/6 officers, only 270 tasks were performed by any member of the group. In terms of the overlap of the tasks performed, there is a correlation of .74 on the total tasks (the 330 tasks performed by some 267X) and a .67 correlation on the 270 tasks performed by some 261X officers. These data reflect a very substantial overlap between the two groups.

In terms of how the groups spend their time, there is a .60 correlation across all tasks and a .57 correlation on the 270 tasks performed by 261X officers. These figures suggest there is slightly less (yet still considerable) overlap between Behavioral Scientists and Scientific Managers in how they use their time. Another expression of this time-spent overlap is an actual percentage figure which quantifies the degree to which work time patterns are the same. This overlap between 267X and 261X officers is 64 percent. Thus, we can say that almost two-thirds of the work time of the two groups

is spent on the same or similar activities. Where the difference exists, they involve the additional tasks involving research data collection and manipulation for 267X officers, as shown earlier, or in some advanced supervisory and management tasks performed by Scientific Managers (as highlighted in Table 13).

This degree of overlap in tasks performed and in how the groups spend their time lends some credence to the proposed concept of having the behavioral science officers in a single ladder (the proposed 2671, 2674, 2676 progression) rather than grouping behavioral science managers with other scientific fields. The question becomes one of whether the Scientific Manager jobs are meant to be purely managerial and supervisory, or whether they have a role in the technical work of the scientific area. Since we have so few 2616 officers representing other scientific areas, it is not possible to reach a final conclusion based on the present data. An expanded study of all 2616 officers would be needed to make such a determination.

What can be done, however, is to more closely examine how the behavioral science job changes with progression in grade. Since there are more grade categories (second lieutenant through colonel) than just the two skill levels, examining the data by grade level will permit a finer serration of changes in the job over a full career.

TABLE 12

TASKS PERFORMED BY MORE BEHAVIORAL SCIENTISTS THAN SCIENTIFIC MANAGERS*
(PERCENT PERFORMING)

<u>TASKS</u>	<u>2671/5 PERFORMING</u>	<u>2611/6 PERFORMING</u>	<u>DIFFERENCE BETWEEN GPS**</u>
J164 COLLECT DATA FOR RESEARCH	48.0	10.8	37.2
J173 PLAN RESEARCH EXPERIMENTS OR RESEARCH SURVEYS	40.8	8.1	32.7
J180 SET UP EXPERIMENTAL DESIGNS	40.0	8.1	31.9
J171 PERFORM RESEARCH LITERATURE REVIEWS	43.2	13.5	29.7
J166 DESIGN SPECIAL INSTRUMENTS OR TECHNIQUES FOR RESEARCH	40.0	10.8	29.2
J167 DEVELOP OR TEST HYPOTHESES	40.0	10.8	29.2
J162 ARRANGE FOR PROCESSING OF RESEARCH DATA	42.4	13.5	28.9
E106 PARTICIPATE IN SEMINAR OR DISCUSSION GROUPS	44.0	16.2	27.8
J168 DIRECT STATISTICAL ANALYSIS OF DATA	43.2	18.9	24.3
J181 SUBMIT PROPOSALS FOR REVIEW OR EVALUATION	29.6	5.4	24.2
J160 ANALYZE RESEARCH DATA	55.2	32.4	22.8
J169 IDENTIFY RESEARCH REQUIREMENTS	47.2	27.0	20.2

* Includes all tasks where the difference is greater than 20 percent more
267X officers performing

** Tasks are displayed in descending order of the difference

TABLE 13

EXAMPLES OF TASKS PERFORMED BY MORE SCIENTIFIC MANAGERS
 THAN BY BEHAVIORAL SCIENTISTS*
 (PERCENT PERFORMING)

TASKS	2611/6	2671/5	DIFFERENCE**
D81 CONDUCT BRIEFINGS	86.5	66.4	20.1
L203 DETERMINE PRIORITIES OF PROJECTS	45.9	25.6	20.3
B22 BRIEF OR ORIENT NEW PERSONNEL	64.9	43.2	21.7
G135 SERVE AS FOCAL POINT BETWEEN ORGANIZATION AND HIGHER HEADQUARTERS	45.9	23.2	22.7
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B44 INTERVIEW OR SELECT MILITARY PERSONNEL FOR ASSIGNMENT	48.6	19.2	29.4
B55 WRITE MILITARY JOB DESCRIPTIONS	51.3	21.6	29.7
A14 RESOLVE PROBLEMS OR CONFLICTS (PROGRAM OR PERSONAL)	81.1	51.2	29.9
B54 WRITE CIVILIAN JOB DESCRIPTIONS	45.9	16.0	29.9
D82 CONDUCT STAFF MEETINGS	56.7	26.4	30.3
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B50 REVIEW, APPROVE, OR DISAPPROVE WRITTEN REPORTS OR RECOMMENDATIONS SUBMITTED BY SUBORDINATES	67.6	27.2	40.4
A17 WELCOME VISITORS OR CONFERENCE GROUPS	78.4	36.0	42.4
B18 ADVISE COMMANDER OR MANAGEMENT ON PLANS OR POLICY	78.4	36.0	42.4
B46 REVIEW MANPOWER DOCUMENTS TO EVALUATE CURRENT OR PROJECTED MANNING STATUS	64.9	20.0	44.9
B49 REVIEW, APPROVE, OR DISAPPROVE TRAVEL REQUESTS	64.9	16.0	48.9

* Examples of the 55 tasks where the difference was 20 percent or greater
 in the direction of more 2611/6 officers performing

** Table ordered in ascending order of the difference

ANALYSIS OF JOB DIFFERENCES BY GRADE LEVELS

The types of tasks performed by Behavioral Scientists could be expected to change as an individual progresses in experience and grade. More senior people hold more responsible positions and often become supervisors of others. Thus, one way we can study how the job changes over time is to examine what tasks and jobs each rank or grade group perform presently.

Because of the diversity of jobs within the behavioral science area, it is appropriate to first recall the types of job for each grade group. Table 14 displays the distribution of jobs by grade. Note that there is only one job which only lieutenants perform (and that group involves only two FTD Human Factors officers). Only one other job (WAPS Test Development Psychologists) involves only lieutenants and captains. Most jobs are composed of individuals of several grades, and there are almost no distinct "company grade" jobs (as opposed to "field grade" jobs, except those noted above).

There are some jobs performed by only captains and majors, but these are typically very small groups and very specialized functions (see earlier discussion of job types). The jobs which are typically more senior (Program Managers and Chiefs) also include a sizeable number of captains and some lieutenants. As noted in the basic analysis of jobs, this Program Managers and Chiefs cluster is composed of a number of very specialized job variations, but the more senior individuals appear in several of those groups. The point here is that responsibility for program management and supervision is not restricted to just "field grade" Scientific Managers. Rather, most of the job types within the behavioral science area are composed of mixed military grades (and some civilians); thus, the leadership of the specialty is diffused across a number of grade levels and types of jobs. There is a general trend, however, of the more junior grades to be concentrated in entry-level or the basic professional jobs, with more senior personnel being primarily concentrated in managerial and supervisory jobs.

Given this kind of distribution of grades across jobs, we would expect to see a very mixed job description when task data are sorted by grades. This is, in fact, exactly the picture seen in such a description. When a lieutenant's description was generated, there were only 13 tasks (out of 330 in the USAF job inventory) performed by 50 percent of all lieutenants or greater. These lieutenant tasks involved activities such as:

Perform additional military duties, such as safety, disaster preparedness, or unit historian	72%
Read Air Force (or semi-official) recurring publications (AU Review, AF Times, Airman, etc.)	72%
Present briefings	70%
Prepare or proofread correspondence, such as memos, letters, or messages	70%
Answer telephone inquiries	67%
Read current periodicals and journals relating to field of endeavor	63%
Coordinate correspondence	60%
Attend off-duty college courses	58%

As can be seen from these tasks, none of these common lieutenant tasks are technical tasks. This finding reinforces the picture of a diverse specialty with several subspecializations where there is no common core of technical tasks.

When a similar job description was created for all captains, similar results were seen. There were only 17 tasks performed by 50 percent or more of all captains, which reflects the continuing diversity of behavioral science jobs.

When a difference description was run to highlight the difference between the tasks performed by lieutenants and captains, there were only two tasks performed by at least 20 percent more lieutenants. There were:

	(Percent)		
	<u>Lts</u>	<u>Cpts</u>	<u>Diff</u>
Attend off-duty college classes	58.1	28.6	29.5
Process item record cards	23.3	1.8	21.5

The college attending task indicates the difference in off-duty education with a much larger percentage of lieutenants in their initial assignment working on school. The second task is one unique to the WAPS Test Development Psychologist job group and is not performed by any other group (only one captain appeared in that work group).

There are, however, some 29 tasks which are performed by at least 20 percent more of the captains than the lieutenants. Examples of these tasks are given in Table 15. As can be seen from the nature of the tasks, most of the added responsibilities (that is, things that captains do that not as many lieutenants do) are either a function of some specialized job ("Conduct classroom instruction" of the USAFA Instructors) or are the initial responsibilities of management ("Monitor suspenses, review status of programs, etc.). Overall, there is a .79 correlation between lieutenants and captains in terms of tasks. The time-spent overlap between these groups is 68 percent, which reflects the very considerable commonality (and lack of major differences) between their jobs.

When the job descriptions for captains and majors are compared, there are no tasks where at least 20 percent more captains than majors perform. There are, however, 39 tasks that at least 20 percent more of the majors perform than captains. Examples of these tasks are shown in Table 16. Note that many of these tasks involve personnel administration. Other of the tasks involve the formulation of research programs or objectives or monitoring contracts. Thus, there are some differences in technical job content, as well as the increase in supervisory responsibilities (which is to be expected). The correlation of tasks for captains and majors is .87, and the time-spent overlap between the two grades is 77 percent. These figures indicate that despite the differences noted above, the jobs of captains and majors have a great deal in common (more so than between lieutenants and captains) and majors jobs are typically broader (more types of tasks performed).

The difference in tasks performed between majors and lieutenant colonels involved technical tasks, with more majors performing research tasks while more lieutenant colonels perform supervisory and management tasks. Examples of these differences can be seen in Table 17. Note that almost all of the tasks which more majors perform are technical research tasks; this indicates that lieutenant colonels have a less technical job in the sense of not performing basic data collection tasks, and fewer are involved in data analysis. The same data, however, also provides a picture of considerable commonality when three-quarters of all majors and almost one-half of all lieutenant colonels are performing technical tasks such "analyze results of research." Apparently, more of the lieutenant colonels are doing such analysis with data collected by others (subordinates or by contract). Overall, there is still substantial overlap in the jobs, with a time-spent overlap of 72 percent and a correlation across all tasks of .85.

Colonel's jobs are somewhat different from those of lieutenant colonels (and below). There are at least 96 tasks where the difference between colonels and lieutenant colonels, in terms of percent of the group performing, is greater than 20 percent; some examples of these differentiating tasks are displayed in Table 18. These data indicate that more lieutenant colonels are performing staff support functions, while colonels are more involved with command and management decisionmaking. Yet, the colonels are involved in the technical work as well, at least in terms of prioritizing the research to be done and identifying (or clarifying) specific research issues. They are also much more involved in human resources management, both in terms of selecting (or approving) military and civilian personnel for employment or promotion and in terms of receiving technical information from their subordinates.

This marked difference in tasks performed reflects a change in the job at the O-6 level. While there are still many tasks which both groups perform, the overlap in tasks is less than for lieutenant colonels with majors and below. The correlation of all tasks is .81 and the time-spent overlap is 68 percent. Thus, while the colonel's job represents a change in emphasis (from staff to executive management), many of the managerial and supervisory tasks are quite similar to those performed by lieutenant colonels.

Overall, the trends exhibited in the data when analyzed by grade groups, reflects an expected shift from emphasis on data collection and instrument design at the junior officer level, to an emphasis on research plans and executive decisionmaking at the more senior officer levels. As noted in the display of job group membership (Table 14), there is no clear-cut change in jobs by specific rank (that is, no jobs which are exclusively captain jobs versus majors jobs). Rather, the grades overlap in the job groups, and the tasks performed have considerable overlap between adjacent rank groups. Nonetheless, the general trend toward management of programs and executive supervision of technical and support personnel is very evident among the senior officer rank groups.

TABLE 14

JOB GROUP MEMBERSHIP BY GRADE LEVEL
(NUMBER IN GROUP)

<u>JOB GROUPS</u>	<u>2LT</u>	<u>1LT</u>	<u>CAPT</u>	<u>MAJ</u>	<u>LTC</u>	<u>COL</u>	<u>CIVILIAN</u>
FTD HUMAN FACTORS ANALYSTS	1	1	0	0	0	0	0
WAPS TEST DEVELOPMENT PSYCHOLOGISTS	3	4	1	0	0	0	10
HUMAN FACTORS SCIENTISTS	1	2	3	1	0	0	0
RESEARCH SCIENTISTS	6	3	6	1	0	0	4
OCCUPATIONAL ANALYSTS	5	6	5	1	0	0	6
AFIT STUDENTS	0	2	3	3	0	0	0
USAFA INSTRUCTORS	0	2	8	2	0	0	0
SPECIAL PROJECT ANALYSTS	0	0	1	1	0	0	0
HQ SCIENTIFIC ANALYSTS	0	0	1	1	0	0	0
CONTRACT MANAGERS	0	0	1	1	0	0	1
ACTION OFFICERS	0	0	1	0	1	0	0
PROGRAM MANAGERS AND CHIEFS	<u>0</u>	<u>5</u>	<u>19</u>	<u>29</u>	<u>21</u>	<u>7</u>	<u>13</u>
TOTAL	16	25	50	39	22	7	35

TABLE 15

TASKS PERFORMED BY AT LEAST 20 PERCENT MORE OF
CAPTAINS THAN LIEUTENANTS
(PERCENT PERFORMING)

<u>TASKS</u>	<u>LT</u>	<u>CAPT</u>	<u>DIFF*</u>
B26 DETERMINE BUDGET PRIORITIES	4.6	25.0	-20.4
I152 PERFORM CAREER DEVELOPMENT COUNSELING	4.6	25.0	-20.4
N230 CONDUCT CLASSROOM INSTRUCTION	4.6	25.0	-20.4
E101 ATTEND IN-SERVICE EDUCATION PROGRAMS	16.3	37.5	-21.2
C68 MAINTAIN CORRESPONDENCE FILES	37.2	58.9	-21.7
B39 EVALUATE OR APPROVE BRIEFINGS	6.9	30.4	-23.5
K196 RECOMMEND FUTURE USES OF ADVANCED TECHNOLOGY	9.3	33.9	-24.6
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C69 MONITOR SUSPENSES	23.3	53.6	-30.3
A15 REVIEW STATUS OF PROGRAMS OR ISSUES	20.9	51.8	-30.9
B47 REVIEW OR EVALUATE POSITION PAPERS	4.6	35.7	-31.1

* Tasks displayed in ascending order of the difference

TABLE 16

EXAMPLES OF TASKS PERFORMED BY AT LEAST 20 PERCENT MORE
OF THE MAJORS THAN CAPTAINS
(PERCENT PERFORMING)

TASKS	CAPT	MAJOR	DIFF*
B29 DIRECT ADMINISTRATIVE ACTIVITIES	19.6	40.0	-20.4
A14 RESOLVE PROBLEMS OR CONFLICTS (PROGRAM OR PERSONAL)	51.8	72.5	-20.7
C70 PREPARE MEMORANDUMS OF AGREEMENT (MOA)	32.3	60.0	-20.7
B41 INITIATE OR APPROVE PERSONNEL ACTION REQUESTS	14.3	35.0	-20.7
J165 CONDUCT RESEARCH PLANS MEETINGS	23.4	42.5	-21.1
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B54 WRITE CIVILIAN JOB DESCRIPTIONS	8.9	32.5	-23.6
E102 ATTEND SCIENTIFIC OR PROFESSIONAL CONVENTIONS OR CONFERENCES	58.9	82.5	-23.6
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J169 IDENTIFY RESEARCH REQUIREMENTS	37.5	62.5	-25.0
J161 ANALYZE RESULTS OF RESEARCH	44.6	75.0	-30.4
B40 EVALUATE PERSONNEL PERFORMANCE	21.4	52.5	-31.1
B27 DEVELOP BUDGET REQUIREMENTS OR ESTIMATES	25.0	62.5	-37.5
B58 WRITE OR INDORSE OERs	12.5	50.0	-37.5

* Displayed in ascending order of the difference

TABLE 17

EXAMPLES OF TASKS PERFORMED WHICH DIFFERENTIATE
LIEUTENANT COLONELS AND MAJORS
(PERCENT PERFORMING)

TASKS	MAJ	LTC	DIFF*
J170 IDENTIFY SPECIFIC RESEARCH PROBLEMS TO BE ADDRESSED	62.5	26.1	36.4
H141 MONITOR CONTRACTS IN TERMS OF TECHNICAL OR FINANCIAL ASPECTS	42.5	13.0	29.5
J164 COLLECT DATA FOR RESEARCH	45.0	17.4	27.6
J161 ANALYZE RESULTS OF RESEARCH	75.0	47.8	27.2
J165 CONDUCT RESEARCH PLANS MEETINGS	42.5	17.4	25.1
B23 CONDUCT OR PARTICIPATE IN GROUND SAFETY MEETINGS OR BRIEFINGS	37.5	13.0	24.5
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* * * * * TASKS OMITTED WHERE THE DIFFERENCE IS LESS THAN 20 PERCENT * * * * *			
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B51 SCHEDULE OR APPROVE LEAVES OR PASSES	50.0	73.9	-23.9
C66 INSPECT PROGRAM RECORDS OR DOCUMENTATION	32.5	56.5	-24.0
A2 ADVISE SUBORDINATES ON PERSONAL DECISIONS OR PROFESSIONAL DEVELOPMENT PLANS	57.5	82.6	-25.1
D82 CONDUCT STAFF MEETINGS	40.0	65.2	-25.2
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B39 EVALUATE OR APPROVE BRIEFINGS	42.5	87.0	-44.5
B21 ASSIGN PERSONNEL TO DUTY POSITIONS	25.0	69.6	-44.6
B24 COORDINATE WITH CIVILIAN PERSONNEL OFFICE (CPO) ON CIVILIAN PERSONNEL MATTERS	27.5	73.9	-46.4
B43 INTERVIEW OR SELECT CIVILIAN PERSONNEL FOR EMPLOYMENT OR PROMOTION	20.0	73.9	-53.9

* Tasks displayed in order of the magnitude of the absolute difference from + to -

TABLE 18

EXAMPLES OF TASKS PERFORMED WHICH DIFFERENTIATE
LIEUTENANT COLONELS AND COLONELS
(PERCENT PERFORMING)

TASKS	LTC	COL	DIFF*
D96 PROVIDE STAFF ASSISTANCE ON POLICY DECISIONS	60.9	14.3	46.6
D78 ACT AS STAND-IN FOR SUPERVISOR	73.9	28.6	45.3
E111 WRITE ARTICLES FOR PROFESSIONAL JOURNALS	43.5	.0	43.5
B45 PREPARE STATUS BOARDS, CHARTS, OR GRAPHS	69.6	28.6	41.0
F126 SERVE AS TECHNICAL CONSULTANT OR REPRESENTATIVE TO SCIENTIFIC MEETINGS, TECHNICAL BOARDS, OR COMMITTEES	39.1	.0	39.1
H142 PARTICIPATE IN CONTRACTOR BRIEFINGS OR REVIEWS	52.2	14.3	37.9
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F125 SERVE AS CONSULTANT TO OTHER GOVERNMENT AGENCIES	34.8	14.3	20.5
J168 DIRECT STATISTICAL ANALYSIS OF DATA	34.8	14.3	20.5

TASKS OMITTED WHERE THE DIFFERENCE IS LESS THAN 20 PERCENT			

B42 INTERPRET POLICIES FOR SUBORDINATES	65.2	85.7	-20.5
B44 INTERVIEW OR SELECT MILITARY PERSONNEL FOR ASSIGNMENT	65.2	85.7	-20.5
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B26 DETERMINE BUDGET PRIORITIES	69.6	100.0	-30.4
J170 IDENTIFY SPECIFIC RESEARCH PROBLEMS TO BE ADDRESSED	26.1	57.1	-31.0
L206 INTERACT WITH LATERAL MANAGERS TO RESOLVE TECHNICAL PROBLEMS	39.1	71.4	-32.3
L211 PROVIDE RESEARCH RESULTS OR FINDINGS TO USERS OR POTENTIAL USERS	39.1	71.4	-32.3
L213 RECOMMEND APPROVAL OR DISAPPROVAL OF RESEARCH REQUESTS	39.1	71.4	-32.3
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B41 INITIATE OR APPROVE PERSONNEL ACTION REQUESTS	43.5	100.0	-56.5
A7 APPROVE SELECTION OR PROMOTION OF CIVILIAN PERSONNEL	39.1	100.0	-60.9
D94 PRESENT EXECUTIVE PROGRAM BRIEFINGS TO VIPs	39.1	100.0	-60.9
L207 LISTEN TO SUBORDINATES SUMMARIZE TECHNICAL PROBLEMS	34.8	100.0	-65.2

* Tasks displayed in order of the magnitude of the absolute difference
from + to -