BLUE TO WHITE COLLAR JOB MOBILITY: A PRELIMINARY REPORT[1]

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Introduction

In the past few years considerable publicity has been focused on the growth of white collar occupations relative to blue collar occupations. Between 1953 and 1963 blue collar employment remained at about the 25 million level. During the same period the number of white collar jobs increased from 23.6 million to 30.2 million, a gain of 28 percent. The largest group of blue collar workers, production workers in manufacturing industries, declined from the 1953 peak of 14.1 million to 12.6 million in 1963. At the same time, however, the civilian labor force increased by over 9 million people.[3]

Reflection upon these aggregate trends raised questions about how many of these new white collar jobs were filled by experienced blue collar workers and how many were filled by new entrants to the labor force. In view of the extensive changes in the composition of our labor force, are the occupational mobility patterns of the 1930's and 1940's still valid? Also, to what degree does the growing participation of women in the labor force, presumably in the traditional female white collar jobs for the most part, color the picture (no pun intended)?

Initial explorations into the literature revealed that little work had been done on the questions of the kind of white collar jobs into which blue collar workers have shifted in recent years and the number of people who have made this type of occupational move. Our particular interest, arising in part from our observations of this phenomenon as it relates to developments in the field of collective bargaining, was in the extent and direction of movement by male blue collar workers into white collar jobs. By extent we mean the numbers of such workers who, for example in manufacturing, leave the ranks of production workers and become technicians or supervisors. By direction we mean the different kinds of white collar occupations into which the blue collar workers shift.

A logical consequence of our interest in the extent and direction of blue to white collar job mobility was our increasing curiosity about the process by which such a shift was accomplished. Was the labor market working in such a way that the invisible hand gathered the required number of the appropriately qualified blue collar workers into the different types of white collar jobs? Or was it a case of a person being in the right place at the right time? Were there particular skills that enable people to make this shift easily; were there job paths that led logically from blue to white collar jobs? Did these shifts take place mainly within a firm or across establishment lines and even on an inter-industry basis?

If some firms fill some of the white collar jobs with men having blue collar backgrounds, what educational, personal or skill characteristics do such men have that would explain why they were hired? Or, is the shift one of those that are explained by the cliché--It's not what you know but who you know? It should be noted that the shift may be possible in one firm and impossible in another, without regard to the attributes of the individual job seeker, because of the personnel policies and practices that prevail. Other potentially important considerations include the placement procedures of public and private vocational schools and employment services.

The enactment of the Manpower Development and Training Act provided funds which enabled us to inquire systematically into many of the questions about which we were curious, the paths by which people make such shifts, and the ways in which mobility from declining to expanding occupations could be improved. Our first step in this project was to obtain the views of the Wisconsin State Employment Service[4] and personnel directors of several large firms about the kinds of white collar jobs into which blue collar workers were moving. From our extended conversations with them and with OMAT and other Department of Labor personnel we arrived at a tentative list of eight broad occupational groupings which we believed would cover the major blue to white collar job shifts. Appendix A contains a description of

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[2] The authors are Professors of Economics at the University of Wisconsin. They were assisted in this project by Industrial Relations Research Center Research Assistants Jan Staggs, Eric Langbaum, Kurt Schneidmiller, Gary Parson, Lloyd David, and Barbara Klees, by Project Assistant Carol Cary, and by Professors Leonard Berkowitz and Vernon Allen of the Psychology Department, University of Wisconsin.

[3] Data taken from the Manpower Report of the President, March, 1964. Table A-7, p. 199; Table C-2, p. 227; Table A-1, p. 195.

[4] Mr. Edward Kehl, Chief of the Research and Statistics Section of the WSES and members of his staff were particularly helpful throughout the development and execution of this project.

these groupings and a list of common job titles found within each group.

Despite the continued growth in employment of service workers outside of private households, service occupations were consciously omitted from this initial list. We thought that these occupations were not ones for which extended training was necessary. For the most part they are low-paying occupations and many shifts into them probably represent unfortunate examples of downward economic mobility. Also, much of the growth of these occupations is among females rather than males and we had decided to confine our inquiry to patterns among the men.

In compiling our occupational list, however, and in the process of checking these lists against census figures on occupational growth, we became aware of how uncertain we were about probable mobility patterns and realized further that unless we made some systematic inquiry and developed a statistical framework within which to assess these shifts, we would face difficult problems at a later date when we attempted to ascertain the relative importance of varying trends. We might find that we had omitted several important white collar groups into which blue collar workers were shifting in large numbers. Even if this were not the case and we simply selected an equal number of blue collar males who had shifted into each of the eight groups we had chosen, we would have no basis for weighting one group against the other because we would have no idea of the number of blue collar males shifting into each of these occupations. Over and above these considerations was the question of how we would obtain the names of 500 blue collar males who had shifted recently into white collar jobs. Where should we look to find these people? How could we draw a representative sample from this unknown universe? The solution to these questions was apparent but time-consuming. Before we could study the characteristics of blue collar workers who had shifted to white collar jobs we needed first to make a survey to determine the extent and direction of these shifts and the relationship of these shifts to employment activity in the white collar market generally.

A questionnaire, Appendix B, was sent to a 10% sample of employing units in Milwaukee County covered by unemployment compensation. Each tenth firm, starting with a random number, was selected from the March, 1962 unemployment compensation register containing approximately 9500 companies listed by descending order of size within industries as defined by the Standard Industrial Classification system. Essentially each firm was asked to list the titles of male white collar jobs it filled in 1961 and 1962, the number of men hired or promoted into each of these jobs, the number of men who had a blue collar background and the total number of men in the occupation as of the end of 1962. The instructions stated that "White collar jobs include professional, technical, managerial, sales, clerical and kindred service jobs. Generally the person is paid a weekly or monthly salary. Blue collar jobs include unskilled and semi-skilled workers, craftsmen and manual workers who are paid by the hour." We identified men with a blue collar background as men "who subsequent to 1/1/56 have had at least 1 year in blue collar job."

Three mailings were made, followed in turn by several hundred phone calls. The final response rate was approximately 70 percent. Comparison of responses and non-responses showed no statistical bias by size of firm or type of industry. We recognized that absence of statistical bias insofar as size of firm or industrial distribution of respondents in no way guaranteed the accuracy of the figures that were supplied. In some instances our intuition suggested that small firms might have answered the questionnaire informally--that is, mentally counting up that Joe, Jim and Pete were hired as salesmen in the last two years, that Pete had worked as a blue collar worker and that they now had about 14 salesmen. Then, after sending back the reply, the office manager who filled it out might have realized that he had been hired during that period and that his job title and the pertinent figures should have been included in the report. Although this illustrative example is based on an actual event and the error was easily corrected, it brought home to us the difficulties of acquiring data in this fashion. In large firms where compliance with our request necessitated a search of hundreds of personnel jackets, we assume that errors were made and that probably there was some understatement of hiring activity. This was avoided in situations where university personnel were used to make the search under the supervision of the company. In one case we encountered an exaggeration of the extent of the shift that gave us the impression that the employee making the search was on piecework. Actually, he wasn't, but he was being paid overtime to come in on a Saturday to do this task and apparently wanted to give us our money's worth. More seriously though, this method of collecting occupational data faced the perennial question of the meaning of job titles. Each title such as draftsman, lab technician and clerk probably covered a wide range of skills and duties because it had a different meaning in different firms. Despite these considerations, however, we believe that the extent and direction survey was most worthwhile and in our case served its dual purposes well.

But, before going on, I think you might be amused to hear about several of the unusual responses to our extent and direction study. One company president sent us a long letter in which he stated that he was ashamed of the University of Wisconsin for cooperating with the United States Government in this project. He obviously thought this a most outrageous waste of time and money and was good enough to tell us that the road to white collar success was open to the blue collar worker who skipped his coffee break and did not join a union. Although he declined to participate in the survey initially, his firm eventually responded to the persistent and guileful efforts of our research assistants and cooperated in supplying names for the sample. Considerations of confidentiality preclude us from publishing whether the blue to white collar shifters at that firm resemble in any way the stereotype suggested by their company president.

A second company president thought very highly of the survey, sent us many articles on the same subject including several he had written, but forgot to return the questionnaire until gently reminded by a second letter. And finally, there was the owner of a tavern in the Negro section of Milwaukee who said that our blue to white collar job shift questionnaire did not apply to him as he "had no white color employees." We are not sure whether this is a case of misspelling or misunderstanding.

Returning to the question at hand, we should note why we think that the extent and direction survey of employing establishments was the most satisfactory approach for our purposes. First of all, blue to white collar shifters as we have defined them make up an extremely small percentage of the work force. We debated for some time whether it would be feasible to construct a statistical frame from which a random sample could be drawn directly. We recognized that although this could be done and should be done on a national basis at some future date, it would be far too costly for this experimental project. Instead, as already mentioned, we drew our extent and direction sample from a 10% cross section of Milwaukee firms covered by unemployment compensation.

Replies were received from 70% of the establishments employing in excess of 26,000 people. Among this group we were told that 1318, or 5 percent, met our first criterion of being male entries into white collar jobs during 1961 and 1962 and that only 210 of these men, or less than 1 percent of the employees covered by the replies, had the necessary year or more of blue collar experiences since 1955. Keep in mind that it was from this less than 1 percent who met our definition of a blue to white collar job shift we were going to draw the 500 men who would be interviewed in our effort to ascertain the personal, educational and occupational characteristics of men who made this particular type of job shift.

Prior to drawing our sample we made an educated guess with the help of experienced guessers from the employment service and the university about what percent of the Milwaukee County labor force fit our definition of a white collar worker with a blue collar background. Because we thought that this group would constitute a very small portion of the working population and because of the possibility of a high non-response rate, we estimated that we should supplement the 10 percent sample with an additional sample, bringing the total coverage up to over half of the workers covered by unemployment compensation. We did this not for the purpose of refining our measure of the extent and direction of blue to white collar shifts, but to garner enough names to provide us with our desired sample size. That we succeeded in this effort is due more to those fortuitous offsetting estimates that make statistical analysis such a pleasant pastime, rather than to the accuracy of our original guesses.

Extent and Direction of Blue to White Collar Job Shifts by Industry and Occupation

Turning now to the results of our extent and direction survey, a weighted projection of the sample indicates that about 22 percent of the men hired or promoted into white collar jobs in Milwaukee County in 1961 and 1962 had a year or more of blue collar experience since 1955. Subject to the statistical limitations explained in Appendix C,[5] we find that about 4000 of the 17,900 male entries into white collar employment were made by men with blue collar backgrounds.[6]

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[5]We wish to thank Miss Estelle Goldberg of the Wisconsin Survey Research Laboratory for preparing this Appendix section for us.

[6]The various measures of extent and direction were prepared by Jan Staggs. Further detailed information is contained in his unpublished thesis, "A Measure of Blue to White Collar Mobility," University of Wisconsin, 1964.

TABLE I *

ENTRIES INTO WHITE COLLAR JOBS AND PROPORTION OF ENTRIES THAT SHIFTED FROM BLUE COLLAR JOBS

By Major Occupational Group in Milwaukee County

OCCUPATIONAL GROUPS	NO. OF ENTRIES	NO. OF SHIFTS	(SHIFTS/ENTIRES) % of Entries With Blue Collar Background	% DISTRIBUTION of Entries	% DISTRIBUTION of Shifts
Managerial	3,606	1,556	43.2%	20.2%	39.0%
Clerical	3,104	827	26.6%	17.4%	20.7%
Professional & Technical	6,127	945	15.4%	34.3%	23.7%
Sales	5,037	661	13.1%	28.2%	16.6%
TOTAL	17,874	3,989	22.3%	100.1%	100.0%

*The figures in this table should be regarded as approximations subject to the statistical limitations explained in Appendix C.

When this 22 percent figure is disaggregated by major occupational groups we see that the percentage of shifts to entries in descending order varies from a high of 43 percent in managerial occupations, to 27 percent in clerical occupations, to 15 percent in professional and technical occupations, and to a low of 13 percent in sales occupations. The impact of the high ratio of shifts to entries in managerial occupations is offset in part, however, by the low growth rate of jobs in this field relative to opportunities in the other three white collar occupational categories. In Table I we see that the distribution of entries into white collar jobs ranges from a high of 34 percent into professional and technical occupations, to 28 percent into sales, to 20 percent into managerial jobs and 17 percent into clerical positions. When these factors are combined and we look at the distribution of the shifts by major occupational groups; that is, when we look at the occupational composition of the 22 percent of the total entries who shifted from blue to white collar jobs, we find that managerial occupations still offer the greatest opportunities, 30 percent, but that the opportunities in professional and technical occupations of 24 percent exceed the 21 percent found in the clerical sector and the 17 percent found in sales.

The breakdown of the entries and shifts by major industrial categories, Table II, shows that the ratio of shifts to entries is high in transportation, communication and public utilities, 59 percent, and construction, 44 percent; medium in wholesale trade, 28 percent, manufacturing, 27 percent, retail trade, 24 percent, and in service industries, 19 percent; and low in government, 8 percent, and finance, insurance and real estate, 4 percent. Unfortunately, as was the case in the breakdown by occupations, the breakdown by industries shows the greatest ratio of shifts to entries in the fields where the growth is the lowest and vice versa.

In construction and transportation, where we found a high ratio of shifts to entries, we found also a low percentage of total entries. The low number of entries reflects the combined effect of growth rates, size and turnover rates of these industrial sectors compared to other

TABLE II*

ENTRIES INTO WHITE COLLAR JOBS AND PROPORTION OF ENTRIES THAT SHIFTED FROM BLUE COLLAR JOBS
By Major Industrial Categories in Milwaukee County

INDUSTRY	NO. OF ENTRIES	NO. OF SHIFTS	(SHIFTS/ENTRIES) % of Entries With Blue Collar Background	% DISTRIBUTION of Entries	% DISTRIBUTION of Shifts
Transportation, Communications & Public Utilities	775	459	59.3%	4.3%	11.5%
Agriculture, Mining & Constr.	623	274	44.0%	3.5%	6.9%
Wholesale Trade	802	224	27.9%	4.5%	5.6%
Manufacturing	5,134	1,389	27.1%	28.7%	34.8%
Retail Trade	2,306	550	23.9%	12.9%	13.8%
Services	4,763	908	19.0%	26.6%	22.7%
Government	1,027	88	8.3%	5.7%	2.2%
Finance, Insurance & Real Estate	2,444	97	4.0%	13.7%	2.4%
TOTAL	17,874	3,989	22.3%	99.9%	99.9%

* The figures in this table should be regarded as approximations subject to the statistical limitations explained in Appendix C.

sectors. Between 1950 and 1960, Milwaukee County employment in both of these industries suffered declines of about 11 percent. By 1960 these two sectors included only 14 percent of the male employment. The net result of these trends shows up in our sample where despite the 60 percent and 44 percent ratios of shifts to entries in transportation and construction respectively, entries into these fields were only 8 percent of total entries. This reduced the percentage of total shifts in these sectors to 18 percent. Although the negative growth rate of construction employment in Milwaukee during the decade of the 1950's differs somewhat from national trends, the general occupational trends in Milwaukee County during the decade are reasonably representative of changes to be found nationally. This can be seen by reference to the tables of Appendix D showing Milwaukee and United States male employment changes between 1950-1960 by occupation and industry.

A further analysis of the distribution of entries by major industrial sectors in Table II shows that manufacturing accounted for about 1/4 of the entries, the service industries accounted for another 1/4, finance and retail trade made up the third quarter of the entries, and the last quarter was divided almost evenly among the four remaining industrial sectors. The picture was changed, however, by the varying ratios of shifts to entries. We found that manufacturing was the most important sector with 35 percent of the blue to white collar shifts, service industries were second, 23 percent, retail trade and transportation were next with 14 percent and 12 percent respectively, then construction and wholesale trade, 7 percent and 6 percent, and finance and government last with 2 percent apiece.

Comparisons of variations in the volume of blue to white collar shifts in different industrial sectors with variations in the major occupational groups raise the question of the degree to which the variations by industry are attributable to the differences in occupational composition of an industry. For example, we found that very few entries into the elementary and secondary school teaching profession had blue collar backgrounds. Therefore, since the large and expanding occupation of teaching is confined mainly to the government industry, the ratio of shifts to entries in this industry is depressed.

On the other hand, the high ratio of shifts to entries in the transportation industry flows in part from the fact that three out of four entries into the dispatcher occupation had a blue collar background. This occupation, which had the largest percentage growth of any male clerical group in Milwaukee between 1950 and 1960, is heavily concentrated in the transportation industry. Examples such as these confirmed our notion that the basic explanation of the overall blue to white collar mobility pattern was to be found in the factors determining the ratio of shifts to entries in each occupation.

This brings us to another consideration raised in the discussions we had with government and industry leaders prior to doing this survey. It was suggested that determinants of entry to an occupation may vary widely among firms according to the size of the firm and the different customs of each industry. Although the information on these characteristics derived from our extent and direction survey is limited, several interesting points were noted.

Among draftsmen, for example, we find 13 firms hiring 44 men. Six of these 13 firms hired men with blue collar backgrounds, seven did not. Among the six that did, one firm hired four draftsmen, all of whom had blue collar backgrounds. The other five firms hired 29 draftsmen, eight of whom had blue collar backgrounds. Among the seven firms that did not, we find four firms in manufacturing that hired no workers with blue collar backgrounds into drafting or any other white collar jobs along with three firms that had blue collar shifts to other white collar jobs but not to drafting. These seven firms with no shifts in the drafting occupation hired 11 of the 44 draftsmen in the 10 percent sample. Presumably our typical blue collar man who became a draftsman did so in part because of his education, personal characteristics and skill, but also did or did not become a draftsman because of the personnel policies of the particular firm that was hiring draftsmen.[7]

Although small firms presumably differ from large firms in many ways, including how promotions are made, we found little evidence on the whole that differences by size of firms had a pronounced net effect on the possibility of blue to white collar job shifts one way or the other. The ratio of shifts to entries was a little higher both in firms with less than 10 employees and in firms with between 51 and 100 employees than the lower but similar level found in firms with 21-50 employees and very large firms with over 100 employees. Appendix Table E shows the ratio of entries and shifts to number of employees by size of firm.

Two Insights Gained from the Extent and Direction Survey

Although the basic purposes of the extent and direction survey were to obtain measures that would enable us to identify the relative importance of various blue to white collar paths and to obtain the names of people who had made these shifts, we gained insights into two other points

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[7]During the pre-testing of the schedule used in the interviews of 500 men who had shifted from blue to white collar jobs we encountered a draftsman whose explanation of the shift illustrates one of the many ways in which the labor market works. He said that he went to vocational school at night on his own but was unable to get a drafting position. Instead, he continued his work in the shipping room. However, one day, when his load was light, he filled out tags in the impeccable printing style associated with mechanical drawing. One such tag was noted by a front office executive who went out to the shipping room to investigate the phenomenon. After talking to the potential draftsman, he informed the personnel office tht it should hire this man for the next drafting opening. And so, this is how one man became a draftsman.

which appear important to us. The first of these points is that the occupation of "foreman" should be considered a white collar job rather than a blue collar and that there is considerable mobility of blue collar workers into it. The second is that there is an internal labor market within the firm with standards that differ from those of the external labor market. The internal labor market may operate in a manner that promotes blue to white collar mobility in instances where the external market does not. Let us take the foreman question first.

In our questionnaire to firms we did not mention foremen either as blue or white collar workers. The definition of white collar worker quoted earlier did not include the term foreman. The definition of blue collar worker also did not; in fact, we specifically did not mention foremen along with skilled workers. It is our impression that most of the respondents outside of the construction industry considered foremen to be white collar workers and listed the foreman occupation as a white collar job. Insofar as prevailing sentiment in industry is a relevant guide for classification, the Census Bureau and others concerned with this question should review their longstanding practice of classifying foremen as blue collar workers.

In 1947 the National Labor Relations Act was amended to define foremen as supervisors and to exclude them from coverage under the Act. The small, weak foremen's union was destroyed and at the same time in many large companies steps were taken to encourage foremen to identify themselves more closely with other components of the management group. In some cases, white smocks were given to foremen as badges of identification. Where foremen had punched the same time clock and used the same locker room as production workers, they were taken off the time clock or at least given a separate time clock of their own, as well as a separate locker room. Over the past decade foremen have been covered by the fringe benefit programs designed for salaried workers rather than the alternative programs for hourly production workers.

The monthly Bureau of Labor Statistics releases about employment changes in non-agricultural industries include the two familiar tables, one covering all employees and the other production workers in manufacturing. Employees excluded from the production worker category are usually regarded as white collar workers. Foremen are excluded and as such would fall into the white collar category. The 1960 census data supply another reason why it makes sense to treat foremen as white collar workers. It is apparent that employment trends for foremen are more like those of white collar workers than those of blue collar workers. For example, in manufacturing, production worker employment did not increase between 1950 and 1960 while the number of foremen in manufacturing increased by 45 percent.[8]

The data from our extent and direction survey reinforce our opinion that foremen should be classified as white collar workers. All of the firms that reported hiring foremen also reported that there was at least one shift; that is, at least one of the new entries into the foreman job had a blue collar background. This was the only occupation for which this was true. The ratio of shifts to entries among foremen was about 80 percent. Some details are supplied in Appendix Table F. No mention was made of hiring foremen in the industries of finance, trade and construction. In finance and trade we find that the term is not used but that instead a person with equivalent duties is called a supervisor, and as such is classified as a managerial occupation. In construction, foremen are considered to be blue collar workers and are also so regarded under our definition because they are paid by the hour. Typically the construction foreman is paid about 25¢ an hour more than the journeyman in his trade. Also, his tenure as foreman is usually confined to that one job and on his next assignment for another construction firm he again may be working as a journeyman.

Next we would like to turn briefly to this question of an internal labor market as opposed to the various aspects of the conventional external labor market. We first became aware of the difference between the occupational paths of the internal labor market and those of the external labor market when experienced staff of the Wisconsin State Employment Service (WSES) and experienced personnel men from large manufacturing plants described quite different patterns when speculating about how men made blue to white collar shifts. The WSES noted two types of movement: (1) horizontal: a lateral movement from a given occupation to an entirely different occupation in a new field of work; and (2) vertical: shifts of workers to jobs based on acquisition of new skills and/or knowledge coupled with previous skills and/or knowledge. Shifts from blue to white collar jobs could involve either lateral or vertical shifts or both as men shifted into managerial, clerical, sales, or professional occupations. The WSES believed that there was very little horizontal or vertical movement by blue collar workers into clerical jobs. The industry personnel men said that blue collar workers frequently made the transition into white collar clerical jobs, particularly in the processing occupations such as routing and scheduling.

The employment service noted that shifts from blue collar to technical jobs in the processing field still existed and mentioned, in passing, jobs such as production planning and production routing. The industry personnel men agreed that this was so but added also the clerical jobs of dispatcher, expeditor and production scheduler. In part the difference may arise because a job considered clerical by the personnel man in industry may be classified among the technical

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[8]Production worker employment in manufacturing in 1950 was 12,523,000 and in 1960 was 12,586,000. The number of foremen in manufacturing increased from 513,473 in 1950 to 744,011 in 1960. Data from the Manpower Report of the President, March 1963, Table C-2, p. 164 and Table G-6, p. 202.

occupations by the employment service. But much more fundamental than this is the fact that the clerical jobs in the processing field are in actuality the entry jobs into the technical positions in this field. If the WSES is correct, part of the reason that there is little vertical movement into technical and higher level clerical jobs is that there is little horizontal movement into the clerical jobs which are in turn the entry jobs to the technical processing occupations.

But if industry personnel men claim that there is considerable occupational movement from blue to white collar clerical jobs of the nature that WSES would classify as horizontal moves, how then is the difference explained? As most of you have surmised already, we believe that the difference arises because the industry personnel men are talking about the internal labor market while the employment service representatives are talking about the external labor market. A limited investigation was made of this possibility and it appears to be the case. A young semi-skilled male with a high school education and a few years in the shop who impresses his supervisor with his diligence and regular attendance frequently is given the opportunity to shift to a clerical position. At the time of a layoff from a production job he may be offered a horizontal move to a clerical position, or when the clerical force is being expanded the factory foreman may be asked to recommend bright young operatives for these vacancies.

Our brief inquiry suggested also that the educational and occupational requirements applied in hiring from the outside were relaxed considerably when potential transfers from the factory were under consideration. This seems sensible, as a recommendation from a company supervisor to the effect that the person involved is bright, eager, and conscientious in his application to his job makes him appear to be as good a risk for the job, if not a better one, as a person from the outside who has a superior education and supposedly relevant occupational background. In fact, it was our feeling that if the employment service could convince a company that its semi-skilled laid-off blue collar worker had these same qualities the man would be hired. Instead, what seems to happen is that new white collar male clerks hired from the outside are those who possess particular skills and abilities acquired either in school or on previous white collar jobs. This barrier to mobility is reinforced apparently by the separation of blue and white collar hiring. In effect, there are two personnel departments operating separately with very little interchange between them.

For the reasons we have sketched, we amended our tentative research design in several respects. First of all we decided to include about 50 foremen in the sample of 500 blue to white collar males who were to be interviewed in depth. Second, we amended our preliminary interview schedule to make sure that we would be able to followly carefully and distinguish between moves in the internal and external labor markets and to see how the procedures for each differed. This brings us now to the second stage of our project, the attempt to gain a greater knowledge of the characteristics of men who made blue to white collar shifts.

Preliminary Results of the Survey of Characteristics of Blue to White Collar Shifters[9]

We should note at the outset that this is a preliminary report. When we say preliminary, we don't mean a rough draft based on complete data; we mean instead an early report based on first returns and issued before the complete data have been processed, not to mention analyzed and digested. The interviews were completed several weeks ago. Coding is underway at present and machine runs should be completed this coming spring. However, for this meeting we did make preliminary runs on one of the 38 IBM decks that are in preparation. These runs consist primarily of occupational histories, that is, the chronological job path of men who have shifted into various white collar job groupings. Before discussing these job patterns, we should note briefly what information we sought from our sample so that you have an idea of how these first returns relate to the remaining data that will be published at a later date.

Respondents gave us a summary occupational history in reverse chronological order for the jobs they have held in the past ten years. The history also included a one phrase description of each job, the name of the company, what it made, the starting and ending dates and wages earned on each job. Military service and full-time schooling were treated as "jobs." After obtaining this skeleton we put flesh on it by asking the respondents for details about each job, this time going in chronological order. We attempted to find out how a person got the job in question, what he did on the job, what skills he used, where he obtained these skills, what outside schooling or on-the-job training he received, where he went to school, why he left this job and how he got his next job.

After completing this portion of the interview, the interviewer then probed in detail about the blue to white collar job shift. We asked why the respondent made the move, what skills and training enabled him to do so, what he thought about it, whether other people could do the same thing, whether he recommended that they try it and

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[9]For their assistance in this portion of the project, we wish to express our appreciation to the University's Survey Research Laboratory, Professor Harry Sharpe, Director, to the staff who conducted and coded the interviews and to Mina Hockstad, Marge Colson and Johan Mathiesen who supervised these procedures. We also wish to thank the Social Systems Research Institute, Professor Roger Miller, Executive Director, Hilde Roubal who supervised the work, and the staff who performed machine computation in cooperation with the Commerce Department Computation Center.

if so how they should go about it. We then asked a set of questions that attempt to measure on a most experimental basis the assertiveness of the individual, in order to see if we can identify personal characteristics of individuals that help to explain why they rather than others made this job shift. Finally we asked the usual questions about age, family status and education so that we can compare our group to other groups in the population.

[10]The occupational code is an adaptation of the census code. Specific occupations are coded from 000 to 999. The first digit of the code designates the major occupational group, technical, managerial, clerical, etc. The second digit identifies the various occupational sub-groups within each major category. For example "1" is the technical group, "10" is the drafting sub-group, "11" the industrial engineering sub-group, etc. The third digit identifies the specific job in the sub-group; "104" for example is a mechanical draftsman.

Occupational Paths and Characteristics

Table III is a frequency distribution by two-digit occupational groups showing the "entry" white collar clusters within each major white collar category.[10] This table and the others in this section of our paper contain raw data reproduced from the first machine runs that we received a few days ago. Thev are included here

TABLE III

DISTRIBUTION OF "ENTRY" WHITE COLLAR JOBS BY TWO-DIGIT OCCUPATIONAL GROUPS*

TWO-DIGIT OCCUPATION GROUPS	MAJOR WHITE COLLAR CATEGORIES					
	Prof-Tech (00)	M'grial (20)	Foremen (28)	Clerical (30)	Sales (36)	Totals
00 Accountants	3					3
01 Teachers (exc. Vocational)	4					4
02 Teachers (Vocational)	7					7
03 Professional Engineers	2					2
04 Personnel & Labor Relations	1					1
05 Misc. Professional	2					2
10 Draftsmen	37					37
11 Industrial Engineering Technicians	54					54
12 Mechanical Engineering Technicians	25					25
13 Other Engineering Technicians	10					10
14 Electrical Technicians	27					27
15 Materials Processing Occupations	21					21
16 Misc. Technical	6					6
17 Professional-Technical Trainees	5					5
18 Professional-Technical Group Leaders	1					1
20 Executives & Public Admin. Officials		3				3
21 Admin. Specializations		12				12
22 Managers & Supervisors		54				54
23 Assistant Managers, etc.		10				10
24 Management Trainees		3				3
25 Proprietors		2				2
28 Foremen			34			34
29 Assistant Foremen			10			10
30 Stenos, Typists, etc.				4		4
31 Computing & Acc't Recording Clerks				8		8
32 Production Recording & Routing Clerks				60		60
33 Information & Message Distribution Clerks				6		6
34 Misc. Clerical				15		15
35 Clerical Group Leaders				2		2
36 Salesmen of Services					7	7
37 Salesmen of Commodities					7	7
38 Other Sales					3	3
39 Sales Group Leaders & Trainees					2	2
TOTALS	205	84	44	95	19	447

*Preliminary unweighted raw data

only to illustrate how we propose to identify occupational paths. In Table IV we show the distribution of "exit" blue collar job statuses of men who shifted into the technical occupational groups. A job status is usually a specific job but it also may be military service, full time schooling, not in the labor force for some other reason, or unemployed.

We identify the job status held immediately prior to the shift as status -1 and, in reverse chronological order, each successive job status held prior to it as status -2, -3 and so on through -6. The entry white collar job is regarded as status 0 and each successive job held after the shift up through the third job status is identified as status +1, +2 and +3. This means that for each status from -6 through +3 for any occupation by one, two or three digit breakdown, we will have a run comparing that status with status 0. Table IV shows the comparison between status -1 and status 0. Two types of summary runs are being compiled. One will summarize the jobs held prior to the shift; the other will summarize the jobs held after the shift. For any occupational group in which we are interested, these summaries will supplement the occupational time path patterns by providing a summary of all blue collar jobs held prior to the shift and a summary of all white collar jobs held after the shift.

Let us turn now to the data involving technicians in Tables III, IV, and V to illustrate the type of analysis that can be made and some of the characteristics and occupational paths of the technicians. The distribution of men entering the technical occupations, all oc-

TABLE IV

DISTRIBUTION OF "EXIT" BLUE COLLAR JOBS OF THOSE MEN WHO SHIFTED INTO THE VARIOUS TECHNICAL OCCUPATIONS*

PRIOR BLUE COLLAR JOB	TECHNICAL OCCUPATIONS INTO WHICH SHIFT OCCURRED									
	Draftsmen	Industrial Engr. Technicians	Mechanical Engr. Technicians	Other Engineering Technicians	Technicians, Electrical & Electronic	Materials Processing Occupations	Misc. Technical & Kindred	Technical Trainees	Technical Group Leaders	TOTALS
41 Electricians	1	1	-	-	4	2	-	-	-	8
42 Machinists	3	6	-	-	-	1	-	-	-	10
43 Tool & Die Makers	5	3	-	-	-	3	-	2	-	13
44 Mechanics & Millwrights	2	4	1	1	-	2	1	-	-	11
46 Metal Workers	-	-	-	-	-	2	-	-	-	6
48 Plumbers	-	-	-	-	-	1	-	-	-	1
49 Linemen, etc., tel & power	-	1	-	-	14	-	-	-	-	15
50 Misc. Craftsmen	2	-	1	-	1	1	-	-	-	5
53 Working Leaders, Craftsmen, etc.	1	2	-	-	-	2	-	-	-	5
54 Working Leaders, Operatives, etc.	-	-	-	1	1	-	-	-	-	2
60 Apprentices	3	6	1	-	-	-	-	-	-	10
62 Assemblers	2	6	3	-	1	1	-	-	-	13
63 Vehicle Drivers	1	-	-	-	-	-	-	1	-	2
64 Material Handlers	1	1	1	-	-	-	-	1	1	5
65 Misc. Operatives	6	8	14	6	3	5	3	1	-	46
70 Press Operators	1	-	-	-	-	-	1	-	-	2
71 Lathe Operators	1	5	-	-	-	-	-	-	-	6
72 Misc. Machine Operators	1	4	2	1	-	1	-	-	-	9
82 Misc. Service Workers	3	-	-	-	-	-	-	-	-	3
86 Non-Farm Laborers	1	2	-	-	1	-	1	-	-	5
90 In School	1	-	2	1	2	-	-	-	-	6
91 In Armed Forces	2	1	-	-	-	-	-	-	-	3
TOTALS	37	54	25	10	27	21	6	5	1	186

* Preliminary unweighted raw data

cupations that have a "1" as the first digit, is shown in the first column of Table III. Data in Table V-A and Table V-B indicate that most of these men are rather young and that they shifted to white collar work early in their careers. Some ideas about the degree of their mobility can be gained by reference to Table V-D showing the number of statuses, jobs, and companies for which they worked. It is of interest to note that about three-fourths of those men shifted from blue to white collar employment within the same company. Table V-E compares the percent of the job shifts that were internal for each of the moves both before and after the shift. As might be expected, the proportion of internal shifts rises as the men settle down after shopping around. Although the original extent and direction survey asked for the number of men who shifted during 1961 and 1962 we relaxed this constraint when we again approached our enlarged sample to obtain the names of men who had shifted from blue to white collar work. Even so, as can be seen from Table V-B, most of the shifts are recent enough to suggest that these particular shift possibilities are not obsolete. Our sample of blue collar males shifting into technical jobs has less education than the census sample of all such white collar technicians. But when we compare our sample with the portion of the census sample that held a blue collar job at age 24, as we expect to do, we suspect we will find little difference in educational attainment.

The relationship between Table III and IV can be visualized more clearly if you note that the nine major technical occupational groups listed vertically in the first column of Table III become the nine columns of Table IV, and in each group, or column, is found the distribution of blue collar jobs held immediately prior to the shift. It is also possible to trace the path of each individual. Again, primarily for illustrative purposes, and without implying any great significance to the particular paths selected, we have included in Table VI the occupational history of several of the men who shifted into a specific type of drafting. In themselves these patterns indicate only that men with a variety of backgrounds have shifted into this occupation. The explanation for the shift on the part of the first and fourth respondent is to be found in their educational background. The other two men were able to make the shift within the same company because of the experience gained from their blue collar jobs. These job patterns are useful mainly to us in our attempts to identify the paths that blue to white collar shifters follow.

With these remarks we must conclude. We recognize that our report is without a conclusion but as we said before, our research is still in progress and this report can cover only what has been discovered to date. We dare not gaze into the crystal ball to speculate about what our completed study will show. The only speculation we have done so far has been about our scheduled completion date and unfortunately we have missed the mark on this by quite a wide margin. We can only reaffirm the estimate that we have made several times since undertaking this project in 1963 --- we hope that it can be concluded in the coming year.

TABLE V

SELECTED CHARACTERISTICS OF MEN WITH BLUE COLLAR BACKGROUNDS WHO SHIFTED INTO TECHNICAL OCCUPATIONS*

A. Distribution by Age

YEAR OF BIRTH	DISTRIBUTION
1909 & earlier	2%
1910 - 1919	10%
1920 - 1929	26%
1930 - 1939	51%
1940 - 1943	11%

B. Distribution by Date of Shift

YEAR OF SHIFT	DISTRIBUTION
1950 - 1954	5%
1955 - 1959	27%
1960 - 1964	68%

C. Level of Education

	OUR SAMPLE	1960 CENSUS SAMPLE OF EMPLOYED TECHNICIANS**
Less than High School graduation	15%	12%
High School graduation	33%	23%
Some College, but no 4-yr. degree	50%	53%
4-yr. College degree	2%	12%

* Preliminary unweighted raw data. N = 186.
** Monthly Labor Review, November 1964, Vol. 87, No. 11, page 1279.

TABLE V (Continued)

D. Distribution of Total Number of Statuses and Jobs Held, and Companies Worked for, since August, 1954

	STATUSES	JOBS	COMPANIES
1	-	3%	46%
2	2%	20%	23%
3	8%	24%	13%
4	19%	22%	9%
5	23%	12%	4%
6	16%	7%	3%
7	7%	6%	1%
8	15%	4%	1%
9	4%	1%	-
10 & over	7%	1%	1%

E. Distribution of Internal and External Shifts

JOB	SAME COMPANY	DIFF. COMPANY	NO JOB OR NO PRIOR JOB TO COMPARE WITH
Prior job to job in Status #3	4%	1%	95%
" " " " " " #2	12%	2%	86%
" " " " " " #1	29%	7%	64%
Blue Collar to White Collar Job	73%	27%	-
Prior Job to job in Status -1	43%	38%	20%
" " " " " " -2	20%	32%	47%
" " " " " " -3	10%	22%	68%
" " " " " " -4	9%	13%	78%
" " " " " " -5	3%	10%	77%
" " " " " " -6	3%	5%	92%

TABLE VI

* Preliminary, unweighted raw data for 4 of the 8 men who shifted into this job.

JOB PATTERNS OF MEN WHO SHIFTED INTO MECHANICAL DRAFTSMAN "104"*

INTERVIEW NUMBER	STATUS +1			WC JOB			STATUS -1			STATUS -2			STATUS -3			STATUS -4			STATUS -5		
	Occupation Code	Duration in Mos.	2-digit SIC Code	Occupation Code	Duration in Mos.	2-digit SIC Code	Occupation Code	Duration in Mos.	2-digit SIC Code	Occupation Code	Duration in Mos.	2-digit SIC Code	Occupation Code	Duration in Mos.	2-digit SIC Code	Occupation Code	Duration in Mos.	2-digit SIC Code	Occupation Code	Duration in Mos.	2-digit SIC Code
175	--			104	62	36	681	09	37	930	10	99	681	24	26	864	06	24	913	48	99
176	--			104	42	36	411	34	36	656	24	36	913	48	99		--			--	
294	180	74	35	104	35	35	656	24	35	673	84	73	914	12	99		--			--	
320	129	11	34	104	18	34	879	09	42	904	21	99		--			--			--	

KEY

OCCUPATIONAL CODES

104 - Mechanical draftsman
129 - Mechanical engr. tech. (n.e.c.)
180 - Group leader, draftsmen
411 - Electrician, electrical service & repair
656 - Checker, examiner or inspector (mfg.)
673 - Photographic process worker
681 - Welder or flame-cutter
864 - Lumberman, raftsman or woodchopper
879 - Non-farm laborer
904 - College
913 - Army
914 - Air Force
930 - Unemployed

INDUSTRY CODES

24 - Lumber & wood products, exc. furniture (mfg.)
26 - Paper & allied products (mfg.)
34 - Fabricated metal products, exc. machinery & transportation equipment (mfg.)
35 - Machinery, except electrical (mfg.)
36 - Electrical machinery, etc. (mfg.)
37 - Transportation equipment (mfg.)
42 - Motor freight transp. & warehousing
73 - Miscellaneous business services
99 - Nonclassifiable establishments

APPENDIX A
LIST OF CLASSIFICATIONS

White Collar Jobs Into which Blue Collar Workers May Have Transferred

Draftsman -- Prepares working plans or detailed drawings to scale from rough or detailed sketches or notes. Inks in lines, letters, dimensions, specifications, and legends on pencil drawings as required. May make engineering computations such as those involved in strength of material, beams, and trusses. Uses triangles, T-square, protractors, compasses, French curves, and other drawing instruments.

Common job titles in this occupation are mechanical draftsman, electrical draftsman, architectural draftsman, checker, layout man, tool designer, die design draftsman.

Electronic & Electrical Technicians -- Assists engineers and scientists in designing, modifying, testing, and assembling devices and equipment. Installs, tests, maintains, troubleshoots, and repairs electrical and electronic equipment where a functional knowledge of electricity and electronics is required. May revise or prepare assembly drawings.

Common titles in this occupation are laboratory technician, power technician, electronic circuit technician, radar technician, engineering aid, systems technician.

Engineering & Physical Science Technician -- Provides semiprofessional technical support for engineers and scientists working in such areas as research, design, development, testing, or production. Work pertains to physical, biological, chemical, or mechanical component or equipment. Has knowledge of science and/or engineering.

Common job titles included in this occupation are test technician, analyst, data processing technician, laboratory technician (other than electrical or electronic), chemical technician, civil engineering technician, x-ray technician, medical technician.

Industrial Engineer -- Plans and develops production methods that make the most efficient use of materials, machinery, and personnel. May supervise the layout of plant machinery, conduct time and motion studies, design industrial safety programs, and plan cost and quality control programs.

Personnel & Labor Relations Worker -- Interviews applicants for employment, assists applicants with application forms, and answers questions about the company. Assists in the administration of tests, prepares information for future training needs, studies and analyzes jobs, determines appropriate wage and salary levels, and keeps records pertaining to the personnel of the company. Administers health and welfare programs, assists in grievance settlements and contract negotiations.

Common job titles included in this occupation are manager, industrial relations, labor relations specialist, employment interviewer, job interviewer, health and welfare specialist, employee benefit specialist, job evaluation man.

Processing Occupations -- Prepares and maintains production schedules and records, compiles statistics, and charts related to actual production and estimates, to man hours to meet required schedules, and related data. --Coordinates flow of materials, parts, and assemblies within or between departments in accordance with production schedules, expedites the delivery of merchandise, parts, and equipment by contacting suppliers, transportation and company officials. --Checks shipping routes to and from customers, plans the most efficient methods of packaging and shipping products, may design and select containers.

Common job titles included in this occupation are production planner, production scheduler, shipping supervisor, traffic analyst, traffic manager, expediter, dispatcher.

Purchasing and Sales Occupations -- Sells industrial and technical equipment and supplies using professional and technical knowledge of the adaptation and installation of equipment and industrial processes. May service new products and train employees to operate and maintain equipment. Buys raw materials, equipment, and supplies necessary for the operation of the enterprise. Keeps records pertaining to costs, inventories, deliveries, and goods purchases, may interview salesmen and draw up contracts.

Common job titles in this occupation are salesmen, manufacturing salesman, technical sales, buyer, spare parts buyer, analyst, material analyst, purchasing agent, procurement man, outside salesman.

Machine Accountants -- Plans, develops, and prepares programs and phases of programs for solution by electronic computer. Corrects program errors by revising or altering sequence of instructions. Performs operations on a variety of data processing machines. May perform the wiring or machine set-up, may monitor and control an electronic computer.

Common job titles included in this occupation are data processing machine operator, office machine operator, console operator, auxiliary machine operator, programmer (if not included in engineering and physical science technician).

APPENDIX B

NAME OF FIRM:_____

Bureau of the Budget
Clearance No. 44-6342

BLUE TO WHITE COLLAR JOB SHIFTS - EMPLOYER QUESTIONNAIRE

COLUMN ONE: Fill in the job title of each white collar job into which men have been newly hired or promoted in the two year period Jan. 1, 1961 - Dec. 31, 1962.

COLUMN TWO: Show the number of men hired or promoted into each white collar job during this time period. We are asking for all white collar hires or promotions during this period, whether or not they have blue collar backgrounds.

COLUMN THREE: Show the number of men hired or promoted into each white collar job who have blue collar backgrounds, whether or not the blue collar work was during their employment with this company.

COLUMN FOUR: Show the total number of men in the occupation as of December 31, 1962.

White Collar Jobs include professional, technical, managerial, sales, clerical and kindred service jobs. Generally the person is paid a weekly or monthly salary.
Blue Collar Jobs include unskilled and semi-skilled workers, craftsmen and manual workers who are paid by the hour.

If you have not hired or promoted any men into white collar jobs between Jan. 1, 1961 and Dec. 31, 1962, please write "none" in the following box and return the form: /_____/

On completion, return in the enclosed envelope to the Industrial Relations Research Center, University of Wisconsin, Social Science Bldg., Madison, Wis. 53706.

(1) White Collar Job	(2) Number of men hired or promoted into this occupation from 1/1/61 - 12/31/62	(3) Number of these men in Col. 2 who subsequent to 1/1/56 have had at least 1 year in a blue collar job	(4) Total number of men in this occupation on or about 12/31/62
(Examples:)			
1. Draftsman	19	6	37
2. Timestudy man	1	0	1
3. Production clerk	7	2	18
4. Salesman	4	0	9
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

(USE ADDITIONAL SHEETS IF NEEDED)

APPENDIX C*

STATISTICAL METHODOLOGY

It should be noted first that the sample of firms was a systematic sample which is frequently approximated by a simple random sample. It is clear that the sample of employees of these firms cannot accurately be considered a random sample of employees in Milwaukee County, since employees of any chosen firm form a cluster of elements of our sample. Nevertheless, in this preliminary analysis we shall proceed as if those employees in the chosen firms in any industry constitute a random sample of employees in that industry.

Weights were assigned to industries according to the proportion of employees of Milwaukee County which they contained. An estimate of male white collar entries in 1961 and 1962 per industry was made by applying the appropriate expansion factor to the number of male white collar entries in that industry. This is equivalent to applying the weighted proportion to N, for if we let h indicate the strata, n_h the number in the sample in strata h, and N_h the total number of employees in Milwaukee County in strata h, we have:

$$\frac{N_h}{n_h}\left(\sum_i Y_{hi}\right) = \frac{N_h}{N}\left(\frac{\sum Y_{hi}}{n_h}\right)N = (W_h)(P_h)\,N$$

where W_h is the weight of strata h and Y_{hi} is 1 if the person is an entry and zero otherwise. The variance of the estimated number of entries in each strata can be computed using

$$V(N_h P_h) = N_h^2\, V(P_h) = N_h^2\,\frac{P_h Q_h}{n_h}$$

and 95% confidence intervals can be computed for the number of entries per strata. However, in finding the variance of the total number N_{Pst} of entries in the county we must take account of the strata weight since estimate

$$V(N_{Pst}) = N^2 V(P_{st}) = N^2 \sum (W_h)^2\,\frac{P_h Q_h}{n_h}$$

In using the above it was found that

$$\sqrt{\sum (W_h)^2\,\frac{P_h Q_h}{n_h}} \;=\; .0018\,.$$

Thus our 95% confidence interval for number of entries became 17,874 ± 1430.

The application of these same formuli to find a 95% confidence interval for the number of white collar entries in 1961 and 1962 who had blue collar backgrounds gave us 3989 ± 708. Similarly, the 95% confidence intervals were computed for the estimates of the totals of entries and shifts for each occupational group and major industry category (See Tables C-1 and C-2). These intervals were rather, as was expected, large because of the small percentages involved. Table C-3 shows the population of employees in the sample and in Milwaukee County by industry category, the expansion factors, and the breakdown of shifts by major occupational group and industry category.

A reasonable estimate of the ratio r_h of shifters to entries in each industry would be the number of entries with blue collar backgrounds in that industry. A weighted sum of these r_h would then give us $\frac{3989}{17,894}$ or .22 for the ratio of shifters to entries for Milwaukee County in the given two-year period.

*Prepared by Estelle Goldberg, Wisconsin Survey Research Laboratory.

APPENDIX TABLE C-1

ESTIMATES AND STANDARD ERRORS OF ESTIMATES FOR ENTRIES AND SHIFTS IN THE MILWAUKEE COUNTY LABOR FORCE

By Major Occupation Group

OCCUPATION	95% CONFIDENCE INTERVAL FOR WHITE COLLAR ENTRIES IN MILWAUKEE COUNTY IN 2-YEAR PERIOD	95% CONFIDENCE INTERVAL FOR SHIFTS
Professional	6,127 ± 951	945 ± 375
Managerial	3,606 ± 708	1,556 ± 469
Clerical	3,104 ± 553	827 ± 270
Sales	5,037 ± 665	661 ± 254
TOTAL	17,874 ± 1,430	3,989 ± 708

APPENDIX TABLE C-2

ESTIMATES AND STANDARD ERRORS OF ESTIMATES
FOR ENTRIES AND SHIFTS IN THE MILWAUKEE COUNTY LABOR FORCE

By Major Industrial Category

INDUSTRY	ENTRIES	SHIFTS
Construction	623.5 ± 246.5	273.5 ± 163.5
Manufacturing	5,127.0 ± 775.0	1,391.0 ± 407.0
Transportation	775.0 ± 294.0	459.0 ± 228.5
Wholesale Trade	805.0 ± 190.0	224.5 ± 102.5
Retail Trade	2,303.5 ± 340.5	549.5 ± 166.5
Finance, etc.	2,447.5 ± 405.5	97.0 ± 11.0
Services	4,762.0 ± 811.0	910.0 ± 448.0
Government	1,013.5 ± 77.5	86.5 ± 22.5

APPENDIX TABLE C-3

DATA USED TO DETERMINE DISTRIBUTION OF BLUE TO WHITE COLLAR SHIFTS
BY INDUSTRY AND BY OCCUPATION FOR MILWAUKEE COUNTY

	NUMBER OF EMPLOYEES			NUMBER OF SHIFTS BY OCCUPATION (1) In Sample (2) Estimated for Milw. County								ESTIMATED SHIFTS MILWAUKEE COUNTY	
Industry	In Milw. County	In Sample	Expansion Factor	Prof. (1)	Prof. (2)	Managerial (1)	Managerial (2)	Clerical (1)	Clerical (2)	Sales (1)	Sales (2)	Total	% Dist. by Industry
Agriculture, etc.	19,009	762	24.9	4	99.6	5	124.5	2	49.8	0	---	273.9	6.9%
Manufacturing	169,598	5,624	30.2	14	422.8	19	573.8	4	120.8	9	271.8	1,389.2	34.8%
Transport.	26,242	914	28.7	0	---	4	114.8	11	315.7	1	28.7	459.2	11.5%
Wholesale	14,201	1,199	11.8	0	---	3	35.4	3	35.4	13	153.4	224.2	5.6%
Retail	61,713	4,715	13.1	0	---	13	170.3	19	248.9	10	131.0	550.2	13.8%
Finance,etc.	17,950	924	19.4	2	38.8	0	---	2	38.8	1	19.4	97.0	2.4%
Services	71,080	1,254	56.7	6	340.2	9	510.3	0	---	1	56.7	907.2	22.7%
Government	17,366	11,000	1.6	27	43.2	17	27.2	11	17.6	0	---	88.0	2.2%
TOTALS	397,159	26,392		945		1556		827		661		3989	
% DISTRIBUTION OF SHIFTS BY OCCUPATION				23.7%		39.0%		20.7		16.6%			100%

APPENDIX TABLE D-1

OCCUPATION OF THE MALE EMPLOYED
FOR THE UNITED STATES AND MILWAUKEE COUNTY: 1950 AND 1960

United States

Occupation	Number in Occupation 1950	Number in Occupation 1960	% Change 1950 to 1960	1960 % Distribution by Occupation
Professional, Technical, etc.	2,970,200	4,479,358	50.8%	10.31%
Managers, Officials & Proprietors	4,356,700	4,629,842	6.3%	10.65%
Clerical Workers	2,646,420	3,015,476	13.9%	6.94%
Sales Workers	2,572,637	2,977,872	15.8%	6.85%
Craftsmen & Foremen	7,584,306	8,488,777	11.9%	19.53%
Operatives	8.154,084	8,641,652	6.0%	19.88%
Laborers	3,308,553	2,997,785	-9.4%	6.90%
Services: Private Household	73,365	61,063	-16.8%	0.14%
Services: Exc. Priv. Household	2,376,749	2,598,673	9.3%	5.98%
Farmers	4,193,986	2,387,584	-43.2%	5.49%
Farm Laborers	1,965,757	1,201,922	-38.9%	2.77%
Occupation Not Reported	459,581	1,986,951	332.3%	4.57%
TOTAL	40,662,374	43,466,955	6.9%	100.00%

Table 202. Detailed Characteristics of the Employed, by Sex, for the United States: 1960 and 1950. U.S. Bureau of the Census. U.S. Census of Population: 1960. Detailed Characteristics. United States Summary. Final Report PC(1)-1D U.S. Government Printing Office, Washington, D.C. 1963.

APPENDIX TABLE D-2

OCCUPATION OF THE MALE EMPLOYED
FOR THE UNITED STATES AND MILWAUKEE COUNTY: 1950 AND 1960

Milwaukee County

Occupation	Number in Occupation 1950	1960	% Change 1950 to 1960	1960 % Distribution by Occupation
Professional, Technical, etc.	23,823	31,125	30.7%	11.3%
Managers, Officials & Proprietors	27,868	25,136	-9.8%	9.2%
Clerical Workers	22,337	22,621	1.3%	8.0%
Sales Workers	18,365	19,689	7.2%	7.2%
Craftsmen & Foremen	63,575	61,041	-4.0%	22.2%
Operatives	67,157	69,276	3.2%	25.2%
Laborers	18,889	16,464	-12.8%	6.0%
Services: Private Household	205	153	-25.4%	.06%
Services: Except Priv. Household	14,924	14,851	-4.9%	5.4%
Farmers	950	396	-58.3%	.01%
Farm Laborers	624	416	-33.3%	.02%
Occupation Not Reported	2,230	13,284	495.5%	4.8%
TOTAL	260,947	274,452	5.2%	99.4%

Table 121. Detailed Occupation of the Employed, by Sex, for the State, Urban, Rural and for Standard Metropolitan Statistical Areas of 100,000 or more and Counties of 250,000 or more: 1960. U.S. Bureau of the Census, U.S. Census of Population: 1960. Detailed Characteristics. Wisconsin. Final Report PC(1)-51D. U.S. Government Printing Office, Washington, D.C. 1962.

Table 73. Detailed Occupation of the Experienced Civilian Labor Force and of Employed Persons, by Sex, for the State, and for Standard Metropolitan Statistical Areas and Cities of 100,000 or more: 1950. U.S. Bureau of the Census. U.S. Census of Population: 1950. Vol. II, Characteristics of the Population, Part 49, Wisconsin. U.S. Government Printing Office, Washington, D.C. 1952.

APPENDIX TABLE D-3

INDUSTRY OF THE EMPLOYED
FOR THE UNITED STATES AND MILWAUKEE COUNTY: MALES, 1950 AND 1960

United States

Industry	Number In Industry 1950	Number In Industry 1960	% Change 1950 to 1960	1960 % Distribution by Industry
Agriculture, Forestry & Fisheries	6,440,903	3,932,225	-38.9%	9.0%
Mining	907.721	622,146	-31.5%	1.4%
Construction	3,359,007	3,662,393	9.0%	8.4%
Manufacturing	11,030,576	13,111,965	18.9%	30.2%
Transportation	3,750,833	3,687,448	-1.7%	8.5%
Wholesale Trade	1,584,527	1,762,082	6.5%	4.1%
Retail Trade	5,365,247	5,635,988	5.0%	13.0%
Finance, etc.	1,137,615	1,464,283	28.7%	3.4%
Services	4,755,116	5,716,948	20.2%	13.2%
Public Administration	1,856,058	2,288,760	23.3%	5.3%
Industry Not Reported	330,119	1,582,717	208.4%	3.6%
TOTAL	40,662,374	43,466,955	6.9%	100.1%

Table 211. Detailed Industry of the Employed, by Sex, for the United States: 1960 and 1950. U.S. Bureau of the Census. U.S. Census of Population: 1960. Detailed Characteristics. United States Summary. Final Report PC(1)-1D. U.S. Government Printing Office, Washington, D.C. 1963.

APPENDIX TABLE D-4

INDUSTRY OF THE EMPLOYED
FOR THE UNITED STATES AND MILWAUKEE COUNTY: MALES, 1950 AND 1960

Milwaukee County

Industry	Number in Industry 1950	Number in Industry 1960	% Change 1950 to 1960	1960 % Distribution by Industry
Agriculture, Forestry & Fisheries	2,004	1,493	-25.5%	0.5%
Mining	189	169	-10.6%	0.00%
Construction	18,287	16,200	-11.4%	5.9%
Manufacturing	125,255	132,750	6.0%	48.4%
Transportation	24,185	21,481	-11.2%	7.8%
Wholesale Trade	11,076	10,594	-4.4%	3.9%
Retail Trade	32,167	30,777	-4.3%	11.2%
Finance, etc.	7,370	8,404	14.0%	3.1%
Services	26,846	28,998	8.0%	10.6%
Public Administration	11,062	13,069	18.1%	4.8%
Industry Not Reported	2,506	10,517	319.7%	3.8%
TOTAL	260,947	274,452	5.2%	100.0%

Table 127. Detailed Industry of the Employed, by Sex, for the State, and for Standard Metropolitan Statistical Areas of 100,000 or more and Counties of 250,000 or more: 1960. U.S. Bureau of the Census. U.S. Census of Population: 1960. Detailed Characteristics. Wisconsin. Final Report PC(1)-51D. U.S. Government Printing Office, Washington, D.C. 1962.

Table 79. Detailed Industry of the Experienced Civilian Labor Force and of Employed Persons, by Sex, for the State, and for Standard Metropolitan Statistical Areas and Cities of 100,000 or more: 1950. U.S. Bureau of the Census, U.S. Census of Population: 1950. Vol. II, Characteristics of the Population, Part 49, Wisconsin. U.S. Government Printing Office, Washington, D.C., 1952.

APPENDIX TABLE E

UNWEIGHTED RATIOS OF ENTRIES AND SHIFTS TO EMPLOYEES
AND SHIFTS TO ENTRIES BY SIZE OF FIRM

SIZE OF FIRM	ENTRIES / EMPLOYEES	RATIO	SHIFTS / EMPLOYEES	RATIO	SHIFTS / EMPLOYEES	RATIO
1 - 10	127 / 1,726	7.4	42 / 1,726	2.4	42 / 143	29.4
11 - 20	98 / 1,481	6.6	15 / 1,481	1.0	15 / 82	18.3
21 - 50	168 / 1,973	8.5	20 / 1,973	1.0	20 / 168	11.9
51 - 100	94 / 2,034	4.6	29 / 2,034	1.4	29 / 94	30.9
101 & over	831 / 19,178	4.3	104 / 19,178	0.5	104 / 831	12.6

APPENDIX TABLE F

FOREMEN

Number of Entries and Blue to White Collar
Shifts by Industry

INDUSTRY	INDUSTRY WEIGHTS	TOTAL NUMBER OF ENTRIES		NO. WITH BLUE COLLAR BACKGROUND		% WITH BLUE COLLAR BACKGROUND
		In Sample	Weighted	In Sample	Weighted	
Agriculture, Mining & Constr.	--	--	--	--	--	--
Manufacturing	30.2	18	544	14	423	77.8%
Transportation, etc.	28.7	3	86	2	57	66.7%
Wholesale Trade	--	--	--	--	--	--
Retail Trade	--	--	--	--	--	--
Finance, etc.	--	--	--	--	--	--
Services	56.7	3	170	3	170	100.0%
Government	1.6	12	19	6	10	50.0%
TOTAL			819		660	80.6%