Department of Defense

MANUAL

NUMBER 1416.08
May 30, 2013
Incorporating Change 1, Effective July 23, 2020

USD(P&R)

SUBJECT: DoD Manual for Foreign National Compensation

References: See Enclosure 1

1. PURPOSE. This manual reissues DoD Manual 1416.8-M (Reference (a)) in accordance with the authority in DoD Directive 5124.02 (Reference (b)); DoD Instruction 1400.25, Volume 1251 (Reference (c)); and section 3968 of Title 22, United States Code (U.S.C.) (Reference (d)) to prescribe procedures and instructions on DoD compensation administration for foreign national employees in foreign areas.

2. APPLICABILITY. This manual:

a. Applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the combatant commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this manual as the "DoD Components").

b. Does **not** apply to:

(1) DoD Components that have established activities under Chief of Mission authority at diplomatic missions with human resource support provided to the DoD by the Department of State (DOS). Instead, a DoD and DOS Memorandum of Agreement (Reference (e)) and chapter 200 of the U.S. Department of State Foreign Affairs Handbook (Reference (f)) applies.

(2) Indirect hire systems where the U.S. forces, by agreement, use host government compensation systems, and the U.S. forces do not retain pay fixing authority, except that the total compensation comparability (TCC) provisions (see Enclosure 9) apply in all cases.

3. POLICY. It is DoD policy in accordance with Reference (c) that:

a. The average pay of foreign national employees of the U.S. forces must equal the average pay of the non-U.S. forces sector in the country concerned.

b. The total compensation of foreign national employees of the U.S. forces must equal the total compensation of the non-U.S. forces in the country concerned.

4. RESPONSIBILITIES

a. Deputy Assistant Secretary of Defense for Civilian Personnel Policy (DASD(CPP)). Under the authority, direction, and control of the Assistant Secretary of Defense for Readiness and Force Management, and in accordance with Reference (c), the DASD(CPP):

(1) Develops and maintains this manual.

(2) Approves any valid exceptions to the provisions of this manual.

(3) Approves alternate wage determination methodology that differs from the provisions of this manual.

b. DoD Components Heads. The DoD Components heads:

(1) Implement the procedures and instructions in this manual in determining compensation for foreign national employees.

(2) Request approval from the DASD(CPP) before using an alternate wage determination methodology that differs from the provisions of this manual.

(3) Use this manual to establish the bargaining parameters for agents negotiating for the U.S. forces where country-to-country or other agreements provide for the negotiation of wages and benefits.

5. PROCEDURES. Enclosures 2 through 9 provide detailed instructions and procedures for determining compensation for foreign national employees.

6. RELEASABILITY. **Cleared for public release.** This manual is available on the Directives Division Website at https://www.esd.whs.mil/DD/.

7. SUMMARY OF CHANGE 1. The change to this issuance updates references and removes expiration language in accordance with current Chief Management Officer of the Department of Defense direction.

8. EFFECTIVE DATE. This manual is effective upon May 30, 2013.

Jessica L. Wright
Acting Under Secretary of Defense
for Personnel and Readiness

Enclosures
1. References
2. General
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Glossary

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ENCLOSURE 1

REFERENCES

(a) DoD 1416.8-M, "DoD Manual for Foreign National Compensation," January 12, 1990 (hereby cancelled)
(b) DoD Directive 5124.02, "Under Secretary of Defense for Personnel and Readiness (USD(P&R))," June 23, 2008
(c) DoD Instruction 1400.25, Volume 1251, "DoD Civilian Personnel Management System: Compensation of Foreign Nationals," January 13, 2014
(d) Section 3968 of Title 22, United States Code
(e) Department of State and Department of Defense Memorandum of Agreement, "Memorandum of Agreement Regarding the Department of State's Overseas Personal Services Agreement Authority," July 27, 2004[1]
(f) Chapter 200, U.S. Department of State Foreign Affairs Handbook, "Foreign Service National Compensation," current edition[2]
(g) Decision of the Comptroller General, B-145804, 40 Comp. Gen. 650, May 26, 1961[3]
(h) Section 5344 of Title 5, United States Code

[1] May be obtained from the Office of the Deputy Assistant Secretary of Defense for Civilian Personnel Policy, 703-693-5235, DSN 312-223-5235.
[2] Copies may be obtained from the Internet at: http://www.state.gov/m/a/dir/regs/fah/
[3] Copies may be obtained from the Internet at http://redbook.gao.gov/5/fl0023527.php

ENCLOSURE 2

GENERAL

1. METHODOLOGY

a. Procedures in this manual represent the preferred methodology for wage determination to satisfy the overall objectives of the DoD. If departure from these procedures is necessary because of the peculiarities of local situations, DoD Components with delegated authorities may employ whatever methodologies best achieve these policy objectives. DoD Components must demonstrate that the methodology employed achieves the desired result and the alternative methodology must receive prior approval of the DASD(CPP).

b. Once the decision is made on whether the provisions of the manual or other provisions developed by the DoD Component and approved by the DASD(CPP) for the country concerned apply, prior approval for deviations must be obtained from the DASD(CPP). Such requests should be processed through channels and should include a complete analysis of all factors bearing on the request.

2. OTHER LIMITS

a. Unresolved differences relating to salaries, wages, fringe benefits, and related compensation matters will be referred by the cognizant combatant commander to the DASD(CPP).

b. Situations which, in the view of overseas Service Component commanders, warrant deviation from prevailing practice, sometimes referred to as public interest determinations, will be referred by the cognizant combatant commander to the DASD(CPP).

c. The total annual pay for an employee established under the delegated authorities may not be more than the rate for Executive Level IV.

3. MONITORSHIP

3. MONITORSHIP. The Defense Civilian Personnel Advisory Service monitors the foreign national compensation program. In carrying out this function, the technical staff reviews survey reports submitted and conduct periodic evaluations of country compensation plans (see Enclosure 8).

ENCLOSURE 3

GRADING STRUCTURES AND CLASSIFICATION

1. UNIFORMITY. All DoD Components must adopt and uniformly apply the same grade and step-rate structure within a given country.

2. USE OF THE U.S. GENERAL SCHEDULE (GS) AND FEDERAL WAGE SYSTEM (FWS) GRADE STRUCTURES. The U.S. GS and FWS grade structures may be used if such structures are compatible with prevailing in-country alignment practices. When the U.S. grade structures are compatible, but exceptions to the structures are needed for specific occupations or job families due to differences between U.S. and in-country practice, the structure may be modified to reflect in-country practice, as follows:

a. Establish special schedules or rates for occupations when prevailing rates for those occupations are significantly higher or lower than rates provided under the U.S. grading structure.

b. Establish special schedules or rates for occupations when prevailing rates for those occupations are determined in a manner inconsistent with rate determination within the U.S. forces structure.

c. When survey data indicate that the U.S. grade alignment deviates from prevailing practice over a period of time, consider changing occupational grade levels to better reflect prevailing practice. This should not be done after the fact to achieve a preferred survey result.

3. ALTERNATIVES TO THE USE OF U.S. GRADING STRUCTURES

a. When the U.S. grading structures are not used, DoD Components should develop the country grading structure (including the number of grades and steps, progression between steps, and the value of step increments), considering:

(1) Prevailing practices in the private non-U.S. forces sector.

(2) The practices of the in-country government (public) sector.

b. When U.S. grading structures are not used, establish key ranking or benchmark jobs to provide the framework of the grading structures and to determine relative values within occupational groupings and among levels of work. These values control the alignment of grade levels in job grading or classification standards and are vital for cross-occupation comparisons when evaluating positions not covered in the standards. Key ranking jobs need not be the same as survey jobs.

c. Key ranking jobs must be representative of heavily populated occupations within the U.S. forces sector in a given country. Align them as closely as possible with non-U.S. forces practices. Change alignment and definitions of key ranking jobs only when significant changes in alignment occur in the non-U.S. forces sector or when skill requirements change as a result of major technological changes in the U.S. forces organizational structure.

4. CLASSIFICATION AND JOB GRADING STANDARDS AND GUIDES

a. When U.S. grading structures are used, classify or grade jobs with applicable classification and job grading standards published by the Office of Personnel Management and supplemental standards and guides issued by Service Components or developed locally.

b. When U.S. grading structures are not used, develop classification and job grading standards and guides to ensure that positions or jobs are properly aligned in relation to the key ranking jobs.

c. All U.S. forces components must use identical classification and job standards for foreign national employees hired under the same hiring arrangement within a country (either indirect or direct hire).

d. Cover each job by a position or job description containing information sufficient to classify or grade it. Keep descriptions current and accurate.

ENCLOSURE 4

FULL-SCALE SURVEYS

1. GENERAL

a. All surveys will be licensed in accordance with Reference (g).

b. A full-scale survey includes developing a current sample of establishments and collecting salary, wage, and benefit data by visits to these establishments. It involves matching survey jobs, collecting data on numbers of employees and rates of pay as well as other data, and analyzing the data to measure the compensation level in the selected non-U.S. forces sector. Conduct full-scale surveys at least every 3 years, or more frequently if economic conditions are unstable. Conduct update surveys in intervening years. See Enclosure 6 for more details on update surveys.

c. This enclosure provides guidance for surveying pay components. Guidance regarding benefit component surveys and total compensation determination is found in Enclosures 5 and 9.

d. The pay component is remuneration provided in cash or in kind for services rendered. It includes the basic rate paid for the performance of the duties of a job, bonuses, allowances, the monetary value of payments-in-kind, seniority pay, merit pay, and other cash payments. An expanded listing of commonly found pay components is at Appendix 1. Most pay components are expressed in local currency as hourly, daily, weekly, monthly, or annual amounts. Some pay components may be expressed as a percent of salary.

2. PLANNING THE SURVEY

a. Hold a Survey Planning Meeting. Include items (1) through (8) on the agenda, as well as any others that may be particular to a given country:

(1) Survey timetable.

(2) Employee inventory.

(3) Resources needed.

(4) Survey questionnaire.

(5) Survey area and application area definitions.

(6) Industry coverage and selection of survey establishments.

(7) Survey job list.

(8) Survey summary.

b. Survey Timetable. When developing the survey timetable, take into account the timing of survey companies wage adjustments, local holidays, desired effective date of the new wage rates, estimated time required for each survey phase, and other scheduled commitments of U.S. forces survey participants.

c. Employee Inventory. Count the number of employees by schedule, grade, step, and occupational series. If required for modeling or analysis purposes, collect additional data on the work force such as length of service. Use the employee inventory data to review survey job coverage, calculate average-to-average adjustments, analyze survey data, and to cost out the survey results.

d. Resources Needed. Determine the number of data collectors and analysts needed and which organizations agree to provide support. Check availability of computer support. Check availability of office space, telephones, and other logistic requirements. Determine whether data collector training is needed, and if so, set up the training requirements. If there is any doubt as to the adequacy of computer support or space, conduct a site survey.

e. Survey Questionnaire. Develop data collection forms in sufficient detail to elicit all information needed to price non-U.S. forces pay components. Data must permit the separate measurement of non-U.S. forces base pay, total pay, and the value of any pay components that may be paid separately by the U.S. forces. Anticipate and account for management or labor requests regarding the questionnaire. Include only necessary benefit or other survey items -- keep the questionnaire as short as possible. Delete questionnaire items that have proven unproductive in prior surveys. Finally, automate as much of the survey questionnaire as possible.

f. Survey Area and Application Area Definitions

(1) The survey area is the geographic area in which the surveyed establishments are located. The survey area normally encompasses the area surrounding U.S. forces work sites within which the predominant number of employees reside, and within which workers may change employers without changing residences. However, if the local survey area has an insufficient industrial base for pay setting purposes or if there is significant recruitment from elsewhere, the survey area may be expanded. The types and distribution of firms (including government facilities), geographic features, availability of public transportation, and commuting habits of workers may influence the establishment of survey area boundaries.

(2) The application area is that geographic area, including the survey area and additional areas within which U.S. forces employ foreign nationals, where pay schedules derived from pay surveys are uniformly applied to all U.S. forces foreign national employees.

(3) Two or more application areas may be combined to form a single area in those countries where pay rates differ only slightly between local areas or the numbers of firms and

matched jobs in an area are too few to develop valid pay lines. Country-wide application areas are preferred when there may be significant problems in the administration of separate local pay schedules.

g. Industry Coverage and Selection of Survey Establishments. Select survey industries from the broadest feasible universe of non-U.S. forces industries, including civilian and military branches of the host government. If inclusion of the host government (national, State, and local levels) is not feasible, document the reasons for its exclusion and include the documentation in the country plan or in survey reports to the DASD(CPP). Information used for selecting survey industries and survey establishments must be as complete and reliable as possible. Sources include host government agencies, the U.S. Embassy, employer associations, and economic planning boards.

(1) The number of establishments that need to be surveyed to obtain representative pay and benefits data varies with the types and sizes of companies surveyed and the number and occupational variety of foreign national employees in the U.S. forces work force. It is important that the industries and individual survey establishments provide a representative sample of the sizes and kinds of industries that are the counterparts to the U.S. components' missions. However, consider eliminating industries that provide few survey job matches. The selected establishments should be in competition with the U.S. forces for workers. If selected establishments prove to be small family-type operations, bankrupt, or clearly and significantly in violation of host government labor laws, they may be excluded from further data analysis. Document such exclusions in regular survey reports.

(2) Review industrial coverage with each full-scale survey to ensure changes in both U.S. forces requirements and in-country industrial makeup are reflected in the selected sample. If one or a few establishments dominate the sample because of the large number of job matches obtained from the establishments, reduce the dominance by adding firms to the survey establishment list. The list of survey establishments should be stabilized to the extent possible to obtain consistent measures of pay trends in the economy, thereby lending a visible measure of credibility to U.S. forces pay concepts and policies.

h. Survey Job List. Select survey jobs that are representative of the U.S. forces work force, both as to occupation and grade level, and that can be matched in the non-U.S. forces sector. Include the most populated jobs at their most populated grade levels. To the extent possible, include survey jobs at each grade level in proportion to the U.S. forces population at each grade level. If an uneven distribution of survey job grades results, supplement the survey job list with other survey jobs likely to produce reliable data from the designated industry coverage.

(1) Review survey jobs when planning for each full-scale survey. If successive full-scale surveys fail to produce adequate matches for a survey job, document the facts and drop the job from future surveys.

(2) U.S. forces standard job descriptions and definitions may require modifications to make them suitable for use as survey job descriptions. Ensure that the survey description can be matched to industrial work situations, that levels of work are clearly differentiated, that peculiar

U.S. forces terminology is converted to common industrial terminology, and that critical elements of the job description are highlighted in either the job description or in supplemental material available to the data collector. Make the descriptions broad enough to facilitate collection of adequate wage and salary data. After each survey, review and modify each description to eliminate or minimize problems encountered in job matching.

i. Survey Summary. Design a summary of the survey results to be distributed to participating firms. The summaries should protect the confidentiality of the data.

j. Minutes. Prepare minutes of the planning meeting.

3. DATA COLLECTION

a. When selecting employees to be used as data collectors, give primary consideration to their overall ability to perform the duties assigned to them. Data collectors must be:

(1) Well-versed in the occupational content of a wide range of occupations.

(2) Able to approach the collection of data objectively, open-mindedly, fairly, and without any semblance of prejudice.

(3) Able to maintain pleasant relationships in communicating with people.

(4) Able to talk intelligently and maturely to non-U.S. forces management.

b. Normally, a team of data collectors will collect data. When consistent with in-country needs, one member of the data collection team may be a foreign national who meets the qualification requirements in subparagraphs 3.a.(1) through 3.a.(4) of this enclosure. Whenever practical and to avoid any appearance of bias, the other member of the team should be a U. S. citizen.

c. Each data collector having access to collected data must retain this information in confidence. The data collector is subject to disciplinary action by his or her employer upon proof of violation of this confidence.

d. Conduct periodic training sessions for the data collectors.

e. Appendix 2 contains general instructions for data collection. Supplement these instructions to meet in-country needs.

f. Collect the data by personal visits to the survey companies. Conduct an initial review of the data as soon as possible after the data are collected to identify and correct errors before data input. Guidelines for this initial review are in Appendix 3.

g. If the data will be analyzed without the use of a computer, recap the data by survey job and proceed to the analysis phase of the survey. If a computer will be used, enter the data, conduct an audit to detect errors, correct the errors, and go on to the analysis phase of the survey.

4. ANALYSIS

a. For each survey job in each company compute:

(1) The weighted average basic rate of pay.

(2) The weighted average of payments-in-kind.

(3) The weighted average of miscellaneous pay components that, when consolidated, will be used to set a single, separate pay component for U.S. forces employees.

(4) The weighted average of any other pay component to be paid separately by the U.S. forces, unless all establishments within the non-U.S. forces sector pay such component in a manner that is identical to the U.S. forces practice. In that case, the component may be eliminated from the survey data.

(5) The weighted average of subparagraphs 4.a.(1) through 4.a.(4) of this enclosure (total pay).

b. Summarize data by survey job, and calculate subparagraphs 4.a.(1) through 4.a.(5) of this enclosure for each survey job.

c. Calculate the weighted average total pay for each grade level.

d. Calculate median values, if desired. Remember that medians, unlike means, may not be averaged. For example, the median for a given grade is found by ordering all the rates at that grade level and then finding the middle rate, rather than averaging the medians of the survey jobs at that grade level.

e. Compare the survey job data collected on this survey against the previous survey to identify observations that were included in a survey job on the last survey, but are missing this survey, and vice versa.

f. Identify company job weighted averages that are significantly outside the cluster of rates for each survey job and respective grade level.

(1) Use standard deviation analysis techniques to identify company weighted averages more than two standard deviations from the survey job mean or the respective grade level mean.

(2) Check the impact of outlying company job averages by comparing survey job weighted averages with and without the outlying data.

g. Graph the survey job weighted averages and grade level weighted averages to see the trend of the data and to visually spot those that may be out of alignment. The overall trend of the data may be linear, non-linear, or segmented. If a logarithmic trend (characterized by a constant percentage between grades) is suspected, plot the logs of the averages on half-log paper.

h. The trend of the survey data may be mathematically described through regression analysis, a method for predicting a value based on other known values. In the case of wage surveys, we conduct a regression analysis of pay on grade level. Certain assumptions are made in regression analysis, a fundamental one being that pay is based on skill level. Therefore, trend lines should be run only on pay data that are survey job and/or grade related. For example, annual leave, supplemental retirement plans, and medical plans are not grade related and should not be part of the pay regression analysis. For guidance in analyzing these types of benefit data, see Enclosure 5. Compute trend lines reflecting the visual trend of the data identified in paragraph 4.g. of this enclosure in accordance with the procedures set forth in Appendix 4. Trend lines may be run at several levels of data aggregation:

(1) "Frequency" (each observation is weighted by the number of employees at that observation).

(2) "Company Job Unit" (equal weight to each company observation).

(3) "Job Unit" (equal weight to each survey job average or survey job median).

(4) "Grade Unit" (equal weight to each grade average or grade median).

i. Each level of aggregation may be run as a linear (constant intergrade differential), parabolic (constant difference in the intergrade differentials), or logarithmic (constant percentage intergrade differential) line. It is neither required nor expected that all possible trend lines be run each time the data is edited. It is important, therefore, to decide from visual inspection of the data (see paragraph 4.g. of this enclosure) and the shape of the existing trend lines whether a linear, parabolic, or logarithmic line is indicated. Once the overall shape of the trend line is evident, run only the regressions that fit the trend of the data.

j. Analyze company data points and survey job averages with respect to computed trend lines. Use standard deviation analysis to identify company job averages that lie outside a band of plus or minus 2 standard deviations from the trend lines. Note that extreme company job averages may be identified with respect to the company unit or frequency lines and extreme survey job averages may be identified with respect to the survey job unit line. Analyze these outliers and potentially disruptive data on a case-by-case basis. Additional information on specific data points may reveal reasons to exclude the data -- red circle or part-time rates, for example. However, even if these data are otherwise acceptable, exclude them if their inclusion distorts the survey results. Recompute trend lines as necessary.

k. Select an appropriate trend line, considering the conditions specific to the country concerned and factors such as:

(1) The relationship of the proposed trend line to the average wage rates for specific occupations represented in the survey jobs that have substantial U.S. forces population.

(2) Current local labor market conditions in relation to principal occupations used in the U.S. forces.

(3) The pattern of change in the major industries included in the survey, such as across-the-board percentages or cents-per-hour increases or varying increases based on level of responsibility.

(4) The grade distribution of the U.S. forces work force.

(5) The type of line selected on the previous survey -- it is generally not desirable to change the shape of the trend line from year to year.

(6) Variability is reduced when data are aggregated into survey job averages and grade averages. Remember that it appears the trend lines fit aggregated data better than non-aggregated data, but because of the smaller number of data points we are less confident of the results.

(7) The distribution of data points about the lines.

(8) The influence of extreme data -- these data may not be available for the next survey.

l. Translate non-U.S. forces data to a U.S. forces pay component package. Develop the pay component package for U.S. forces employees to meet in-country needs, in accordance with established policies and guidance:

(1) Survey results will be equated to the U.S. forces pay schedules on an average-to-average basis. The following apply to the placement of the pay line within the step rate structure:

(a) If a pay system measures comparability with the non-U.S. forces sector through surveys that collect wage data by kind and level of work performed, regardless of seniority or other conditions that affect the placement of the workers in the rate range, and if such data are used in regression analyses to formulate a new pay comparability line for the U.S. forces pay structure, that system must relate the pay line to the average pay of the U.S. forces employees through acceptable methods. See Appendix 5 for guidance.

(b) If a foreign national system measures the variable of longevity in its wage survey procedure and establishes minimums, or minimum-maximum ranges in accordance with the practice of the non-U.S. forces sector, the system is considered to have achieved the total pay comparability posture that the average-to-average procedure seeks to achieve.

(2) Payments-in-kind, bonuses, and allowances normally must be paid as separate components (either individually or consolidated). Only base pay will be used to compute premium pay (such as overtime and holiday pay), cost-of-living allowances, bonuses, or separation entitlements, unless host government law or prevailing compensation practices support a different computation procedure.

5. PREVAILING PRACTICE DETERMINATION

a. Decision of the Comptroller General, Volume 40, page 650, (Reference (g)) provides guidelines for determining whether a pay or benefit component is a prevailing practice and can be paid separately:

(1) The practice should be substantially followed by local employers in the area.

(2) Adoption of the practice should be consistent with the public interest.

(3) The manner of adopting the practice should be coordinated with other U.S. Government agencies so that the same or a substantially similar practice will be followed by each agency operating in that area.

b. Consistent with this decision, additional guidance includes:

(1) Employment practices will be considered prevailing practices when a majority of the survey firms employing a majority of the survey population follows such practices.

(2) That the amount or level of benefits associated with the employment practice will be determined by:

(a) Any rate or level paid by a simple majority of the survey firms is considered to be prevailing practice, providing the number of employees at that rate or level exceeds the number receiving any other rate or level reported (including zero or none) in the survey.

(b) When no one rate or level can be established as prevailing practice under subparagraph 5.b.(2)(a) of this enclosure, the weighted average rate or level of a benefit paid by survey firms (e.g., the sum of each company's rate multiplied by the number of employees at that rate, divided by the total employee population) will be considered the prevailing practice.

(3) That the application of subparagraphs 5.b.(2)(a) and 5.b.(2)(b) of this enclosure must be consistent with operational requirements and compatible with the basic management needs of the U.S. forces.

6. EFFECTIVE DATES. The effective date for changes in compensation and conditions of employment must be no earlier than the date competent administrative authority (in this case the component to whom wage fixing authority has been delegated) takes final action to approve the

changes. Exceptions may be justified in certain instances under such authority as the specific provisions of controlling treaties and agreements, or Reference (d), if supported by local custom and practice. Section 5344 of Title 5, U.S.C. (Reference (h)) applies only to U.S. citizens and cannot be used as the authority for retroactive adjustments for foreign national employees. Unless legal authority for retroactive changes exists, all changes in compensation and conditions of employment must be effective no earlier than the date the wage fixing authority takes final action to approve the changes.

Appendixes

1. Pay and Benefit Components
2. Instructions for Data Collection
3. Guidelines for Initial Review of Pay and Benefit Data
4. Computing Wage Trend Lines
5. Average-to-Average

APPENDIX 1 TO ENCLOSURE 4

PAY AND BENEFIT COMPONENTS

Pay elements and fringe benefits to be considered when measuring TCC:

a. Pay Component

(1) Pay elements normally included in TCC:

(a) Base pay.

(b) Cash allowances or bonuses:

1. Cash bonus.

2. Cost of living.

3. Educational allowance.

4. Family allowance.

5. Housing and utilities.

6. Language.

7. Meals.

8. Pay differential.

9. Profit sharing.

10. Responsibility and trust.

11. Seasonal.

12. Seniority.

13. Skill.

14. Stock option.

15. Transportation.

(c) Payments in kind:

1. Commissary privileges.

2. Food (e.g., rice or bread not part of a meal).

3. Free or discounted company product.

4. Free or discounted housing and utilities.

5. Free or discounted meals.

6. Free or discounted transportation (when employment situation is similar to that of the U.S. forces).

7. Free or discounted vacation travel.

8. Uniforms.

9. Use of automobile.

(2) Items of pay that may be included in TCC:

(a) Those provided to identifiable groups of employees:

1. Occupational premium.

2. Remote area allowance.

(b) Those provided to individuals:

1. Educational assistance to dependent children.

2. Family allowance.

3. Funeral expenses for family members.

4. Marriage bonus.

(3) Items of pay not included in TCC:

(a) Premium Pay:

1. Hazardous duty pay.

2. Holiday pay.

3. Overtime.

4. Shift differential.

5. Sunday pay.

(b) Those items for which the U.S. forces and non-U.S. forces provide like amounts.

b. Benefit Component

(1) Fringe benefits normally included in TCC:

(a) Time-off benefits:

1. Annual leave and vacation.

2. Holidays.

3. Paid rest time.

(b) Financial assistance benefits:

1. Company investment or savings plans.

2. Low interest loans.

(c) Social and social security type benefits:

1. Basic.

2. Life insurance.

3. Medical and hospital.

4. Provident fund.

5. Retirement supplemental.

(d) Other non-cash payments not included in subparagraphs b.(1)(a) through b.(1)(c) of this appendix.

(2) Benefits not normally included in TCC:

(a) Event-oriented time off benefits:

1. Bereavement leave.

2. Maternity leave.

3. Military leave.

4. Personal time off.

5. Physiological leave.

6. Sick leave.

(b) Severance pay, unless granted for all separations.

(c) First aid or health stations when the U.S. forces provide similar facilities for their employees.

(d) Any other benefit provided by the U.S. forces that is substantially similar to that provided by the non-U.S. forces sector.

APPENDIX 2 TO ENCLOSURE 4

INSTRUCTIONS FOR DATA COLLECTION

1. INITIAL CONTACT WITH SURVEY COMPANIES. When it is expected that the company has received the letter requesting its participation, contact the establishment in person or by telephone to advise the company official of the type of survey information desired and to set a date and time for the visit. If letters requesting participation are hand delivered, these arrangements may be accomplished at the same time. It is important that the interview be arranged with a company representative familiar with company jobs, compensation, and employment conditions and practices.

2. ACTION WHEN AN ESTABLISHMENT DECLINES TO PARTICIPATE. If the company representative declines to participate during the initial contact or the data collection interview, explain why the information is desired to ensure that the refusal is not due to a lack of understanding of the purpose and nature of the survey. If the official still refuses to participate, report the reason to the survey chair, who may make further efforts to obtain the company's participation.

3. THE INTERVIEW

a. Preparation. The interview with the company representative is a very important part of the data collector's assignment. Factual data must be obtained at a minimum expenditure of time and money to the company and the U.S. forces. Data collectors must be fully prepared to conduct each interview as efficiently as possible while establishing and maintaining good public relations. In preparation for the interview, data collectors should:

(1) Be able to explain to company representatives the wage administration policies of the U.S. Government, the wage survey process, and the use that will be made of survey data.

(2) Review thoroughly the data on kinds of jobs, numbers of employees, rates of pay, and other survey information collected on the last survey of the establishment.

(3) Be thoroughly familiar with the survey key jobs and grade distinctions.

(4) Be thoroughly familiar with data to be collected, the meaning and interpretation of questions on data collection sheets or fringe benefit questionnaires, and instructions for recording data on wage survey forms. Keep the instructions and key job definitions available for reference during the company contact.

(5) Have a copy of current U.S. forces pay schedule and benefit information, and be able to answer questions regarding this information.

b. Conduct. Data collectors should ensure that their appearance and behavior reflect credit on themselves and the DoD. They should be on time for appointments and polite and considerate in all dealings with company representatives.

c. Introductory Remarks

(1) Initially, give the company official a brief explanation of wage determination policies. Explain that a major objective is to establish a satisfactory relationship between the general level of wage rates paid by local U.S. forces activities and those paid by other employers in the area. To accomplish this objective, each wage area is surveyed periodically to ascertain going rates of pay for comparable work found in the survey companies. Wage survey data are carefully and confidentially reviewed at the local level and at higher Military Service Headquarters that approve the resulting wage schedules. After data review, survey key job weighted averages are arrayed to reflect the trend of rates by grade level. A pay line is then fit to this trend of rates. The resulting pay schedule does not provide rates that conform exactly to the average rate for each survey key job, but it does provide a rate relationship consistent with the overall pattern of prevailing rates found in survey companies. In addition, it provides employees equitable compensation levels in accordance with the responsibilities of their positions.

(2) During the early part of the introductory phase of the interview, the data collectors should emphasize that information provided by the company will be treated confidentially and will not be divulged to unauthorized personnel. Also, they should explain that a summary of survey data will be sent to each participating company at the conclusion of the survey, and that the summary will not associate a specific company with its data.

4. DATA COLLECTION. Gathering accurate data is essential to the reliability and validity of wage survey results. Every effort should be made to obtain necessary data and to record it in sufficient detail to determine comparability with survey key jobs and ensure that accurate wage information is obtained. Gather data in a manner convenient to the company representative, realizing that data must be collected in person (for full-scale surveys) from knowledgeable company officials. Follow-up information may be obtained by telephone, electronic mail, or other internet based applications. If the company representative has no preference, the following approach is suggested.

a. Complete the company information sheet.

b. Match the survey jobs and obtain data necessary to complete data collection forms.

(1) Briefly explain the content of each survey job and get the company official's opinion on which jobs might be found at the company.

(2) For each possible job match, discuss the duties of the company job with the official. Review any formal company job descriptions for accuracy.

(3) Compare duties of company jobs with survey key job descriptions. Sometimes observing the job in operation helps determine comparability. Do **not** match jobs solely on the basis of job titles. Make an initial job match determination. This determination is subject review and change at the local or headquarters level, so appropriate documentation is vital.

(4) If a job match determination cannot be made or cannot be agreed upon by the data collectors, obtain detailed information on the company job duties.

(5) Explain on the appropriate forms differences between data collected during the prior survey and data collected on the current survey.

c. After job matches have been determined, obtain the number of employees at each pay rate for each matched job or questionable match. This may be done after each job match decision, or after all matching determinations have been made. Record and report all wage data obtained on matched jobs. Compare rates with contracts and explain any discrepancies.

d. Obtain data on remaining survey questions regarding pay, benefits and employment practices and conditions. Collect these data whether universally applied or provided to select individuals or groups of employees.

5. INCLUSIONS. Data on jobs at participating companies are usable when:

a. The company job is comparable to a survey job. Comparable does not necessarily mean identical. In general, the survey job descriptions are broad enough to allow collection of adequate wage data. If more than one company job is a match to a survey key job, obtain pay data for each of the company jobs. If the converse is true, obtain data on employees who mainly perform work comparable to each of the narrower survey jobs.

b. The number of employees at each rate in the rate range is obtained. If, however the company can furnish only the total number of employees in the matched job and the weighted average pay rate for those employees, accept the data. Collect data in a format allowing conversion to the appropriate survey pay unit. For example, monthly rates are acceptable if the number of work hours per month is known and the survey pay unit is hourly. Incentive or piecework rates paid for comparable jobs may be used, provided the base rates and guaranteed rates are obtained. Also, record the type of incentive plan used by the company. Any such rates must be based either on documented average percentage-over-guaranteed-minimum by occupation or average weekly earnings for four or more recent pay periods.

6. EXCLUSIONS

a. Exclude data on company jobs that are definitely not comparable to survey jobs.

b. Exclude trainee, pensioner, part-time, or temporary jobs.

c. Exclude data on leader and supervisory jobs except when such duties are a part of the survey key job description.

d. Exclude data for jobs when only the rate range and not specific rates or weighted averages is available. Report the rate range data for informational purposes.

e. Exclude data for jobs paid below minimum rates established by the host country. Report the rates for informational reasons.

f. Report any apparent discriminatory hiring practices so the survey officials can make decisions on use of the data.

7. SUMMARY OF DATA COLLECTION METHODS. The best method of obtaining survey data will depend to a large extent on the company official's records and willingness to allow data collectors to use them. Data may be obtained with the expenditure of relatively little time if the collectors have access to adequate job descriptions and pay records. Otherwise, a lengthier interview with the company official may elicit the necessary data. Regardless of the method used, the rates and other information should be crosschecked with other available sources, such as collective bargaining agreements, to ensure the highest possible accuracy.

APPENDIX 3 TO ENCLOSURE 4

GUIDELINES FOR INITIAL REVIEW OF PAY AND BENEFIT DATA

1. GENERAL. Review all pay and benefit data collected for acceptability, reasonableness, comparability with survey key jobs, accuracy of computations, correct preparation of survey forms, and to ensure that the survey is conducted within prescribed procedures and specifications. The reviewer should meet with the data collectors as soon as possible after each company contact, while the information collected is still fresh in their minds, to go over all items in the survey questionnaire. Discuss each job match and ensure that each is comparable to the appropriate survey key job.

2. REVIEW GUIDELINES

a. Check to see that all available written materials, such as union contracts, pay tables, job descriptions, and benefit pamphlets were collected and filed with the company survey data. Use the written material to verify the data reported on survey forms.

b. Check all questionnaire items for completeness and clarity. For example:

(1) Is the company product or service reported?

(2) Are overtime provisions covered?

(3) Is the total employment figure consistent with the last survey? If not, are differences explained?

(4) Are the company employment subtotals consistent with the sample reported?

(5) Are bonus plans clearly described?

(6) Is the annual leave plan adequately documented?

(7) Are calculations of company cost for particular benefits clear and correct?

c. Ensure that the required information on survey key jobs is complete, for example:

(1) Check that the number of employees at each rate or the total number of employees at a weighted average rate has been recorded.

(2) Check that the rates are properly recorded. Pay units and work hour information necessary to convert the data to survey pay units should be clear.

(3) Check that all rates reported as base rates exclude additives such as shift differentials, overtime pay, cost-of-living allowances, and bonuses unless they are considered as part of base pay for purposes of premium pay in the host country. If piecework or incentive rates are reported, make sure the base rate, guaranteed minimum, and average percentage over the guaranteed minimum or average earnings over at least four pay periods are clearly reported.

(4) Check that information on other pay components, including payments in kind, is provided in sufficient detail to permit both monetizing and identification of the specific jobs to which the components apply.

d. Review the company's intervals between rates within jobs and among occupations. Note exceptions to the normal intervals and check that explanations are provided for these exceptions. Also note occupational intervals that run counter to the U.S. forces grading structure; i.e., rates for low skill jobs that exceed rates for higher skilled jobs.

3. COMPARABILITY. Verify the comparability of all job matches. To be a good match, the company job must "fit" the survey key job with regards to duties and skill level. While the pay rate for the job may provide some insight into the level of work or the degree of skill required, the relative level of the pay rate does not automatically govern the inclusion or exclusion of data. Give special attention to situations where:

a. Data collectors disagree on comparability.

b. Jobs matched by the collectors differ from those reported on the previous survey.

c. Job information reported on the data collection forms raises a question of comparability.

d. Pay data show marked deviations from data for other jobs in the same company or other companies in the survey.

e. Very large rate ranges are reported for the same job. Frequently, a large range includes levels from trainee or apprentice to supervisor or manager. Only data applicable to the duties of the matched survey key job may be used.

4. CONSISTENCY WITH PREVIOUS DATA FROM THE SAME ESTABLISHMENT. The review must determine how individual rates, matched jobs, numbers of matched employees, and benefit data compare with data obtained from the same company in the preceding survey. When differences are found that cannot be explained, it may be necessary to recontact the company. Recontacts may be necessary if no explanation is provided for the following:

a. Inconsistent rate relationships with previous survey data. For example, the pay rate for one matched job increased 15 percent while other matched job rates increased 5 percent over the previous survey.

b. Significant differences in matched job populations from survey to survey.

c. Company jobs matched this survey that were not matched last survey, and vice versa.

d. Significant changes in benefits or employer costs since the last survey.

APPENDIX 4 TO ENCLOSURE 4

COMPUTING WAGE TREND LINES

1. GENERAL

a. A wage trend line passes through an array of wage data so that the data above the line and the data below the line are in balance. When plotted, the mathematical equation for a trend line shows the trend of a set of data points and provides a concise definition of the trend. The "least squares" method is such an equation, and is accepted by statisticians as a sound, convenient device for obtaining an objective fit of a trend line. Consistent with the name "least squares," the sum of the squares of the deviations of all the data, both above and below the trend line, is less than the sum of the squares of the deviations of the data from any other trend line of the same type (linear, parabolic, or logarithmic). Another characteristic is that the sum of the squared deviations of the data above the trend line exactly balances the sum of the squared deviations below the trend line.

b. The following types of trend lines may be run on survey data:

(1) Linear Unit Company Job Average. Equal weight to each company survey job weighted average.

(2) Linear Unit Survey Job Average. Equal weight to each survey job weighted average.

(3) Linear Unit Grade Average. Equal weight to each grade weighted average.

(4) Linear Frequency. Each observation is weighted by the number of employees at that observation.

(5) Linear Unit Survey Job Median. Equal weight to each survey job median.

(6) Curvilinear. Curved line that may be of two types: parabolic or logarithmic. Each type may be a "Unit Company Job Average," "Unit Survey Job Average," "Unit Grade Average," "Frequency," or "Unit Survey Job Median."

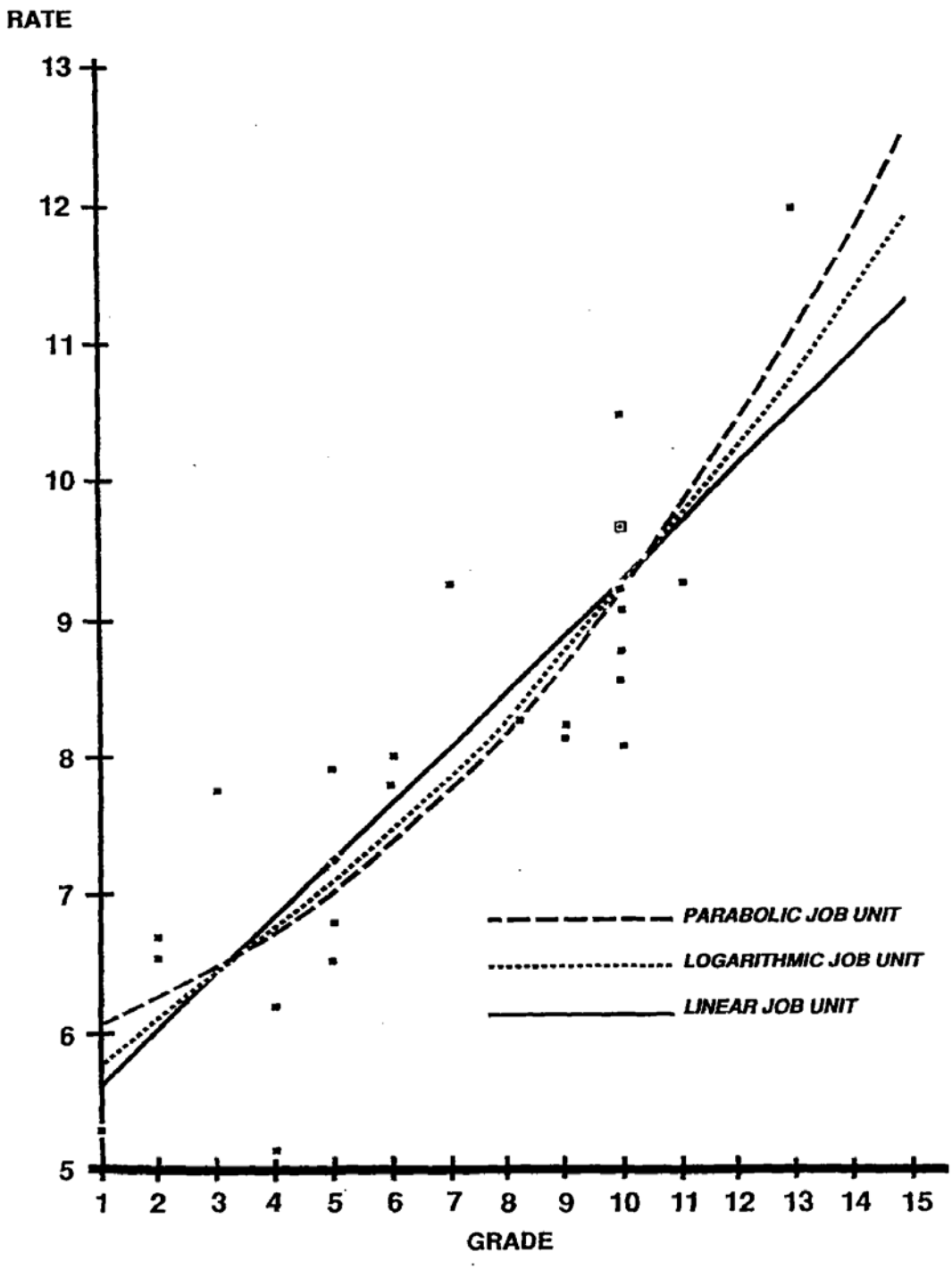
c. The first step in computing a trend line is to plot the weighted averages for each survey job on a scatter diagram (Figure 1) to portray graphically the general pattern of the rate structure in the area. Judging from the scatterplot, decide if a straight line or one of the curved lines (parabolic or logarithmic) best fits the data. To further test for the logarithmic, plot the logarithms of the job averages on semi-log paper; the result should indicate a straight line.

d. The data from which the scatter diagram is plotted are shown in the x and y columns of the Linear Regression Computation Sheet at section 2 of this appendix. Other computations and data necessary to solve the linear, second degree (parabolic), and exponential (logarithmic) trend line formulas are shown on the respective tables and figures in this appendix. The illustrative

computations in sections 2, 3, and 4 of this appendix are examples of potential data based on 26 survey job averages, but the same principles apply using company job averages (which would simply mean more rows of data to sum) or grade averages (which would mean fewer rows to sum).

e. In computing trend lines two methods are used: the unit line approach gives equal weight to each data point and the frequency line weights each data point by the number of observations at the data point.

Figure 1. Scatter Diagram



2. LINEAR REGRESSION

a. The formula for a straight line is Y=a+bx.

b. The Linear Regression Computation Sheet (Table 1) illustrates the initial computations necessary for calculating unit and frequency linear trend lines. Columns 5 through 10 on the computation sheet display mathematical computations – multiply x by y for column 5, for example. The last line of the computation sheet shows the column summations (∑).

Table 1. Linear Regression Computation Sheet

n = survey job x = survey job grade y = survey job weighted average f = number of observations for the survey job									
n	x	y	f	xy	x^2	fx	fy	fxy	fx^2
A	1	5.29	194	5.29	1	194	1,026.26	1,026.26	194
B	2	6.52	215	13.04	4	430	1,401.80	2,803.60	860
C	2	6.69	386	13.38	4	772	2,582.34	5,164.68	1,544
D	3	7.76	173	23.28	9	519	1,342.48	4,027.44	1,557
E	4	5.11	207	20.44	16	828	1,057.77	4,231.08	3,312
F	4	6.20	125	24.80	16	500	775.00	3,100.00	2,000
G	5	6.80	66	34.00	25	330	448.80	2,244.00	1,650
H	5	6.50	54	32.50	25	270	351.00	1,755.00	1,350
I	5	7.26	757	36.30	25	3,785	5,495.82	27,479.10	18,925
J	5	7.91	439	39.55	25	2,195	3,472.49	17,362.45	10,975
K	6	8.00	228	48.00	36	1,368	1,824.00	10,944.00	8,208
L	6	7.79	63	46.74	36	378	490.77	2,944.62	2,268
M	7	9.23	884	64.61	49	6,188	8,159.32	57,115.24	43,316
N	8	8.27	327	66.16	64	2,616	2,704.29	21,634.32	20,928
O	9	8.20	821	73.80	81	7,389	6,732.20	60,589.80	66,501
P	9	8.16	37	73.44	81	333	301.92	2,717.28	2,997
Q	10	9.63	227	96.30	100	2,270	2,186.01	21,860.10	22,700
R	10	9.21	46	92.10	100	460	423.66	4,236.60	4,600
S	10	9.08	24	90.80	100	240	217.92	2,179.20	2,400
T	10	8.08	274	80.80	100	2,740	2,213.92	22,139.20	27,400
U	10	8.55	529	85.50	100	5,290	4,522.95	45,229.50	52,900
V	10	8.77	536	87.70	100	5,360	4,700.72	47,007.20	53,600

Table 1. Linear Regression Computation Sheet, Continued

n	x	y	f	xy	x^2	fx	fy	fxy	fx^2
W	10	10.44	205	104.40	100	2,050	2,140.20	21,402.00	20,500
X	10	9.63	786	96.30	100	7,860	7,569.18	75,691.80	78,600
Y	11	9.27	222	101.97	121	2,442	2,057.94	22,637.34	26,862
Z	13	11.93	330	155.09	169	4,290	3,936.90	51,179.70	55,770
∑=26	185	210.28	8,155	1,606.29	1,587	61,097	68,135.66	538,701.51	531,917

c. To compute a unit linear trend line, derive the values of the unknown a and b through the use of the equations in Figure 2:

Figure 2. Equations to Compute a Unit Linear Trend Line

$$a = \frac{(\sum x^2)(\sum y)-(\sum x)(\sum xy)}{(\sum n)(\sum x^2)-(\sum x)^2} \qquad b = \frac{(\sum n)(\sum xy)-(\sum x)(\sum y)}{(\sum n)(\sum x^2)-(\sum x)^2}$$

BY SUBSTITUTING THE APPROPRIATE COLUMN TOTALS FROM THE LINEAR REGRESSION COMPUTATION SHEET (TABLE 2):

$$a = \frac{(1{,}587)(210.28)-(185)(1{,}606.29)}{(26)(1{,}587)-(185)^2} \qquad b = \frac{(26)(1{,}606.29)-(185)(210.28)}{(26)(1{,}587)-(185)^2}$$

$a = 5.1941$ $\qquad$ $b = 0.40667$

d. To determine the wage rate (Y) for any given grade level (x) the values for a, b, and x are substituted in the formula Y=a+bx. Table 2 illustrates the computations for grades 1 to 15:

Table 2. Computations for Grades 1 Through 15 (Linear)

x	a+	bx	=Y
1	5.1941	0.40667	5.60
2	5.1941	0.81334	6.01
3	5.1941	1.22001	6.41
4	5.1941	1.62668	6.82
5	5.1941	2.03335	7.23
6	5.1941	2.44002	7.63

Table 2. Computations for Grades 1 Through 15 (Linear), Continued

x	a+	bx	=Y
7	5.1941	2.84669	8.04
8	5.1941	3.25336	8.45
9	5.1941	3.66003	8.85
10	5.1941	4.06670	9.26
11	5.1941	4.47337	9.67
12	5.1941	4.88004	10.07
13	5.1941	5.28671	10.48
14	5.1941	5.69338	10.89
15	5.1941	6.10005	11.29

e. Use the equations in Figure 3 to compute the frequency linear a and b values:

Figure 3. Equations to Compute Frequency Linear "a" and "b" Values

$$a = \frac{(\sum fx^2)(\sum fy)-(\sum fx)(\sum fxy)}{(\sum f)(\sum fx^2)-(\sum fx)^2} \qquad b = \frac{(\sum f)(\sum fxy)-(\sum fx)(\sum fy)}{(\sum f)(\sum fx^2)-(\sum fx)^2}$$

SOLVE THE EQUATIONS BY SUBSTITUTING THE APPROPRIATE COLUMN TOTALS FROM THE LINEAR REGRESSION COMPUTATION SHEET (TABLE 1). IN THIS EXAMPLE, THE FREQUENCY A AND B VALUES ARE 5.5038 AND 0.38058, RESPECTIVELY. TO DETERMINE THE WAGE RATE AT ANY GIVEN GRADE LEVEL, FOLLOW THE SAME PROCEDURES USED FOR THE UNIT LINE.

3. SECOND DEGREE REGRESSION

a. The equation for a second degree (parabolic) regression is $Y=a+bx+cx^2$.

b. Using the same data from which the linear trend line values were computed, the computation sheet for a unit second degree recession is shown in Table 3:

Table 3. Second Degree Regression Computation Sheet (Unit)

n = survey job x = survey job grade y = survey job weighted average f = number of observations for the survey job

Table 3. Second Degree Regression Computation Sheet (Unit), Continued

n	x	Y	x^2	x^3	x^4	xy	x^2y
A	1	5.29	1	1	1	5.29	5.29
B	2	6.52	4	8	16	13.04	26.08
C	2	6.69	4	8	16	13.38	26.76
D	3	7.76	9	27	81	23.28	69.84
E	4	5.11	16	64	256	20.44	81.76
F	4	6.20	16	64	256	24.80	99.20
G	5	6.80	25	125	625	34.00	170.00
H	5	6.50	25	125	625	32.50	162.50
I	5	7.26	25	125	625	36.30	181.50
J	5	7.91	25	125	625	39.55	197.75
K	6	8.00	36	216	1,296	48.00	288.00
L	6	7.79	36	216	1,296	46.74	280.44
M	7	9.23	49	343	2,401	64.61	452.27
N	8	8.27	64	512	4,096	66.16	529.28
O	9	8.20	81	729	6,561	73.80	664.20
P	9	8.16	81	729	6,561	73.44	660.96
Q	10	9.63	100	1,000	10,000	96.30	963.00
R	10	9.21	100	1,000	10,000	92.10	921.00
S	10	9.08	100	1,000	10,000	90.80	908.00
T	10	8.08	100	1,000	10,000	80.80	808.00
U	10	8.55	100	1,000	10,000	85.50	855.00
V	10	8.77	100	1,000	10,000	87.70	877.00
W	10	10.44	100	1,000	10,000	104.40	1,044.00
X	10	9.63	100	1,000	10,000	96.30	963.00
Y	11	9.27	121	1,331	14,641	101.97	1,121.67
Z	13	11.93	169	2,197	28,561	155.09	2,016.17
∑=26	185	210.28	1,587	14,945	148,539	1,606.29	14,372.67

c. In addition to a and b, a third parameter, c must be calculated for second degree regressions. Determine the a, b, and c parameters for a unit second degree regression trend line by solving the following simultaneous equations. Equations are identified by Roman numerals.

Figure 4. "Equations to Compute Second Degree Unit "a", "b", and "c" Values

I. $\sum x^2y=a\sum x^2+b\sum x^3+c\sum x^4$

II. $\sum xy=a\sum x+b\sum x^2+c\sum x^3$

III. $\sum y=a\sum n+b\sum x+c\sum x^2$

Substitute the appropriate values from the computation sheet :

I. 14,372.67=1,587a+14,945b+148,539c

II. 1,606.29=185a+1,587b+14,945c

III. 210.28=26a+185b+1,587c

Solve for c:

Eliminate a: 185(I)-1,587(II)=IV

26(II)-185(III)=V

IV. 109,761.72=246,256b+3,762,000c

V. 2,861.74=7,037b+94,975c

Eliminate b: 7,037(IV)-246,256(V)=VI

VI. 67,672,578.2=3,085,030,400c

c= 0.021936

Substitute c in IV to solve for b:

b=0.11061

Substitute c and b in I to solve for a:

a=5.9617

Proof: substitute a, b, and c in II:

1,606.29=185(5.9617)+1,587(0.11061)+14,945(0.021936)

=1,102.9145+175.53807+327.83352

=1,606.29 (rounded to 2 decimal places)

d. Substituting the calculated values of a, b, and c into the formula $Y=a+bx+cx^2$ results in the Table 4:

Table 4. Computation for Grades 1 Through 15 (Second Degree)

X	a+	bx+	cx^2	=Y
1	5.9617	0.11061	0.021936	6.09
2	5.9617	0.22122	0.087744	6.27
3	5.9617	0.33183	0.197424	6.49
4	5.9617	0.44244	0.350976	6.76
5	5.9617	0.55305	0.548400	7.06
6	5.9617	0.66366	0.789696	7.42
7	5.9617	0.77427	1.074864	7.81
8	5.9617	0.88488	1.403904	8.25
9	5.9617	0.99549	1.776816	8.73
10	5.9617	1.10610	2.193600	9.26
11	5.9617	1.21671	2.654256	9.83
12	5.9617	1.32732	3.158784	10.45
13	5.9617	1.43793	3.707184	11.11
14	5.9617	1.54854	4.299456	11.81
15	5.9617	1.65915	4.935600	12.56

e. To calculate frequency a, b, and c parameters, compute the following additional sums: $\sum fx^2y$, $\sum fx^3$, $\sum fx^4$, $\sum fxy$, $\sum fx$, $\sum fx^2$, $\sum f$, and $\sum fy$. Solve for a, b, and c in the following equations in the same manner as for the unit computations:

Figure 5. Equations to Compute Second Degree Frequency "a", "b", and "c" Values

$$\sum fx^2y=a\sum fx^2+b\sum fx^3+c\sum fx^4$$

$$\sum fxy=a\sum fx+b\sum fx^2+c\sum fx^3$$

$$\sum fy=a\sum f+b\sum fx+c\sum fx^2$$

IN THIS EXAMPLE, THE FREQUENCY A, B, AND C VALUES ARE 5.9859, 0.20421, AND 0.012867, RESPECTIVELY. CALCULATE Y VALUES AS BEFORE BY SUBSTITUTING THE A, B, C, AND X VALUES IN THE SECOND DEGREE REGRESSION EQUATION.

4. EXPONENTIAL REGRESSION

a. Exponential trend line parameters log a and log b are calculated in a manner similar to that for linear a and b values, except references to y in the formulas are replaced by log y. The equation for an exponential line is $Y=ab^x$. Using logs, this equation becomes log Y=log a+(log b)x.

b. Again, using the same wage data, the computation sheet for calculating the unit log a and log b values is shown below:

Table 5. Computation of Unit log a and Unit log b Values

n	x	y	log y	(log y)(x)	x^2
A	1	5.29	0.723455	0.723455	1
B	2	6.52	0.814247	1.628494	4
C	2	6.69	0.825426	1.650852	4
D	3	7.76	0.889861	2.669583	9
E	4	5.11	0.708420	2.833680	16
F	4	6.20	0.792391	3.169564	16
G	5	6.80	0.832508	4.162540	25
H	5	6.50	0.812913	4.064565	25
I	5	7.26	0.860936	4.304680	25
J	5	7.91	0.898176	4.490880	25
K	6	8.00	0.903089	5.418534	36
L	6	7.79	0.891537	5.349222	36
M	7	9.23	0.965201	6.756407	49
N	8	8.27	0.917505	7.340040	64
O	9	8.20	0.913813	8.224317	81
P	9	8.16	0.911690	8.205210	81
Q	10	9.63	0.983626	9.836260	100
R	10	9.21	0.964259	9.642590	100
S	10	9.08	0.958085	9.580850	100
T	10	8.08	0.907411	9.074110	100
U	10	8.55	0.931966	9.319660	100
V	10	8.77	0.942999	9.429990	100
W	10	10.44	1.018700	10.187000	100
X	10	9.63	0.983626	9.836260	100
Y	11	9.27	0.967079	10.637869	121
Z	13	11.93	1.076640	13.996320	169
∑=26	185	210.28	23.395559	172.532932	1587

c. The equations for log a and log b are derived by substituting log y for y in the linear regression equations, giving:

Figure 6. Equations to Compute Exponential Unit log "a" and log "b" Values

$$\log a = \frac{(\sum x^2)(\sum \log y)-(\sum x)(\sum x \log y)}{(\sum n)(\sum x^2)-(\sum x)^2} \qquad \log b = \frac{(\sum n)(\sum x \log y)-(\sum x)(\sum \log y)}{(\sum n)(\sum x^2)-(\sum x)^2}$$

SUBSTITUTING THE SUMS ABOVE RESULTS IN :

log a=0.740395

log b=0.022407

d. Substituting the computed values of log a and log b in the formula log Y=log a+(log b)(x) gives the following table. Take the antilog of the log Y column to find Y.

Table 6. Computation for Grades 1 Through 15 (Exponential)

x	log a	(log b)(x)	log Y	Y
1	0.740395	0.022407	0.762802	5.79
2	0.740395	0.044814	0.785209	6.10
3	0.740395	0.067221	0.807616	6.42
4	0.740395	0.089628	0.830023	6.76
5	0.740395	0.112035	0.852430	7.12
6	0.740395	0.134442	0.874837	7.50
7	0.740395	0.156849	0.897244	7.89
8	0.740395	0.179256	0.919651	8.31
9	0.740395	0.201663	0.942058	8.75
10	0.740395	0.224070	0.964465	9.21
11	0.740395	0.246477	0.986872	9.70
12	0.740395	0.268884	1.009279	10.22
13	0.740395	0.291291	1.031686	10.76
14	0.740395	0.313698	1.054093	11.33
15	0.740395	0.336105	1.076500	11.93

e. Use the following equations to compute the frequency log a and log b values:

Figure 7. Equations to Compute Exponential Frequency log "a" and log "b" Values

$$\log a = \frac{(\sum fx^2)(\sum f \log y)-(\sum fx)(\sum fx \log y)}{(\sum f)(\sum fx^2)-(\sum fx)^2} \qquad \log b = \frac{(\sum f)(\sum fx \log y)-(\sum fx)(\sum f \log y)}{(\sum f)(\sum fx^2)-(\sum fx)^2}$$

CALCULATE THE ADDITIONAL SUMS REQUIRED AND SOLVE THE EQUATIONS BY SUBSTITUTING THE APPROPRIATE SUMS. IN THIS EXAMPLE, THE FREQUENCY LOG A AND LOG B VALUES ARE 0.761313 AND 0.020607, RESPECTIVELY. TO DETERMINE THE WAGE RATE AT ANY GIVEN GRADE LEVEL FOLLOW THE SAME PROCEDURES USED FOR THE UNIT LINE.

APPENDIX 5 TO ENCLOSURE 4

AVERAGE-TO-AVERAGE

1. AVERAGE-TO-AVERAGE POLICY. Survey results must be incorporated into U.S. forces pay schedules in a manner that ensures that the average total pay of U.S. forces employees equals the average total pay of non-U.S. forces employees, as measured by the survey results. Several approaches that will achieve this result are shown in sections 2 through 5 of this appendix.

2. THE UNIVERSE APPROACH

a. Subtract from the selected total pay trend line the value of pay components paid separately. The remainder is the adjusted pay line.

b. Compute the weighted average step of all employees paid from the schedule. This may be the current average step or a moving average. Regardless of the method, the average step used may not change more than one third of the value of a step from year to year.

c. Establish the average step as the point in the schedule structure to which the adjusted pay line rates will apply.

d. Compute the schedule step rates, as shown in Figure 8:

Figure 8. Computation of Schedule Step Rates in the Universe Approach

1 Assumptions: Schedule has 5 steps 4 percent of step 2 is the step increment Average step is 4.28
2. Step 4.28 represents a point in the step rate structure that is 109.12 percent of step 2 (8 percent plus 0.28 of the 4 percent interval between steps 4 and 5).
3. Determine the step 2 rate at each grade by dividing the adjusted pay line by 1.0912 at each grade. If, for example, the adjusted pay line rate at grade 1 is $5.00 per hour, the grade 1 step 2 rate of the schedule is $4.58 per hour (5.00/1.0912 = 4.58).
4. Once the step 2 rates for each grade have been determined, calculate the remaining steps at each grade by multiplying step 2 by 0.96 for step 1, 1.04 for step 3, 1.08 for step 4, and 1.12 for step 5.

3. MODIFIED UNIVERSE APPROACH. This approach sets the adjusted pay line at the average step for each grade.

a. Subtract from the selected total pay trend line the value of pay components paid separately. The reminder is the adjusted pay line.

b. Compute the weighted average step of all employees paid from the schedule by grade. This may be the current average step or a moving average. Regardless of the method, each average step used may not change more than one third of the value of a step from year to year.

c. Establish the average step for each grade as the point to which the adjusted pay line rates will apply.

d. Compute the schedule step rates, as shown in Figure 9:

Figure 9. Computation of Schedule Step Rates in the Modified Universe Approach

1. ASSUMPTIONS: SCHEDULE HAS 5 STEPS
   4 PERCENT OF STEP 2 IS THE STEP INCREMENT
   AVERAGE STEPS: GRADE 1 3.28
   GRADE 2 3.75
   GRADE 3 3.55
   GRADE 4 3.86
   GRADE 5 4.00

2. DETERMINE THE PERCENTAGE OF STEP 2 THAT EACH AVERAGE REPRESENTS:

A. FOR GRADE 1, STEP 3.28 REPRESENTS A POINT IN THE STEP RATE STRUCTURE THAT IS 105.12 PERCENT OF STEP 2 (4 PERCENT PLUS 0.28 OF THE 4 PERCENT INTERVAL BETWEEN STEPS 4 AND 5).

B. THE CORRESPONDING PERCENTAGES FOR THE REMAINING GRADES IN THE EXAMPLE ARE: GRADE 2, 107.00 PERCENT; GRADE 3, 106.20 PERCENT; GRADE 4, 107.44 PERCENT; AND GRADE 5, 108.00 PERCENT.

3 DETERMINE THE STEP 2 RATE AT EACH GRADE BY DIVIDING THE ADJUSTED PAY LINE BY THE PERCENTAGE CALCULATED IN SUBPARAGRAPH 3.D.(2) FOR EACH GRADE. IF, FOR EXAMPLE, THE ADJUSTED PAY LINE RATE AT GRADE 1 IS $5.00 PER HOUR, THE GRADE 1 STEP 2 RATE OF THE SCHEDULE IS $4.76 PER HOUR (5.00/1.0512 = 4.76).

4. ONCE THE STEP 2 RATES FOR EACH GRADE HAVE BEEN DETERMINED, CALCULATE THE REMAINING STEPS AT EACH GRADE BY MULTIPLYING STEP 2 BY 0.96 FOR STEP 1, 1.04 FOR STEP 3, 1.08 FOR STEP 4, AND 1.12 FOR STEP 5.

4. DUAL-PAY LINE APPROACH

a. Select the best fit total pay line for the survey data.

b. Compute weighted averages of current U.S. forces total pay by grade, including separately paid pay components as well as step rates in the calculations.

c. Compute a regression line on the U.S. forces data, using the same type of regression that resulted in the best fit total pay line from the survey data.

d. Adjust current total pay at each grade by the difference between the two total pay lines.

e. Apportion the difference among the various pay elements taking into account prevailing practice and the U.S. forces compensation plans. Ensure that the new total pay, on average, does not exceed current total pay plus the difference calculated in paragraph 4.d. of this appendix.

5. ADDITIONAL GUIDANCE

a. Consider the following when selecting the approach to achieve the average-to-average requirement:

(1) If the average step of U.S. forces employees varies significantly by grade, the modified universe or the dual pay line approach may be indicated. These procedures allow a more incremental approach, by grade, than the universe approach. The trade-off is that the resulting pay schedule may not progress smoothly from grade to grade.

(2) If the average steps of U.S. forces employees tend to cluster at certain skill levels (i.e., similar average steps at unskilled grade levels), it may be desirable to compute average-to-average values for the grades at that skill level using the average step for those grades.

b. To minimize the impact of year-to-year fluctuations in the average step figures, 3- or 4-year moving averages may be used. For example:

Figure 10. Using Moving Averages

YEAR	AVERAGE STEP	3-YEAR MOVING AVERAGE
2007	3.13	
2008	2.70	
2009	3.26	3.03
2010	3.37	3.11
2011	3.55	3.39

c. Once an average-to-average policy is implemented, do not change it solely for the purpose of controlling wage adjustments.

ENCLOSURE 5

BENEFIT ANALYSIS

1. GENERAL. There are many ways to approach the analysis of benefit data. The purpose of this enclosure is to give some examples and suggestions; it is not meant to be all-inclusive. As with much of compensation analysis in general, the important points are:

a. Analysis methods should be rational and repeatable.

b. To the extent possible, similar benefit items should be analyzed in a similar manner.

c. Analysis methods should be consistent from year to year. This establishes a base line so that subsequent benefit changes can be appropriately quantified.

2. ANALYSIS OF TIME-OFF BENEFITS. Express annual leave, holidays, and paid rest time in terms of hours or days and compare with U.S. forces practice. Aggregate the differences, weighting the data by company, company size, specific company work force employment, and number of matches at the company. Remember that each weighting factor carries different assumptions and subsequent data changes will have different effects on the aggregation depending on the type of weighting. For example, consider a survey with 100 participating companies. If annual leave differences are aggregated by company and a simple average is taken (sum the differences and divide by the number of participants), each company has equal weight -- 1 percent. If a particular company drops out of the next survey, the overall average is not likely to change much. On the other hand, if the differences are weighted by employment and the company that drops out constitutes 10 percent of the survey company total employment, the weighted average leave difference will be affected to a much greater degree, particularly if the company's leave plan is at one end of the distribution.

3. ANALYSIS OF OTHER BENEFITS. Evaluate most other benefits according to the cost to the employer. These costs may be weighted a number of ways, as indicated above, prior to the aggregation and averaging process. Benefit to the employee is usually subjective and not easily quantifiable in a rational, consistent manner.

4. USE OF BENEFIT DIFFERENCE IN TCC COMPUTATIONS. When the benefit analysis is complete, incorporate the benefit differences into the overall compensation plan. This may take the form of benefit-by-benefit adjustments to the U.S. forces benefits, adjustments in U.S. forces pay rates, or both. Sometimes an adjustment may not be possible, in that case, the benefit difference must be expressed in clearly labeled monetary terms and as a percentage of payroll (e.g., "The U.S. forces benefits cost for 1,548 employees exceeds average survey company benefit cost by $85 per employee per year, for a total of $131,580 per year or 0.85 percent of payroll.") In short, differences identified in the analysis of benefits must be accounted for in

total compensation or must be identified by cost and payroll percentage in the report submitted to the DASD(CPP) that is required by Enclosure 8. Also include in the report a plan to deal with TCC differences.

ENCLOSURE 6

UPDATE SURVEYS

1. GENERAL. The purpose of an update survey is to determine the compensation changes that have occurred since the previous full-scale survey. Contact those establishments that participated in the prior survey and collect data on the same matched jobs. The types of data that may be collected are:

a. General, across-the-board wage adjustments.

b. All other wage adjustments.

c. New job frequencies.

d. New benefit data or updated benefit data as appropriate.

2. METHOD

a. Using telephone, mail, e-mail, or personal contact, collect data concerning pay adjustments for the pay components covered in the full-scale survey from each establishment that participated in the prior full-scale survey. Apply these pay adjustments to the wage rates from the prior survey to obtain new company survey job averages and therefore new survey job averages.

b. Compute regression lines on the new data. Select the same regression line used in the full-scale survey, unless there are compelling reasons for change. Such reasons can include changes in the survey company list and significant variations in the pay data.

c. Place the pay line developed as a result of the update survey in the step-rate structure in accordance with the policy and guidance in Enclosure 4 and Appendix 5.

d. Analyze benefit data collected. (See Enclosure 5.)

ENCLOSURE 7

ALTERNATIVES TO SURVEYS

1. ACCEPTABLE ALTERNATIVES TO U.S. FORCES WAGE SURVEYS

a. Compensation and benefits are patterned after host country practices (normally applicable to host country government employees) under terms of an international agreement or as sanctioned by appropriate authority. In such cases, negotiations on effecting adjustments for U.S. forces employees should not commence until after final enactment or publication of the enabling directive(s) by the host government. This ensures that all aspects of the adjustments may be taken into account for TCC purposes.

b. Compensation and benefits are directly related to industrial awards sanctioned under host country jurisdiction, in line with an international agreement (e.g., H. E. Holt Communications Station, State of Western Australia).

c. Third country national employment programs, when compensation is based either on third country national home country rates or host country rates and uniform benefits are applicable to all third country nationals in the theater (e.g., U.S. Pacific Command Third Country National Program).

2. WHEN SURVEYS MAY NOT BE FEASIBLE.

Situations that may make wage surveys not feasible are:

a. The number of U.S. forces employees is so small that the cost of conducting a survey outweighs the advantages to be gained from surveying.

b. There is a lack of counterpart industry in the area where U.S. forces are located.

3. ACTIONS WHEN SURVEYS ARE NOT FEASIBLE.

When conditions such as those described in section 2 of this enclosure exist, alternatives to wage surveys that may be adopted are:

a. Determine the proper relationship between the wage and salary rates in the nearest surveyed area and the area in question, and fix and adjust wages and salaries by maintaining this relative relationship. Such relationships may be established by:

(1) Comparing economic indicators or earnings figures for counterpart industries that may be available from governmental or private sources in the country concerned.

(2) Conducting surveys for only a limited number of establishments and comparing these data to data obtained from the reference area in which complete surveys were made to determine

proper pay relationships. When this procedure is used, the jobs selected should represent both unskilled and skilled levels of work so any differences in pay relationships by skill level can be recognized.

b. When the level of rates is similar among the areas in question, the wage schedule based on the complete survey should be extended in application to the broader area. This treatment is appropriate when the relationships found by comparisons such as those in paragraph 3.a. of this enclosure are similar.

c. Requesting authority from the DASD(CPP) to use a Joint Compensation Plan in conjunction with the American Embassy (and other U.S. agencies) is a viable alternative when the U.S. forces work force is small and closely associated with the work force of U.S. Government civilian agencies in the country concerned.

ENCLOSURE 8

REPORTS

1. PURPOSE. This reporting requirement documents the survey process and results, or if conditions in an area preclude the conduct of a wage survey, the basis for the determination that a survey is not feasible and the basis used for establishing the schedules.

2. REQUIREMENTS. The reporting requirements prescribed herein have the following Report Control Symbol: DD-P&R(A)1571. DoD Components must submit the following materials to the Military Departments concerned and the DASD(CPP) within 60 days after changes have been approved:

a. Minutes of meetings of the joint committees.

b. Schedules of wages and implementing instructions, along with the date of the schedule being superseded.

c. A report of current fringe benefits.

d. The current exchange rate.

e. The distribution of employees paid from the schedules by grade and step.

f. Report of surveys conducted of prevailing rates and benefits, consisting of:

(1) Brief narrative of the survey including the geographical scope.

(2) List of participating and nonparticipating firms by type of industry and the reasons for nonparticipation.

(3) Survey job descriptions.

(4) Pay and benefit survey data:

(a) Usable data listed by company and survey job.

(b) Excluded data and the reasons for exclusion.

(c) Data analysis summaries.

g. Considered and selected trend lines and supporting survey data, along with a rationale for each trend line selected.

h. Explanation of schedule derivation and construction.

i. Summary of the method used to meet the average-to-average policy requirement.

j. Summary of the TCC method used and the annual dollar amount and percent of payroll that the value of the U.S. forces compensation plan differs from that of the surveyed companies' compensation plans. Include a plan for dealing with significant TCC differences.

ENCLOSURE 9

TCC

To implement the policy of TCC, DoD Components to whom wage fixing authority for foreign national employees has been delegated will coordinate in the effort to update the TCC plan for each country. Requirements are:

a. The plan must cover the pay and benefit components listed in Appendix 1 to Enclosure 4.

b. The plan must specify the time frame in which pay and benefits will be studied.

c. The plan must specify the basis for monetizing each non-U.S. forces and U.S. forces benefit.

d. The plan must specify for the country concerned which benefits are identical in the non-U.S. forces sectors and how such benefits are to be treated.

e. Different benefit packages provided for different groups of employees within a country in the non-U.S. forces sector must be recognized.

f. The plan must specify any exclusions and the basis for the exclusions.

g. The plan must specify the specific methodology to be used to compare U.S. forces total compensation with non-U.S. forces total compensation and the procedures must be statistically valid. The methodology must result in an overall monetary term, expressed in money and percentage, which portrays the amount by which U.S. forces pay and benefits in the aggregate exceed or trail non-U.S. forces pay and benefits.

h. Updated plans for each country must be submitted by DoD Components to the DASD(CPP) for approval.

GLOSSARY

PART I. ABBREVIATIONS AND ACRONYMS

DASD(CPP)	Deputy Assistant Secretary of Defense for Civilian Personnel Policy
DOS	Department of State
FWS	Federal Wage System
GS	General Schedule
TCC	total compensation comparability
U.S.C.	United States Code

PART II. DEFINITIONS

These terms and their definitions are for the purposes of this manual.

base pay. That part of U.S. forces total pay used to compute premium pay and certain other allowances. Depending on the in-country situation, base pay may be:

The scheduled rate for the position.

The scheduled rate less a value representing pay components found in the non-U.S. forces sector that were used in developing the scheduled rate, but that are not used by the non-U.S. forces sector to compute premium pay and certain other allowances.

The scheduled rate plus other allowances or pays granted by both U.S. forces and non-U.S. forces sectors that, in the non-U.S. forces sector, are used to compute premium pay and certain other allowances. In this case, the scheduled rate plus the other pay and allowances are used by the U.S. forces sector to compute premium pay and certain other allowances.

benefit component. The fringe benefits granted by U.S. forces to foreign national employees and by non-U.S. forces employers to their employees. Fringe benefits normally include time-off benefits, financial assistance benefits, and social security-type benefits. The most commonly used benefit components are listed in Appendix 1 to Enclosure 4 of this manual.

consolidated allowance. An allowance paid by the U.S. forces to represent a wide variety of non-U.S. forces pay that is considered in arriving at total pay for positions comparable to U.S. forces positions.

Executive Level IV. A pay rate in the Executive Schedule, which is a pay schedule consisting of the highest-ranked appointed positions in the executive branch of the U.S. Government.

foreign national employee. A non-U.S. citizen employed by the U.S. forces outside the United States, its territories, and possessions.

median. The middle rate of a series of rates arranged in order of magnitude. If the series contains an even number of rates, the median is the simple average of the two middle rates.

pay component. Remuneration in cash or in kind for services rendered. The most commonly used pay components are listed in Appendix 1 to Enclosure 4 of this manual.

payment-in-kind. That part of the pay component that is remuneration received other than in cash and that can be expressed in monetary terms.

segmented line. Wage line drawn through segments of survey data to reflect pay patterns in the country concerned.

survey job. In each local wage survey, wage rate data are collected for a prescribed list of jobs which cover a wide range of occupations common in skill and responsibility in both private industry and the government. Use of these survey jobs provides a means of sampling industrial wage levels that prevail for work similar to that performed by U.S. forces foreign national employees.

total pay. The combined value of all separately paid pay components.

trend line. The result of regression analysis performed on the survey data.

weighted average. The arithmetic mean that represents the aggregate of individual pay rates divided by the number of employees receiving such pay rates.